



This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

### Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

- + *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.
- + *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.
- + *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.
- + *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

### About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at <http://books.google.com/>



# *Annual Report*

Chicago (Ill.). Dept. of Public Works

Ill Doz 13.5.15



Harvard College Library

FROM

Municipal Reference Library  
Chicago





LITTAUER LIBRARY, SSP  
HARVARD UNIVERSITY





*F. W. Bevecki*

COMMISSIONER OF PUBLIC WORKS.

MAYOR'S ANNUAL MESSAGE

AND THE

Twenty-Eighth Annual Report

OF THE

DEPARTMENT OF

PUBLIC WORKS

TO THE

City Council of the City of Chicago

FOR THE

Fiscal Year Ending December 31

1903

900 Dec 13, 5. 15



*The Chicago River Bridge  
Chicago.*



**MESSAGE OF  
MAYOR HARRISON**





# Message of Mayor Harrison.

---

MAYOR'S OFFICE, CHICAGO, April 11, 1904.

*To the Honorable the City Council:*

GENTLEMEN—For the seven years I have had the honor to serve as Mayor of Chicago, of all the questions with which the City government has been called upon to deal, the traction question has easily held the first place in importance. During my first administration the chief cause for alarm lay in the aggressiveness of certain traction interests in their attempts to force by questionable methods a settlement inimical to the public welfare; in these years it was only by the exercise of a supreme effort the people prevented the consummation of a franchise grant which if made would have weighed heavily upon the community for more than two generations to come. For the past five years the traction companies have practiced every strategy shrewd counsel has been able to suggest in finessing for a technical advantage and to secure by stealth and indirection benefits they would not dare openly to ask. In the meanwhile, the public, discouraged and made suspicious by the constant shifting of ground of those to whom it has looked for leadership and guidance, and worn to desperation by the wretchedness of the service with which it has been accommodated, finally in the so-called “little ballot” voted in the last municipal election, has made demand for a settlement of a character which may well tax your ingenuity in granting.

I may be pardoned if in attempting to clear the path the public has bidden its officials to follow and to take such share of constructive work in legislation as an administrative officer may permit himself I recount as briefly as it may be done some of the successive steps which have led to the position the traction question occupies today:

In messages submitted to your Honorable Body outlining what appeared to me to be the necessary features to be observed in undertaking a settlement of this important question I have centered upon three salient points which, if the question were to be settled aright, seemed to my way of thinking absolute essentials. Let me repeat them. The municipal experience of the past brought forcibly to the front the necessity of eliminating from all future consideration of the problem the rights claimed by the companies under the legislative act of 1865, commonly known as the ninety-nine-year act. The general experience of this and other municipalities in dealing with kindred questions and the constant danger that in the granting of franchises public rights might be waived or lost through the weakness of officials or the influence upon them of sordid considerations dictated the resort to a referendum to the people in any proposed settlement as the surest warrant and safest guaranty of the public interests being adequately protected. The firm conviction that sound policy at no distant date would demand a public ownership of great municipal utilities dictated the necessity for the passage of an enabling bill by the State Legislature, authorizing cities to own and operate street car lines, as an absolute prerequisite to a settlement in the interest of the public.

In the belief these things were right and necessary, at an early date in the controversy I made public statement that no grant of franchise would fully meet my views until an enabling bill had been enacted into law, nor in which a referendum vote was not afforded to the people, nor in which there was not a distinct waiver by the interested company of all the rights and privileges it claimed by virtue of the ninety-nine-year act.

At once I was charged with adopting obstructive tactics. The public was assured the one purpose controlling my official actions was a desire to keep the traction question alive to be used for personal political advantage. The members of your Honorable Body were advised day after day to ignore the demands and suggestions made by me as unworthy and to settle the question without reference

to whatever views I might entertain. The result of this advice is what might reasonably have been expected. A considerable public element was educated to withhold all weight from the opinions I held upon the question; but more disastrous still the holders of traction stocks and securities were encouraged in the belief that by eliminating me from the field of official activity it would be easy for them to obtain a franchise of the character they most desired.

Had those who preached these dogmas remained consistent in their criticisms it would not be excusable for me to call attention to the criticisms now. Gradually, however, the suggestions made by me were accepted even by the bitterest of my honest hostile critics, until finally after the municipal election of 1903 there grew up a practical unanimity of sentiment that in a proper settlement the fundamentals just mentioned must be observed.

In the meanwhile many citizens had been educated to believe that in all the years this question has been under consideration I have served no other aim than to obstruct the way to an acceptable settlement. This idea is prevalent today. Selfish interests assert the administration is unwilling to allow a safe solution of the problem. Hostile partisanship urges the obstructive tactics of the executive as the one barrier to decent public service. Thoughtless critics attack the administration for its failure successfully to grapple with the question. Were one and all of these critics to be fair and candid they would be forced to admit that since the Mueller bill was enacted into law and since the referendum and the waiver of the ninety-nine-year act have been given general acceptance as essential to a final and just determination of the dispute, the real and only obstructionists have been the traction companies themselves. For one year the traction companies have blocked the way to settlement and the failure of your Honorable Body to submit a fair extension ordinance to the people for their approval or disapproval in the last election has been due to the refusal of the one company to accede to the righteous demands of this Council for proper compensation and the recognition of the popular outcry for an early opportunity to acquire

its lines and the resort of the other company to the federal courts for protection from what in the beginning it was pleased to term the hostile and anarchistic attitude of the City government.

For these reasons I wish to protest with all the power at my command against the charge that my position has been merely that of an obstructionist, unless those making the charge hold it to be obstructive to stand consistently and unwaveringly for what one is convinced is right, fair and just.

Any effort to bring about a settlement of the traction question is seriously embarrassed by the difference in the positions occupied by the two principal companies, due to conditions for which the municipality is in no way responsible and over which indeed it has no control. The one company has been before a committee of this Council seeking a franchise grant covering a term of twenty years, the second company has appealed to the federal courts on the theory it does not require a franchise extension in order to continue in business in this community for many years to come. While members of the Local Transportation Committee have been arguing with the representatives of the first company for adequate compensation and the reserved right for the municipality to acquire possession of its properties upon payment of a fair price at the end of ten years from the date of the grant, the staff of the Corporation Counsel's office has been engaged in a hard fought legal battle with the other company to preserve the citizens' rights in the streets and to prevent a construction of the ninety-nine-year act which would bind the municipality hand and foot for decades to come.

Within the past few weeks new officers of the federal court have been publicly quoted as desirous of meeting City officials in an effort to solve the problem. As yet these officials have no means of knowing the character of the proposals that might be made. I do not take it to be the duty or the right of an executive officer in the absence of instructions from the legislative branch of the City government officially to undertake a first discussion of questions the decision of which properly and under the law is vested in the City Council. From the public

statements that have been made, however, it would appear to be the desire of the court officers to undertake a settlement along lines that would preserve unimpaired the rights claimed under the act of 1865. The members of this body as well as the City's executive both by public pledges and by the repeated mandate of the citizens rest under a solemn obligation to require a waiver of these rights as a prerequisite to a franchise grant.

The positions occupied by the two companies might perhaps not improperly be outlined as follows: The one company is willing to surrender its alleged rights under the ninety-nine-year act in consideration of a twenty-year grant of franchise, while the second company stands ready to forego a definite long term grant in consideration of an official acknowledgment of its ninety-nine-year act claims. With neither of these propositions may the City properly agree. It must not be forgotten that the public by its votes on the "little ballot" has served notice on its officials of its desire for early if not indeed immediate municipal ownership of the traction properties. Previous Councils, by the reports of the Street Railway Commission and the Local Transportation Committee, have given expression to a decided belief in the necessity of a requirement, that at the end of ten years from the grant of franchise and thereafter through the full term of the grant, the City shall have the right upon payment of proper and fair compensation to assume the control of the properties. Public officials and the best public sentiment for some years have been of one mind in demanding a waiver of the ninety-nine-year act rights, if any exist, as essential in an extension ordinance.

The controversy prior to the last City election was certainly complicated enough. This election, however, has added further complication to an involved situation. In this election a vote was taken on two points directly connected with the traction question and each proposition was carried by a majority of those voting thereon in approximately the ratio of two and a half to one, and by a majority of all those voting for the various aldermanic candidates. The first of these propositions is



a demand that your Honorable Body proceed at once to acquire municipal control of the lines of surface transportation; the second proposition is a demand that in the interim of securing this control the City give the companies a bare license to occupy the streets. The municipality is now confronted with the problem of finding the means by which these demands of the electorate may be granted.

The suggestion has been made that in order to test the ability of the municipality successfully to operate street railways, the City make use of the lines covered by the franchises of the Chicago Passenger Railway Company which are about to expire, for the purposes of the experiment. As from time to time the other franchises of this company run out, the suggestion is that the City add them to the municipally operated system, gradually extending the service until a thorough test of public operation has been made. This suggestion comes from two distinctly separate sources and its purposes must be therefore considered in a double light. If the desire be merely to test the ability of the City of Chicago to engage profitably and efficiently in the surface transportation business, the suggestion is admirable. If, on the other hand, it is sought to impress the public with the appearance of a municipal ownership victory, and on the strength of it to claim the accomplishment of great things, the object would perhaps be gained, but the purpose of it would be most unworthy. If the idea be by this means finally and effectually to inaugurate general public ownership of all the traction utilities of this City, the suggestion is Utopian rather than practical.

Even with the City operating all the franchises of the Chicago Passenger Railway Co. the prospect of its obtaining control of all the other surface lines would be as remote and as beset with difficulties as it is today. As was set up by the City's counsel in the case now being tried in the local federal court, one of the strongest points in the City's favor is the fact that, even should the validity of the act of 1865 be sustained, by no stretch of the legal imagination could the benign influence of that act be made to cover the franchises granted by the City to the Chicago

Passenger Railway Company. By a judicious use of these expiring rights it has been hoped the stockholders of the Union Traction Company might be brought to a reasonable view of their obligations to the citizens at large. Should they remain recalcitrant the City has counted upon using to the utmost limit its control over the streets covered by the Chicago Passenger Railway Company's franchises.

For myself I may be permitted to say I believe in municipal ownership not as an ephemeral fad, nor as a catch-penny device for currying public favor, but as a practical essential to good municipal government. My views on this question have been outlined in previous messages to your Honorable Body, and need not be repeated here. Because of these beliefs I do not care for bogus municipal ownership; I am not willing to accept in lieu of the real article municipal ownership husks devoid both of substance and nourishment. Nor am I willing to practice a municipal ownership confidence game upon the public. To meet my approval a municipal ownership plan must be something more than a hazy dream or a succession of high sounding words and phrases signifying nothing. I do not propose to chase a will-o'-the-wisp with the comforting delusion that a substantial object is in view. In the old German fable it is said that wherever the rainbow comes in contact with the earth a pot of gold is to be found. In this prosaic twentieth century one may well be excused from chasing rainbows with the idea that merely because the rainbow is in distant view great ingots of gold are awaiting him who can find the spot where the bow of hope touches the solid, substantial earth.

Moreover, when municipal ownership is really to be had, I for one do not wish to pay for it more than it is really worth. This in the only true analysis is a business proposition, pure and simple. When it is obtained, if it is to be a success, it will be operated as a business venture for the benefit and profit of the public, and otherwise it should not be operated at all. The question must always be, Will it pay? For it the municipality must not pay a price upon which the public operation shall fail to pay a dividend.

In considering the question of a traction settlement I take it a plan should be adopted which would be a fair business proposition for the companies and so fair to the municipality in the service it offered and the compensation returns it promised, that the citizens, when given an opportunity to voice their sentiments, would place upon it the stamp of their approval. The plan should afford a guaranty to the public that at a certain stipulated time before the expiration of the full grant, and upon payment of a fair price, the municipality could acquire ownership of the properties, if it elected so to do. As an assurance to the public of the genuineness of the official plans for ultimate public ownership the compensation to be paid should either all be applied to a safely guarded sinking fund account to be held as a nucleus of a fund with which to purchase the properties, or a part should be applied to the cleaning of streets and alleys and the remainder to the sinking fund account. I believe, even in view of the recent vote for immediate public control of the traction properties, an ordinance of this character submitted today to the people would secure a vote of popular approval. A proposition such as this should satisfy the popular demand for early public ownership, because it would make such ownership possible whenever public interest in the management of public affairs would have resulted in such an improvement of conditions as would make such ownership profitable. I firmly believe a majority of the citizens would consent to such a settlement rather than leave matters in their present unsettled state, subject the riding public to a continuation of the present wretched service, and abandon the entire question to the uncertain decision of the courts of law and the possible manipulations of future public officials.

The City is in the unfortunate dilemma of being unable to deal with both companies along identical lines. From the effort which has been made to support its claims it would appear one of the companies looks upon its ninety-nine-year rights as its chief asset, the principal property it possesses with which to bolster its fallen fortunes. The public demands a waiver of these rights, the City officials are pledged

again and again to exact this waiver. It is desired, moreover, to find an ultimate settlement of the question in its entirety, a settlement promising in the not distant future an unified surface transportation system under public control. It is here the apparently insurmountable difficulty confronts us. However, while it may be unfortunate that both companies cannot deal with the City along the same lines and to their individual profit, the fault is not of the municipality. What good reason is there against the City demanding an identical settlement, settling with either company which will accept its terms and withholding a settlement from the other company until it comes to see the error of its ways?

Two possibilities would therefore seem to present themselves. The first is to draft an ordinance along the lines of the so-called tentative ordinance of the Local Transportation Committee, inserting a provision for a fair and reasonable rate of compensation, as well as a provision enabling the City at the end of ten years from the date of the grant, upon payment of a fair price, to acquire the lines, with a further proviso calling for the creation of a sinking fund account of all or a part of the compensation moneys to be used ultimately as purchase money, offer the ordinance to each company, and if either or both accept, arrange that the ordinance shall be submitted for popular approval or disapproval at the fall elections.

The second plan calls for laying aside the tentative ordinance and for the drafting of a new ordinance along new lines, offering to pay the companies in Mueller law certificates the full value of their present tangible property, the value of all their unexpired franchises, excepting their alleged rights under the act of 1865, the value of the improvements and betterments to be made necessary by a complete rehabilitation of the systems, finally making a lease of the lines to the companies upon a fair rental basis, the entire ordinance to be conditioned upon an absolute waiver of all the rights the companies accepting it may claim under the ninety-nine-year act. This second proposition under the terms of the Mueller law itself would of necessity be submitted for

popular approval at the next following election. The rental moneys paid by the companies would be deposited in a sinking fund account with which to retire the certificates at maturity.

In either proposition the saving clause would be the necessity for the ratification of the action of your Honorable Body by the public when the referendum vote was had. Each proposition provides for the public ownership which the people in the "little ballot" have demanded. Each proposition offers fair terms of settlement to the traction companies. Each proposition would prepare the way for a betterment of the atrocious service to which the riding public of Chicago is today subjected.

In a decision in a recent case brought by the City to establish its right to issue bonds for the purpose of refunding its judgment debt, the Supreme Court of the State classified the existing indebtedness of the municipality, separating that part of the debt which comes within the constitutional limitation from that part which is outside of the limitation. As a result of this classification the City finds itself able to sell bonds for corporate purposes in the sum of \$4,000,000.00, in addition to the bonds which it may sell for the purpose of refunding its judgment debts. With the proceeds of these bonds it will be possible for the City to undertake much work of urgent importance. Prudence forbids the application of any part of these moneys to other than permanent improvements. In the face of extreme pressure the last Council acquitted itself well in the practical unanimity with which it voiced its determination properly to husband these funds.

In a previous message to your Honorable Body I have said:

"In my message of 1899 I dwelt at length upon the necessity of an increase in the bonded debt of Chicago, as well as upon the safeguards which should be thrown around the moneys raised by such means. Each issue of bonds, I suggested, should be devoted specifically and unalterably to a given purpose; bonds should be issued only as the money to be raised by them was needed; the moneys obtained by their sale should be expended under the direct and constant care of a board

of overseers or directors appointed for the specific purpose of jealously guarding against a possible misapplication of the funds, as well as against the reckless and unnecessary issuing of bonds."

While the subject then under discussion was a comprehensive scheme of issuing bonds for all permanent improvements, and while the amount of bonds which the City is now able to issue will be exhausted by the all important work of lowering the La Salle street and Washington street tunnels, together with the work on new bridges, free bath-houses, new engine houses and police stations already planned and provided for in this year's appropriation bill, public confidence in the ability of the City to handle with prudence and economy great sums of money to be raised by bond issues would be materially promoted by the appointment of a citizens' commission which should have supervision over the expenditure of the proceeds of bond sales and whose advice and counsel would be sought and heeded in all the details connected with the raising of and caring for sinking fund accounts.

Unfortunately for the City, the opportunity to issue new bonds comes at an inopportune time, if we consider the condition of the money market alone. During the past seven years the City has marketed bond issues as follows:

**BONDS ISSUED BY THE CITY OF CHICAGO SINCE MAY 1, 1897.**

DATE OF ISSUE.	Kind.	Interest Rate of Retired Bonds.	Amount.	Interest Rate of New Bonds.	Prices at Which Bonds Were Sold.
July, 1898.....	Tunnel....	7	\$100,000.00	8½	\$1.0866
July, 1898.....	Tunnel....	7	98,000.00	8½	1.0866
October, 1898.....	Tunnel....	7	100,000.00	8½	1.08289
January, 1899.....	Tunnel....	7	98,000.00	8½	1.0441
July, 1899.....	Municipal.	7	547,000.00	8½	1.06076
September, 1899.....	Municipal.	7	228,000.00	8½	1.06119

In September, 1899, the City sold bonds at 3.12 per cent, the lowest rate at which it has sold bonds in its territory, while the highest rate it has paid in seven years has been 3.25 per cent. At the present time many circumstances have combined to make money dear and the interest rate at which the City will be able to market bonds is prob-



lematical. The best advice the City is able to obtain holds out no promise of an early cheapening of money. Because of its necessities even in the face of an adverse money market, the City must attempt to place bonds. In order to better the market, negotiations were instituted by the Comptroller to secure the acceptance of the Municipal Bonds of Chicago, by the Treasurer of the United States, as authorized and recognized deposits for the purposes fixed by the acts of Congress. As a result of these negotiations, the Treasury Department finally wrote, on March 24, 1904, saying: "Bonds of the City of Chicago are acceptable the same as other municipal and state bonds for the purposes above mentioned," thus establishing the bonds of this City on the same plane of value and acceptability as those of New York City, Boston, and the other great municipalities of the country. In the appropriation bill of this year the following improvements were provided for, to be paid for out of the proceeds of bond sales:

#### PERMANENT IMPROVEMENTS ORDERED IN 1904 APPROPRIATION BILL.

##### POLICE DEPARTMENT.

For purchase of site and erection of building for police station in Lake View.....	\$ 20,000.00
--	--------------

##### FIRE DEPARTMENT.

For engine and hook and ladder companies equipped on lot owned by the City at the northeast corner of Fourteenth street and Michigan avenue:	
Double two-story brick house.....	24,000.00
For engine company in the vicinity of Byron and West Ravenswood Park avenues:	
Lot .....	\$ 3,200.00
Two-story brick house.....	12,000.00
	<hr/>
	15,200.00
For hook and ladder company at Nos. 6017-19 State street, on lot owned by City:	
Two-story brick house.....	12,000.00
For engine company, on lot owned by the City at the southwest corner of Diversey and Fairfield avenues, in connection with Hook and Ladder Company No. 13, to be removed from present location, No. 1549 North Rockwell street:	
Double two-story brick house.....	24,000.00
Carried forward.....	\$ 95,200.00

Amount carried forward.....	\$ 95,200.00
For hook and ladder company at Nos. 928-30 Rosemount avenue, on lot owned by the City, said company to take the place of Hook and Ladder Company No. 25, now located at No. 4874 North Clark street:	
Two-story brick house.....	12,000.00
For engine company on lot owned by the City, adjoining house of Hook and Ladder Company No. 12, No. 1245 West Thirteenth street:	
Two-story brick addition.....	10,000.00
For engine company in the vicinity of West Ohio street and Grand avenue:	
Lot .....	\$ 2,000.00
Two-story brick building.....	12,000.00
	<hr/> 14,000.00
For engine company in the vicinity of Lafin and Van Buren streets:	
Lot .....	\$ 3,000.00
Two-story brick house.....	12,000.00
	<hr/> 15,000.00
For engine company at No. 1635 West Sixty-ninth street, on lot owned by the City:	
Two-story brick house.....	12,000.00
For new quarters for Engine Company No. 33, on lot owned by the City, No. 150 Southport avenue:	
Two-story brick house.....	\$12,000.00
Lot .....	7,000.00
	<hr/> 19,000.00
For quarters for Hose Company No. 1, in vicinity of Lake street and Waller avenue, Austin:	
Lot and two-story brick house.....	12,000.00
For new quarters for Engine Company No. 11, in the vicinity of Illinois and Pine streets:	
Lot .....	\$10,000.00
Two-story brick house.....	12,000.00
	<hr/> 22,000.00
For new quarters for Engine Company No. 52, on lot owned by the City, No. 4714 Elizabeth street:	
Two-story brick house.....	12,000.00
For quarters for engine company at 8451 Commercial avenue, on lot owned by City:	
Two-story brick building.....	12,000.00
For engine company in the vicinity of North Central Park avenue and West Dunning street:	
Lot .....	2,000.00
For five first-class engines, to replace those now in the service, at \$4,700 each.....	23,500.00
For three new aerial trucks, at \$5,000 each.....	15,000.00
Carried forward.....	<hr/> \$ 275,700.00

Amount carried forward.....	\$ 275,700.00	
For engine company in the vicinity of Forty-eighth avenue and Harrison street:		
Lot .....	\$ 2,000.00	
Two-story brick house.....	12,000.00	
		14,000.00
In vicinity of Fifty-first street and Western avenue:		
Lot and building .....	12,000.00	
In vicinity of North and California avenues:		
Lot and building .....	12,000.00	
		24,000.00
		<hr/> \$ 313,700.00

## HEALTH DEPARTMENT.

For new baths in:		
Seventeenth ward .....	\$ 15,000.00	
Twenty-second ward .....	15,000.00	
Fourth ward .....	15,000.00	
Fifth ward .....	15,000.00	
Fourteenth ward .....	15,000.00	
		<hr/> 75,000.00

## DEPARTMENT OF PUBLIC WORKS.

*Bureau of Engineering:*

Including salaries of employes necessary to make de- signs and supervise construction:		
West Division street bridge.....	\$ 9,000.00	
North Western avenue bridge.....	103,000.00	
Amount required for new bridges and viaducts to be constructed for (including salaries of employes neces- sary to make designs and supervise construction):		
Removing old bridge from Eighteenth street to South Western avenue and building new substruc- ture .....	45,000.00	
Archer avenue bridge (estimated).....	240,000.00	
North avenue bridge (estimated).....	240,000.00	
Thirty-seventh street bridge (estimated).....	250,000.00	
For plans for Market street bridge and viaduct and		
Thirty-first street bridge.....	1,000.00	
Gates for bascule bridges.....	8,000.00	
Eggleston avenue bridge.....	5,000.00	
For completion of North Western avenue bridge.....	122,391.34	
For completion of West Division street bridge.....	41,645.15	
		<hr/> 1,065,036.49

## DEPARTMENT OF ELECTRICITY.

Extending municipal lighting system.....	200,000.00
--	------------

Total .. 

---

\$1,658,786.49

In addition thereto the City is faced with the necessity for im-  
mediate action in the lowering of the tunnels. Aside from the probable  
action of Congress in ordering the lowering or removal of the tunnels as

obstructions to navigation, the demands of the river interests, as well as the general welfare and prosperity of the City, insistently demand a river channel with a depth capable of accommodating the modern navigation of the great lakes. Health and decency, moreover, demand of the City a sanitary method of disposal for the City's garbage. Present methods are not only barbarous but economically unjustifiable, and no single reform should command your attention with greater force than the institution of a sanitary scheme for disposing of the City's refuse and garbage.

The necessity for applying the proceeds of bond sales to the development of the Sanitary District's water power has been eliminated by the action of the last Legislature, which, largely upon the advice of City officials and upon the promise of Trustees of the Sanitary District that the water power when developed should be placed at the disposal of the various municipalities comprising the district, passed a bill enabling the district among other things to contract for the development of the water power at Lockport. This contract has been let and the work itself is in progress. No honest objection can be raised to giving the water power to the taxpayers of the Sanitary District upon proper terms. No honest argument can be urged in favor of bestowing upon private capital advantages paid for by and belonging to the people. Your Honorable Body should invite the co-operation of press and public in an insistent demand that the rights of the people who pay the taxes in the district be recognized and respected, and that the water power when developed be placed at the disposal of the public in whose interests the bill authorizing the raising of revenue by additional taxation ostensibly was passed, and whose taxes are paying for the work.

At the last session of the Legislature, after a bitter fight and at the demand of an aroused public, a bill was passed giving municipalities, under certain restrictions and limitations, the right to own and operate street railways. This act, in accordance with its provisions, was submitted to the electorate at the last municipal election and received the hearty endorsement of the voters. The passage of the bill marked a

distinct step in advance; it has established, moreover, a precedent for future action of the same general character in respect to other utilities.

I would urge your Honorable Body to direct your Committee on State Legislation to prepare for presentation to the next Legislature bills providing for public ownership of gas and electric utilities and authorizing the issuance of certificates of the same character as the Mueller bill certificates to finance the establishment of the systems.

Were the City able to issue bonds in a large amount I would urge action under the recent opinion of the Corporation Counsel in which he holds the City has the inherent right to sell gas and electric current to its citizens. While awaiting action on the part of the Legislature it would be expedient to direct the City Electrician to proceed at once to sell surplus electric current which can be developed in the various electric stations during the day time and in this way invite a legal contest with the private companies by which the City's rights and powers may be adjudicated and learned.

Your Committee on State Legislation should be directed to prepare a bill to be submitted to the next Legislature authorizing the municipality to regulate the price of gas. The City recently won a notable victory in the Supreme Court of the United States which recognizes that the gas company is subject to regulation. The power to regulate is vested either in the Legislature or the City Council. A decision of the local Federal Court holds this power to lie with the Legislature, and while the case will be appealed and every effort will be made to establish the authority of the municipality to exercise this control, pending final adjudication it would be well for the City to move upon the Legislature and seek remedial legislation.

The ordinance recently passed extending the hour for closing dramshops from midnight until one o'clock and requiring that after that hour all blinds shall be drawn and a light kept burning, affording a clear and unobstructed view of the interior, will materially aid the police in enforcing the closing ordinance. The ordinance is now, to all intents and purposes, self-enforcing, and except in the cases of combina-

tion saloons and restaurants the patrol sergeants and patrolmen would be utterly without excuse or justification were evasions to be permitted. The old law was almost impossible of enforcement, in view of the limited number of the patrolmen. There was, moreover, an unquestioned popular demand for a later hour than midnight for dramshops to be kept open. It is difficult at best to enforce an ordinance to which there is considerable public opposition; to enforce the old ordinance in face of public opposition and with a limited police force was a practical impossibility. The amendment advancing the hour for closing to one o'clock satisfies the public demand for longer hours than the old ordinance permitted, and the ordinance requiring the drawing of blinds enables each citizen to have notice of an attempted evasion of the law.

A difficult task, engaging the attention of the Police Department is the effort to break up the evil of race-horse gambling. The extent to which this vice has spread is difficult to estimate and is probably not fully understood by the citizens. The ticker ordinance, passed by the City Council at my suggestion, and the close scrutiny and rigorous treatment of saloons in which handbooks have been made has diminished this form of law violations to a material extent. Handbooks today are being made in out of the way places and the telephone has taken the place of the telegraph instruments in diffusing gambling information. The vice is pandered to by the publication in the daily press and in other ways of racing form cards, or what are vulgarly known as "dope sheets," giving the odds, riders, condition of tracks, and other information calculated to aid the "picking of winners" and to increase the unhealthy interest in this form of public gambling. These form cards should be strictly prohibited, if the vice is to be curtailed, and I would recommend action leading to the necessary legislation.

In the past year there have been many forms of investigation of the public service both on the part of officials and of volunteer bodies. In most instances criticism, fault-finding and attack seem to have been the only purposes sought. In the investigations which have been made, whether for laudable or ulterior



aims, the fact seems to have been lost sight of that public servants are merely human beings, open to the same temptations, subject to the same failings, as other human beings, often intolerant as human nature is intolerant of harsh criticism, eager as all human nature is eager for a word of commendation and praise, disheartened and made stubborn in the common human way by constant abuse and captious criticism, stimulated and encouraged to better effort in the same common human way by applause and words of approbation.

For myself, I have always felt that the preponderance of good to ill result following upon honest investigation made such investigation rather to be welcomed than resented. Nevertheless, it should do no harm to point out that the general scheme of work which has suddenly grown so prevalent and popular would promote a healthier condition of public affairs if an occasional investigation for good conditions were to be undertaken and if worthy and deserving public servants were to receive an occasional expression of confidence. The good work of the Municipal Voters' League has been promoted by the generous and unstinted credit given by the organization to exemplary service in the ranks of the City Council; improvement in the personnel of this body has followed largely because good work is recognized and appreciated. A like improvement in the general public service would be promoted by conscientious investigation which would not only register blame, where there was cause for blame, but bestow credit where credit was due. It is hardly conceivable that among all the thousands of City employees, both high and low, there are not many cases of worth and merit; yet judged by the reports of investigations published from time to time, the City government is in the hands of the Philistines, and all chosen people are in the ranks of the investigators. If the purpose of these investigations is a betterment of conditions, let the bright side of public affairs be brought out as well as the dark; then not only will bad service be held up to obloquy and opprobrium, but good service will receive the praise and encouragement it deserves.

And in connection with this suggestion let it be emphasized again

and again that the law is made not only to be enforced, but to be observed and obeyed. It is not every critic of the public service who can honestly say: "My hands are clean; I am an observer of the law."

In the recent election a proposition was presented on "the little ballot" calling for a change in the present method of choosing members of the Board of Education. Without entering into a discussion of the interests promoting the change from an appointive to an elective system, nor of the influences behind the move, let it be remembered that in all the hostile criticism of City Councils, County Boards, Drainage Boards, and Legislatures of the past generation, the general standard of the Board of Education has remained excellent, and few scandals have cropped up in its work. The best thought on municipal government of the day unites in demanding the greatest possible concentration of authority and responsibility. The same arguments which are urged in favor of electing the members of the Board of Education might as well and as appropriately be advanced in favor of the election of the Comptroller, the Commissioner of Public Works, the Chief of Police, the Fire Marshal, in fact of every head of a municipal department. Advanced thought favors increasing rather than diminishing the power and responsibility of the Mayor. When the citizens have reconsidered this question and have given it the benefit of a sober second thought they will hesitate before they take a backward step. It has been my aim and purpose in the years I have served as Mayor to remove the schools as far as may be possible from the sphere of politics and political influence. Merit today controls in the public schools and individual pull has lost its malign power. The scheme recently voted upon would upset all the good work of seven long years and place the schools absolutely at the mercy of political rings and spoils dictation.

A Mayor's message would be incomplete were no reference to be made in it to the financial distress of the City government. Year after year I have discussed the subject in all its bearings; indeed, the full gamut has been run in pointing out the causes of municipal poverty and the apparent impossibility of obtaining relief. The present year, as

members of your Honorable Body are well aware, has been no exception to the rule, which seems to be that this great City of two million souls is indefinitely doomed to struggle along with a revenue inadequate for its barest needs. Where, when, and how relief is to come has not yet been made evident. Citizens are indulging in roseate dreams of the benefits to be obtained from the proposed constitutional amendment by which Chicago is to be given a new charter. To these citizens I would commend a careful reading of the amendment itself. Its adoption will be of assistance to the City. It must not be thought, however, that with its adoption all the ills from which Chicago has suffered in the past and is suffering today will be cured.

#### CORPORATION COUNSEL'S OFFICE.

The Corporation Counsel's office has during the past year been engaged in the most important legal controversies that have ever engaged the attention of that department. The disputes between the City and the traction companies pending for years, so far as the West and North side companies are concerned, have been submitted to the United States Court for consideration upon oral arguments and written briefs. The bone of contention always has been the validity and extent of the so-called "ninety-nine-year act." The proceedings leading up to the appointment of the receivers for the Chicago Union Traction Company and the underlying companies, and the legal contest which has been a result thereof are matters on which the public must be so well informed that it is unnecessary for me here to refer to them. There can be no doubt that the City has presented its contentions forcibly and ably, and that nothing has been left undone by the Law Department to fully present every argument that could be presented in behalf of the City.

The Supreme Court of Illinois held in the case entitled, *City of Chicago, for Use of Schools, vs. City of Chicago*, that all school lands commonly known as "Section 16 lands" (being lands acquired by grant from the general government) and all lands derived by purchase with the proceeds of sales of such lands, were subject to special assessment, and as a result thereof the Board of Education will be compelled to

pay all special assessments heretofore levied against its property which it has heretofore refused to pay, and those bonds on which the City has defaulted, owing to the present refusal to pay, will be paid.

In the case of *City vs. Chicago General Railway Company*, the department ousted the railway company from certain streets for failure to maintain its right of way in good condition and repair, and in the case against the *Chicago Terminal Railway Company*, and the *Suburban Railway Company*, ousted the railway company from the street for failure to operate.

The judgment for \$555,560.25 entered August 29, 1899, by the Circuit Court of Cook County, in favor of the firm of Weir, McKechney & Co. for money alleged to have been due on account of work performed by said firm in the construction of Section 3 of the Northwest Land Tunnel, was reversed by the Supreme Court.

The Supreme Court of Illinois, in deciding the Stone case, which was an appeal from a decree of the Circuit Court, denying an injunction to restrain the City from issuing bonds to the amount of four million dollars for the purpose of paying judgments against the City, passed upon the question of the present indebtedness of the City, and as a result thereof the City will be enabled to issue bonds to a comparatively considerable amount for the purpose of making several needed improvements.

October 15, 1900, the City Council, by ordinance, fixed the price of gas to be charged in the city at the rate of not to exceed seventy-five cents per thousand feet. The People's Gas Light and Coke Company contested the validity of the ordinance in the United States Courts, claiming that under its special amended charter, passed by the Legislature in 1865, it had a contract whereby the City could not reduce the price below the sum of three dollars per thousand feet, and that by virtue of its having taken advantage of the Gas Consolidation Act of 1897, by merging with many other companies, it had still a contract whereby the City was prohibited from reducing the price of gas below the sum of one dollar per thousand feet, and that it was charging one dollar, and

that the passage of the ordinance constituted an impairment of the contract. The Circuit Court decided adversely to the Gas Company's contention, and the Supreme Court of the United States has just sustained the lower court. The only obstacle now in the way of cheaper gas to the citizens of Chicago is the decision of the United States Circuit Court in the Mills case, that the City has no power to regulate the price of gas. The Law Department is now preparing this case for appeal to the Supreme Court of the United States and is confident of a favorable decision. In the event, however, of an adverse decision, the administration will seek a grant of power to regulate the price of gas from the Legislature.

If space allowed, it would be my pleasure to refer to other very important litigation which has resulted successfully. The marked success of the Law Department has been due to its devotion and fidelity to the interests of the City, and due credit should be given accordingly.

In the Special Assessment Law Department thirty-six (36) condemnation cases have been successfully tried, and eight hundred and fifty (850) special assessment proceedings for street improvement have been confirmed. This includes the Jackson Park avenue sewer system, at an estimated cost of \$887,000. This department has caused to be put in collection during the year over \$100,000 of old assessments, a large amount of which should have been in collection years ago. When collected, practically all local improvement bonds now outstanding can be met.

The present vigorous course in substituting new sidewalks for old plank sidewalks, where these are defective, should be continued, as the direct cause of a majority of the present pending injury cases against the City are due to the defective condition of plank walks.

The warrants brought down to date by Haskins & Sells should be investigated for the purpose of ascertaining their accuracy, with a view to determining whether any moneys are due on them or not.

## COMPTROLLER'S OFFICE.

The administration of the City's finances during the year 1903 was embarrassed by the proverbial insufficiency of revenue. While the public needs of the City corporate are constantly increasing, the revenue from taxation remains practically the same from year to year. This is illustrated by the fact that general taxes levied for corporate purposes in 1902 amounted to \$5,770,876.97; in 1903, \$5,831,097.25, an increase of \$60,220.28, whereas the corporate expenses for 1903, as compared with 1902, show an increase of \$554,772.80, and an excess of expenses over revenue for 1903 of \$895,724.13.

The necessity for providing funds promptly and in sufficient volume to satisfy all legitimate demands and sustain the City's credit has required the most constant watchfulness and attention. Every safeguard that has been devised by the business world for use in commercial transactions has been installed in the various departments in the City in order that the revenues may be conserved and the utmost economy practiced in expenses. Much of this work has devolved upon the Audit Bureau of the Comptroller's office, whose usefulness is being constantly extended. For example, during the past year a Price and Material Division has been created, wherein prices on every purchase made by the City are carefully scrutinized and compared. The pay rolls of departments are also checked against original time books and their accuracy tested by an actual count of the employees while at work. The results have been gratifying not only in their moral effect, but in the fact that the economies resulting have placed the bureau on a self-supporting basis.

The records of the City's real estate have been revised and perfected, and careful attention has been given to the revenues from that source.

The most notable achievement in the history of special assessments was the successful culmination during the past year of the work of the accountants, Haskins & Sells, in adjusting the accounts and rewriting the records of special assessments from the time of the great fire of 1871.

This work was in progress for nearly three years, and covered 4,300,000 individual assessments, aggregating \$95,500,000. The work contains over 200,000 sheets of manuscript and typewritten matter, and is an invaluable record to both the taxpayers and the City, as it has enabled the taxpayer promptly to collect for excessive payments without the assistance of a tax expert; it has provided the City with a full knowledge of the special assessment obligations, and in many cases has pointed the means of liquidating them, and has promoted harmony in the relations between the citizens and the City government.

Among the financial benefits of this work are the recovery by the City of \$550,000 of delinquent taxes, which had been lost sight of in past years, and the payment of rebates to property owners aggregating over \$400,000.

By virtue of the systematic methods of accounting for special assessments and the careful administration of the special assessment funds throughout the year, the City was enabled to comply with the legal requirements for the payment of special assessment bonds, and bonds were called for payment at the end of the year aggregating \$567,500. Additional payments have since been made as fast as funds have accumulated and a large saving of interest charges has thus been effected.

By a system of daily checking and constant supervision the Police Courts have finally been put upon a paying basis, the revenue from this source for 1903 being \$163,680.43, and the expenses \$117,646.23, leaving a net earning of \$46,034.20.

#### DEPARTMENT OF PUBLIC WORKS.

##### WATER SUPPLY.

Stations and amount and capacity of pumping machinery have remained the same as in 1902. Total amount of water pumped during 1903 was 137,515,751,956 gallons, being an increase of 6,623,468,936 gallons over 1902. On a basis of 2,000,000 population, this is 188 gallons per capita, daily.

Contracts have been let for three 25,000,000-gallon vertical triple expansion engines at Chicago avenue station. A contract was also

awarded for a new boiler plant to take the place of the existing plant at the Fourteenth street pumping station at a cost of \$100,000.

#### WATER PIPE EXTENSION.

One hundred and twenty-four thousand and twelve lineal feet of water pipe, varying in size from 4 to 36 inches in diameter, were laid; 332 hydrants and 253 valves were placed. At the close of 1903 there were in all a total of 1,940 miles of water mains, 19,922 hydrants and 15,681 valves.

#### BRIDGES AND VIADUCTS.

During the year 1903 new bascule bridges were opened for public use as follows: East Division street, Ninety-fifth street, Canal street, Main street, State street, Ashland avenue (West Fork), and Randolph street bridges. The first two were built by the City of Chicago and the others by the Sanitary District of Chicago. Substructures for new trunnion bascule bridges over the North branch of the river at West Division street and North avenue were completed, and plans were prepared and contracts let for the superstructure of the North Western avenue bridge. The West Division street bridge will be opened to traffic by April 15th, and the North Western avenue bridge will be completed by August 1, 1904.

#### HARBORS.

Forty-four permits for dock work along the Chicago and Calumet rivers were issued, involving the construction of 5,075 feet of new docks, the rebuilding of 3,721 feet, and the repairing of 2,161 feet. Sixty-three permits were issued for dredging in the Chicago and Calumet rivers, covering approximately 1,952,000 cubic yards. The Sanitary District continued dredging the Chicago river, removing about 232,000 cubic yards. The United States government removed from the Calumet river 1,440,000 cubic yards.

A new engine should be installed at Sixty-eighth street station; another at the Springfield avenue station; and a third at the Central Park avenue station. Work should commence at once on the proposed new tunnel leading from the present Sixty-eighth street crib southwesterly



to the central portion of the southwest district to a new pumping station so that this new station can supply the entire district south of the Sixty-eighth street station, thus enabling the Sixty-eighth street pumping station to supply Hyde Park and the Town of Lake.

#### BUREAU OF WATER.

The work of the bureau for the year 1903 has been of the routine nature. Results have been quite satisfactory. House-to-house inspections, extending over eight of the outlying and sparsely settled wards, have resulted in an increase to the general assessment of about \$73,000.

#### ASSESSOR'S DIVISION.

Contracts were let for laying water service pipes in sixty streets. Estimates for laying water service pipes prepared for the Board of Local Improvements cover one hundred and twelve streets.

#### METER DIVISION.

Two thousand five hundred and sixty-three meters were repaired, being about 33 per cent. of the total number in service. Collections in this division exceeded those of the previous year by \$74,214.09.

#### COLLECTION DIVISION.

Quite a reduction of the force was made at the commencement of the year, making it necessary to perform some night work. The collections exceeded those of the previous year by \$416,340.44.

Legislation should be had so as to make effective the application of \$200,000 appropriated by the Council for installation of meters for the purpose of stopping the enormous waste of water.

#### GARBAGE.

During the year 1903 there were removed 1,367,550 cubic yards of garbage, or 273,926 loads, at a cost of \$643,427.30. There were 919 garbage complaints, in comparison with 1,417 during 1902; 47,688 loads of snow were removed at a total cost of \$58,079.59.

Some action should be taken at once towards providing a more modern method of disposing of the garbage and refuse of this City.

### STREET AND ALLEY CLEANING.

During the year there were cleaned 15,079 3-4 miles of streets and alleys, necessitating the removal of 117,223 loads of street dirt. One million two hundred and forty-five thousand and two lineal feet of weeds were cut. Two hundred and twenty-four thousand eight hundred and forty-eight inlets to catch-basins were opened and cleaned. The total cost of this work was \$244,225.57, and \$37,120.43 of this amount was charged to the street car companies for cleaning their various rights of way.

### REPAIRING IMPROVED STREETS AND ALLEYS.

During the year the following work was done in the repair of streets and alleys: 9,333 1-2 square yards of new cedar blocks were laid, 8,498 square yards of old cedar blocks were relaid, 7,285 square yards of granite blocks were relaid, 1,861 1-4 square yards of macadam laid, 896 1-2 square yards of brick laid, and 488 square yards of asphalt.

### UNIMPROVED STREET AND ALLEY CLEANING.

The following work was done on unimproved streets and alleys: 1,191,529 lineal feet of streets graded, 660,260 lineal feet of ditches opened and cleaned, 385 new and repaired aprons, 1,314 new and repaired crossings, 1,601 new and repaired culverts, 40 new and repaired box drains.

### SIDEWALK REPAIRS.

The following work was done on sidewalks: 1,906 new and repaired intersections, 16,776 general repairs were made.

### SMALL PARKS.

Thirty-two small parks were maintained and kept in good condition by this department at a cost of \$19,087.24. The appropriation for the year was \$21,000. In improving and beautifying the parks 1,125 cubic yards of black soil were used. Seven thousand eight hundred plants and 135 trees were planted. Special attention was given to the following parks: Congress, Normal, Fernwood, Jefferson, Irving, Bernard, and East End Parks. In the improvement of East End Park 20,000 loads of rubbish were removed.

The Police Department should give special attention to the enforcement of the Clean Street Ordinance. The Health Department should request property owners and residents to see that all cleaning of yards, etc., be done about the 15th of April instead of the 1st of May. The abolition of plank sidewalks should be advocated. Steps should be taken to have the money received as compensation for sidewalk space, bay window space, and coal vault space, available for use in cleaning and repairing streets, as the sum appropriated by the Council is not sufficient.

#### BUREAU OF SEWERS.

Amount of sewage pumped, in gallons.....	10,099,000,000
Mileage of sewers cleaned during year.....	369.4
Catch-basins cleaned .....	14,683
Total cost of cleaning sewers and catch-basins....	\$118,303.41
House drains put in.....	8,651
Total expenditures for maintenance.....	\$286,815.40

Owing to the inadequate appropriation we have not given the sewers a general cleaning for several years, confining ourselves to attending to complaints. We should have enough money to go over the entire system at least once a year. The growing tendency to clean asphalt and brick paved streets by flushing into the catch-basins requires the frequent cleaning of the basins, and unless an increased appropriation is provided this will be impossible. On newly paved streets the Board of Local Improvements should provide as many inlets as possible to prevent water standing in the gutters. Numerous complaints reach this office of water standing on vacant property, fronting on streets which have sewers. Some way should be found to compel owners to drain their property of this water, which becomes stagnant and causes sickness. Installation of a sewer system in each of the following districts is necessary: In the extreme southern portion of the City, and in the territory lying west of Western avenue and south of Thirty-ninth street, as these districts are completely inundated every spring.

#### INTERCEPTING SEWERS.

The 20-foot conduit in Thirty-ninth street (Sections C and L) has been completed and cleaned. The work on the grounds and walls for

the pumping station at Thirty-ninth street and Lake Michigan was much delayed by the constant northerly winds. The protection pier was completed, as well as the very large coffer-dam in which the water channels and foundations of the pumping station are now building; nearly one-third of the foundation was finished in 1903. Work on the pumping machinery and engines for the Thirty-ninth street pumping station is progressing steadily. The southern intercepting sewer is completed to Seventy-first street. A temporary pumping plant on the Illinois Central right of way is being installed for the purpose of diverting the sewage from the lake on the South side. The work on Stony Island avenue has been carried on by day labor as heretofore, with good results. Following is a summary of sewers and appurtenances built by day labor during 1903:

- 622 feet 15 1-4-foot sewer, Section G3.
- 2,437 feet 13 1-2-foot sewer, Section G3.
- 4,656 feet 13 1-4-foot sewer, Sections H and H2.
- 392 feet 12 1-2-foot sewer, Section H2.
- 12 manholes.
- 5 catch-basins.
- 1,240 feet 1 1-4-foot sewer.

The City has maintained during 1903 the temporary pumping station on Lawrence avenue at Lake Michigan to relieve the conduit of such sewage and storm water as flows into it; likewise the temporary plants on Thirty-ninth street at Halsted street, Dearborn street and Lake Michigan. These three plants last mentioned will be dispensed with as soon as the temporary plant connecting the South side system with the Thirty-ninth street conduit is completed.

#### WORK TO BE DONE IN 1904.

Finish Section H2 to Seventy-third street, a 12 1-2-foot sewer 1,700 feet long; also 1,200 feet of 4-foot sewer in Sixty-third street, from Stony Island avenue to present Woodlawn pumping station; also 2,900 feet of 6 1-2-foot sewer from Thirty-fifth street to Thirty-ninth street; also reversing all sewers east of Cornell and Stony Island avenues. This

will finish the intercepting sewer work on the South side, so that the entire South side system will be ready for operation as soon as the pumping station and machinery at the foot of Thirty-ninth street is completed.

On the North side there will have to be built 8,100 feet of 16-foot diameter conduit in Lawrence avenue, together with needed pumping station, intake at lake and outfall to river. This work, however, cannot proceed pending the decision by the Supreme Court of the Hanreddy case. The crib for the Fullerton avenue conduit will be repaired and partially reconstructed.

#### BUREAU OF MAPS.

During the year this bureau prepared 1,677 plats, of which 1,523 covering an area of 1,458.67 miles, were for the Board of Local Improvements. Plats showing all bay windows and other encroachments on City property were prepared, also plats for all sidewalks in the downtown district showing space occupied by the adjacent property owners. Seventeen thousand nine hundred and seventy-seven people required the personal attention of an employe during the year. Approximately 56,000 people made use of the information obtained in this bureau. Two hundred and twenty-two petitions, including street railway, electric light, heating, etc., saloon license protests and house-moving petitions were verified and reported on.

All atlases in this bureau should be renewed as soon as possible.

#### DEPARTMENT OF HEALTH.

I have kept in closer touch with the Health Department than usual during the year, and as a result I wish to bring somewhat fully to the attention of the Council the present status of this branch of my administration, the results of its work and its effect upon the reputation of the City.

It must be a source of gratification to learn that, while Chicago spends the least amount per capita for health purposes, it has the lowest death rate of any of the principal cities of the country. These two asser-

tions are based on official reports of the United States Census Office and the United States Department of Labor.

In the census year 1900 there were, according to these authorities, eleven so-called "principal cities,"—that is, those having populations of more than 300,000 each. In order of lowest death rate these are as follows:

	Death rate per 1,000.	Per capita for health purposes.
Chicago .....	16.2	\$0.10
Cleveland .....	17.1	.16
St. Louis .....	17.9	.22
Buffalo .....	18.4	.14
Cincinnati .....	19.1	.12
Pittsburg .....	20.1	.25
San Francisco .....	20.5	.64
Baltimore .....	21.0	.15
Philadelphia .....	21.2	.23
Boston .....	23.4	.30
New York .....	25.4	.30

These figures show Chicago's death rate to be 20 per cent lower than the average of the other ten cities, 23 per cent lower than Baltimore's, 24 per cent lower than Philadelphia's, 32 per cent lower than Boston's and 36 per cent lower than New York's. They show its per capita expenditure for health purposes to be 58 per cent lower than the average, and 66.6 per cent lower than that of Boston and New York.

In achieving these results the following features of Health Department work are regarded as important factors:

1. *Supervision and inspection of the milk supply, which has resulted in giving Chicago the best milk and cream of any large city in the country.* The improvement in its quality and consequent effects on child life are shown in the statement that in 1896 more than one-third (37 per cent) of the samples examined in the Municipal Laboratory were found to be below grade, and the deaths of children under five years of age were 66.6 per 10,000 of total population. In 1903 only 6.4 per cent were found below grade, and the children's deaths were 44.7 per 10,000—an improvement of 83 per cent in milk quality and a decrease of 33 per cent in child mortality.

I would call the attention of the Council to the fact that the present force available for supervision of the milk supply—which includes the collection of samples throughout the entire City, inspection of dairies, stores where milk is sold, wagons, utensils, etc.—consists of six milk inspectors, one dairy inspector and one milk tester. The total cost of this service for the year 1903, including salaries, horse feed, shoeing, repairing of harness and vehicles, purchases of appliances, bottles, chemicals, apparatus, etc., was \$8,915. The license fees paid into the City treasury amounted to \$45,647. Add to this the sum of \$7,217 collected in fines from violators of the milk ordinance, and the total receipts by the City through the work of the Milk Division amount to \$52,864 or \$43,949 more than its total cost. I beg to suggest to your Honorable Body that a large part, if not every dollar, of this excess of receipts over expenditures would be profitably employed in the extension of the services of the Milk Division to the work of careful inspection and supervision of Chicago's milk supply at the points of production.

2. *The efforts of the department in the field of preventive medicine, especially with reference to consumption, diphtheria, influenza, pneumonia, scarlet fever, smallpox and typhoid fever.* In 1893 the consumption death rate was 18.10 per 10,000 of population. A campaign of education in the cause and restriction of the disease was then begun and has been carried on since. Last year the death rate was 14.04—a decrease of more than one-fifth (22.4 per cent).

In 1894 the City paid the penalty of previous years of neglected vaccination through an epidemic of smallpox, which cost 1,190 lives and an enormous loss in money. The practice of vaccination has been completely modernized and persistently pushed. An up-to-date Isolation Hospital has replaced the old "pest-house," and at the close of last year there had been but sixty-one deaths from smallpox since 1895.

In October, 1895, the department promoted the antitoxin treatment of diphtheria and assumed its treatment among the poor and destitute. In that year the deaths from this disease amounted to 11.66 per

10,000 of population. Last year there were only 3.44 per 10,000—a decrease of 70 per cent.

During the three years previous to the first appointment of the present Commissioner there were 4,494 deaths from typhoid fever—an average annual rate of 12.86 per 10,000 of population. During the last three years, 1901-1903, there were only 1,898 such deaths—an average annual rate of 3.46 per 10,000 and a decrease of nearly three-fourths (73.1 per cent) in the typhoid mortality. The decrease is due, in large measure, to the information given to the public as to the sanitary quality of the water supply, based upon the daily chemical examinations.

3. *Chicago's system of free public baths, open throughout the year, is also a factor of public health.* More than half a million men, women and children were, during the past year, afforded bathing facilities without charge. The Carter H. Harrison bath, opened in January, 1894, was the first absolutely free municipal bath established in the world.

Among other features of the ten years' work of the department may be mentioned the development of a first-class practical working laboratory of chemistry, bacteriology, pathology and diagnosis, whose scope and volume of work may be inferred from the fact that considerably more than 100,000 separate determinations and manipulations are made annually in the regular branches, exclusive of special examinations and analyses;

The original devising and subsequent perfecting of a system of disinfection, already widely copied elsewhere;

The inauguration of medical school inspection in 1896; the second city in the country to make the attempt;

The vast improvement in the registration of vital statistics and the certification of causes of death;

The supervision of contagious disease during life, and the conduct of funerals and care of premises after death;

And, above all, the persistent education of the public by circulars,



leaflets, bulletins, lectures and addresses, whose lessons and precepts are disseminated and emphasized by various civic and philanthropic organizations and still more widely by the public press.

The Commissioner claims that the Chicago public is thus made more intelligent on sanitary matters than is any other community and largely to this fact he ascribes the constantly increasing healthfulness, the reducing death rates and the lengthening of human life in Chicago—facts shown by the department's figures and corroborated by the official statistics of the United States authorities.

#### BOARD OF LOCAL IMPROVEMENTS.

During the past year 1,499,041 square yards, or 82.5 miles, of paving were constructed of different material at a cost of \$3,817,400, as follows:

	Miles.
Asphalt .....	48.88
Brick .....	7.06
Cedar .....	1.92
Creosoted block .....	.03
Granite .....	3.55
Macadam .....	20.15
Novaculite .....	.28
Rock asphalt .....	.18

There are now confirmed by the County Court and ready for advertising paving assessments on 126 streets, which, with the number of streets that will yet be confirmed so that the work can be done this year, will insure fully as many miles of street paving for the year 1904 as was laid in 1903.

Sewers were constructed in different streets amounting to \$343,750, and assessments for drains, water service pipes and water mains were confirmed and improvements constructed amounting to \$150,000. Plans have been prepared and an estimate made and the roll is now being spread for a system of sewers to be known as the "Ninety-fifth Street System," which is designed to drain 5,500 acres lying south of Eighty-seventh street, the estimated cost of which is \$745,000.

In 1903 357 miles of sidewalks were constructed at a total cost of

\$1,163,783, as follows: Cement, 135 miles; cinder, 172 miles; plank, 50 miles, this being far in excess of sidewalk work ever heretofore done by the department. Assessments have been confirmed and are now under contract for the construction of plank walks upon 52 streets, covering 13 miles; cement walks upon 107 streets, covering 57 1-2 miles; cinder walks upon 224 streets, covering 56 miles. In addition to these streets, already under contract for sidewalks, assessments have been confirmed and are ready for advertising as follows: Plank sidewalks, 8 streets, 2 miles; cement sidewalks, 141 streets, 37 3-4 miles; cinder sidewalks, 52 streets, 26 miles.

#### POLICE DEPARTMENT.

The increase of the salaries of patrolmen from \$1,000 to \$1,100 per year has been much appreciated by the rank and file of the service.

As a whole the department is growing old, and while many patrolmen by reason of long service and the ills incident to police duties are not as active and efficient on post as desired, they would be fairly satisfactory in the performance of certain lines of duty such as street crossings, public playgrounds, public baths, schools in congested neighborhoods and wherever men are actually necessary if younger men were available for active police work. If this City is to be adequately policed, an increase of at least 1,000 patrolmen is a crying necessity.

The total number of arrests during the year was 77,763, an increase of 7,449 over 1902. These figures do not include 223 arrests made on *capias*. There were 40,186 arrests for disorderly conduct, an increase of 5,781 over last year. About 16 per cent of the arrests of the year were felonies, 11 per cent for state misdemeanors, and 73 per cent for violations of City ordinances; 20,412 persons were fined in police courts, the amount of fines aggregating \$330,026; 377 persons were sent to penitentiaries or reformatories and 764 persons to the County Jail or House of Correction by the Criminal Courts through the activity of this department. Fifty-three fugitives were traced to and arrested in other cities and returned to Chicago for trial, and 209

fugitives were arrested in Chicago and turned over to officers from other cities.

The area of the City is 190.6 square miles. Number of police officers per square mile, 14.5. Average number of arrests to each officer, 28.12.

The number of insane persons handled during the year shows a decrease of about 8 per cent as compared with 1902.

During the year the patrol wagon responded to 69,918 calls and traveled 235,979 miles. Eight ambulances are in service.

During the year there has been an increase in the number of arrests for both serious and minor offenses, which may be attributed to the increased vigilance and energy of both rank and file in the service.

Estimated value of property reported stolen, \$434,881.75. Value of stolen property recovered by the police, \$392,181.63. Total expenditures for the department in 1903, \$3,569,477.77.

Thirty-two deaths occurred in the active service of the department—three from gunshot wounds and twenty-nine from other causes while in the discharge of duty. Two hundred and twenty-eight officers were injured during the year while in the discharge of their duty.

#### HOUSE OF CORRECTION.

The House of Correction in 1903 cared for a total of 10,368 persons, with an average daily population of 1,401. It earned \$95,987, and showed an average per capita expenditure of 33 cents per day.

Quarrying of stone was commenced during the year and plans for enlarging the stone crushing plant completed and the product of the quarry is being used for street purposes and other municipal needs. Five million brick were made at the institution and turned into the various departments of the City during the year. The policy of work for every inmate has been rigidly adhered to, and in a short time they will all be employed on work for City account only, lessening the objection to the competition of prison labor, furnishing the City required

articles at a minimum price, and making the institutions more self-sustaining.

The new City dog pound was built on the institution grounds during the year largely by inmates of the institution and is credited with being the best appointed dog pound in the country.

Three and one-half acres of river slips have been filled in during the past year, that additional ground added to the acreage of the institution, it now being converted to farm purposes.

The John Worthy School department, with an average population of 348, has added new features of educational interest during the year, and its effective work in reclaiming many a wayward boy with its salutary influence upon hundreds of others is shown in the reports.

The institution's work was further enlarged during the year by its adoption of the House of Good Shepherd and the Erring Women's Refuge for reform as houses of shelter and provisions made for the maintenance of delinquent young girls in these two institutions, which action legalizes commitments and places them under the jurisdiction of the House of Correction.

The efficient and high plane upon which the institution is conducted, its constantly declining percentage of recommitments and the value and influence of the institution's work upon thousands of unfortunates annually committed there, are personally known to hundreds of our best citizens who interest themselves in philanthropic matters.

#### FIRE DEPARTMENT.

The Fire Department during the past year responded to 8,251 alarms, an increase of 1,056 over the preceding year. The value of property involved was \$111,743,441. The loss for the year was \$3,062,922, or \$1,056,011 less than in the year 1902 period. The total insurance involved was \$68,748,203. Five new engine houses were built during the year at a cost of \$54,000. Three new steam fire engines, of the latest improved type, were purchased at a cost of \$14,100. Three new aerial hook and ladder trucks were purchased at a cost of \$12,600.

These trucks are valuable acquisitions to the department and can be readily handled by two men, requiring but fifteen seconds to be raised and put into service, whereas the old-style trucks required five minutes' time and the services of six or eight men. Twenty-three thousand feet of hose was purchased at a cost of \$16,000, and forty-three horses were bought at a cost of \$8,110. The cost of repairs to apparatus for the year amounted to \$34,101.45. Repairs to buildings cost \$10,000. The improvements as noted above were very essential and will add greatly to the efficiency of the department.

I would suggest the early installation of the high-pressure system in the congested district. I would also recommend the high-pressure system for the Stock Yards district, or that the engine companies now located there be duplicated. It is also very essential that companies be equipped and installed as follows:

Nine engine and four truck companies west of Halsted street, between the City limits north and south. Five engine and three truck companies in the north division of the City, north of Fullerton avenue. Six engine and four truck companies south of Thirty-ninth street and east of Halsted street.

I would again urge the speedy installation of the pipe line system for the fire boats as recommended in my previous reports, the same to be a part of the high-pressure system contemplated.

#### CIVIL SERVICE COMMISSION.

The following is a short abstract of the work done by the Civil Service Commission for the year 1903, to-wit:

Number of applications filed in official service.....	2,030
Number of applications filed in labor service.....	1,970
	<hr/>
Total for 1903.....	4,000
Number of examinations held in the official service.....	61
Number of examinations held in the skilled labor service..	24
Number of examinations held in the unskilled labor service	1
	<hr/>
Total number of examinations for the year.....	86

Number of original entrance examinations (official service)	42
Number of original entrance examinations (skilled labor service) .....	24
Number of promotion examinations (official service).....	19
Number of examinations in unskilled labor service.....	1
<hr/>	
Total number .....	86
Number of candidates who appeared for promotion.....	190
Number of candidates who passed for promotion.....	149
Number of candidates examined for original entrance into the official service.....	1,418
Number who passed.....	692
Number of candidates examined for skilled labor service..	266
Number who passed.....	167
Number of applications received for unskilled labor service, which were placed on the eligible list.....	479

Among the most important promotional examinations were the Chiefs of Battalions, Fire Department; Assistant Chief of Sanitary Inspectors, General Corporation Inspectors, and six examinations for School Engineers.

Among the most important examinations for original entrance into the service were Superintendent of the Laboratory and Bacteriologist; Assistant Deputy Commissioner of Buildings; Truant Officers, Board of Education; four examinations for positions in the Boiler Inspection Department, and Drivers Fire Department.

There were fifteen more examinations held this year than last year.

The number of certifications for appointment to the official service .....	1,102
Number of certifications for skilled labor service.....	391
Number of certifications for unskilled labor service.....	858
Number of reinstatements to official and skilled labor service .....	593
Number of reinstatements to unskilled labor service.....	1,018
<hr/>	
Total certifications and reinstatements.....	3,962

#### DEPARTMENT OF SUPPLIES.

The report of the Business Agent shows that there were issued during the year 1903 18,313 orders for materials, supplies and repair work, involving an expenditure of \$653,195.32. A comparison with business of the previous year shows an increase of 401 in the number

of orders issued, and a decrease of \$4,715.75 in the total sum expended through the department. The average expenditure involved in the year's transactions was \$30.21, as compared with \$36.72 for the year 1902, showing an average decrease of \$6.51. The year's business as thus summarized includes purchases of merchandise for the warehouse maintained by the department, as well as of stationery and office supplies carried in stock in the City Hall. The warehouse stock includes materials and supplies which are in regular and constant use and which are delivered upon requisition in small lots to the several departments. There were issued during the year 1,601 orders on the warehouse, mostly including lists of small items and representing a cost of \$19,595.86.

The cost of maintaining the Department of Supplies during the year 1903, including salaries, rent of warehouse, equipment and all other expenses, was \$15,427.36. During the same period the department received from the sale of scrap iron, old machinery and various waste materials the sum of \$6,383.62.

It is the purpose of the Department of Supplies to guard the City's small disbursements and get full values for all sums expended. To this end the work of the department is conducted on strict business principles. Competition is free, and the records of all transactions are complete.

#### TRACK ELEVATION.

Ordinances have been passed for the elevation of the Chicago Junction Railway and the tracks of the Chicago and North Western Railway, eliminating jointly forty-two grade crossings and elevating 6 miles of tracks, at an estimated joint cost of \$2,400,000. The various railroads entering Chicago have elevated 7 miles of main tracks and about 62 miles of other tracks, and have eliminated forty-one grade crossings by the construction of subways at an estimated cost of \$3,165,250.00

The work to be done by the railway and railroad companies under ordinances that have been passed and accepted and which is to be fully

and finally completed on or before the 31st day of December, 1906, is as follows: Total number of miles of main tracks to be elevated, 57.43; total number of miles of other tracks to be elevated, 279.76; total number of subways yet to be constructed, 186; total estimated cost of work yet to be completed, \$18,095,000.

As all of this work has to be completed within the next three years it will require that the railroad companies shall construct and fully complete at least a little over \$6,000,000 of work each year at their own expense.

#### BUILDING DEPARTMENT.

The inspection of new buildings has been more thorough and frequent than in former years, because of the institution of a new system of records. All halls, churches, hospitals and hotels have been inspected and made to comply with the requirements of the ordinance.

The fire escape ordinance has been vigorously enforced and the erection of fire escapes ordered on 1,300 buildings. The enclosure of elevator shafts with fireproof material has been stringently enforced. A large number of buildings erected in previous years were found to be poorly equipped with protection against fire, and in these a strict compliance has been required with the present ordinance.

The department is limited as regards employes and should be improved in that respect. Although building was not as extensive as in the preceding year, the department turned over to the general fund, after paying all expenses, \$9,428.95.

#### CITY COLLECTOR'S OFFICE.

The large increase as shown by the resume of the work of this office for the fiscal year is evidence of the persistent and earnest work of the department in the collection of all license, special assessment and warrant for collection matters assigned to this office for collection. The following is a comparative statement of receipts for 1902 and 1903:



	1902.	1903.
School Fund .....		\$ 32,500.00
Police, L & H. Inspection Fund.....		80.00
J. Burr Income Fund.....		575.00
Municipal Coal Fund.....		5,197.18
Harrison and Tree Fund.....		48.80
Unclaimed Wages.....\$	35.67	2,974.50
Library Fund.....	10,392.39	7,893.09
City Employees' Ticket Account....	4,925.80	20,963.56
Supply Stock Account.....	12,191.45	54,993.62
Water Fund .....	204,684.97	92,416.17
Insurance Tax .....	158,702.18	169,229.39
License and permits.....	4,072,076.03	4,284,907.01
Warrants for Collection.....	586,706.36	543,496.12
Miscellaneous .....	323,821.22	263,630.19
Special Assessments .....	569,231.68	1,838,534.91
Special Deposits .....	88,245.92	128,128.96
Trust Funds .....	616.02	.....
Education Fund .....	381.30	.....
Miscellaneous Deposits .....	478.64	.....
Total .....	\$6,032,489.63	\$7,445,568.50
Increase over 1902.....	1,413,078.87	

The most noticeable gain for 1903 was effected in the collection of special assessments; \$1,269,303.31 was collected in excess of the amount returned to the City Treasurer during 1903. A net gain of \$12,824.98 is shown in the collection of licenses and permits, as well as a substantial increase in the collection of insurance tax. Special efforts were made in forcing prompt payment of saloon licenses of which there were issued during 1903 7,055.

The innovation in the collection of warrants issued for services rendered in making boiler, elevator and electrical inspections, including all other charges for services and material, damages to bridges, etc., charged by the municipality has wrought most gratifying results. Thirteen thousand eight hundred and eighty-seven accounts were charged during 1903, of which 13,388 were collected. Of this number individual returns were made by the collectors of this department on 5,108 accounts involving \$183,316.10—a decrease of 40 per cent in the number of delinquents as compared with accounts outstanding during 1902. The total amount collected on these warrants during 1903 was \$543,496.12.

## BOILER INSPECTION.

## Inspections for which fees were charged:

Bollers .....	6,785
Tanks .....	418
Jacket-kettles .....	90
Retorts .....	74
Dryers .....	37
Superheaters .....	1
Vulcanizers .....	4

Total .....	7,409
-------------	-------

## Inspections for which no fees were charged:

Schools .....	418
Municipal property .....	103
Charitable and religious institutions.....	73

Total .....	594
-------------	-----

## Condemnations:

Bollers .....	64
Tanks .....	2

Total .....	66
-------------	----

Number of repairs ordered.....	617
Number of permits issued for installation of new boilers .....	126
Number of new boilers installed.....	181
Number of plans rejected and returned to be made to conform with the ordinance.....	108
Amount of inspection fees charged.....	\$27,031.00
Amount of permit fees charged.....	905.00

Total amount of fees.....	\$27,936.00
---------------------------	-------------

Number of smoke complaints made.....	484
Places visited and notices of violation sent....	7,202
Number of suits brought for smoke violations..	288
Number of violators called before the Board..	157
Amount of fines imposed to July 1 (under old ordinance) .....	\$ 626.00
Amount of fines imposed from July 1 (under new ordinance) .....	3,586.00

	\$4,212.00
--	------------

The Boiler Inspection Department should have at least two additional boiler inspectors and two helpers; an investigator to verify plans and specifications, and three additional smoke inspectors.

## DEPARTMENT OF ELECTRICITY.

Twenty-four additional fire alarm boxes, sixteen additional police boxes, 5,000 feet of underground cable, and 13 miles of aerial wire have been added. Four hundred and three additional lamps have been placed in service, and forty-one lamps have been discontinued, increasing the total number of lamps by 362 for the year, and making the total number of lamps in service December 31, 1903, 5,003. In addition to lamps placed in service during the year, 5 miles of underground cable, 35 miles of aerial wire, five 160-light and one 150-light generators have been added. One and a half miles of underground cable, containing about 15 miles of wire, and 210 miles of aerial wire have been placed in service to renew defective cables and old aerial iron wire, and the instruments connected with the lines renewed have been put in good condition in the Fire Alarm and Police Telegraph and Telephone service.

The total number of fire alarms received and transmitted during the year was 8,051, being 1,062 more than in 1902.

This bureau shows a saving of about \$50,000 over 1902, on account of the substitution of burners consuming three cubic feet of gas per hour instead of three and a half and four feet, and a saving of \$5,000 in the maintenance of the lamps over 1902 on account of the lower rate on contracts for the care and repair of the mantle lamps. Two hundred 24-candle-power mantle lamps have been added and the same number of 60-candle-power mantle lamps removed. All of the gasoline lamps are now 60-candle-power. One hundred and fifty-two have been added during the year, and \$3,500 saved over 1902, on account of the lower rate obtained.

About 1,200 new automobile licenses have been issued during the current year and 700 renewals, the revenue collected therefrom being \$4,263. Of this amount, \$1,200 has been spent for badges, certificates, postage stamps and stationery, leaving over \$3,000 net profit to the City; all of which is exclusive of the revenues collected for electric and gas inspections.

The most important improvement needed at present is better lighted streets in the outlying districts. Chicago now stands at the head of all cities in the world in its municipal lighting, and such money as may be available should be used to extend the system.

The proper improvement of streets means the removal of all poles and overhead wires at the time permanent paving is put in place. The City occupies many pole lines jointly with private companies and finds in some instances that lack of money to remove its own wires blocks the desired improvement. This work should be proceeded with upon every street that is repaved, and special effort should be made to secure the necessary money to enable the City to care for its part of such improvements.

For three years past an effort has been made to secure the necessary money to permit the placing of proper signs at street intersections, but the effort has been unsuccessful. Like many other details that cost money, this important one has been put aside because it was not absolutely necessary, yet there are many complaints and frequent criticisms upon the lack of signs. No city can be great unless it looks after the little details.

#### MUNICIPAL LIBRARY AND BUREAU OF STATISTICS.

During the year 1903, 1,424 bound and unbound volumes were received, 156 letters were referred to it by the various City departments, and 670 letters addressed to it directly. The mailing list now contains 830 names and is steadily increasing.

#### BOARD OF EXAMINING ENGINEERS.

5096 Engineer licenses renewed.....	\$10,192.00
188 Water tender licenses renewed.....	188.00
729 Engineer applications filed.....	1,458.00
126 Water tender applications filed.....	126.00
<hr/>	
Total receipts .....	\$11,964.00
Salaries and incidental expenditures.....	\$10,340.70
<hr/>	
Total credit over expenditures.....	\$ 1,623.30

In 1902 the credit by receipts over expenditures showed a balance

of \$1,243.15. The above shows an increase of almost \$400 over 1902 to its credit.

Total number of applicants examined, 3,080.

#### OIL INSPECTION.

521,372 barrels at 6 cents.....	\$31,282.32
Cash turned over to City Collector.	\$10,510.70
Less for inspections 1902.....	251.10
<hr/>	
Net for inspections 1903.....	\$10,259.60
Salaries .....	\$ 9,653.96
Rent, stationery, transportation, etc.	1,214.60
<hr/>	
Total expenses for the year.....	10,868.56
Amount outstanding, pending suit for inspection of gasoline and naphtha.....	9,731.82
Amount uncollected, miscellaneous account.	422.34
<hr/>	
	\$31,282.32
<hr/>	
	\$31,282.32

#### CITY TREASURER.

Received from the several departments (City and County), \$38,244,668.82; disbursements, \$37,500,535.24.

Under the present system, pay checks of City laborers are cashed at places convenient to the men, saving trouble and expense for the men and saving in time. In handling the pay checks for the Board of Education; a system has been inaugurated which saves about two months' time.

In special assessment collections a system has been inaugurated which saves interest to the City and enables the contractors to receive money due them much sooner than in former years.

A system has also been inaugurated whereby City employes may receive advances during the month, if occasion warrants, of a portion of their earned salaries; thus obviating the necessity of their falling into the hands of "loan sharks," who caused untold annoyance in stopping City employes' salaries in former years.

## PROSECUTING ATTORNEY.

Prosecutions of cases in the Criminal Court appealed from Justice Courts, 311. Prosecution of cases commenced by summons in Justice Courts, 3,257. Hearing of habeas corpus cases, 146. Hearing of Juvenile Court cases, 2,979.

## CITY SEALER.

Scales inspected.....	31,788
Scales condemned.....	1,336
Measures inspected.....	46,091
Measures condemned.....	3,757
Fees collected, 1903.....	\$15,211.75
Fees collected, 1902.....	12,866.40
<hr/>	
Increase .....	\$ 2,345.35
Expenses, 1902.....	\$ 3,285.52
Expenses, 1903.....	1,377.43
<hr/>	
Decrease .....	\$ 1,908.09
Salaries, 1902.....	\$12,750.00
Salaries, 1903.....	11,699.88
<hr/>	
Decrease .....	\$ 1,050.12
Total decrease.....	\$2,958.21
Number of arrests, 1903.....	110
Amount of fines imposed.....	\$1,580.00

## SMALL PARKS AND PLAYGROUNDS.

The statutory Park Boards have continued their policy of active co-operation with the Special Park Commission, appointed by me, and the latter body has made gratifying progress in the establishment of municipal playgrounds. At the last session of the General Assembly the Special Commission assisted in the passage of legislation which provides for the South Park District additional safeguards for the small park and playground funds, a half mill tax for their maintenance and the acquisition of others with any surplus; also authority to issue \$3,000,000 additional bonds for the acquisition of additional parks unlimited in area and the improvement of Grant Park; also a half mill tax for the maintenance of such parks; for the Lincoln Park district authority to issue \$1,000,000 of bonds for the addition of 215 acres to Lincoln Park.

Of the park and playground sites recommended by the Special Commission the South Park Commissioners selected five either without change or by adding to the area and selected five other sites close to those recommended. Altogether fourteen large and small park sites have been bought or will be in a short time on the South side, adding 647 acres to the park area. A majority of these sites are in densely populated districts. The beneficent work started by your Honorable Body more than four years ago in the organization of the Special Commission will bear fruit this year in the opening of the first small park and playground. Before this Commission was organized none of the Park Boards had made a move towards park extension. Authority has been obtained now to expend \$6,500,000 by bond issues for this purpose, in addition to special taxes for maintenance.

After receiving a comprehensive report on sites, needs and conditions from the Special Commission the Commissioners of Lincoln Park selected all the four sites for small parks and playgrounds which were recommended. Active steps are now being taken to purchase the property and to sell the \$500,000 of bonds authorized. Authority has been given by the City Clerk and County Treasurer to issue these bonds. Sufficient breathing spaces and recreation grounds are now assured the densely populated parts of the North side.

It is to be deplored that the West Park Board came to a standstill after selecting three of the small park sites recommended by the Special Commission and offering \$250,000 of bonds for sale. The reason given is that the bonds are not marketable owing to an alleged flaw in the act. That part of Chicago which stands in most need of these breathing spaces must wait two years or more unless public-spirited citizens of wealth rise to the needs of the occasion.

In the matter of an outer belt system of parks and boulevards for the City and county the Special Commission is preparing a preliminary report. The County Board has provided for a Commission which will co-operate with the Special Commission along those lines.

One new playground was established during the year, at Institute

place and Orleans street, in a densely populated district. This recreation ground was made possible by private contributions, the principal benefactor being Miss Margaret S. Watson, of Evanston. A total of nearly \$1,000 was thus obtained and the Commission added another \$1,000 for equipment and maintenance. The free use of this site was given by the Northwestern Elevated Railroad Company, making the second gift of the kind. This ground was taken over as part of the Municipal system late in the year, making eight playgrounds now in operation. A ninth one, on West Chicago avenue near Lincoln street, is partly finished and will be opened during the summer. The free use of this site has been given the City.

Respectfully yours,

CARTER H. HARRISON,

*Mayor.*



## CITY EXECUTIVE OFFICERS.

---

CARTER H. HARRISON,  
MAYOR.

JOHN F. SMULSKI,  
CITY ATTORNEY.

ERNST HUMMEL,  
CITY TREASURER.

FRED C. BENDER,  
CITY CLERK.

---

## THE CITY COUNCIL.

1904-1905.

1ST WARD.  
John J. Coughlin.  
Michael Kenna.

2D WARD.  
Thomas J. Dixon.  
Chas. Alling.

3D WARD.  
Milton J. Foreman.  
W. J. Pringle.

4TH WARD.  
James M. Dailey.  
J. A. Richert.

5TH WARD.  
Thomas Rooney.  
James J. McCormick.

6TH WARD.  
Linn H. Young.  
E. C. Potter.

7TH WARD.  
Frank I. Bennett.  
Bernard W. Snow.

8TH WARD.  
John H. Jones.  
P. H. Moynihan.

9TH WARD.  
Michael J. Preib.  
Henry L. Fick.

10TH WARD.  
Jacob Sindelar.  
Rudolph Hurt.

11TH WARD.  
Edward F. Cullerton.  
P. L. Hoffman.

12TH WARD.  
Michael Zimmer.  
Joseph Z. Uhlir.

13TH WARD.  
John E. Scully.  
Luther P. Friestedt.

14TH WARD.  
Daniel V. Harkin.  
Wm. T. Maypole.

15TH WARD.  
Bernard Anderson.  
Albert W. Bellfuss.

16TH WARD.  
V. J. Jozwiakowski.  
Stanley H. Kunz.

17TH WARD.  
Lewis D. Sitts.  
Wm. E. Dever.

18TH WARD.  
John J. Brennan.  
Michael C. Conlon.

19TH WARD.  
Wm. J. Moran.  
F. D. Ryan.

20TH WARD.  
J. O. Patterson.  
Nicholas R. Finn.

21ST WARD.  
Honore Palmer.  
Robert A. McCormick.

22D WARD.  
John H. Sullivan.  
Michael D. Doherty.

23D WARD.  
Charles Werno.  
Robert Schmidt.

24TH WARD.  
Wm. H. Ehemann.  
George K. Schmidt.

25TH WARD.  
Winfield P. Dunn.  
Alfred D. Williston.

26TH WARD.  
Freeman K. Blake.  
Peter Reinberg.

27TH WARD.  
Silas F. Leachman.  
Hubert W. Butler.

28TH WARD.  
Adolph Larson.  
Walter J. Raymer.

29TH WARD.  
Peter A. Wendling.  
Thomas Carey.

30TH WARD.  
John Burns.  
John J. Bradley.

31ST WARD.  
Wm. M. Butterworth.  
Wm. J. Roberts.

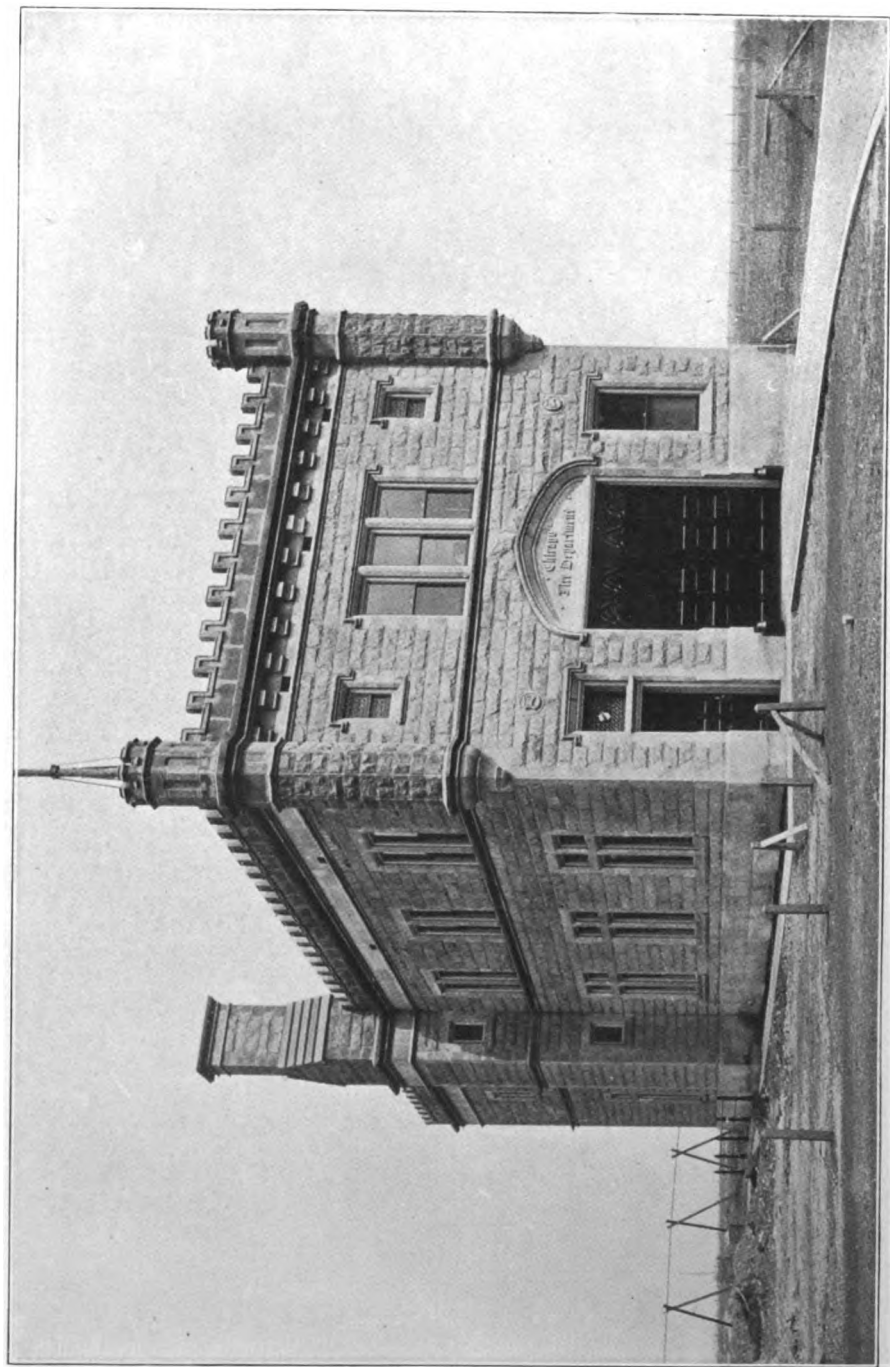
32D WARD.  
Henry F. Eldmann.  
Joseph Badenoch.

33D WARD.  
William Johnson.  
Ernest Bihl.

34TH WARD.  
Charles Woodward.  
Jonathan Ruxton.

35TH WARD.  
Frank L. Race.  
Thomas M. Hunter.





**FIRE ENGINE HOUSE, CHICAGO AVENUE, EAST OF LINCOLN PARK DRIVE.**

# Department of Public Works

CITY OF CHICAGO

---

F. W. BLOCKI

COMMISSIONER

W. F. BRENNAN

DEPUTY COMMISSIONER

---

## HEADS OF BUREAUS

ACTING CITY ENGINEER, . . . . JOHN H. SPENGLER

SUPERINTENDENT BUREAU OF SEWERS, . . . . WM. E. QUINN

SUPERINTENDENT BUREAU OF WATER, . . . . H. O. NOURSE

SUPERINTENDENT BUREAU OF STREETS, . . . . M. J. DOHERTY

SUPERINTENDENT BUREAU OF MAPS AND PLATS, . . CHAS. J. BUHMANN

SUPERINTENDENT BUREAU OF STREET AND ALLEY CLEANING, F. W. SOLON

DEPARTMENT BOOKKEEPER, . . . . HUGO RASPER

## PAST COMMISSIONERS OF PUBLIC WORKS.

### WATER BOARD.

- 1851-54—John B. Turner, Prest., Horatio G. Loomis, Alson S. Sherman.  
1854-56—James H. Woodworth, Prest., John C. Haines, George W. Dole.  
1856-58—George W. Dole, Prest., Orrington Lunt, John C. Haines.  
1858-60—George W. Dole, Prest., Orrington Lunt, Noah Sturtevant.  
1860-61—Orrington Lunt, Prest., Edward Hamilton, Benjamin Carpenter.

### SEWERAGE BOARD.

- 1855-59—Wm. B. Ogden, Prest., James D. Webster, Sylvester Lind.  
1859-61—James D. Webster, Prest., Sylvester Lind, Phillip Conley.

Water and Sewerage Boards merged May 6, 1861, into

### BOARD OF PUBLIC WORKS.

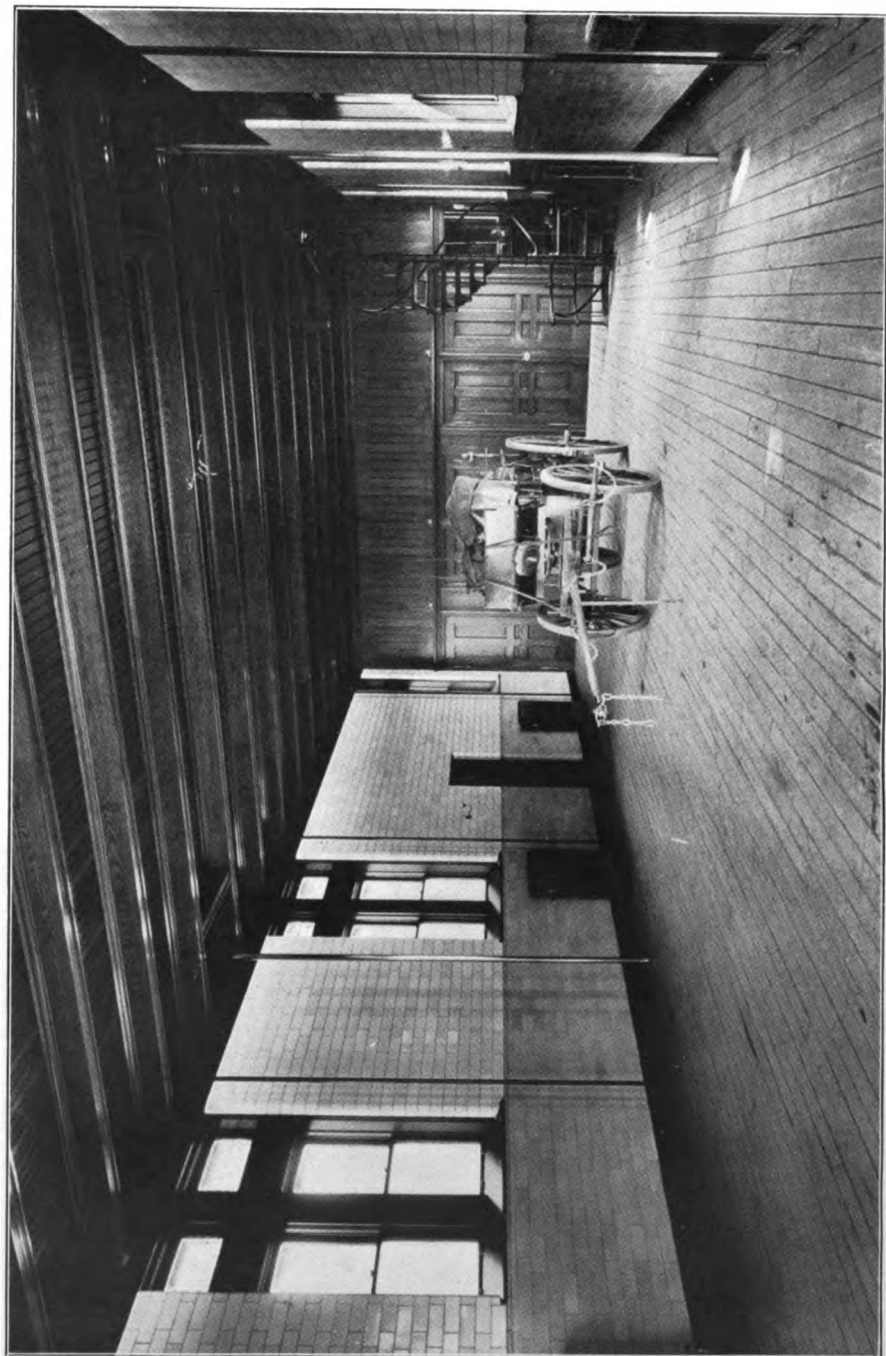
- 1861-63—Benjamin Carpenter, Prest., John G. Gindele, Frederick Letz.  
1863-65—Francis C. Sherman, Mayor, *ex-officio* member of the Board.  
1865-67—John G. Gindele, Prest., Frederick Letz, Orrin J. Rose.  
1867-69—Aug. H. Burley, Prest., Wm. H. Carter, John McArthur.  
1869-71—John McArthur, Prest., Wm. H. Carter, Redmond Prindiville.  
1865-69—Wm. Gooding and Roswell B. Mason, members of the Board in matters pertaining to the cleansing of the river.  
1869-71—Wm. Gooding and Edward B. Talcott, members of the Board in matters pertaining to the cleansing of the river.  
1871-73—Wm. H. Carter, Prest., Jas. K. Thompson, Redmond Prindiville.  
1873-76—Redmond Prindiville, Prest., Louis Wahl, Jas. K. Thompson.

Board of Public Works abolished September 18, 1876, and on the same date there was established by the City Council

### THE DEPARTMENT OF PUBLIC WORKS.

- 1876-78—Monroe Heath, Mayor, Acting Commissioner.  
January 7 to May 18, 1879—E. S. Chesbrough.  
May 19, 1879, to October 18, 1881—Charles S. Waller.  
October 19, 1881, to February 4, 1882—Carter H. Harrison, Mayor, Acting Commissioner.  
February 4, 1882, to January 31, 1886—DeWitt C. Cregier.  
February 1, 1886, to June 28, 1886—Carter H. Harrison, Mayor, Acting Commissioner.  
June 28, 1886, to April 11, 1887—W. H. Purdy.  
April 12, 1887, to April 15, 1889—George B. Swift.  
April 16, 1889, to April 27, 1891—W. H. Purdy.  
April 28, 1891, to December 24, 1892—J. Frank Aldrich.  
December 24, 1892, to April 25, 1893—E. Louis Kuhns, Acting Commissioner.  
April 25, 1893, to November 21, 1894—Hiram J. Jones.  
November 21, 1894, to November 23, 1894—John A. Moody, Acting Commissioner.  
November 28, 1894, to April 8, 1895—John McCarthy.  
April 8, 1895, to July 30, 1896—William D. Kent.  
July 30, 1896, to April 15, 1898—Joseph Downey.  
April 15, 1897, to May 21, 1901—L. E. McGann.





FIRE ENGINE HOUSE, CHICAGO AVENUE, EAST OF LINCOLN PARK DRIVE — INTERIOR VIEW.

REPORT OF THE  
**Commissioner of Public Works**  
CITY OF CHICAGO  
1903





# COMMISSIONER'S REPORT.

OFFICE OF THE COMMISSIONER OF PUBLIC WORKS, }  
CITY HALL.

*To the Honorable, the Mayor and Common Council  
of the City of Chicago:*

GENTLEMEN:—As required by the ordinances of the City of Chicago, I respectfully submit the Twenty-eighth Annual Report of the Department of Public Works for the year ending December 31, 1903.

Accompanying this report are the several detailed reports of the various bureaus comprising the Department of Public Works, also the reports of the Department of Track Elevation and the Special Commission on Small Parks.

## WATER SUPPLY.

During the year 1903 the total pumpage amounted to 137,515,751,956 gallons, or an increase of the total pumpage for the year 1902 of 6,623,468,936 gallons, which represents a daily average increase of 18,146,490 gallons. Assuming a population of 2,000,000 inhabitants, this is equivalent to a daily supply of 188 gallons per capita, an amount far in excess of the actual requirements, as investigations show that a great amount of this pumpage is wasted. As the pumpage is being increased year after year, this emphasizes the necessity of extending the meter service as rapidly as possible, as recommended in my report to your Honorable Body in 1902.

I also recommend, owing to the amount of water used by the various parks, that your Honorable Body take some action, as the park boards are separate taxing bodies, to compel all park boards to pay for such water as is supplied by the City to them at meter rates to be determined by your Honorable Body, as I believe the park boards should erect and operate their own pumping stations to supply water to the parks under their jurisdiction, for sprinkling, filling of lagoons, etc.

On account of the increase in population and in the consumption of water per capita, it will be necessary to increase the capacity of several of the pumping stations, and to begin work on the proposed tunnel leading from the present Sixty-eighth street crib southwesterly to a new pumping station to be located in the center of the southwest portion of the City, so as to give satisfactory service.

The installation of a new boiler plant for the Fourteenth street pumping station will be commenced during the coming year, and completed as quickly as possible.

The work of remodeling the Chicago avenue pumping station, and the tunnel system in connection therewith, preliminary to the erection of three vertical expansion engines, is being pushed as rapidly as possible.

The mileage of the various water tunnel systems remains the same as reported in the annual report for 1902, or a total of 37.7 miles.

#### WATER PIPE EXTENSION.

In the downtown district a number of new valves have been inserted, with a view to decreasing the size of territory shut out of water when a break occurs or repairs are made, and also lessening liability of loss from fire when mains are out of service. A specific appropriation should be made for the purpose of systematically placing necessary valves in the districts where needed.

Work was started in laying a large main in Oglesby avenue, from the Hyde Park pumping station to Seventy-ninth street, for the relief and supply of the southwest section of the City, and will materially better the water supply conditions in West Pullman. It is expected that this main will be completed early the coming year.

Upon the completion of the new bridge at Division street over the Ogden canal, the 24-inch main was replaced by a 36-inch main leading from the North side to Goose Island, thereby giving increased pressure to the West and North sides.

The following table shows the pipe laid during 1903, including hydrant branches:

DIVISION.	DIAMETER OF PIPE IN INCHES.						Total length of Pipe in feet.
	4-inch.	6-inch.	8-inch.	12-inch.	24-inch.	36-inch.	
North .....		4,178			35	585	4,793
South .....		2,024	192				2,216
West .....	24	24,249	12,824	6,008			43,105
Hyde Park.....	164	4,819	1,846	768		8,140	10,787
Lake View.....	48	9,466	1,440				10,954
Lake .....	144	9,653	4,019				13,816
Jefferson.....	86	17,988	10,087	70			28,181
Calumet .....		5,118	3,773	1,819			10,310
Norwood Park .....							
Rogers Park .....							
Totals .....	416	77,490	34,181	8,165	85	8,725	124,012

Three hundred and thirty-two hydrants of various sizes were placed, and 55 hydrants taken out and replaced; 253 valves were placed and 9 valves taken out and replaced. The total amount of pipe in the City of Chicago at the close of 1903 was 1,939 miles and 3,943 feet; hydrants, 19,922; valves, 15,681.

#### BRIDGES AND VIADUCTS.

The Ninety-fifth street bridge was opened for traffic in February and the East Division street bridge in March, and both have been in continuous and successful operation since. The substructure of the West Division street bridge is completed and the work on the superstructure is well under way. The contract for the substructure of the bascule bridge at North Western avenue is completed and work on the superstructure started.

The following bridges built by the Sanitary District and tendered to the City for use were also opened to the public:

Main street over the South branch of the Chicago river.

Canal street over the South branch of the Chicago river.

State street over the Chicago river.

Ashland avenue over the South branch of the Chicago river.

Randolph street over the South branch of the Chicago river.

Early in the coming year the West Division street bridge will be opened to traffic, and the North Western avenue bridge will be completed in the latter part of the year 1904.

The cost of repairs and maintenance of the various bridges and viaducts, exclusive of bridge-tenders' salaries, during the year amounted to \$175,421.71. Other repairs were made on the different viaducts by the various railroad companies at their own expense.

The most extensive repairs were made on a number of the old bridges, and constant care and attention were required to keep them in operation. Some of the bridges are in such a condition as to be practically beyond repair. Such bridges should be replaced by bridges of the bascule type as soon as sufficient funds are provided; but from the present condition of the City finances it will be impossible to make necessary improvements unless a means is provided to secure more revenue for the City of Chicago.

#### RIVERS AND HARBORS.

Forty-four permits for new construction, rebuilding and repairing dock work along the Chicago and Calumet rivers were issued during the year, which covered a total of 10,957 feet; 63 permits were issued for dredging, covering approximately 1,951,660 cubic yards of material.

## DIVISION OF ARCHITECTURE.

Plans were prepared for an addition to the Sixty-eighth street pumping station and for a sewage pumping station to be erected at Seventy-fifth street and Jackson Park avenue.

Plans and specifications were also prepared for eight fire-engine houses. Contracts were let for six of these houses, which were completed during the year.

Under the supervision of this division a dog-pound was built at the Bridewell, and plans and specifications were prepared for remodeling the Municipal Lodging House at 12 and 14 North Union street.

Plans and specifications were also prepared for a brick bath-house to be known as the Kosciusko Bath.

## BUREAU OF WATER.

The collections of the Bureau of Water have exceeded those of any prior year, while the expenses have been less than any year since 1891, the collections from assessed rates exceeding those for 1902 by \$416,340.44.

A greater number of inspections than ever before were made by the Inspection Division during the year, amounting to 112,747, increasing the general assessment account by \$72,844.55.

Contracts were let for laying water service pipes in 60 streets, as compared with 76 streets for the previous year.

Estimates for laying service pipes in 112 streets were prepared and returned to the Board of Local Improvements.

In the Shut-off Division the work has been satisfactorily performed, there having been no claims under the ordinance for the abatement of taxes because of any neglect in the division.

## BUREAU OF SEWERS.

There were 10,099,000,000 gallons of sewage pumped during the year, which does not include 4,665,000,000 cubic feet of water pumped at the Fullerton avenue station; \$118,303.41 was expended in cleaning sewers and catch-basins, which includes amount paid Rogers Park Water Company for water used in flushing sewers and miscellaneous bills for supplies, tools, etc.; 14,683 catch-basins were cleaned at a cost of \$48,208.64, which amount is included in the above amount of \$118,303.41; 9,114 complaints were attended to during the year, and \$68,522.45 was expended for repairs of sewers, manholes and catch-basins.

The department has been unable to give a thorough cleaning to sewers and catch-basins for several years; 179,113 feet of new sewers with catch-basins were built at a cost of \$343,037.74 by special assessments and by

private contracts. There were also built 9,347 feet of intercepting sewers at a cost of \$646,464.81, making a total expenditure of \$985,502.55 for a total of 188,460 feet. This increases the work of the division with no increase of money to do the work. The work of this bureau shall have to be practically abandoned unless more money is provided to carry on the necessary work.

#### INTERCEPTING SEWERS.

The work in this division has made good progress this year. The 20-foot main conduit in Thirty-ninth street from the lake to Halsted street slip has been completed and cleaned. The contract for the completion of this conduit has been settled and closed, and there can be no suit for extras, such as has of late accompanied heavy contracts. The southern intercepting sewer from Thirty-ninth street to Seventy-third street has been completed nearly to Seventy-first street. This work is being done by day labor directly employed by the City, and, notwithstanding an increase in the cost of labor and material of 17 to 30 per cent, the sewers have been built for less than they would have cost at the prices bid in the year 1899, and it is evident that had prices remained stationary or fallen, the gain to the City would have been considerable.

Work on the pumping station is progressing fairly, but the constant northerly winds of 1902 and 1903 retarded the preliminary work of the protection pier and coffer-dam so that the walls of wells and channels cannot be completed before spring.

A temporary pumping plant will be set in operation at Thirty-ninth street and Lake Michigan during the coming year, which will relieve the lake of pollution between Thirty-ninth and Seventieth streets in a marked degree and inure to the benefit of the public health. When this plant is set in operation the daily flow of sewage will be cut off from the lake between Surf street on the North side and Seventieth street on the South side.

#### BUREAU OF STREETS.

##### GARBAGE.

There were removed during the year 1903 1,367,550 cubic yards of garbage, or 273,926 loads, at a cost of \$643,427.30.

##### STREET AND ALLEY CLEANING.

Forty-seven thousand six hundred and eighty-eight loads of snow were removed at a total cost of \$58,079.59. Part of this amount is to be reimbursed to the City by the traction companies for the removal of snow from their various rights of way in the downtown district.

Fifteen thousand seventy-nine and three-fourths miles of streets and alleys were cleaned, necessitating the removal of 117,223 loads of street dirt; 1,245,002 lineal feet of weeds were cut; 224,848 inlets to catch-basins were opened and cleaned. The total cost of this work amounted to \$244,225.57, of which amount \$37,120.48 was charged the various railway companies for cleaning their rights of way, and is to be reimbursed to the City by the companies.

A total of 16,665 dead animals were removed during the year at no expense to the City.

Repairing to improved streets and alleys was done at a cost of \$30,676.95, and to unimproved streets and alleys at a cost of \$32,089.08, making a total of \$62,766.03.

Sidewalk repairs were made during the year at a cost of \$30,867.62.

In discussing the disposition of the City's garbage, I wish to call your attention to the fact that under the present clean streets ordinance two separations are called for—one of pure ashes, the other of kitchen refuse and combustible material. The City has been unable to enforce this ordinance except in a few instances, owing to the fact that the appropriation is not sufficient to permit the City to carry out its provisions. The City at the present time disposes of its refuse by dumping its garbage into clay holes in remote parts of the City which necessitates in some instances long hauls, the ashes that are free from garbage being used to fill low places in streets and alleys whenever possible.

I am not at the present time prepared to say or recommend whether or not crematories or reduction plants should be adopted by the City of Chicago. Should crematories be decided upon as being the most desirable or advisable, the ashes could be used for filling in sidewalk space, streets that are below grade, etc. The kitchen refuse and combustible material could be taken to plants conveniently located, either in connection with some of the existing pumping stations where the power derived from such material would reduce the cost of fuel, or crematories could be built independently and the power used for electric lighting and other municipal purposes. Should reduction plants be preferable, I believe these plants should be situated in very remote parts of the City where there are few inhabitants, or be placed outside of the City limits. The kitchen refuse of this City I do not believe is more than 20 per cent of all the City's refuse. This kitchen refuse could be taken to the reduction plant or plants in cars or in scows along the Chicago river or Drainage canal.

PERMIT DIVISION.

During the year 1903 permits were issued to open improved streets as follows:

People's Gas Light and Coke Company .....	10,488
Chicago Edison Company .....	626
Commonwealth Electric Company .....	27
Chicago Telephone Company .....	218
Ogden Gas Company .....	222
Various corporations .....	187
Plumbers and sewer builders .....	1,392
City departments .....	1,818
Unimproved street opening permits .....	3,447
Use of streets .....	582
Inspection permits .....	83
Manure vault permits .....	23
Miscellaneous permits .....	2,606
Total number of permits .....	21,114

During the year the People's Gas Light and Coke Company repaired 64,200 square yards of cedar pavement, 20,862 square yards of macadam pavement, 11,182 square yards of granite pavement, 1,228 square yards of brick pavement and 1,157 square yards of asphalt pavement.

The Chicago Edison Company repaired 4,853 square yards of cedar pavement, 50 square yards of macadam pavement, 6,672 square yards of granite pavement, 1,432 square yards of brick pavement and 1,056 square yards of asphalt pavement.

Chicago Commonwealth Electric Company repaired 5,295 square yards of cedar pavement, 350 square yards of macadam pavement, 35 square yards of granite pavement, 453 square yards of brick pavement and 1,041 square yards of asphalt pavement.

The Chicago Telephone Company repaired 10,085 square yards of cedar pavement, 14,367 square yards of macadam pavement, 2,750 square yards of granite pavement, 452 square yards of brick pavement and 1,105 square yards of asphalt pavement.

The Ogden Gas Company repaired 1,230 $\frac{1}{2}$  square yards of cedar pavement, 215 $\frac{1}{2}$  square yards of macadam pavement, 87 $\frac{1}{2}$  square yards of brick pavement and 4 $\frac{1}{2}$  square yards of asphalt pavement.

I again wish to call the attention of your Honorable Body to the number of openings being made in improved streets, and some provision should be made to compel the placing of all underground work in conduits or tunnels, and especially at this time in the streets that are about to be improved, so as to do away with the necessity of tearing up the pavements.



Regarding the question of lowering the tunnels, I believe that when this work is undertaken the plans should be drawn with a view to having the tunnels so constructed that they may be utilized in connection with subways to be built in the down-town district. These subways should be built as early as possible to relieve the congested condition in said district. When these plans are made, provision should be made for all underground work so as to avoid the opening of street pavements.

Five hundred and eight permits were issued for the removal of houses; 442 of these were for frame houses and 66 for brick houses. The total amount of fees collected amounted to \$1,571.

#### SMALL PARKS.

During the year 1903 the sum of \$19,087.24 was expended for the improvement and maintenance of the thirty-two small parks under the jurisdiction of this department.

#### BUREAU OF MAPS.

There were prepared by this bureau 1,677 plats; 1,523, covering an area of 1,458.67 miles, were for the Board of Local Improvements. Plats were also prepared showing all bay windows and other encroachments on City property and of all sidewalks in the downtown district, showing space occupied by adjacent property owners; 222 petitions were verified and reported on; 17,977 people required the services of an employe of this bureau for the purpose of furnishing legal descriptions and house numbers. Approximately 56,000 persons made use of the information obtained in this bureau; 233 new subdivisions, containing 595.55 acres, were entered on the atlases of the bureau. Nine and one-fourth miles of streets were added during the year, and 1.84 miles of streets vacated, leaving a net amount of 8.41 miles of streets added during the year; 10.248 miles of alleys were added during the year, and 3.988 miles of alleys vacated, which leaves a net amount of 6.26 miles of alleys added during the year.

#### TRACK ELEVATION.

During the year 1903, 8.25 miles of main tracks were elevated, and 66.5 miles of other tracks, eliminating 41 grade crossings by the construction of subways, at an estimated cost of \$3,165,250.00 for the entire work.

Ordinances passed by the City Council and accepted by the railroad companies for the elevation of their roadbed and tracks from May 23, 1892, to December 31, 1903, covering the following amount of work:

Total number miles of main tracks to be elevated.....	188.10
Total number miles of other tracks to be elevated.....	709.95
Total number of subways to be constructed.....	537
Total estimated cost of entire work when completed.....	\$48,540,250.00

Amount of elevation that has been done from May 23, 1892, to December 31, 1903, as follows:

Total number miles of main tracks elevated.....	80.67
Total number miles of other tracks elevated.....	420.19
Total number of subways constructed.....	351
Total estimated cost of work done .....	\$25,445,250.00

Leaving work to be done under all ordinances that have been passed from May 23, 1892, to December 31, 1903, as follows:

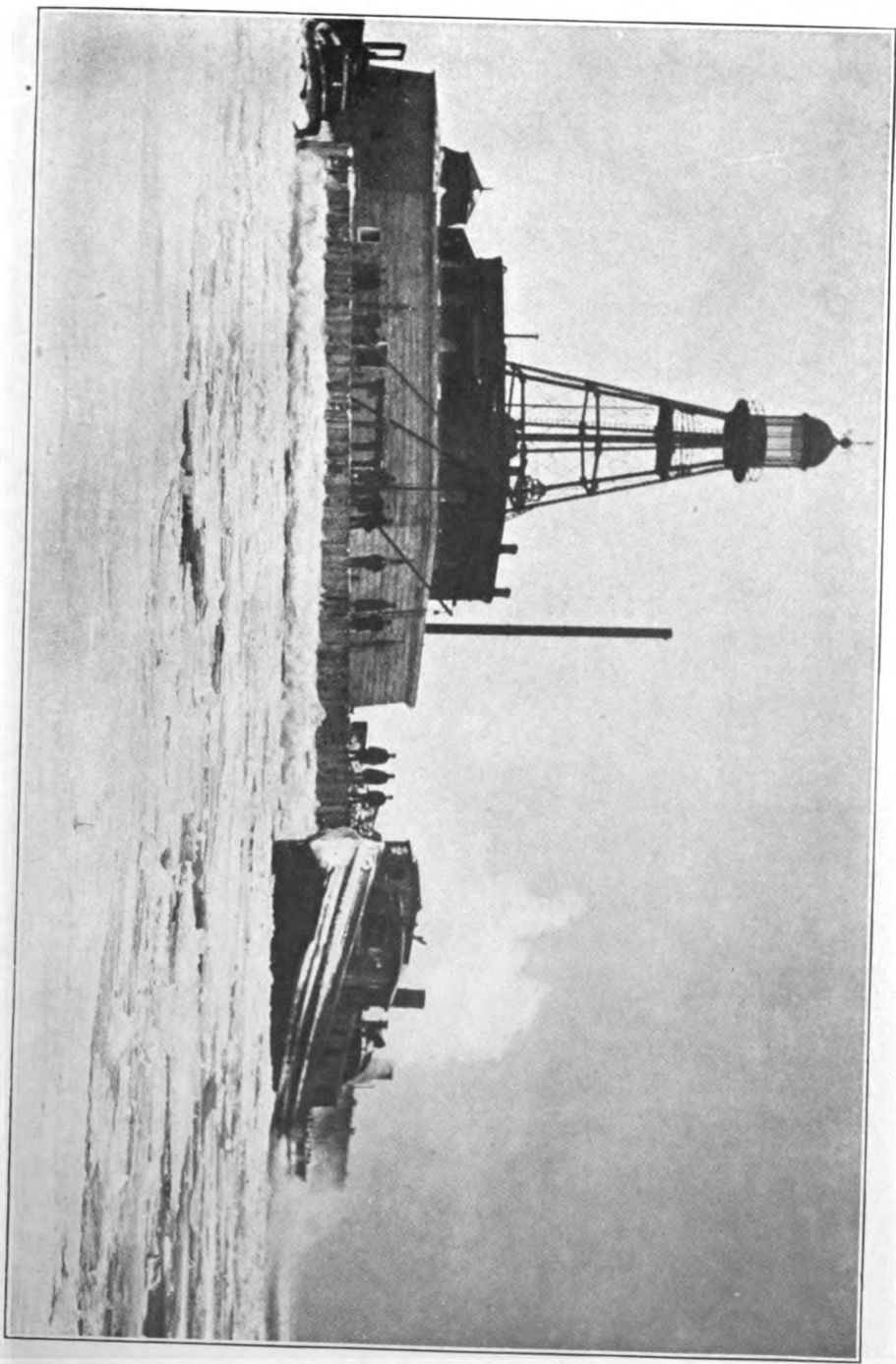
Total number miles of main tracks yet to be elevated.....	57.48
Total number miles of other tracks yet to be elevated.....	279.76
Total number of subways yet to be constructed .....	186
Total estimated cost of work yet to be completed.....	\$18,095,000.00

Respectfully submitted,

F. W. BLOCKI,

*Commissioner of Public Works.*





TWO-MILE CRIB — WINTER OF 1903-04.



ANNUAL REPORT

**Bureau of Engineering**

CITY OF CHICAGO

1903

J. H. SPENGLER  
Acting City Engineer



# CITY ENGINEER'S REPORT

---

CHICAGO, January 1, 1904.

HON. F. W. BLOČKI,  
*Commissioner of Public Works.*

Dear Sir:—I beg to submit herewith the annual report of the Bureau of Engineering for the year ending December 31, 1903.

As will be noticed in the reports of the various heads of divisions, a great deal of work has been done during the year and the constant aim has been to expedite all construction work with the greatest economy, and, further, to maintain and operate the machinery and plants of the various pumping stations in order to give the citizens the best service possible.

## PUMPING STATIONS.

The total pumpage for the year was 137,515,751,956 gallons, being an increase of 6,623,468,936 gallons over the total yearly pumpage for 1902. This amount represents a daily average increase of 18,146,490 gallons. Assuming a population of 2,000,000, this is equivalent to a daily supply of 188 gallons per capita, an amount far in excess of the actual requirements, as it has already been clearly demonstrated in special reports made to you that more than half of the pumpage is wasted. It may be noted that the amount of water delivered per capita per day is gradually increasing from year to year, and I would recommend again that the question of extending the meter service as fast as possible be taken up in order to bring down the consumption of water within reasonable limits.

Owing to the conditions of the coal trade, the high prices and labor troubles in the East, the City was obliged to contract for Illinois coal for the year 1903. As compared with the Eastern coal burned in 1902, this coal showed a reduction in evaporation of from 20 to 25 per cent, while the price per ton was but slightly less than that paid for the higher grade coal in 1902, thus necessitating a greater consumption of fuel. Taking into consideration the increased pumpage, the price per ton of coal and the difference in evaporation of the coal used as compared with that in 1902, an analysis of these facts will show that under the conditions the stations were run as economically as in the previous year. Refer-



ring to the table which gives facts as to the pumpage at the various stations, salaries, amount of coal used, etc., it will be noticed that there is a slight increase in the total amount paid for salaries over the amount paid in 1902. This was due to the fact that the number of men was increased slightly owing to the necessity of operating the machinery more steadily in order to supply the demands of the people and for the further reason that there was an increase in the wages of the employees authorized by the City Council.

Work on the remodeling of the Chicago avenue pumping station was continued. The remodeling of the tunnel system made necessary as a preliminary to the installation of three 25,000,000-gallon vertical triple expansion pumping engines was practically completed at the close of the year, and work on the foundations for one of these engines was commenced.

In December bids were opened for the installation of a new boiler plant for Fourteenth street pumping station, and work will be commenced on this important improvement early in 1904. The plans for this work contemplate the tearing out of the nine tubular boilers which have been in service since 1891 and the substitution of six 250 horse-power boilers of the internally fired type having Morison corrugated furnaces, as well as Hawley down-draft furnaces. Complete coal-conveying machinery will be installed with overhead bins having a total capacity of 600 tons of coal. It is the intention to make this a model boiler plant, and when completed there will be a material saving in labor and fuel.

At the rate of the present increase in population and in the consumption of water per capita, additional machinery should be placed as soon as possible in order to meet the demands of the people. I would again strongly recommend that one additional engine be placed in the Springfield avenue station, the Central Park avenue station and in the Sixty-eighth street station.

It is also imperative, in order to give satisfactory service to the people in the southwest portion of the City, to begin work on the proposed tunnel leading from the present Sixty-eighth street crib southwesterly to a new pumping station to be located in the center of this southwest district.

I have again to repeat the recommendations made by the City Engineer for several years as to the necessity of placing a new superstructure on the Lake View crib, as well as the necessity of extending the present two-mile tunnels to an intake in the Carter Harrison crib already constructed, thus doing away with the old Two-mile crib, which is becoming very dilapidated, and for the purpose of saving \$18,000 to \$20,000 a year necessary to maintain the Two-mile crib.

## WATER PIPE EXTENSION.

An appropriation was made for a 36-inch main in Oglesby avenue from the Sixty-eighth street pumping station to Seventy-ninth street, this main to be laid for the relief and supply of the southwest section of the City, as well as a preliminary feeder to connect with new feeders which would have to be placed when the proposed new pumping station is constructed. Three thousand one hundred and forty feet of this 36-inch pipe were laid in the fall, when the work had to be stopped on account of the inclement weather. This work will be completed early in 1904 and will materially better the water supply conditions in West Pullman.

The completion of the new bridge at East Division street over the Ogden canal made it possible to reconnect the 24-inch main, which, however, was replaced by a 36-inch main leading from the North side to Goose Island. The completion of this work gave increased pressure to the West and Northwest sides.

A number of new valves was inserted in the mains in the downtown district. Attention is again called to the necessity of having a specific appropriation for the purpose of systematically placing necessary valves in this district.

## BRIDGES.

During the year the following new bascule bridges were opened to traffic: East Division street, Ninety-fifth street, Canal street, Main street, State street, Ashland avenue (West fork), and Randolph street bridges. The first two were built by the City of Chicago and the others by the Sanitary District of Chicago. With a few minor repairs and alterations these bridges have been in successful operation since their opening to traffic. Extensive repairs were made to a number of the old bridges, and constant attention and care were required to keep them in operation. With the exception of a few instances, where the bridges were temporarily disabled, the street and river traffic was not obstructed. Some of the structures are now in such a state of dilapidation as to be almost beyond repair. This is notably the case with the old swing bridges at Archer avenue and North avenue, which should be replaced by modern bascule bridges as soon as possible. Substructures for new trunnion bascule bridges over the North branch of the river at West Division street and North Western avenue were completed, and plans were prepared and contracts let for the superstructure of the North Western avenue bridge. Plans were also prepared for the sub and superstructures of a bridge to be placed at Archer avenue. The work on the superstructure of the West Division street bridge was well under way at the close of the year, and, barring delays on account of the

weather, this bridge will be opened to traffic by April 15. The North Western avenue bridge will be completed in the contract time, August, 1904.

### HARBOR.

The United States authorities this year have made no separation in the number of clearances and arrivals of vessels as between the Calumet river and the Chicago river, but reported the total of each class for the City as a whole. These returns present a gratifying increase of 786,616 tons over the total tonnage for 1902, while the number of vessels engaged in this trade fell off 951 as against the previous year, yielding as a direct consequence a great increase of the average cargo for the year 1903, being a gain of 111 tons over the average cargo for the whole City for 1902. This again arises, no doubt, from the fact that the improvements made in the Calumet river allow vessels of greater draught to be unloaded in this port, a condition which is not obtainable at present in the Chicago river, where the existing tunnels exclude all vessels drawing more than 17 feet of water.

The work in detail of the various divisions of this bureau will be found under the following headings:

## DIVISION OF WATER SUPPLY.

### PUMPING STATIONS.

#### FOURTEENTH STREET PUMPING STATION.

**MR. HUGH MARTIN, Engineer in Charge.**

During the year the following repairs were made to engines, boilers and buildings:

Owing to the delay in awarding the contract for a new boiler plant, extensive repairs were necessitated on boilers Nos. 1, 2, 3, 4, 5 and 6, as follows: New back tube sheets, new braces for heads and domes and eighteen new 4-inch by 20-foot tubes were put in. Four inches were cut off back end of boilers, all seams were chipped and caulked, tubes removed and cleaned, ends annealed and replaced. Feed-water pipes and valves, blow-off pipes and asbestos-packed cocks were renewed. The flanges on 12-inch steam header, 6-inch connections between header and boilers and 9-inch steam by-pass were repacked and furnished with new bolts. The Hawley furnaces under boilers Nos. 1, 2 and 3 were repaired with new cast iron fronts, top liners, side liners, dead plates and grate bars, and fifteen new 1½-inch tubes 4 feet 3½ inches long with brass bushings and 4-inch pipe connections from boilers to drums. A new bottom back sheet was placed on boiler No. 1. Boilers Nos. 1, 2 and 3 were reset and back walls



TUG GOING TO LAKE CRIBS — JANUARY, 1904.



on Nos. 4, 5 and 6 rebuilt. The resetting of boilers Nos. 7, 8 and 9 will be completed in January. Patches were riveted on front and bottom back sheets on boiler No. 8. Purifiers, domes of boilers and steam pipes were covered with non-conducting material.

The repairs to the water tube boilers Nos. 10, 11 and 12 were as follows: Twelve new 4-inch by 18-foot tubes and fifty new safety clamps were put in. Feed-water pipes, valves and asbestos-packed cocks were renewed. Purifiers and feed-water pipes were covered with non-conducting material. On the Roney mechanical stokers under these boilers, a new crank shaft, crank brasses, piston rod, and steam and exhaust pipes were placed on engine, the line shaft was trued up and new cast iron cups placed on shaft boxes. Fifty new top grates, forty new web grates, eighteen new basket grates, and new sheet steel tops were placed on coal hoppers.

The three Blake boiler feed pumps were overhauled. Piston rods, steam valve stems, brass bushings, and valve seats were renewed, and one new copper air chamber was placed on No. 1 pump.

The Knowles bilge pump was overhauled, and piston-rod, stuffing-box glands, brass bushing, valves and springs were renewed.

During the month of November one of the piston rods and the cylinder head on the intermediate cylinder of No. 3 engine broke. This engine was then put out of service and given a thorough overhauling. New piston rods, piston ring and springs and a set of crank brasses were placed. All connecting rod and shaft brasses were taken out and the oil grooves recut, pins trued up, brasses refitted and replaced, and steam jacket pipes renewed.

The overhauling of the valve motion is now in progress.

Engines Nos. 1, 2 and 4 were in almost continuous operation during the whole of the year, minor repairs only being necessary.

The boiler feed pumps of No. 1, 2 and 3 engines had pump cylinders rebored, and were equipped with new pump rods and stuffing-box glands. Plungers were repacked and hot well thermometers put on Nos. 2 and 4 engines. The head was re-riveted and seams chipped and caulked on steam separator of No. 4 engine.

The valve motion on Nos. 1 and 2 engines should be overhauled and new valve stems put in the intermediate and low-pressure cylinders. A new frame should be provided for lagging, and lagging should be repaired. Old hair covering should be removed from around cylinders and receivers and be replaced with non-conducting material on No. 1 engine.

The wooden platforms around the main pumps should be replaced with iron gratings.

The purchase and installation of a lathe in this station would greatly reduce the cost of repairs to machinery.

**REPAIRS TO BUILDINGS.**—The stone walls in the basement of the engine-room were cleaned and new cement plaster put on, and the entire basement, including the intake and discharge pipes, was painted. The windows in engine-room, boiler-room and coal-room were overhauled and new sash cord put in where necessary. The coal-room floor was repaired, and part of the alley at the west end of the station was repaved. A new foundation, frame and platform were built for a 2-ton scale in the boiler-room, and four new coal cars were constructed.

Considerable trouble is experienced from leakage and condensation from the boiler-room roof. This roof should be remodeled. The walls of the engine-room on Indiana avenue and on Fourteenth street should be carried up above the roof to prevent ice and snow from sliding to the sidewalks.

The shafts and wet well outside of the pumping station had their covers lowered and sealed with Portland cement mortar to prevent surface leakage into tunnel.

**PUBLIC BATHROOM.**—The bathroom at this station was thoroughly overhauled and repaired, and given three coats of paint. During the year thirty-one thousand three hundred and fourteen people were furnished with baths, a decrease of nearly fourteen thousand when compared with last year.

#### SIXTY-EIGHTH STREET PUMPING STATION.

MR. THOMAS REYNOLDS, Engineer in Charge.

The principal repairs made at this station during the year consist of the following:

**ENGINE No. 3.**—New brasses were placed in the high and low pressure rods, and the pins were turned up on the north side of the engine. The water ends and air pumps were overhauled and the plungers packed.

**ENGINE No. 4.**—The ram was trued up and the gland bushed. All pins were trued up and both ends of rods on the cut-off motion were bushed. A complete set of new valves was placed in the water ends and the size of the primers increased. All joints on the steam jackets were repaired. The lagging was repaired and the whole engine repainted. The air pumps were equipped with a new set of valves. All valves were packed, as well as piston rods and ram. One new Phoenix lubricator was placed and a new foot valve for the suction pipe ordered.

**ENGINE No. 5.**—All the valves in the water ends were overhauled, and new joints were made on the steam chests and connections. All trips and toes on the cut-off motion were trued up. The air pumps and engine were packed all around and the whole repainted. Placed one new Phoenix lubricator. A new 1¼-inch ell and nipple were put on for connecting the

high and low pressure jackets. The north high-pressure rods were packed with Irons' metallic packing, and a leak in the south high-pressure jacket was repaired.

ENGINE No. 6.—The plungers were packed with Daniels' PPP packing.

#### BOILERS AND STEAM PIPES.

BOILERS NOS. 11 AND 12.—There were twenty-five rivets removed from each boiler from the seams over the fire and replaced with new ones.

BOILERS NOS. 9 AND 10.—Twenty rivets were removed from each boiler from the seams over the fire and replaced with new ones. All the seams were caulked. Overhauled and placed one 10-inch gate valve in the main header in the south boiler room.

The auxiliary header in the north room was connected with the header in the south boiler room. The 8-inch gate valve leading to No. 3 engine was repaired and a new 10-inch gate valve was placed in the header. The auxiliary header valves and connections were covered with non-conducting material.

BOILERS NOS. 13 AND 14.—Two bottom sheets were removed from each boiler and replaced by one long sheet under each. Two new 6-inch Jenkins discs were placed in the valves connecting boilers Nos. 7 and 8.

BOILER No. 5.—Twenty rivets were removed from front seam and twenty-five from back seam and replaced with new ones. All seams were caulked.

BOILER No. 16.—Twenty rivets were removed and replaced with new ones and all seams were caulked.

BOILER No. 10.—Fifteen rivets were removed and replaced with new ones.

On August 13th a smoke-preventing device was placed in boilers No. 5 and No. 6 and an evaporation test made with good results.

#### BUILDINGS AND GROUNDS.

The new building for machine and blacksmith shop was completed and all tools were removed from the old Town of Lake building and transferred to the new shop. The old Town of Lake building was razed and the machinery and debris removed and when the site has been filled in and some black dirt and grass seed applied it will present an appearance uniform with the rest of the grounds.

The basement under the main engine-room and fireroom was white-washed and all the pipes in the basement were cleaned and painted.

A new combination drinking fountain was placed on Sixty-eighth street in front of the new building.

On August 3rd the north chimney was struck by lightning and con-



siderably shattered. The chimney was repaired and a lightning rod placed on same. The grounds are practically in good condition.

**WORK WHICH SHOULD BE DONE DURING 1904.**

The engines are practically in good condition, excepting engines No. 1 and No. 5. The former requires two sets of brasses for the south low-pressure rod. Engine No. 5 must be provided with new keys in north beam.

I would also recommend the changing of the valves and valve seats in the water ends of both these engines. By so doing the pumping capacity can be increased 20 per cent.

I also wish to recommend the installation of one new 15,000,000-gallon pumping engine as early as possible. The consumption of water is increasing so rapidly that it will be difficult, if not impossible, to meet the increased demand in 1904. The boiler capacity of the station is ample to take care of this additional engine.

The boilers are in fair condition, but, having been in service many years, considerable repairs are necessary each year to both boilers and setting. Some of the boilers will need new sheets this coming summer.

The existing buildings of the station are in good condition with a few exceptions. The plaster on the east wall of the south engine-room is loose. It should be removed and the wall replastered.

The wooden floor in the south engine-room is almost worn out. This should be torn up and replaced with a tile floor similar in design and construction to that in the north engine-room. The yard in the rear of the coal sheds between the railroad tracks should be planked over. At present it is almost impossible to get a wagon near the sheds to unload coal in times of blockades on the railroads. The coal sheds require new floors. In this connection I would suggest that the office in the pipe yard be moved and the coal shed on the east side of the track be extended 100 feet further south and made about 10 feet wider. This would materially increase the coal storage capacity of the station.

**TWENTY-SECOND STREET PUMPING STATION.**

**MR. MARTIN MAHONEY, Engineer in Charge.**

The following is a report on construction and repairs at this station during the year 1903: The engines were in operation almost continuously with the exception of No. 26, which was shut down for about two months for extensive repairs. The high-pressure cylinder was rebored, a new bull ring and follower were placed, new brasses were fitted to high-pressure cross head, new sleeves were put on all valve stems, back bonnets were re-bushed, and one small rubber valve and one disc valve were placed in pump.

ENGINE No. 25.—Two large rubber valves, one medium and one disc valve were placed in pump of this engine.

ENGINE No. 50.—This engine was furnished with three 8-inch double beat valves.

ENGINE No. 51.—Two sections were placed in cage on suction of this engine, also sixty-six 4-inch valve seats to same cage and four 8-inch double beat valves. In the boiler-room new drum heads and tubes were placed in the Hawley furnaces attached to boilers Nos. 2, 3, 4, 5 and 6 on north end. New lower half boiler fronts were placed on all six boilers on the north end, and one hundred new lower grate bars were placed in the furnaces. A new copper float pipe was placed in the Weir well.

Twenty new clothes closets were constructed in the basement and five closets in engineers' room on the main floor.

The following work should be attended to at once: The suction on engine No. 25 should be overhauled and valves repaired. The roof of boiler-room should be painted outside and in, and the walls of the basement and fireroom should be whitewashed.

The public bathroom at this station furnished baths to 29,460 people during the year.

#### CHICAGO AVENUE PUMPING STATION.

MR. WILLIAM J. BURNS, Engineer in Charge.

The two Gaskill engines at this station were in continuous service during the entire year, with the exception of a short time on account of certain necessary repairs. During the month of February a new hollow steel crank shaft was placed in No. 72 engine to take the place of the old crank shaft, which had been fractured for some time. While the new shaft was being put in place both pumps were overhauled, all valves and springs were inspected and a large number of old valves and springs was taken out and replaced with new ones. The north pump, which had been out of service for some time, was in bad condition. Thick rust had formed on the walls of the pump barrel and on the pump rod and plungers. This was removed. All pins and bearings, including engine brasses, were fitted up. One new brass was placed on the south crank pin and one new crown brass was placed on the north crank pin. Two new pump brasses were placed on the main bearings and the two top ones were babbitted. One new gib and key were purchased as a reserve in case one of the others should break.

In the early part of the year the connecting rod on No. 2 Gaskill engine broke in the fork. The rod was repaired. It was connected up to the engine and the engine was running only about one month when it broke in the same place. A new and heavier connecting rod was then ordered.

On No. 72 north engine a new steel cross head was put to replace the old one which broke at the hub. Eighteen 8-inch coal spouts leading from the coal bunkers to the furnaces were completed during the year by the Hawley Down-Draft Company, and these spouts have been used with good success.

An iron stairway was placed in the south end of the boiler-room leading up to the top of the coal bunkers. A  $1\frac{1}{4}$ -inch iron pipe handrail was built across the top of the coal bunkers on each side of the conveyor track. The coal conveyor was completed and has been in continuous service the entire year. It is a pronounced success, easily operated and never out of order.

• The City Electricians re-arranged the arc lamps in the boiler-room to properly light up all valves and water and steam gauges.

There were two 3-pint automatic cylinder oil pumps attached to Gaskill engines Nos. 1 and 2 to replace the old worn-out lubricators which had been in use fifteen years. A new end was welded on the connecting rod No. 1 Gaskill engine. A brick manhole was built in front of the building for repairing wires. Three and one-half inch flues were rolled and caulked in Nos. 1 and 2 boilers. One  $3\frac{1}{2}$ -inch by 12-foot 8-inch flue was placed in No. 2 boiler. Six 2-inch by 5-foot  $1\frac{3}{4}$ -inch steel tubes were placed in No. 4 Hawley furnace. Seven 2-inch by 5-foot  $1\frac{3}{4}$ -inch steel tubes were placed in No. 3 Hawley furnace. A 2-inch oak plank lining was laid in the coal hopper to replace the worn-out plank.

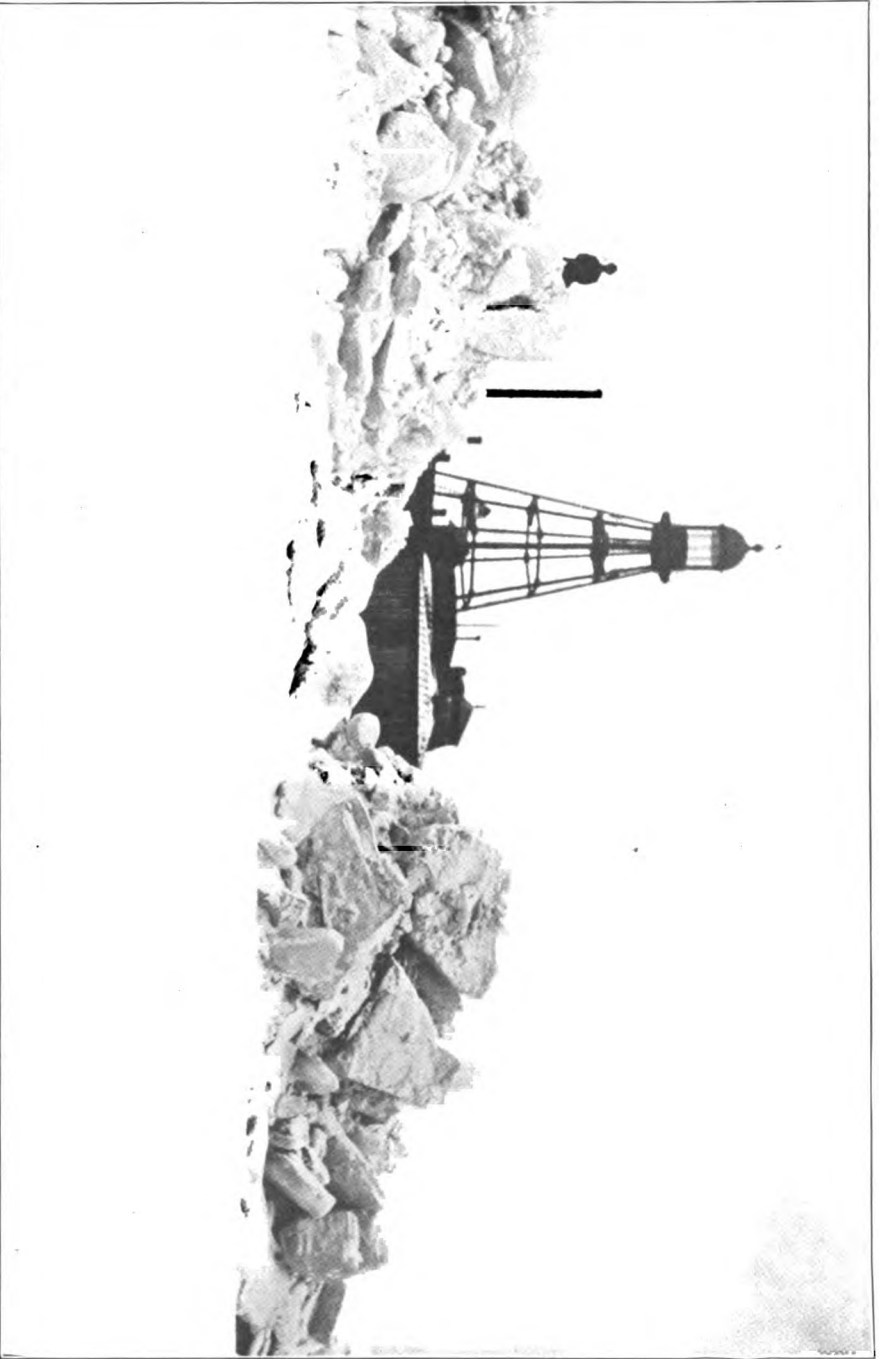
Beam engines 1853 and 1857 were dismantled and taken out by the contractor for the new pumping machinery.

Twenty new 1x2-inch steel teeth were placed on the coal crusher drum to replace the worn-out teeth.

All steam, water and gas pipes in the basement were rearranged and changed. All pipes connected to engine 53 and 57 were disconnected and carried over and hung as close as possible to engines Nos. 67 and 72, and were kept as close to the two side walls as possible in order to take the two old engines out and also to give the contractor room to build the foundation for the new engines.

Extra heavy Chapman gate valves with by-passes attached and tested to 250 pounds per square inch were placed on all the steam headers, replacing the Jenkins globe valves which were in poor condition.

New crosses and tees were also put in, in order to allow the contractors for the new pumping engines to make their steam pipe connection out into the main engine-room. New steel nozzles were placed on all the steam headers; in the old nozzles the flanges were too small for the valve flanges. Copper corrugated gaskets were used in all the steam joints between the boilers and the engines. A 12-inch extra heavy reducing valve was placed



TWO-MILE CRIB — JANUARY, 1904.



on No. 3 steam header to reduce the steam pressure from 180 pounds on the boilers to 70 pounds for the Gaskill engines.

The coal shed in the rear of the building was taken down and the yard was filled with cinders up to grade. A brick wall was built from the Holly coal shed over to the wall of the Holly fireroom.

During the great hail storm in July about 30 lights of glass were broken both in the main building and the tower. New lights were ordered and put in.

A new Penberthy injector was placed in the Holly boiler-room to supply feed water to the boilers at high temperature. A new toilet-room was built between the Holly boiler-room and the main boiler-room. Fifteen 2-inch by 5-foot  $1\frac{3}{4}$ -inch steel tubes were placed in No. 6 Hawley furnace.

Removed the 12-inch water main that connected No. 68 engine and No. 53 engine discharge in the basement. Bolted  $\frac{1}{2}$ x20-inch steel blank flange over the opening in air chamber. A crack in the 27-inch copper steam pipe was repaired, tested and made perfectly steam-tight by riveting a heavy copper patch over it and caulking same. Two  $2\frac{1}{2}$ -inch Climax reducing valves were placed in the main steam pipe to reduce the steam from 180 pounds to 100 pounds to supply the boiler feed pump, coal conveyor, bilge pump, etc. The six Holly tubular boilers which have been kept in continuous service since they were installed require considerable repairs both to boilers and brickwork around them.

#### REMODELING CHICAGO AVENUE PUMPING STATION.

The contract for the remodeling of the tunnel system adjacent to the station was awarded to John O'Brien on December 20, 1902, on a bid of \$27,599. The work as outlined comprised the sinking of three 12-foot shafts 90 feet deep, the digging of 180 feet of 6-foot tunnel and 458 feet of 5-foot tunnel, and the supplying and putting in place in one of the shafts of a 72-inch gate valve.

SHAFTS.—On January 6th ground was broken for shaft No. 1, located on the boulevard a little to the north of the main entrance to the station, this being the first work done on the new tunnel system. A cast iron shoe, 15 feet in diameter, was used in the sinking of each of the three shafts. After the shoe at each shaft with 20 feet of shaft wall had been weighted down and forced into the clay underlying the quicksand until the surface water had been cut off, the shaft was reduced to 10 feet internal diameter, as the plan of using them as suction wells had then been abandoned. All work pertaining to shaft No. 1 was completed June 30th, when the asphalt pavement was replaced over the shaft.

Shaft No. 2, which contains the 72-inch gate valve imbedded in concrete, was carried up to grade and domed over on August 8th.

The third shaft, located in grass plot 15 feet west of the south entrance, used as a working shaft, and which contains the cage and hoisting apparatus, is still unfinished owing to the delay in making tunnel connection to well "J".

Shafts.	Surface Elevation.	Elevation at Bottom of Sump.	Total Depth of Shaft.	Total Number of Brick Shifts.	Average Progress.	Shaft Reduced to 10 feet Diameter at
1	+14.30'	-74.00'	88.30'	15	6.00'	- 9.94'
2	+14.31'	No Sump.	86.10'	13	6.60'	-13.56'
3	+14.00'	-74.00'	88.00'	13	6.30'	-13.48'

The walls of shafts above shoe were made 18 inches thick, and 13 inches where diameter was reduced to 10 feet. In order that a heavy bed of concrete might surround the valve, shaft No. 2 was gradually widened out to 12 feet in diameter, beginning at—52.00. Elevation centre of valve—66.20.

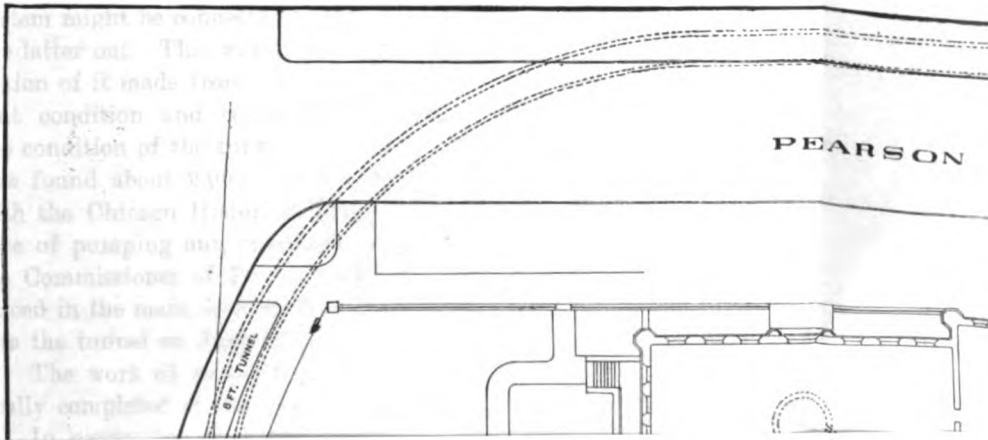
DRIFT No. 1.—This is a 6-foot drift extending from shaft No. 3 to well "J" to which its connection has yet to be made. It passes through shafts 1 and 2, and at the latter shaft for a distance of 15½ feet each way it was built with an 18-inch concrete lining. The total length of this drift as completed is 154.5 feet, and the elevation of the roof is—63.20. The ground at this depth was hard blue clay mixed with gravel mined out with picks, no powder being used. The average progress made by the miners in sixteen hours was 15 feet.

DRIFT No. 2.—This drift is 5 feet in diameter and connects the new remodeled system with the old 5-foot tunnel to the Two-mile crib. Starting from shaft No. 3 at an elevation of—64.40, a rise of 5 inches was given in its entire length, 300 feet, for drainage. This drift was completed in fifteen mason shifts, averaging 20 feet each, the connection to the old tunnel being made June 11th.

DRIFT No. 3.—Owing to a collapse in the ground over the excavation for this tunnel, after reaching a distance of 93 feet from shaft No. 3, it became necessary to build a brick bulkhead at the face and divert the line of the tunnel in a southeasterly direction forming what is known as

DRIFT No. 4.—Leaving drift No. 3 at an angle of 45°, a curve to the left was begun under Chicago avenue, which gave the line of the tunnel a bearing of N. 38° :30' E., so that connection to the old 5-foot tunnel near well "B" could be made. When within 22 feet of the point of connection a bulkhead was built at the face, the balance of the tunnel to be completed after all other connections had been made. The total length of this drift from shaft to bulkhead is 197 feet and its roof elevation—26.20, the ground penetrated being uniformly soft blue clay. The total number of mason

shifts was fifteen averaging 12.1 feet ~~measured~~ in one shift of miners. No



shafts were keyed up, and lagging repaired.



The third shaft located in grass plot 15 feet west of the south entrance,

used  
tus,  
well

Sh.

wh  
cre  
12

wel  
sha  
it v  
as  
gro  
pic  
six

rer  
ing  
in  
fift  
bei

for  
bec  
of

lef  
be  
we  
by

ed being uniformly soft blue clay. The total number of mason

shifts was fifteen, averaging 13.1 feet prepared in one shift of miners. No work was done in this drift after June 2nd.

**PUMPING OUT OF OLD TWO-MILE TUNNEL.**—In order that the new system might be connected to this old tunnel, it became necessary to pump the latter out. This was done during the first part of June, and an examination of it made from the shore shaft to the crib proved it to be in excellent condition and containing but little dirt. A brass plate, stating the condition of the tunnel, etc., when pumped out during January, 1882, was found about 2,000 feet from the shore end, and has been deposited with the Chicago Historical Society. A similar plate, giving the present date of pumping out, condition of tunnel, with the names of the Mayor, the Commissioner of Public Works, the City Engineer and Assistant, was placed in the main drift 20 feet from the shore shaft. Water was again let into the tunnel on June 17th.

The work of remodeling the tunnel system at this station was practically completed at the close of the year.

In connection with the contract for the furnishing and erecting of three vertical triple-expansion engines, each having a capacity of 25,000,000 gallons per twenty-four hours, the first engine to be installed is to take the place of the old 53 and 57 engines. These engines were removed and work on the foundations for one of the new engines will be started in a few days. Contract for the foundations for the first new engine was let to William E. McCarthy & Company on August 15, 1903.

**INSTALLATION OF TWENTY-TON ELECTRIC CRANE.**—Work on the foundations of columns supporting the runway girders for the crane was begun January 13th. The iron work was delivered during the early part of the following month and the erection and assembling of same practically completed by March 21st. By April 14th all wiring for the crane had been completed, and the current, brought from the Street Railway Company, turned on, and the crane operated for the first time. The painting of the crane was completed the last of May, and the crane then turned over to the City ready for use.

Mr. E. P. Scott is in local charge of this work.

#### LAKE VIEW PUMPING STATION.

MR. F. D. PARKER, Engineer in Charge.

The following represents the principal repairs made at this station during 1903:

**ENGINE No. 1.**—This engine was provided with new valves in the water ends and new cast iron valve gears on main shaft.

**ENGINE No. 2.**—New valves were provided for water ends and all shafts were keyed up, and lagging repaired.

**ENGINE No. 3.**—New valves were placed in water ends and repairs made to lagging.

**ENGINE No. 4.**—A new set of brass sleeves was placed in water end, as well as a complete set of new valves.

#### **BOILER-ROOM.**

**BOILER No. 4.**—The mud drum was taken off and a new 5-inch combination pipe put on in its place. The resetting of boilers Nos. 4 and 5, started in 1902, was completed. Boilers Nos. 6 and 7 were also reset.

#### **BUILDING REPAIRS.**

The roof of the engine-room was repaired on the outside, about one hundred and fifty old slates being removed and replaced with new ones. The outer roof of the boiler-room and the roof of the coal shed were removed and replaced with new tar-and-gravel roofs. The old plank roadway north of the coal shed was removed and replaced with new 3-inch oak planking on good cinder foundation. The planking on the scale was renewed and a new concrete crossing built on the line of the sidewalk.

#### **WORK WHICH OUGHT TO BE DONE IN 1904.**

The interior of the roof of the engine-room ought to be painted, as it has not been painted since the erection of the building. The walls of the engine-room should also be painted, having received no attention in seven years. This station is greatly in need of a complete new boiler plant. Four of the boilers have been in service for sixteen years and have long outlived their serviceability. The Hawley Down-Draft furnaces have been in constant use on all boilers with the exception of No. 8 and No. 9 for the last twelve years; they are now practically obsolete and ought to be replaced with a more modern type.

As I have previously reported, on the grounds of this station, it is imperatively necessary that the City provide a fence for the north line of this property and a cement sidewalk on Montrose boulevard to the east side of the grounds.

#### **HARRISON STREET PUMPING STATION.**

**MR. THOMAS KAVANAGH, Engineer in Charge.**

The following is a statement of the most important work in the way of repairs and construction completed at this station during the year:

**ENGINE No. 2.**—This engine was furnished with a new set of brasses on high-pressure crank, one new piston on low-pressure, one new bucket and discharge plate complete for air pump and new pipes to water and steam gauges.

**BOILERS.**—The bottom sheets of boilers No. 2 and No. 5 were repaired and new grates were placed in all furnaces. One new cross connection was

placed on boilers and two new 6-inch Jenkins valves. A complete set of pistons, guides and connecting rods for mechanical stoker engine on Murphy furnace was furnished for the west battery.

**BUILDINGS.**—A new brick storeroom, 20 by 40 feet, one story high, was erected on the east side of the boiler-room just south of the alley. A new tar-and-gravel roof was put on the coal shed and the boiler-room roof was patched, replanked and given a new coat of tar and gravel. A greater part of the coal shed floor was renewed with 3-inch oak planking. New gutters and down spouts were placed on both boiler-room and coal shed roof. A new shower bath with two dressing-rooms was erected in the basement.

#### CENTRAL PARK AVENUE PUMPING STATION.

**MR. JAMES ASHWORTH, Engineer in Charge.**

The three 20,000,000-gallon pumping engines at this station were operated practically continuously during the year. The most important work in the way of repairs made during the year was as follows:

During August the contractors for the pumping machinery installed a "dry vacuum" pump in the engine pit. This was connected to the three engines. By means of this pump a vacuum is obtained before the engines are started. In January the electric light engine was overhauled and moved from the basement to the storeroom on the south side of the building, which had been remodeled as an engine-room. The two front headers on all the Hawley furnaces were connected with an additional circulating pipe. The lower front headers of the Hawley furnaces on boilers Nos. 2, 3 and 4 were patched. A new platform and lockers were built in the machine shop, giving additional storeroom. The entire engine-room and brick engine piers were painted. A new stairway was built to the coal-conveying machinery. As the only means of access to this machinery was by ladder, which was dangerous and inconvenient, the new stairway makes this machinery more accessible.

Some of the work necessary to complete this station is as follows: An upper floor on the wet well connecting with the engine platforms; laying cement sidewalk; building ventilators over the engine and boiler-rooms, and the grading of the grounds east of the building as far as the limits of the City property at St. Louis avenue.

#### SPRINGFIELD AVENUE PUMPING STATION.

**MR. DANIEL L. SULLIVAN, Engineer in Charge.**

During March of this year the machine shop for the station was provided with one lathe, one drill press, a grind stone and an emery grinder, all being run by a 12 horse-power vertical engine.

In regard to important repairs and improvements during the year I would state that all the sewer pipe drains were changed so as to drain water into the catch basins instead of the boiler-room basement.

On February 14th the 36-inch main attached to No. 2 engine was closed owing to a crack in the main due to the settling of same. It was repaired and water turned on February 28th.

March 1st No. 2 engine was started for the first time since the accident in September, 1902, the Henry R. Worthington Company having put in a new intermediate cylinder and new compensator guide frame, and straightened crosshead twisted at the time of the accident.

In March forty-eight new teeth were placed in the rolls of the crusher engine, these rolls of the tetrahedron type, having redrilled and retapped holes in the rolls with 1-inch pipe tap. On March 10th No. 2 engine was shut down on account of the breaking of a large brass sleeve on the compensator system, the same being replaced by the Worthington Company by a new one.

In March the brick flue rings were renewed and the furnaces thoroughly overhauled in all the boilers. On March 19th a test was made with saturated steam on engine No. 2 to ascertain the amount of duty obtained per 1,000 pounds of steam.

In April the breeching was entirely covered with asbestos mill boarding. This covering, as well as that on the boilers and piping, was badly damaged by rain storms during the time the roof was off of the boiler-room, and same will have to be repaired as soon as possible.

The roofs on the engine-room and boiler-room have since been completed and are now in good condition.

In July a new piston rod was put in the electric engine and a new governor on crusher engine.

In August a new iron walk with railing was erected at the south end of the coal hopper, and conveyor engine also repaired. In August the entire boiler plant was completed for the use of superheated steam.

In September new iron ladders and platforms were erected extending to each of the steam header valves over the boilers, making them of easy access, the work being done by the Henry R. Worthington Company.

In November a new 5-inch steam pipe header was put in, the same being fitted out with Crosby spring seat valves. The boiler feed pumps, circulating and bilge pumps were fitted up with new lubricating pumps.

November 9th an official test was made on No. 3 engine, starting at 9:30 A. M. and finishing at 9:30 P. M. the following day. November 12th an official test started on No. 1 engine at 9:30 A. M. and finished the following day at 9:30 A. M. November 16th an official test on No. 2 engine

started at 10:15 A. M. and finished at 10:15 A. M. the following day. The City painters are now painting the inside of the station and have completed two coats of paint over the entire engine-room.

#### WASHINGTON HEIGHTS PUMPING STATION.

MR. JOHN E. THOME, Engineer in Charge.

Last year's overhauling put this plant in such shape that very little repairing or additional machinery was needed during 1903. The only new machinery installed was a boiler feed pump, and, with the old pump thoroughly overhauled, that part of the machinery is provided for for some time to come. No. 1 pump received a general overhauling. Eight new steam joints were put on the high and low pressure cylinders. The main rods and valve stems were turned up and glands bushed. All pins were turned up and brasses refitted. The tubes in the surface condenser were repacked. These repairs put this pump in first-class condition. The roof of the station was repaired. The wooden partition between the boiler and coal room was repaired and painted, and a new cable put on the coal door.

In regard to the requirements of the station for the coming year, I again respectfully suggest the installation of a new pump of not less than 2,500,000 gallons capacity. The consumption of water in the district supplied by this station has, since the laying of the 16-inch main, risen to such a degree that it is absolutely necessary to provide additional machinery, as the reserve pump would be entirely too small to take care of the increased pumpage in case of a break-down to pump No. 1, which has been running continuously during the year.

In order to prevent rust from taking hold of the steel tank and tower, which have been in service since 1901, both should be repainted, the tank inside as well as out. The bath tub faucets and, in short, all plumbing in the station should be renewed or repaired. With these additions and improvements the station will be properly equipped for some time to come.

#### NORWOOD PARK PUMPING STATION.

MR. NELS SAMPSON, Engineer in Charge.

The artesian wells from which this station takes its supply have proven adequate for all demands. The flues were expanded in boiler No. 1 and in boiler No. 2 a new blow-off flange was inserted, various connections to same were renewed, and steam pipes were covered with 1-inch asbestos fireproof covering. Various minor repairs were made to the steam connections to the deep well pump. Small repairs were also made on the gravel roof over the coal shed. The coal shed floor was renewed.

## WATER WORKS SHOPS.

MR. JAMES GARVEY, Superintendent.

During the year our stock of patterns was largely increased by the receipt of patterns belonging to bridges turned over to the City by the Chicago Sanitary District. These patterns and all others in the shop were repaired and put in shape for use. A large number of new patterns was made for the Water Pipe Extension and quite a number made for the Ninety-fifth street bridge.

The general repairing and overhauling in the shop was quite extensive, including the calcimining of the shop ceiling and interior brick walls, putting in new ceiling in the washroom, painting the windows, doors and interior woodwork, repairing the steam-heating system, repairing the roof of the shop, overhauling and repairing lathes, drill presses and other machinery, lining up shafting, and repairing belting.

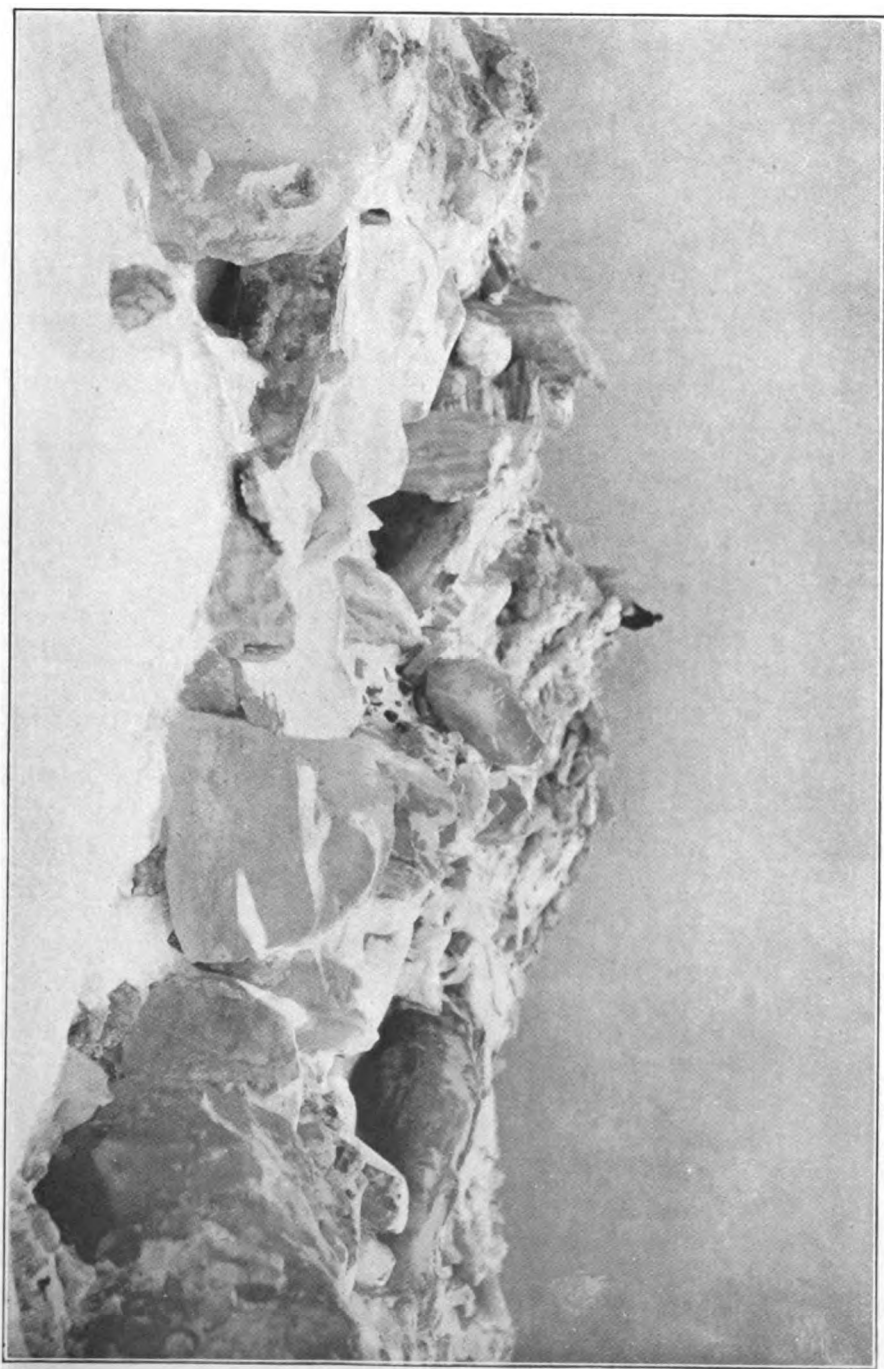
The ventilator in the blacksmith shop was remodeled, the stack being raised 14 feet and a blower installed, which makes the entire shop free from smoke and gas from the forges.

One new 12-inch lathe and one new drill press and the necessary counter shafting were added to the shop complement.

The volume of work at the shop is constantly increasing, and is becoming more diversified in its nature each year, the miscellaneous repair work for the various bureaus of the Department of Public Works showing a large increase over that of the year 1902, the pumping stations, bridges and water pipe extension getting the larger proportion of such work. The Main street, Ninety-fifth street, State street, Canal street and Madison street bridges were especially conspicuous in the item of repairs made. A total of thirty-five bridges appears in the itemized report of the shop. The repair of old hydrants compares favorably with the report of last year, a slight increase being shown in the number of hydrants of all sizes repaired.

The work of the Meter department of the shop has been put on a new system, so no comparison with last year's report of that department can be made.

The past year was a busy one in the shop. The total volume of work done was \$82,891.88 as against \$71,445.94 for 1902. Following is a detailed statement showing the number of hydrants and valves manufactured and shipped in the year 1903:



ICE AT TWO-MILE CRIB — JANUARY, 1904.





HYDRANTS.	Single Hydrants.	2½" Double Hydrants.	3½" Double Hydrants.	4" Double Hydrants.
On hand January 1st, 1903.....	6	21	3	1
Manufactured in 1903 .....	87	353		14
Total .....	93	374	3	15
Shipped during 1903 .....	79	374	1	13
On hand January 1, 1904 .....	14	0	2	2

VALVES.	4-Inch.	6-Inch.	8-Inch.	12-Inch.	16-Inch.	24-Inch.
On hand January 1, 1903	12	24	11	9		1
Manufactured in 1903 ...	72	159	92	23	3	3
Total .....	84	183	103	32	3	4
Shipped during 1903.....	66	154	88	21	1	3
On hand January 1, 1904	18	29	15	11	2	1

## WATER TUNNELS IN USE.

No changes were made in the various water tunnel systems. The mileage remains the same as reported in the annual report for 1902, as follows:

5 feet diameter, length.....	18,885 feet
6 feet diameter, length.....	44,170 feet
7 feet diameter, length.....	61,896 feet
8 feet diameter, length.....	51,695 feet
10 feet diameter, length.....	22,699 feet

Total.....198,795 feet, or 37.7 miles

TABLE "A" — MONTHLY PUMPAGE IN GALLONS, 1908.

MONTH.	14th Street Pumping Station.	68th Street Pumping Station.	22d Street Pumping Station.	Chicago Avenue Pumping Station.	Springfield Avenue Pumping Station.	Central Park Avenue Pumping Station.	Harrison Street Pumping Station.	Lake View Pumping Station.	The City as a Whole.
January .....	2,245,722,595	1,990,133,210	1,679,048,800	1,836,046,245	1,098,141,080	1,725,087,985	1,001,312,244	924,680,391	11,989,882,350
February ....	2,104,916,835	1,815,725,250	1,622,768,200	1,240,462,455	970,273,260	1,525,546,570	889,973,032	828,182,155	10,997,838,077
March .....	2,310,376,838	1,875,500,370	1,716,058,800	1,399,540,795	1,087,523,630	1,489,538,150	980,973,879	947,707,820	11,657,215,267
April .....	2,242,651,138	1,692,871,380	1,522,775,000	1,288,384,375	1,069,861,880	1,559,760,050	487,886,780	811,171,850	10,696,151,408
May .....	2,226,045,768	1,805,407,170	1,417,148,400	1,315,822,158	1,191,194,890	1,666,843,840	692,370,924	845,429,966	11,159,762,106
June .....	2,107,387,843	1,774,588,570	1,259,977,800	1,389,023,300	1,283,059,810	1,601,856,020	972,780,620	790,649,067	11,179,942,080
July .....	2,186,051,680	1,988,795,910	1,498,347,200	1,529,568,658	1,245,551,130	1,768,577,100	1,001,166,790	916,094,989	12,075,153,402
August .....	2,146,282,448	1,981,982,760	1,566,748,200	1,399,461,690	1,096,000,820	1,654,196,900	997,618,774	916,813,080	11,709,094,622
September .....	2,091,791,366	1,889,417,300	1,519,914,600	1,245,287,245	1,060,975,170	1,682,706,980	965,262,632	898,411,210	11,274,766,453
October .....	2,141,641,267	1,864,542,320	1,559,625,400	1,396,156,450	1,155,750,290	1,508,677,670	998,025,058	924,297,940	11,543,714,350
November .....	1,918,478,990	1,707,964,270	1,550,819,600	1,394,307,770	1,019,540,080	1,254,855,000	976,471,309	901,648,973	10,714,696,552
December .....	1,954,634,279	1,956,467,275	1,711,374,600	1,644,094,815	1,176,208,210	1,906,313,940	997,146,225	951,184,495	12,299,423,889
<b>Totals .....</b>	<b>25,675,991,027</b>	<b>22,194,395,785</b>	<b>18,619,596,600</b>	<b>16,567,255,945</b>	<b>13,494,079,650</b>	<b>19,286,944,935</b>	<b>10,912,895,882</b>	<b>10,556,270,886</b>	<b>137,245,830,811</b>
<b>Total Pumpage Washington Heights.....</b>									<b>249,565,345</b>
<b>Total Pumpage Norwood Park.....</b>									<b>26,806,000</b>
<b>Grand Total.....</b>									<b>137,515,751,966</b>



.....

TABLE "B"—OPERATIONS OF PUMPING STATIONS DURING 1908.

	Fourteenth Street Pumping Station.	Sixty-eighth Street Pumping Station.	Twenty-second Street Pumping Station.	Chicago Avenue Pumping Station.
Bituminous coal, tons.....	19,767.44	19,109.44	18,680.44	19,286.44
Price of bituminous coal, per ton.....	\$2.88	\$2.44	\$2.49	\$2.82
Cost of coal on hand January 1, 1908.....	\$ 1,276.00	\$ 540.42	\$ 548.38	\$ 441.00
Cost of coal delivered during 1908.....	57,318.65	46,880.39	46,587.55	56,324.07
Total.....	\$58,594.65	\$47,420.81	\$47,085.93	\$56,765.07
Cost of coal on hand January 1, 1904.....	1,522.09	868.33	644.60	615.72
Cost of coal burned during 1908.....	57,072.56	46,562.48	46,441.38	56,149.35
Cost of coal for baths, shops, etc.....	676.40	35.59	2,474.13	889.78
Cost of coal for operation.....	56,396.16	46,516.89	43,967.20	55,309.57
Salaries.....	41,142.64	44,665.10	35,314.32	46,521.05
Cost of oils, waste and grease.....	1,733.42	1,798.47	1,022.45	1,588.26
Cost of miscellaneous supplies.....	5,559.25	4,566.37	3,615.80	6,040.35
Total cost of operation.....	104,880.47	97,537.83	89,919.77	109,459.23
Repairs to buildings, pumps, engines and boilers.....	17,053.49	8,195.07	10,827.08	7,511.68
Cost of new work charged to repairs.....	2,580.00	5,960.00	3,875.00	4,500.00
Cost of new work charged to construction.....	73.21	.....	.....	118,866.74
Cost of operation, maintenance and construction.....	124,507.17	111,692.99	98,621.85	235,327.63
Cost of coal for baths, shops, etc.....	676.40	35.59	2,474.13	889.78
Cost of coal on hand January 1, 1904.....	1,522.09	868.33	644.60	615.72
Total.....	\$126,705.66	\$112,596.82	\$101,740.58	\$236,763.13
Cost of coal on hand January 1, 1908.....	1,276.00	540.42	548.38	441.00
Total expense incurred in 1908.....	125,429.66	112,046.40	101,192.30	236,342.13
Total gallons pumped during the year.....	25,675,991.677	22,194,336,785	18,619,596,600	16,567,235,946
*Per cent of pumpage of City as a whole.....	18.7	16.2	13.6	12.0
Greatest amount pumped in one day, gallons.....	(Feb. 19) 79,086,218	(Feb. 18) 71,227,800	(Feb. 17) 64,087,800	(Dec. 26) 60,486,680
Least amount pumped in one day, gallons.....	(July 24) 48,867,440	(May 31) 52,662,070	(July 12) 38,544,600	(Sept. 20) 32,310,600
*Average pumped per day, gallons.....	70,345,181	60,806,564	51,012,588	45,389,742
Average head against pumps, in feet.....	111.2	113.0	98.0	105.0
Cost of fuel pumping 1,000,000 gallons one foot high.....	1.45c	1.55c	2.45c	3.45c
Total operative cost of pumping 1,000,000 gallons one foot high.....	3.45c	3.45c	4.15c	6.15c

\* Except Norwood Park and Washington Heights Pumping Stations.

TABLE "B"—OPERATIONS OF PUMPING STATIONS DURING 1903—CONTINUED.

	Springfield Avenue Pumping Station.	Central Park Avenue Pumping Station.	Harrison Street Pumping Station.	Lake View Pumping Station.	The City as a Whole.
Bituminous coal, tons.....	10,391,188	13,580,388	8,674,888	9,224,888	118,645,888
Price of bituminous coal, per ton.....	\$2.50	\$2.53	\$2.85	\$2.81	\$2.69
Cost of coal on hand January 1, 1903.....	\$ 232.75	\$ 166.62	\$ 88.76	\$ 18.83	\$ 3,312.76
Cost of coal delivered during 1903.....	26,140.25	34,511.22	24,742.07	26,339.82	318,793.52
Total.....	\$26,373.00	\$34,677.80	\$24,830.83	\$26,358.65	\$322,106.28
Cost of coal on hand January 1, 1904.....	420.87	307.13	128.12	394.07	4,900.93
Cost of coal burned during 1903.....	25,952.13	34,370.71	24,702.71	25,964.08	317,205.35
Cost of coal for baths, shops, etc.....	1.22	78.55	.....	.....	4,105.67
Cost of coal for operation.....	25,950.91	34,292.16	24,702.71	25,964.08	313,099.68
Salaries.....	26,050.38	31,310.62	24,555.38	28,363.62	277,913.11
Cost of oils, waste and grease.....	1,647.81	1,794.20	1,053.33	1,603.88	12,241.82
Cost of miscellaneous supplies.....	1,364.21	3,271.56	3,124.13	1,971.12	29,512.79
Total cost of operation.....	55,013.31	70,688.54	53,435.55	57,902.70	682,767.40
Repairs to buildings, pumps, engines and boilers.....	7,692.37	7,439.79	5,918.70	7,083.22	71,721.38
Cost of new work charged to repairs.....	6,500.00	3,950.00	.....	.....	27,325.00
Cost of new work charged to construction.....	48,898.58	45,000.00	.....	.....	207,828.53
Cost of operation, maintenance and construction.....	118,104.26	127,058.33	59,354.25	64,985.92	939,642.31
Cost of coal for baths, shops, etc.....	1.22	78.55	.....	.....	4,105.67
Cost of coal on hand January 1, 1904.....	420.87	307.13	128.12	394.07	4,900.93
Total.....	\$ 118,526.35	\$127,444.01	\$59,482.37	\$65,379.99	\$948,648.91
Cost of coal on hand January 1, 1903.....	232.75	166.62	88.76	18.83	3,312.76
Total expense incurred in 1903.....	118,293.60	127,277.39	59,393.61	65,361.16	945,336.15
*Total gallons pumped during the year.....	13,434,079,650	19,285,944,995	10,912,596,832	10,556,270,832	137,245,830,611
*Per cent of pumpage of City as a whole.....	9.8	14.0	8.0	7.7	100
Greatest amount pumped in one day, gallons.....	(July 3) 48,243,720	(Dec. 30) 66,638,900	(June 10) 32,557,413	(Feb. 20) 35,781,053	(Feb. 19) 432,779,559
Least amount pumped in one day, gallons.....	(Mar. 19) 13,189,940	(Nov. 4) 34,421,690	(May 4) 15,066,458	(Mar. 24) 23,506,961	(Nov. 15) 325,068,004
*Average pumped per day, gallons.....	36,805,698	52,838,205	29,896,701	28,921,290	376,015,974
Average head against pumps, in feet.....	96.3	98.6	97.9	100.1	103.8
Cost of fuel pumping 1,000,000 gallons one foot high.....	2.15c	1.56c	2.15c	2.15c	2.15c
Total operative cost of pumping 1,000,000 gals. one foot high.....	4.45c	3.15c	5.35c	5.15c	4.15c

\* Except Norwood Park and Washington Heights Pumping Stations.







**FIRE ENGINE HOUSE, 3042 FORTY-FIRST COURT.**

The preceding tables give detailed information as to pumpage, expenditures, etc. Table "A" gives the monthly and annual pumpage at the various stations. Table "B" gives the more important figures relating to quantities and expense. The appended diagram shows the daily pumpage at each station, separately and combined, with the head pumped against, as well as the temperature of the water.

## LAKE CRIBS.

### TWO-MILE CRIB.

CARL JACOBSON, Keeper.

All the iron work and machinery in and about this crib were given two coats of paint. The kitchen and storm sheds were also painted. Three new 12x12-inch oak timber heads were placed in the dock for the use of the tugs as checking posts. A number of 3x10-inch 16-foot plank was placed in the dock. The building over the Ross & Ross shaft was wrecked by a storm and required the renewal of the entire north face and various timbers to strengthen same. The plank walk leading to the lighthouse was entirely rebuilt. New sash frames and casings were put in the engine-room windows. Slight repairs were made to the wooden window sills of the living rooms. A new derrick was erected on the dock on the west face of the crib. The ice boom was rebuilt. Three new steps were cut in the breakwater to provide a landing place for the tugs. Various boiler repairs were ordered by the Boiler Inspector, and, complying with these orders, the repairs were made. Various new connections were made to the steam heating plant in order to provide more heat for the living rooms. All the tar-and-gravel roofs were recoated. A storm shed was built over the door leading from the sitting-room to west outside entrance of the crib.

### FOUR-MILE CRIB.

JOSEPH COSGROVE, Keeper.

The entire inside of the well room, a portion of the lower halls, and the inside of the lighthouse tower, including all iron work connected with these parts of the crib, were given two coats of paint. The woodwork in the kitchen and dining-room, including china case and large cupboard, was given a coat of varnish. An archtop was built over the main chimney. All down spouts and waste pipes were put in good repair. A flat boat, three clothes closets and three screen doors were made and put in place. All windows and storm windows were refitted, and six new storm windows were put in place.

**CARTER H. HARRISON CRIB.****GILBERT JOHNSON, Keeper.**

The entire tile roof over the well room was reconstructed in the following manner: The tiles were removed and 1-inch matched flooring was bolted on to Z bars which formerly held the tile in place. Over this was put a double layer of roofing felt and on top of this were fastened the old Ludowici tile by means of staples and copper wire. In making these repairs as much of the old material as possible was used in reconstructing. The entire inside of the well room, including the iron work of the roof, cylinders and steel shell of well, was given two coats of white paint and one coat of good grade white enamel. The cement floor containing the dead lights over the lamp room had sunk about 5 inches. This was raised up and given a little pitch to provide drainage. New screen doors were provided for the main entrance to the crib. Broken steam pipes and steam connections were renewed. A new wash basin was built in the engine-room. Machinery, boilers, etc., were thoroughly overhauled and given two coats of paint.

**SIXTY-EIGHTH STREET CRIB.****WILLIAM H. HUNCH, Keeper.**

The entire inside of well room, including the iron work in and about the various portions of the crib, was repainted. The walls and woodwork of four living rooms were also repainted. The old tar-and-gravel roof was removed and replaced with a new one. The crib was equipped with new storm doors and windows, and screen doors and windows put in thorough repair. Various repairs as ordered by the Boiler Inspector were made to the boilers. Lumber was delivered for the renewal of 3x10-inch planking of breakwater, but on account of heavy weather this was abandoned. The kitchen and pantry floors were covered with linoleum.

**LAKE VIEW CRIB.****PATRICK H. GRIFFIN, Keeper.**

On account of the contemplated removal of the superstructure now in place on this crib, no repairs were made on this portion of the crib during the year. The sailboat of the crib was rebuilt and boat davits provided so as to aid the launching of the boat in case of fire.





## DIVISION OF WATER PIPE EXTENSION.

MR. JAMES WALLACE, Superintendent; MR. THOMAS F. KEIRNAN, Assistant Superintendent;  
MR. GEORGE K. WHELOCK, Engineer.

There has been a continued improvement in the water pipe system during the year 1903, considerable work being done on streets under contract to be paved, small mains being replaced by those of larger size, and single with double nozzle hydrants. In the down-town district a number of new valves have been inserted, thereby decreasing size of territory shut out of water when a break occurs or repairs are made, and also lessening liability of loss from fire when mains are out of service.

In compliance with the order for a large main in Oglesby avenue from Hyde Park pumping station to Seventy-ninth street, work has been started and 3,140 feet of 36-inch pipe has been laid. This pipe is for the supply of West Pullman and will be completed in the spring of 1904.

When the tunnel at Division street and the Chicago river was changed and rebuilt the 24-inch main was removed. This has been replaced this year with a 36-inch main, thereby giving increased pressure to mains on west and northwest sides of the City.

Whenever it is found that the permanent revenue from buildings already erected on any street will yield an annual income to the City of ten (10) cents per lineal foot of pipe laid, the City executes the work, without cost to the property owners, when so ordered by the City Council.

The many demands made each year for pipe laid under this ordinance cause defects in the water system, such as "dead ends" and systems without the requisite supply, making it necessary to lay pipe for improvement of the system.

The amount of pipe of various sizes laid for circulation and on revenue was 35,678 lineal feet. The cost of laying this pipe, changing of hydrants and placing of additional valves, as noted above, is \$98,502.82, which is chargeable under the head of "Water Pipe Extension" and is a legitimate expense to be borne by the fund appropriated for that purpose.

During the year 108 estimates were prepared for water supply pipes, and plans and specifications in duplicate were prepared for contracts on 88 streets, of which 59 were completed. In addition to these streets there were 10 streets completed this year on which contracts were awarded in 1902; making a total of 69 streets, amounting to 80,345 lineal feet of various sizes of pipe at a cost of \$124,399.35. This work was executed under instructions of the City Engineer for the Board of Local Improvements.

In order to avoid delay incidental to securing water supply pipe, by special assessment, property owners deposited with the City this year the

sum of \$8,693.39 to cover the cost of laying 7,989 feet of pipe of various sizes.

During the year private meter connections were made by this division at a total cost of \$8,140.63.

The following is the total number of leaks and complaints reported to this office in 1903, all of which received prompt attention:

Repaired joint leaks in mains.....	1,584
Repaired hydrants .....	1,367
Private service pipes shut off.....	633
Private service pipes repaired by owners.....	1,295
Miscellaneous complaints .....	402
<b>Total .....</b>	<b>5,281</b>

In the building of 130 hydrant basins, 183 valve basins, one fire cistern and 7 brick piers; in the rebuilding of 291 hydrant basins, 42 valve basins, and in the repairing of 1,604 hydrant basins and 1,024 valve basins, there were used 1,024,225 brick, 4,139 barrels of cement, 695 yards of sand, 10,066 feet of 4-inch, 22 feet of 6-inch, 48 feet of 9-inch and 26 feet of 12-inch sewer pipe.

The work of filling and refilling 20,998 hydrant basins with manure, was done at a total cost of \$20,313.47. The plan of having manure shipped in carloads to the various districts, thereby enabling the employes to fill a greater number of basins each day than were filled before, which was adopted last year, has been continued during the present year, with a saving of much time and expense.

The following tables show in detail the work of this division:

#### HYDRANTS PLACED IN 1903.

DIVISION.	2¼-inch Single.	2¼-inch Double.	4-inch Double.	Total.
North.....		7	1	8
South.....		24		24
West .....	2	116		118
Hyde Park.....	5	19		24
Lake View.....	4	17		21
Lake .....	12	32		44
Jefferson.....	3	59		62
Calumet .....		31		31
Norwood Park.....				
Rogers Park.....				
<b>Total.....</b>	<b>26</b>	<b>305</b>	<b>1</b>	<b>332</b>

**HYDRANTS TAKEN OUT IN 1908, WHICH WERE REPLACED BY  
HYDRANTS OF DIFFERENT SIZE.**

DIVISION.	2¼-inch Single.	2¼-inch Double.	2½-in. Double with one 4-in. Double.	Total.
North.....	6	.....	.....	6
South.....	15	1	.....	16
West.....	6	.....	.....	6
Hyde Park.....	8	7	1	16
Lake View.....	1	8	.....	4
Lake.....	.....	1	6	7
Jefferson.....	.....	.....	.....	.....
Calumet.....	.....	.....	.....	.....
Norwood Park.....	.....	.....	.....	.....
Rogers Park.....	.....	.....	.....	.....
Total.....	86	12	7	55

**TOTAL NUMBER OF FIRE HYDRANTS AT THE CLOSE OF 1908.**

DIVISION.	2¼-inch Single.	2¼-inch Double.	3¼-inch Double.	4-inch Double.	2½-inch Double with one 4-inch Single.	Total.
North.....	880	585	.....	184	.....	1,099
South.....	740	1,182	.....	194	.....	2,116
West.....	1,672	4,569	21	286	.....	6,498
Hyde Park.....	462	1,940	22	12	601	8,087
Lake View.....	304	1,240	.....	.....	1	1,545
Lake.....	488	1,040	.....	4	1,566	3,048
Jefferson.....	297	1,413	.....	4	.....	1,714
Calumet.....	196	566	.....	.....	55	817
Norwood Park.....	6	41	.....	.....	.....	47
Rogers Park.....	.....	1	.....	.....	.....	1
Totals.....	4,495	12,577	48	584	2,228	19,922



## STOP-VALVES PUT IN DURING THE YEAR 1903.

DIVISION.	SIZE OF VALVES.						Total.
	4-inch.	6-inch.	8-inch.	12-inch.	16-inch.	24-inch.	
North.....	2	6	2	1	.....	2	13
South.....	5	21	21	2	.....	.....	49
West .....	6	40	24	10	1	.....	81
Hyde Park.....	.....	11	3	3	.....	.....	17
Lake View.....	.....	15	4	.....	.....	.....	19
Lake .....	.....	14	9	.....	.....	.....	23
Jefferson.....	.....	20	15	.....	.....	.....	35
Calumet .....	.....	8	6	2	.....	.....	16
Norwood Park.....	.....	.....	.....	.....	.....	.....	.....
Rogers Park.....	.....	.....	.....	.....	.....	.....	.....
Totals.....	18	135	84	18	1	2	258

During the year 1903 there were taken out in the North Division one 4-inch valve; in the South Division one 4-inch valve; in Hyde Park one 4-inch valve; in Lake View four 4-inch valves; in Jefferson two 6-inch valves: Total, seven 4-inch and two 6-inch valves, all of which were replaced by valves of different size.

TOTAL NUMBER AND SIZE OF VALVES IN USE AT THE CLOSE OF 1903.

DIVISION.	SIZE OF VALVES.													Total.
	3-inch.	4-inch.	6-inch.	8-inch.	10-inch.	12-inch.	14-inch.	16-inch.	18-inch.	20-inch.	24-inch.	30-inch.	36-inch.	
North.....	.....	131	534	331	.....	47	.....	13	.....	.....	21	.....	3	1,080
South.....	.....	158	830	718	1	99	.....	25	.....	.....	38	2	16	1,887
West.....	.....	553	2,754	1,421	.....	385	.....	79	.....	.....	34	.....	27	5,202
Hyde Park.....	.....	73	1,289	357	20	102	4	59	.....	1	23	.....	9	1,937
Lake View.....	1	190	979	216	.....	54	3	17	.....	3	14	1	5	1,433
Lake.....	.....	109	1,411	447	2	98	14	38	2	.....	25	4	2	2,152
Jefferson.....	.....	5	850	451	.....	96	.....	12	.....	.....	32	5	8	1,459
Calumet.....	.....	5	298	117	.....	14	.....	8	.....	.....	1	.....	.....	488
Norwood Park.....	.....	14	16	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	37
Rogers Park.....	.....	.....	4	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	6
Totals.....	1	1,237	8,960	4,067	23	845	21	251	2	4	188	12	70	15,631

## PIPE LAID IN NORTH DIVISION.

STREET.	FROM	TO	Approx. Amount in Feet.	Diameter in Inches.
Burling .....	Center .....	Belden avenue .....	1,888	6
Division .....	Tunnel .....	Under Chicago river. {	585	86
Garfield avenue .....	Racine avenue .....	75 ft. E. of Lewis ...	85	24
Gault court .....	Oak .....	Division .....	148	6
*Indiana .....	993 ft. E. of Seneca...	Peshtigo court .....	1,077	6
*Peshtigo court .....	Crossing .....	Indiana .....	676	6
Peshtigo court .....	Indiana .....	Illinois .....	51	6
			287	6
Total .....			4,697	
Add branch pipe for hydrants .....			96	6
Total feet of pipe laid in North Division....			4,793	

\*Laid by Special Assessment.

## PIPE LAID IN SOUTH DIVISION.

STREET.	FROM	TO	Approx. Amount in Feet.	Diameter in Inches.
*Alley first west of State.	Twentieth .....	Twenty-first .....	{ 192	8
Artesian avenue .....	Crossing .....	Thirty-ninth .....	238	6
Elmwood place .....	Thirty-seventh .....	Thirty-eighth .....	84	6
Hart avenue .....	Crossing .....	Thirty-ninth .....	668	6
Mozart .....	Thirty-fifth .....	Thirty-sixth .....	42	6
Twenty-seventh .....	Crossing .....	Princeton avenue....	624	6
			85	6
Total .....			1,828	
Add branch pipe for hydrants .....			288	6
Total feet of pipe laid in South Division....			2,116	

\*Laid by Deposit.

## PIPE LAID IN WEST DIVISION.

STREET.	FROM	TO	Approximate Amount in feet.	Diameter in inches.
*Augusta.....	Austin avenue.....	Willow avenue.....	3,950	8
†Augusta.....	Western avenue.....	Leavitt.....	1,269	8
†Austin avenue.....	Augusta.....	Division.....	1,311	6
Campbell avenue.....	Crossing.....	Harrison.....	32	6
Chicago avenue.....	N. Fifty-second ave.	N. Fifty-third ave...	644	12
†Division.....	Austin avenue.....	Lewis.....	1,640	6
Division.....	N. Forty-sixth ave.	N. Forty-eighth ave.	1,358	12
Forty-first court, S.....	65 ft. N. of Adelaide place..	Southward.....	90	6
*Forty-first court, S.....	Twenty-fifth place..	Southward.....	156	6
Forty-second court, S.....	Crossing.....	W. Twenty-sixth....	30	6
†Forty-third avenue, S.....	W. Twenty-sixth....	W. Twenty-seventh..	696	6
Forty-fifth court, S.....	Congress.....	Southward.....	144	6
†Forty-eighth avenue, N.....	North avenue.....	Augusta.....	4,006	12
*Fiftieth court, N.....	Chicago avenue.....	Augusta.....	1,289	6
*Fisk.....	W. Twenty-second..	Southward.....	811	6
†Franklin avenue.....	Augusta.....	Division.....	1,309	6
†Harding avenue, S.....	W. Twenty-second..	Northward.....	28	6
Homan avenue.....	Harrison.....	Lexington.....	536	8
†Howard avenue.....	Augusta.....	Division.....	1,310	6
Huron.....	N. Fifty-first avenue.	Eastward.....	480	6
†Iowa.....	N. Forty-eighth ave.	N. Forty-ninth ave..	628	6
†Iowa.....	Willow avenue.....	N. Fifty-second ave..	1,396	8
†Kamerling avenue.....	215 ft. W. of N. Fortieth ave.	N. Forty second ave.	1,050	6
†Lewis.....	Augusta.....	Division.....	1,306	6
Marshfield avenue.....	Van Buren.....	Jackson boulevard..	457	6
Nineteenth.....	May.....	Center avenue.....	416	6
†Oakley avenue.....	Crossing.....	Augusta.....	66	6
†Ogden avenue.....	Albany avenue.....	Kedzie avenue.....	704	6
†Ogden avenue.....	Springfield avenue..	Harding avenue.....	375	6
†Ogden avenue.....	St. Louis avenue.....	Central Park avenue.	710	6
Park avenue.....	S. Forty-sixth avenue	S. Forty-seventh ave.	710	6
†Polk, W.....	83 ft. E. of Douglas boulevard.	Lawndale avenue...	348	6
†Prairie avenue.....	Augusta.....	Division.....	1,307	6
Sacramento avenue.....	200 ft. S. of W. Twenty-eighth.	Southward.....	432	6
Seward.....	Eighteenth.....	Northward.....	26	8
†Springfield avenue.....	W. Twenty-eighth..	W. Thirty-first.....	1,350	6
St. Louis avenue.....	Flournoy.....	Northward.....	102	8
†Taylor, W.....	S. Fortieth avenue..	S. Forty-first avenue.	652	6
†Third avenue.....	Augusta.....	Thomas.....	620	6
†Thirteenth place.....	St. Louis avenue.....	Central Park avenue.	661	6
*Twentieth, W.....	S. Fortieth avenue..	S. Forty-first avenue.	695	6
*Twenty-second, W.....	S. Forty-fourth ave..	S. Forty-sixth ave...	1,266	8
Twenty-second, W.....	Harding avenue.....	S. Fortieth avenue..	315	6
†Twenty-sixth, W.....	S. Forty-second ave..	S. Forty-sixth ave...	2,636	8
Twenty-sixth, W.....	Springfield.....	Avers avenue.....	335	6
†Twenty-eighth, W.....	S. Forty-fourth ave..	S. Forty-fifth court..	1,029	8
Union court.....	Crossing.....	Harrison.....	38	6
†Webster avenue.....	C. & N. W. Ry.....	35 ft. W. Chicago river...	356	6
†Willow avenue.....	Augusta.....	Iowa.....	684	8
Total.....			41,689	
Add branch pipe for hydrants.....			24	4
Add branch pipe for hydrants.....			1,392	6
Total feet of pipe laid in West Division...			43,105	

\*Laid by Deposit. †Laid by Special Assessment.

## PIPE LAID IN HYDE PARK.

STREET.	FROM	TO	Approximate Amount in feet.	Diameter in inches.
Buffalo avenue.....	183d.....	186th.....	2,007	6
Cornell avenue.....	Fifty-third.....	Northward.....	104	4
Eighty-eighth place....	South Park avenue..	Calumet avenue....	449	6
Fifty-first.....	Lake avenue.....	East End avenue....	768	12
Jeffrey avenue.....	Ninety-third.....	Northward.....	468	8
†Ninety-third.....	Kimbark avenue....	Vaughn avenue.....	187	6
Oglesby avenue.....	340 ft. S. of Sixty-eighth	84 ft. S. of Seventy-third.	8,140	36
†107th.....	State.....	Michigan avenue....	610	6
†Rhodes avenue.....	Seventy-third.....	Northward.....	264	6
†Seventy-third.....	Crossing.....	Rhodes avenue.....	72	8
†Seventy-fourth.....	Yates avenue.....	Phillips avenue....	421	6
†State.....	105th.....	106th place.....	982	8
State.....	106th place.....	107th.....	324	8
†Vaughn avenue.....	Ninety-third.....	Ninety-fourth.....	708	6
Total.....			10,449	
Add branch pipe for hydrants.....			60	4
Add branch pipe for hydrants.....			228	6
Total feet of pipe laid in Hyde Park.....			10,787	

† Laid by Special Assessment.

## PIPE LAID IN LAKE VIEW.

STREET.	FROM	TO	Approximate Amount in feet.	Diameter in inches.
†Ainslie .....	Clark .....	E. L. of Ashland avenue ....	427	6
Ainslie .....	E. Ravenswood Park.	{ First alley E. of E. } { Ravenswood Park }	178	6
Barry avenue .....	Clark .....	Evanston avenue ....	1,315	6
Burling .....	Crossing .....	Dewey place .....	84	6
Devon avenue .....	Southport avenue .....	Perry .....	647	8
Dewey place .....	Halsted .....	Clark .....	1,174	6
*Dover .....	Sunnyside avenue .....	Montrose avenue .....	670	6
*Hood avenue .....	Southport avenue .....	Clark .....	1,344	6
Hoyne avenue .....	Bradley place .....	Southward .....	115	6
Hoyne avenue .....	Waveland avenue .....	Northward .....	260	6
Irving avenue .....	Lawrence avenue .....	140 ft. S. of Ainslie ..	460	6
Kenmore avenue .....	62 ft. N. of Buena avenue ..	40 ft. S. of Buena avenue ..	204	6
*Lewis .....	Waveland avenue .....	Grace .....	712	6
*Noble avenue .....	31 ft. W. of Lincoln ..	160 ft. E. of Lincoln ..	257	6
†Perry .....	Lill avenue .....	Wrightwood avenue ..	342	6
†Perry .....	Wrightwood avenue ..	Diversey avenue .....	1,284	6
†Ridge avenue .....	Clark .....	Peterson avenue .....	670	8
Southport avenue .....	Crossing .....	Devon avenue .....	28	8
Western avenue .....	75 ft. N. of Leland avenue ..	Northward .....	100	8
Wilson avenue .....	W. Ravenswood Park	N. Lincoln .....	389	6
Wolfram .....	Ashland avenue .....	Westward .....	197	6
Total .....			10,702	
Add branch pipe for hydrants .....			48	4
Add branch pipe for hydrants .....			204	6
Total feet of pipe laid in Lake View .....			10,954	

\* Laid by Deposit.

† Laid by Special Assessment.

## PIPE LAID IN TOWN OF LAKE.

STREET.	FROM	TO	Approximate Amount in feet.	Diameter in inches.
†Alley 1st S. of Garfield boulevard.	Robey.....	103 ft. W. of Hamilton avenue.	958	8
†Ada.....	Connecting.....	Seventy-first.....	5	6
Artesian avenue.....	570 ft. S. of Thirty-ninth...	Southward.....	493	6
†Bishop.....	Crossing.....	Seventy-first.....	51	6
†Carpenter.....	Eighty-fourth.....	220 ft. N. of Eighty-fifth...	379	6
†Carpenter.....	Eighty-sixth.....	Eighty-seventh.....	685	6
Forty-third.....	California avenue...	Westward.....	150	8
Garfield boulevard.....	Shields avenue.....	Stewart avenue.....	284	6
Green.....	S. L. of Eighty-fourth.	Southward.....	50	6
Hoyne avenue.....	Garfield boulevard..	Southward.....	120	6
†Justine.....	Connecting.....	Seventy-first.....	7	6
†Lafin.....	Crossing.....	Seventy-first.....	55	6
†Lincoln.....	Seventy-second.....	Seventy-third.....	640	6
†Loomis.....	Crossing.....	Seventy first.....	11	6
			43	8
†Morgan.....	Eighty-fourth.....	Eighty-fifth.....	568	8
†Peoria.....	Eighty-fourth.....	Southward.....	173	6
†Robey.....	Fifty-fourth.....	First alley S. of Garfield bld.	1,128	6
†Sangamon.....	Eighty-fourth.....	Southward.....	240	6
†Sangamon.....	Eighty-fifth.....	Southward.....	837	6
†Seventy-first.....	Ashland avenue.....	Ada.....	1,640	8
†Seventy-third.....	Robey.....	Lincoln.....	660	8
†Sixtieth place.....	Homan avenue.....	Spaulding avenue...	665	6
Sixty-first place.....	St. Louis avenue...	Eastward.....	465	6
Washtenaw avenue.....	Forty-fourth.....	Southward.....	281	6
†Troy.....	Sixty-third.....	300 ft. S. of Sixty-sixth...	2,347	6
Western avenue.....	440 ft. S. of Thirty-ninth...	Southward.....	328	6
†Winchester avenue.....	Seventy-second.....	Seventy-third.....	640	6
Total.....			18,288	
Add branch pipe for hydrants.....			144	4
Add branch pipe for hydrants.....			884	6
Total feet of pipe laid in Town of Lake...			18,816	

† Laid by Special Assessment.

## PIPE LAID IN JEFFERSON.

STREET.	FROM	TO	Approximate Amount in feet.	Diameter in inches.
Alley 1st W. of Humboldt boulevard.	Belden avenue.....	Northward.....	800	6
Addison.....	Kedzie avenue.....	Elston avenue.....	290	8
Belden avenue.....	Crossing.....	Central Park avenue.	41	6
Belmont avenue.....	N. Fortieth avenue..	Eastward.....	865	8
Bernard.....	Crossing.....	Noble avenue.....	16	6
† Bloomingdale avenue...	N. Fifty-first avenue.	N. Fifty-second ave.	783	8
Byron.....	Springfield avenue..	Harding boulevard..	260	6
Central Park avenue...	Dickens avenue.....	Northward.....	190	8
* Central Park avenue...	370 ft S of Dunning.	Southward.....	72	8
Central Park avenue...	Humboldt avenue....	Belden avenue.....	656	8
Central Park avenue...	Irving Park blvd....	Northward.....	120	6
Central Park avenue...	Montrose boulevard.	Southward.....	108	6
† Christiana avenue.....	Irving Park blvd....	Grace.....	1,289	6
† Cornelia.....	Connecting.....	Hamlin avenue.....	23	6
* Dakin.....	N. Fifty-ninth ave..	Westward.....	266	6
Dakin.....	N. Fortieth avenue..	Springfield avenue..	655	6
† Dickens avenue.....	N. Forty-eighth ave.	Eastward.....	443	6
† Fifty-fourth court, N...	Carmen avenue.....	Foster avenue.....	665	6
Fifty-fourth court, N...	Lawrence avenue....	Southward.....	275	6
Fortieth avenue, N....	Milwaukee avenue..	Roscoe.....	485	8
Forty-fourth avenue, N.	Willson avenue.....	Southward.....	40	6
† Forty-seventh ave., N.	Fullerton avenue....	Armitage avenue....	2,636	6
† Forty-eighth avenue, N.	Crossing.....	North avenue.....	45	8
† Foster avenue.....	N. Fifty-fourth court	Westward.....	135	8
† Francisco.....	W. Grace.....	W. Addison.....	1,810	6
† Grace.....	Humboldt.....	Francisco.....	350	8
† Hamlin avenue.....	Armitage avenue....	Cortland.....	625	8
† Hamlin avenue.....	Cornelia.....	Roscoe.....	642	8
Hamlin avenue.....	Fullerton avenue....	Northward.....	469	8
† Irving Park boulevard..	Kedzie avenue.....	Sacramento avenue..	1,072	8
† Irving Park boulevard..	Kimball avenue.....	Christiana avenue...	265	8
Linden avenue.....	{ 164 ft. N. W. of N. }	Northwestward.....	172	6
	{ Forty-second ave. }			
Lyndale avenue.....	Crossing.....	Central Park avenue. }	6	8
			35	6
Lyndale avenue.....	{ 337 ft. W. of Lawn- }	Westward.....	140	6
	{ dale avenue.... }			
† McLean avenue.....	N. Fortieth avenue..	C., M. & St. P. R. R..	584	6
Melrose.....	{ 190 ft. E. of Call- }	Eastward.....	459	6
	{ fornia avenue.. }			
† Nelson.....	Paulina.....	Eastward.....	203	6
Noble avenue.....	Gresham.....	Bernard.....	192	6
† North avenue.....	Crossing.....	N. Forty-eighth ave.	70	12
† Oakdale avenue.....	Ridgeway avenue...	{ 155 W. of Central }	628	6
		{ Park avenue... }		
† O'Brien avenue.....	Humboldt avenue....	Fullerton avenue....	1,387	6
† Ridgeway avenue.....	186 ft. S. of Cortland.	Bloomingdale road..	385	6
Sacramento avenue....	Diversey avenue.....	Southward.....	517	8
† Seventieth avenue, N...	Fullerton avenue....	Schubert avenue....	1,948	8
Springfield avenue....	Byron.....	Grace.....	650	6
† Syracuse avenue.....	Belle Plaine avenue.	Berteau avenue.....	707	6
† Troy.....	Irving Park blvd....	Montrose avenue....	2,562	6

\* Laid by Deposit.

† Laid by Special Assessment.



## PIPE LAID IN JEFFERSON — CONTINUED.

STREET.	FROM	TO	Approximate Amount in feet.	Diameter in inches.
Warwick avenue.....	N. Fortleth avenue..	N. Forty-first court..	879	6
Whipple.....	Crossing.....	Diversey avenue....	94	8
† Whipple.....	Diversey avenue....	Schubert.....	610	8
Wilson avenue.....	{ 64 ft. W. of N. } Forty-fourth ct. }	N. Forty-fourth ave.	468	8
Total.....			27,487	
Add branch pipe for hydrants.....			86	4
Add branch pipe for hydrants.....			708	6
Total feet of pipe laid in Jefferson.....			28,181	

† Laid by Special Assessment.

## PIPE LAID IN CALUMET DISTRICT.

STREET.	FROM	TO	Approximate Amount in feet.	Diameter in inches.
† Butler.....	123d.....	124th.....	666	6
† Logan avenue.....	Ninety-fifth.....	Ninety-ninth.....	2,756	8
† Lowe avenue.....	175 ft. N. of Ninetieth	C. R. I. & P. R. R. right-of-way	505	6
† Morgan.....	60 ft. N. of Eighty-ninth	Ninety-first.....	1,424	6
† Morgan.....	115th.....	117th.....	1,886	6
† Ninety-fifth.....	Vincennes Road....	Logan avenue.....	362	8
† Ninety-ninth.....	Logan avenue.....	Vincennes Road....	360	8
† 101st.....	Prospect avenue....	Wood.....	1,274	8
* 103d.....	12 ft. E. of Western avenue..	Westward.....	21	8
107th.....	Connecting.....	State.....	52	12
† 107th.....	Wentworth avenue..	State.....	1,267	12
116th.....	Wallace.....	Eastward.....	815	6
Total.....			9,888	
Add branch pipe for hydrants.....			872	6
Total feet of pipe laid in Calumet.....			10,210	

\* Laid by Deposit.

† Laid by Special Assessment.

### RECAPITULATION OF PIPE LAID DURING 1903, INCLUDING HYDRANT BRANCHES.

DIVISION.	DIAMETER OF PIPE IN INCHES.						Total length of Pipe in feet.
	4-inch.	6-inch.	8-inch.	12-inch.	24-inch.	36-inch.	
North .....		4,178			35	585	4,798
South .....		2,024	192				2,216
West .....	24	24,249	12,824	6,008			43,105
Hyde Park....	164	4,819	1,846	768		3,140	10,787
Lake View....	48	9,466	1,440				10,954
Lake .....	144	9,653	4,019				13,816
Jefferson.....	36	17,988	10,087	70			28,181
Calumet.....		5,118	8,773	1,319			10,310
Norwood Park.							
Rogers Park...							
Totals .....	416	77,490	34,181	8,165	35	3,725	124,012

TABLE SHOWING AMOUNT OF PIPE IN THE CITY OF CHICAGO  
AT THE CLOSE OF 1903.

DIAMETER OF PIPE IN INCHES.	1902	1903			
	Amount in use in feet.	Amount taken up or aban- doned in feet.	Amount laid in feet.	Grand total in feet, in use at the close of 1903.	Grand Total in miles.
48	2,873			2,873	0.1118
36	197,641		3,725	201,366	38.740
30	38,291			38,291	7.1118
28	160			160	0.1118
24	346,755	620	35	346,170	65.1118
20	7,931			7,931	1.1118
18	1,000			1,000	0.1118
16	831,686			831,686	62.1118
14	22,552			22,552	4.1118
12	587,710		8,165	595,875	112.1118
10	26,860			26,860	5.1118
8	2,118,252		34,181	2,152,433	407.1118
6	5,466,198	1,085	77,490	5,542,648	1,049.1118
4	974,056	9,443	416	983,915	182.1118
3	8,996	2,007		6,989	1.1118
Totals in feet....	10,130,956	18,105	124,012	10,241,863	
Totals in miles..	1,918.1118	2.1118	23.1118	1,939.1118	1,939.1118

## DIVISION OF BRIDGES AND VIADUCTS.

MR. THOMAS G. PIHLFELDT, Structural Iron Designer in Charge.

MR. ALEXANDER VON HABO, Structural Iron Designer.

During the year 1903 plans and specifications for the following structures were prepared:

For the substructure and superstructure of a new bascule bridge at North Western avenue over the North branch of the Chicago river.

For the repair and reinforcement of west abutment of Lake street bridge.

For the repair and reinforcement of the superstructure of Belmont avenue swing bridge.

For the repair and reinforcement of the west abutment of Washington street bridge.

For a new sidewalk construction of steel and concrete for the south approach of the new State street bridge.

For the repair of the turntable and pier protection of Fuller street swing bridge.

For the substructure and superstructure of a new bridge at Archer avenue over the South fork of the South branch of the Chicago river. The set of plans for this bridge, already prepared in the year 1902, were thoroughly revised and modified, wherever an improvement or a saving could be effected.

For additional brakes for the new bridges at East Division street and at Ninety-fifth street.

The following subjects were also investigated and plans prepared for the same:

The roof trusses for Jackson Park avenue sewerage pumping station.

The reconstruction and widening of the Eighteenth street viaduct east of the Chicago river.

The foundation of the engine pit of the Chicago avenue pumping station.

The bridge gates for Randolph street and State street bridges.

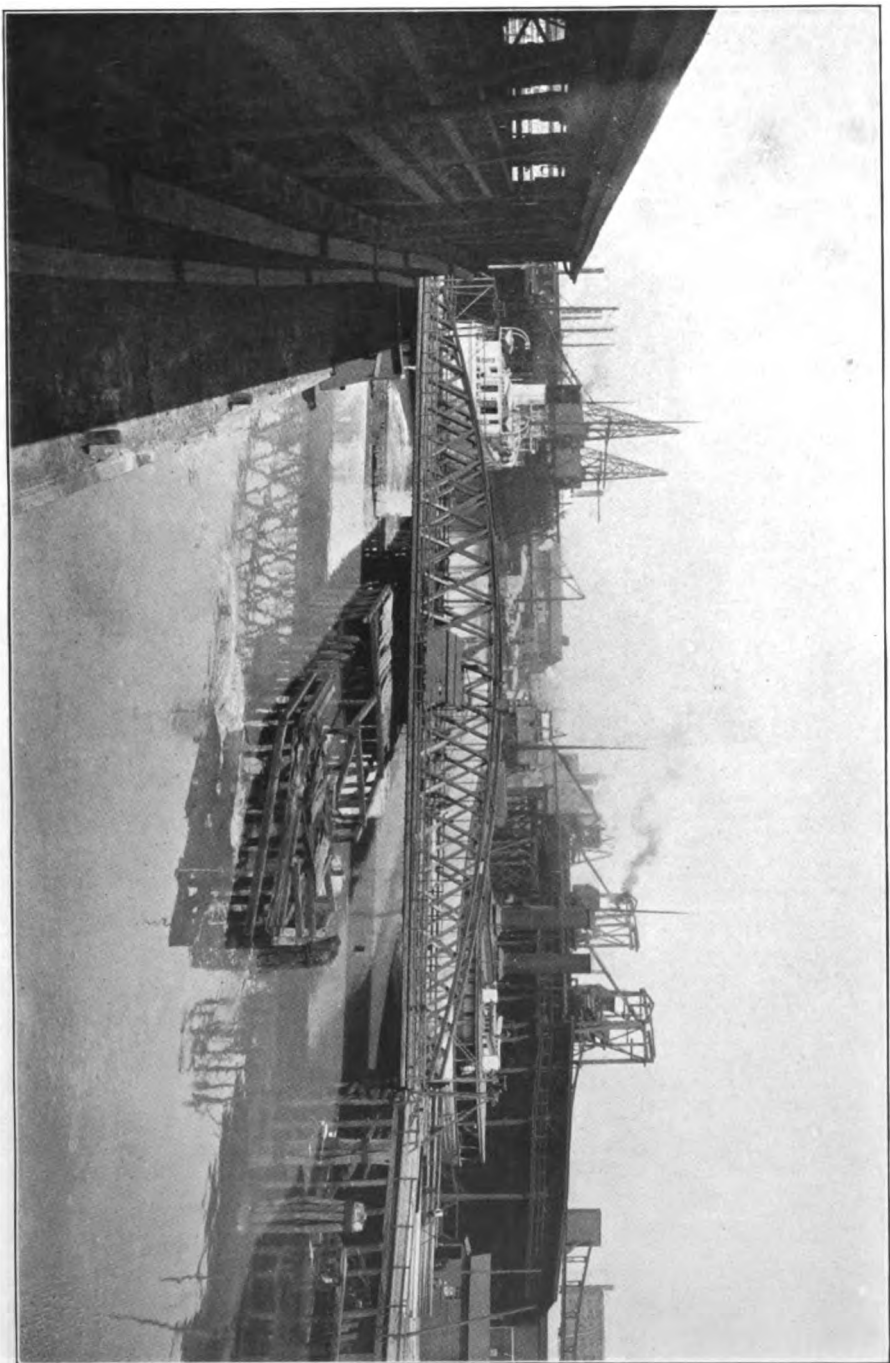
Other portions of the work of this office were as follows:

All the working drawings submitted by the contractors for bridges and structures under construction, especially for the West Division street and the North Western avenue bridges, were examined, checked and approved.

The following bridges, built by the Sanitary District and tendered to the City for use, operation and maintenance, were inspected, examined and reported on in writing:

Bridge at Main street over the South branch of the Chicago river.

Bridge at Canal street over the South branch of the Chicago river.



OLD SWING BRIDGE AT WEST DIVISION STREET — APRIL 30, 1902.



Bridge at State street over the Chicago river.

Bridge at Ashland avenue over the South branch of the Chicago river.

Bridge at Randolph street over the South branch of the Chicago river.

The bridge at Ashland avenue being a "Page" bridge and the other four "Scherzer" bridges.

Finally, miscellaneous plans, plats, data and estimates for various projects and minor repairs were prepared and designs and plans for steel and similar structures of interest to the City were investigated and examined.

It must also be mentioned that on various occasions members of the force of this office were assigned to work for other departments.

### NEW BRIDGE CONSTRUCTION.

MR. GEORGE F. SAMUEL, Assistant Engineer.

#### NINETY-FIFTH STREET BRIDGE.

The new bridge over the Calumet river at Ninety-fifth street was completed and thrown open to traffic early in the year, and has been in continuous operation since. This bridge is of the movable trunnion bascule type adopted by the City and has three trusses with a double roadway 39 feet in width. The total width of the bridge, including sidewalks, is 60 feet, and the length between trunnion supports is 154 feet. The width of the river between protections is 120 feet. The contract for the construction of the bridge was let to Roemheld & Gallery on June 21, 1900. The construction of the substructure was completed and the erection of the superstructure begun on June 26, 1902. The cars of the Calumet Electric Railway began running over the bridge March 13, 1903, and the bridge was opened to team traffic on April 1, 1903. The contract was completed June 30, 1903. The total cost of the bridge and approaches was \$232,454.21.

#### EAST DIVISION STREET BRIDGE.

The construction of the new trunnion bascule bridge over the canal at East Division street was so far advanced as to allow of its being opened to traffic in February, 1903. This is of the same general design as the Ninety-fifth street bridge, and has three trusses, 21 feet center to center. The width of roadway is 39 feet and the total width of the bridge and sidewalks is 60 feet. The length between the trunnion supports is 149 feet and the clear width of river between the pier protections is 80 feet. The contract for this bridge was let to Roemheld & Gallery June 11, 1900. The construction of the substructure was completed and the erection of the superstructure begun on June 26, 1902. The bridge was opened to teams on February 1, 1903. The contract was completed June 15, 1903. The total cost of the bridge and approaches was \$194,150.44.

**WEST DIVISION STREET BRIDGE.**

A contract was let on March 25, 1902, to the FitzSimons & Connell Company for the removal of the old swing bridge and the construction of the substructure of a new bascule bridge over the river at West Division street. The construction of substructure and approaches was begun May 1, 1902, and was practically completed, with the exception of the paving on the approaches, by December 31, 1902. The approaches were paved in August and the contract completed August 27, 1903. The cost of the substructure was \$94,407.84. The contract for the superstructure was let to Roemheld & Gallery on October 1, 1902. The contractors began erecting the superstructure August 25, 1903. By December 31, 1903, the structural steel in the three trusses and floor on both sides of the river was erected. This bridge will be ready for use early in 1904.

**NORTH WESTERN AVENUE BRIDGE.**

A contract for the removal of the old wooden Howe truss bridge and the construction of the substructure for a new bascule bridge over the Chicago river at North Western avenue was let to the FitzSimons & Connell Company on December 22, 1902. The contractors began the work of removing the old bridge on January 16, 1903. The excavation for the south piers was begun February 23rd and finished April 4th. Laying concrete in south piers was begun April 22nd and finished July 11th. Building the north cofferdam was begun May 5th and finished August 19th. Laying concrete in the north piers was begun September 16th and finished October 20th. This contract was completed December 21, 1903. The amount of this contract which includes all the work on substructure and approaches, except paving, is \$88,279.78. The contract for the superstructure was let July 15th to C. L. Strobel. The erection of the superstructure is expected to begin in March and the bridge will be ready for traffic in the latter part of 1904.

The following new bridges, built by the Sanitary District, were completed during the year and turned over to the City: Canal street bridge on February 17th; Main street bridge on March 1st; State street bridge on June 16th; Ashland avenue (West fork) bridge on July 1st; Randolph street bridge on July 29th.

**REPAIRS AND MAINTENANCE.**

MR. THOMAS G. PIHLFELDT, Structural Iron Designer in Charge.

MR. JOHN A. LENNARTSON, Assistant.

This division has under its supervision forty-eight movable bridges, fifteen fixed spans and thirty-seven systems of viaducts. During the year of 1903 four bridges were operated by steam, twenty by electricity, and twenty-four by hand power.

The following is a statement of the cost of repairs and maintenance of the various bridges and viaducts, exclusive of bridge tenders' salaries, during the year of 1903:

Adams street bridge.....	\$2,776.36	Taylor street bridge.....	\$1,893.52
Archer avenue bridge.....	781.69	12th street bridge.....	2,512.57
Ashland avenue bridge		22nd street bridge.....	6,533.38
(South fork).....	2,084.63	35th street bridge.....	536.97
Ashland avenue bridge		Van Buren street bridge...	3,835.04
(West fork).....	2,396.16	Washington street bridge..	5,089.10
Belmont avenue bridge....	2,425.00	Webster avenue bridge....	2,206.23
Canal street bridge.....	3,544.88	Wells street bridge.....	605.29
Chicago avenue bridge....	5,923.86	N. Western avenue bridge..	377.61
Chittenden bridge .....	288.25	S. Western avenue bridge..	822.19
Clark street bridge.....	7,126.89	Blackhawk street bridge...	1,859.67
Clybourn place bridge....	1,881.91	Chicago avenue and Hal-	
Dearborn street bridge....	2,714.24	sted street viaduct.....	30.40
Deering street bridge.....	687.19	Culvert at Canal pumping	
Diversey street bridge....	3,403.82	station .....	312.53
E. Division street bridge..	1,939.57	Dearborn street viaduct...	69.75
W. Division street bridge..	22.55	18th street viaduct.....	63.62
18th street bridge.....	3,219.84	Forest Glen avenue bridge..	242.56
Erle street bridge.....	4,021.46	Halsted street and Chicago	
Fuller street bridge.....	5,181.61	avenue viaduct.....	115.34
Fullerton avenue bridge...	2,654.09	Halsted street and Six-	
N. Halsted street bridge		teenth street viaduct....	23.79
(Canal) .....	1,018.66	Halsted street and Kinzie	
N. Halsted street bridge		street viaduct.....	24.06
(River) .....	2,881.88	Kedzie avenue (Canal)	
S. Halsted street bridge...	10,463.21	bridge .....	7.27
Harrison street bridge....	382.77	Kedzie avenue (North	
Indiana street bridge....	946.44	branch) bridge.....	129.07
Jackson street bridge....	2,572.86	Kedzie avenue (Mud Lake)	
Kinzie street bridge.....	9,186.38	bridge .....	133.73
Lake street bridge.....	6,554.98	Lawndale avenue bridge...	495.04
Laurel street bridge.....	910.44	Milwaukee avenue viaduct.	18.15
Madison street bridge....	7,146.64	North Fifty-sixth avenue	
Main street bridge.....	3,775.86	bridge .....	228.27
Ninety-second street bridge	1,755.30	North Forty-eighth avenue	
Ninety-fifth street bridge..	3,149.43	bridge .....	428.01
North avenue bridge.....	1,790.79	Steamer Hopkins.....	672.44
106th street bridge.....	2,539.60	Sangamon street viaduct..	157.00
Polk street bridge.....	1,631.65	State street viaduct.....	1,925.36
Randolph street bridge...	2,755.80	Taylor street viaduct.....	5.90
Riverdale bridge.....	279.92	General account.....	22,503.84
Rush street bridge.....	4,689.66		
State street bridge.....	4,057.74	Total .....	\$175,421.71

The following synopsis shows the most essential repairs made during the year of 1903:

#### BRIDGES.

**ADAMS STREET BRIDGE.**—The operating house was covered with corrugated galvanized iron and painted, and the turntable track and spider-rods were adjusted.

**ASHLAND AVENUE BRIDGE (South Fork).**—Thirty piles and sheeting were driven to retain the filling on the south approach. The machinery re-



ceived a general overhauling, and the bridge, which has not been opened for years, was swung open on November 2nd.

**ASHLAND AVENUE BRIDGE (West Fork).**—Platforms were built around the machinery and permanent feeders were installed.

**BELMONT AVENUE BRIDGE.**—The trusses were reinforced in a substantial manner. This work was done under contract by Messrs. Roemheld & Gallery.

**BLACKHAWK STREET BRIDGE.**—The planking on the roadway of the bridge and approaches was patched and the end rollers and wheels were adjusted.

**CANAL STREET BRIDGE.**—Platforms were built in the tail pits and around the machinery, permanent electric feeders were installed, and the heel locks and pit pumps were repaired repeatedly. One of the driving-gear shafts which had become bent was taken out and a new shaft put in its place, and the center locks were repaired. The old grease cups were removed and new ones of an improved design were substituted.

**CHICAGO AVENUE BRIDGE.**—The decayed condition of the piles and timbers supporting the west approach made a complete rebuilding of this approach necessary. The bridge seats were also rebuilt and some of the web members in the trusses were renewed. New circle joists and locks were put in place, and the chord cover and the sidewalks were patched and the floor in the bridge house renewed.

**CLARK STREET BRIDGE.**—The iron work of the entire structure was given two coats of paint, the operating house was covered with corrugated galvanized iron, and some of the rack segments and wheels were renewed. Seventy-seven new piles were driven in the center pier protection.

**CLYBOURN PLACE BRIDGE.**—Two lower buffer levers were put in and one of the lower buffer cylinders was rebored. Some minor repairs were also made to the pit pumps.

**DEARBORN STREET BRIDGE.**—The operating machinery was adjusted and the roadway and sidewalks were patched.

**DEERING STREET BRIDGE.**—The bridge trucks and the truck bearings were adjusted and the north approach was reinforced.

**DIVERSEY STREET BRIDGE.**—The sidewalks were patched and sixty-nine piles were driven in place to support the approaches and bridge seats. Work is now in progress on the complete reconstruction of the approaches and bridge seats.

**EAST DIVISION STREET BRIDGE.**—The temporary pontoon bridge was dismantled and removed and the machinery of the new bridge was closed in.

**EIGHTEENTH STREET BRIDGE.**—The machinery was repaired, the road-

way, sidewalks and chord cover were patched, and the operating house was painted. The superstructure of this bridge was removed to the slip in the rear of the Water Works Shops in accordance with contract by the Chicago & Great Lakes Dredging Co. on November 15th.

**ERIE STREET BRIDGE.**—The entire decking, wheel guard and chord cover was renewed and the sidewalks were patched. The bridge house was reshingled and a new floor was put in. The locks and machinery were repaired repeatedly and seventy-two new piles were driven in the center pier protection.

**FULLER STREET BRIDGE.**—Owing to the dilapidated condition of the center pier protection, this bridge sustained severe damages from collisions with vessels during the year. The most serious accident occurred on August 26th, when the steamer "John Lambert" ran into the bridge with such force as to knock the whole structure off the center several inches. The span was jacked up and brought back into position and the damage done to the drum, spider-rods and the center step was repaired. Sixty-two new piles were driven and the entire north side of the protection was rebuilt. The roadway, sidewalks and chord cover were repaired and some of the braces and counters in the trusses were reinforced.

**FULLERTON AVENUE BRIDGE.**—The sidewalks and railings were repaired.

**NORTH HALSTED STREET (Canal) BRIDGE.**—New circle beams were put in and the locks were repaired repeatedly.

**NORTH HALSTED STREET (River) BRIDGE.**—The bridge houses were painted, the track girders were shimmed up and the electrical machinery was overhauled.

**SOUTH HALSTED STREET BRIDGE.**—The cost of maintenance and repairs of this bridge has always been comparatively high, and breakdowns, necessitating the closing of the bridge to traffic, used to occur frequently. In February the decking, paving, wheel guard and chord cover were renewed, and when the old paving blocks were taken up a layer of sand, varying in thickness from one-half inch to three inches, was found covering the entire subplanking. In the reconstruction of the bridge floor the sand cushion was omitted, decreasing the weight of the movable part about twenty tons. The bridge can now be raised with one engine with a steam pressure of 90 pounds, while with the old floor it was difficult to make a lift with two engines and a steam pressure of 110 pounds. In addition to the repairs mentioned some adjustments were made to the machinery, the cables were greased and part of the iron work painted. The bridge has been in operation uninterruptedly since March 6th.

**INDIANA STREET BRIDGE.**—New end circle planks and circle beams were put in and the bridge house was painted.

**JACKSON STREET BRIDGE.**—New pinion brackets were erected in place, the sidewalks and chord cover were patched, and the operating machinery was overhauled.

**KINZIE STREET BRIDGE.**—On account of the heavy team traffic the planking on this bridge and the approaches had to be repaired repeatedly. The timbers in the center pier, which have been in a state of decay for years, gave way under the center step and the bridge was thrown out of service on September 11th. After the span was jacked up the center pier was practically rebuilt from the water's edge, new tracks were put in, and the bridge was leveled up. Fifty-three piles were driven in the center pier protection and approaches, and new bridge seats were built.

**LAKE STREET BRIDGE.**—The west abutment was reinforced with I beams and rods. This work was done under contract by Messrs. Jackson & Corbett Co. The City force put in new sub-planking, wheel guard and paving on the west approach. One hundred and one new piles were driven in the center pier protection.

**LAUREL STREET BRIDGE.**—The entire bridge floor was replanked and the north abutment was cut in order to free the bridge.

**MADISON STREET BRIDGE.**—Ninety-six new piles were driven in the center pier protection which had gradually rotted away to such an extent as to afford no protection whatever to the bridge. A number of vessels collided with the bridge during the year doing more or less damage. On October 31st the steamer "Rome" ran into this bridge and the force of the impact was so great that the entire superstructure was pushed about 11 inches off the center. The center step pin, 12 inches in diameter, sheared off and most of the spider-rods were bent. By means of hydraulic and mechanical jacks placed on the center pier the bridge was brought back into its original position, the broken parts were replaced and the bridge was opened to traffic on November 16th. The engines were overhauled and the fire boxes in the boilers were patched.

**MAIN STREET BRIDGE.**—Permanent electric feeders were installed, platforms were built around the machinery and in the tailpits, and the heel locks were repaired repeatedly.

**NINETY-SECOND STREET BRIDGE.**—The approaches were anchored back, timber bents were erected under the bridge seats, and the sidewalks were repaired.

**NINETY-FIFTH STREET BRIDGE.**—The machinery was closed in and some minor repairs were made to the machinery.

**NORTH AVENUE BRIDGE.**—New circle beams were put in, the roadway and sidewalks were patched and the machinery was repaired.

**ONE HUNDRED AND SIXTH STREET BRIDGE.**—Two clumps of thirteen

40-foot piles each were driven on the west side of the center pier and the approaches were reinforced and patched.

**POLK STREET BRIDGE.**—Thirty-four new piles were driven in the center pier protection and at the abutments, and the sidewalks and roadway were repaired.

**RIVERDALE BRIDGE.**—The sidewalks on the north approach were partly renewed.

**RUSH STREET BRIDGE.**—A clump of thirteen 45-foot piles was driven on the south side of the center pier protection and extensive repairs were made to the machinery.

**RANDOLPH STREET BRIDGE.**—Platforms were built in the tail pits, permanent electric feeders were put in and the pit pumps were repaired.

**STATE STREET BRIDGE.**—New feeders were installed and platforms built in the pits. The heel locks and pit pumps were repaired repeatedly. The counter weight bolts were adjusted and closets and lockers were built and painted. New cement sidewalks on the south approach are now in course of construction. This work is done under contract by Mr. M. H. McGovern.

**TAYLOR STREET BRIDGE.**—The light circuits were re-wired, the signal lights were changed and the center locks were adjusted. The Chicago Union Traction Company erected new trolley attachments in place and put in some additional counter weights.

**TWELFTH STREET BRIDGE.**—The bridge house was repaired and painted and the machinery was overhauled. Twenty-four new piles were driven at the south end of the east abutment.

**TWENTY-SECOND STREET BRIDGE.**—Extensive repairs are now in progress on the center pier protection. One hundred and fifty-three new piles were driven in place and the entire south half is being rebuilt. The approaches were strengthened by means of additional bents and braces and the sidewalks and roadway on the bridge and the approaches were repaired. The bridge house was jacked up and painted.

**THIRTY-FIFTH STREET BRIDGE.**—The bridge was raised and a new disc put in the center step. The sidewalks were patched and the end rollers were adjusted.

**VAN BUREN STREET BRIDGE.**—A new submerged centrifugal pit pump with motor and starting box was installed, the locks were repaired and the electrical machinery was overhauled. A clump of nine 45-foot piles was driven north of the west foundation piers.

**WASHINGTON STREET BRIDGE.**—Several new pile clumps were driven in the center pier protection. The west abutment, which was badly damaged in a collision with the steamer "Arthur Orr" on April 12th, was rein-

forced by means of channel irons and rods. The planking on the roadway and sidewalks was patched.

**WEBSTER AVENUE BRIDGE.**—The planking was repaired, the end rollers, circle rails, drum and spider-rods were adjusted, and the bridge house was painted.

**WELLS STREET BRIDGE.**—Some minor repairs were made to the sidewalks and circle planks, and the police house was painted.

**SOUTH WESTERN AVENUE BRIDGE.**—The roadway, chord cover and sidewalks were patched.

The following fixed spans over the North branch of the Chicago river had the decking renewed: North Fifty-sixth avenue, Forest Glen avenue, North Forty-eighth avenue and Kedzie avenue.

All the bridges, with the exception of the fixed spans, were equipped with new signal balls, in conformity with ordinance passed July 7, 1902.

During the year seventy-two collisions between vessels and bridges occurred, and the repairs of the damages, which in some cases were considerable, were made by this division.

#### VIADUCTS.

**HALSTED AND SIXTEENTH STREET VIADUCT.**—The planking, wheel guard and sidewalks over the tracks of the Chicago & North-Western Railway Company were renewed. The cost of this work was charged to the Chicago & North-Western Railway Company.

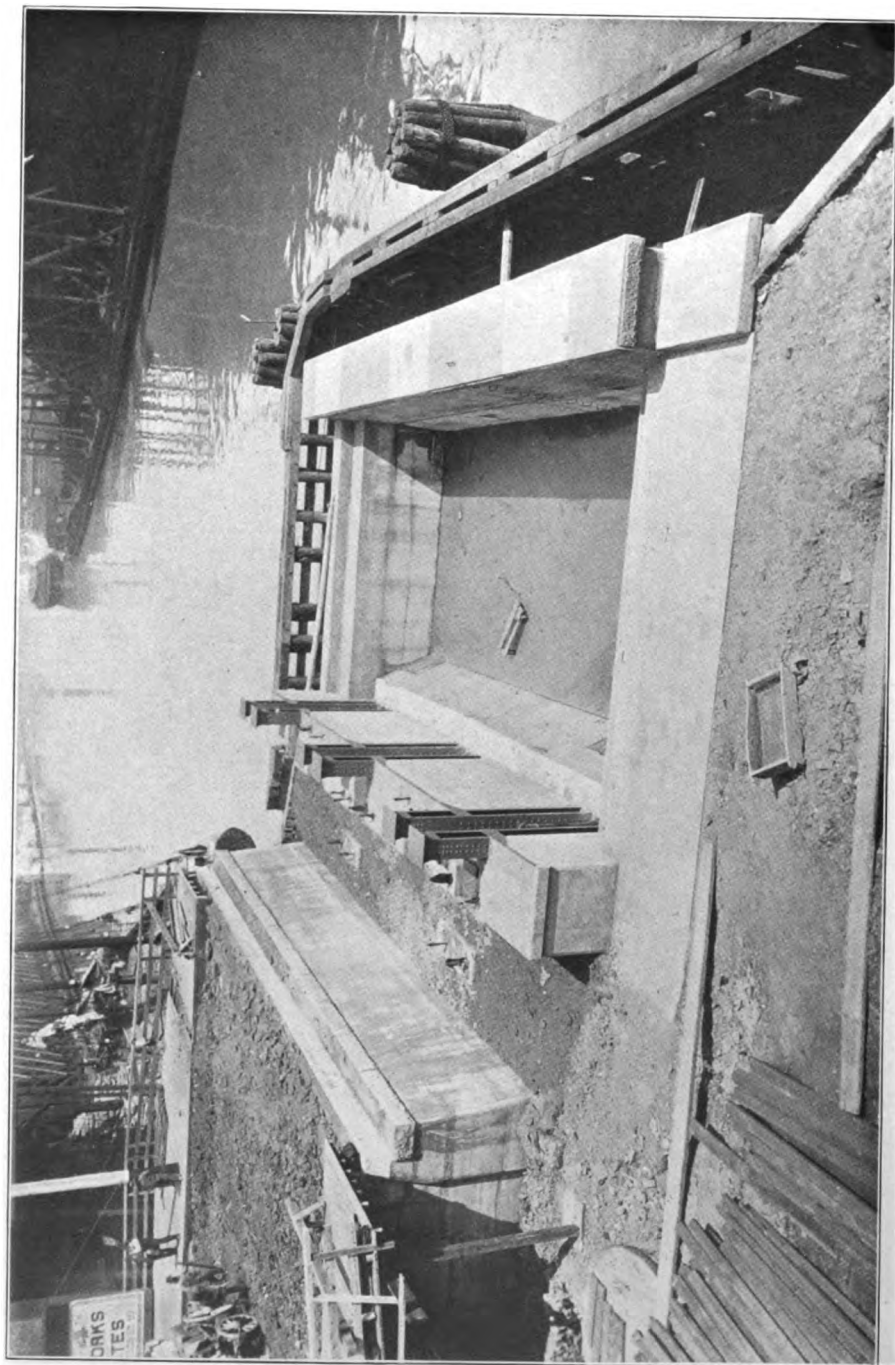
**GRAND AVENUE VIADUCT.**—The floor stringers in four panels which were badly corroded were reinforced and the subplanking, wheel guard, chord cover, and paving and the north sidewalk on one of the spans were renewed. The cost of this work was charged to the Chicago & North-Western Railway Company and the Chicago Union Traction Company.

**STATE STREET VIADUCT.**—New decking, wheel guard and chord covers were put in on the entire structure and the sidewalks were repaired.

A trestle bent approach was built in the alley leading up to the west side of the north approach to the Sangamon street viaduct, about 117 feet north of Kinzie street. This work was done in accordance with Council order passed May 11, 1903, and the expense was charged to the Chicago & North-Western, Chicago, Milwaukee & St. Paul and Pittsburg, Cincinnati & St. Louis Railway Companies.

Other repairs were made on the different viaducts by the various railroad companies at their own expense.





WEST DIVISION STREET BRIDGE — JUNE 26, 1903 — WEST PIERS AND TAIL PITS.

## DIVISION OF HARBORS.

This division has supervision over the Harbors of the City of Chicago, which consists of Chicago river, its branches, forks and slips; Calumet river, its forks, branches and adjacent slips; Lake Michigan from the north to the south boundary lines of the City and three miles out from shore and for a distance of five miles beyond or east of this latter line Sanitary Jurisdiction of the City extends.

RICARD O'S. BURKE, Harbor Engineer in Charge.

CAPTAIN JOHN MCCARTHY, Harbor Master.

THOMAS J. ELDERKIN, Vessel Dispatcher.

The following is a brief summary of the work done in Chicago Harbor during the year :

DOCKING AND BREAKWATERS IN CHICAGO AND CALUMET RIVERS  
AND HARBORS—DOCK PERMITS AND FEES.

## NEW CONSTRUCTION.

	Permits	Feet	Fees
South Branch Chicago River .....	3	1,375	\$298.75
Calumet River .....	3	3,650	153.50
Lake Michigan .....	1	50	12.50
Miscellaneous .....	1	Clump	.....
Total .....	8	5,075	\$464.75

## REBUILDING.

	Permits	Feet	Fees
North Branch Chicago River .....	3	606	\$151.50
South Branch Chicago River .....	7	717	179.25
Calumet River .....	5	1,743	30.00
Lake Michigan .....	3	440	110.00
Main Chicago River .....	2	180	45.00
Miscellaneous, City Acct. and Clumps	2	30	.....
Total .....	23	3,721	\$515.75

## REPAIRING.

	Permits	Feet	Fees
Main Chicago River .....	4	459	\$ 51.75
Lake Michigan .....	5	1,147	143.37
Calumet River .....	4	555	69.40
Miscellaneous, protection piles .....	1	.....	3.50
Total .....	14	2,161	\$268.02



## SUMMARY OF DOCK WORK.

	Permits	Feet	Fees
New construction .....	8	5,075	\$ 464.75
Rebuilding .....	22	8,721	515.75
Repairing .....	14	2,161	268.02
Total .....	44	10,957	\$1,248.52

## DREDGING DURING 1908.

	Permits	Cubic Yards	Fees
Main Chicago River .....	4	2,000	\$ 8.00
Calumet River .....	29	98,000	871.00
North Branch Chicago River .....	8	8,000	12.00
South Branch Chicago River .....	13	8,000	32.00
Lake Michigan .....	14	11,000	44.00
Total private work .....	68	117,000	\$467.00

## SUMMARY OF DREDGING.

	Cubic Yards	Cost
By the United States, Calumet River .....	1,440,784	\$229,076.71
By the South Park Commrs., Outer Harbor, Chicago	161,000	.....
By the Sanitary District, Chicago .....	332,926	58,906.58
Private dredging .....	117,000	.....
Total dredging done .....	1,951,660	.....

## SUMMARY OF FEES.

Docking .....	\$ 1,248.52
Dredging .....	467.00
Towing .....	132.00
Special permit, No. 719 .....	8.00
Overpaid under permit No. 88, credit given on No. 89....	1.00
Total .....	\$ 1,851.52

There were 11 towing permits issued during the year, yielding \$132.00 fees.

## THE CITY DOCK ORDINANCES SUSTAINED.

Many efforts have been made by parties to disregard the requirements of City ordinances as to permits for constructing or rebuilding docks, and when prevented from carrying out their construction plans, unless the same are covered by a City permit, they assert the possession of a permit from the Secretary of War, and in a few instances they have applied to the Courts. Reference here to one case may be made more fully than usual because of its importance, as it is a type of that class covering the Deering Harvester Company and some other cases, and as it fully recognizes the binding force of the City ordinances as to permits for dock construction. The case is *David Mark Cummings et al.*, against the City, No. 136 of October Term 1902, in the Supreme Court of the United States. Justice Harlan on February 23, 1903, delivered the opinion of the Court.

The appellants, citizens of Illinois, brought this suit against the City of Chicago for the purpose of obtaining a decree restraining the defendant, its officers and agents, from interfering with the construction of a dock in front of certain lands owned by the plaintiffs and situated on Calumet river, within the limits of that City.

The City demurred to the bill upon the ground that it did not state facts entitling the plaintiffs to the relief asked. The demurrer was sustained and the bill was dismissed for want of equity.

The controlling question in the case is whether the plaintiffs have the right, in virtue of certain legislation of Congress and of certain action of the Secretary of War, to which reference will be presently made, to proceed with the proposed work in disregard of an ordinance of the City of Chicago requiring the permission of its Department of Public Works as a condition precedent to the construction of any dock within the limits of the City. The plaintiffs had not obtained any permit from that department.

The legislation of Congress and the action of the Secretary of War upon which the plaintiffs rely are very fully set forth in the bill and are as follows:

In the River and Harbor Appropriation Act of August 2, 1882, C. 375, will be found this provision: "Improving harbor at Calumet, Illinois: Continuing improvement, thirty-five thousand dollars; Provided, That with a view of the improvements of the Calumet river, in the State of Illinois, from its mouth to the Fork at Calumet lake, the Secretary of War shall appoint a board of engineers who shall examine said river and report upon the practicability and the best method of perfecting and maintaining a channel for through navigation to said Fork at Lake Calumet, adapted to the passage of the largest vessels navigating the Northern and Northwestern Lakes, limiting and locating the lines of channel to be improved by the United States, and of docks that may be constructed by private individuals, corporations, or other parties, and clearly defining the same under the direction of the Chief of Engineers, United States Army; and the Secretary of War shall report to Congress the result of said examination, and the estimated cost of the proposed improvement; also what legislation, if any, is necessary, to prevent encroachments being made or maintained within the limits of the channel designated as above provided for." 22 Stat. 194.

Thereafter, the bill alleges, the Secretary of War appointed a board of

engineers, who surveyed the river and defined the lines of its channel and of docks to be constructed, under the direction of said Chief of Engineers; and the Secretary of War thereafter reported to Congress the estimated cost of the proposed improvement.

In the River and Harbor Appropriation Act of July 5, 1884, C. 229, this provision was inserted: "Improving Calumet river, Illinois: Continuing improvement, fifty thousand dollars; Provided, however, that no part of said sum shall be expended until the right of way shall have been conveyed to the United States, free from expense, and the United States shall be fully released from all liability for damages to adjacent property owners, to the satisfaction of the Secretary of War." 23 Stat. 133, 143.

Under these enactments, the bill alleged, the United States caused a plat to be made establishing the channel of the river and its lines, and fixing the dock lines thereof. That plat was approved by the Chief of Engineers of the Army and was duly recorded in the Recorder's Office of Cook County.

The above legislation was followed by this provision in the River and Harbor Act of August 5, 1886, C. 929: "Improving Calumet river, Illinois: Continuing improvement, thirty thousand dollars: of which eleven thousand two hundred and fifty dollars are to be used between the Forks and one-half mile east of Hammond, Indiana; \* \* \* Provided, however, that no part of said sum, nor any sum heretofore appropriated, except the said eleven thousand two hundred and fifty dollars, for the river above the Forks, shall be expended until the entire right of way, as set forth in Senate Executive Document Number Nine, second session Forty-seventh Congress, shall have been conveyed to the United States free of expense, and the United States shall be fully released from all liability for damages to adjacent property owners, to the satisfaction of the Secretary of War; \* \* \*" 24 Stat. 310, 325.

Without going into all the details set forth in the bill, it may be assumed that the deeds of conveyance which the above acts of 1884 and 1886 required to be made to the United States were in fact made and accepted.

The bill alleges that the United States by its duly authorized officials thereafter entered upon the improvement of Calumet river in accordance with the surveys and plans adopted by the Chief of Engineers of the United States Army and "thereby established said dock or channel line on the west line of said river in the manner and form shown by said plat, approved by the said Chief of Engineers and filed for record as aforesaid."

By the seventh section of the River and Harbor Act of Congress, approved September 19, 1890, C. 907, it was provided: "That it shall not be lawful to build any wharf, pier, dolphin, boom, dam, weir, and breakwater, bulkhead, jetty, or structure of any kind outside established harbor lines, or in any navigable waters of the United States where no harbor lines are or may be established, without the permission of the Secretary of War, in any port, roadstead, haven, harbor, navigable river, or other waters of the United States, in such manner as shall obstruct or impair navigation, commerce, or anchorage of said waters, and it shall not be lawful hereafter to commence the construction of any bridge, bridge draw, bridge piers and abutments, causeway or other works over or in any port, road, roadstead, haven, harbor, navigable river, or navigable waters of the United States, under any act of the Legislative Assembly of any State, until the location and plan of such bridge or other works have been

submitted to and approved by the Secretary of War, or to excavate or fill, or in any manner to alter or modify the coast, location, condition or capacity of the channel of said navigable water of the United States, unless approved and authorized by the Secretary of War; Provided, That this section shall not apply to any bridge, bridge draw, bridge piers and abutments, the construction of which has been heretofore duly authorized by law, or be so construed as to authorize the construction of any bridge, draw bridge, bridge piers and abutments, or other works, under an act of the Legislature of any State, over or in any stream, port, roadstead, haven or harbor or other navigable water not wholly within the limits of such State." 26 Stat. 425, 454.

Then by the tenth section of the River and Harbor Act of March 3, 1899, C. 425, it was provided: "That the creation of any obstruction not affirmatively authorized by Congress, to the navigable capacity of any of the waters of the United States is hereby prohibited; and it shall not be lawful to build or commence the building of any wharf, pier, dolphin, boom, weir, breakwater, bulkhead, jetty or other structures in any port, roadstead, haven, harbor, canal, navigable river, or other water of the United States, outside established harbor lines, or where no harbor lines have been established, except on plans recommended by the Chief of Engineers and authorized by the Secretary of War; and it shall not be lawful to excavate or fill, or in any manner to alter or modify the coast, location, condition, or capacity of, any port, roadstead, haven, harbor, canal, lake, harbor of refuge, or enclosure within the limits of any breakwater, or of the channel of any navigable water of the United States, unless the work has been recommended by the Chief of Engineers and authorized by the Secretary of War prior to the beginning of same." O. Stat. 1121, 1151.

Subsequently, the plaintiffs and the Calumet Grain & Elevator Company—the latter also owning land on the Calumet river in front of which the proposed new dock would be built—caused plans of the dock to be prepared and submitted to the Secretary of War and the Chief of Engineers of the Army, and application was made to the former for permission to rebuild the dock along the front of their lands on Calumet river as shown by those plans.

Those plans were approved by the United States Engineer stationed at Chicago, and were subsequently recommended by the Chief of Engineers of the Army. The Secretary thereupon issued and delivered to the plaintiffs and the Grain and Elevator Company the following instrument:

"Whereas, By Section 10 of an Act of Congress approved March 3, 1899, entitled 'An act making appropriations for the construction, repair and preservation of certain public works on rivers and harbors, and for other purposes,' it is provided that it shall not be lawful to build or commence the building of any wharf, pier, dolphin, boom, weir, breakwater, bulkhead, jetty, or other structures in any port, roadstead, haven, harbor, canal, navigable river, or other waters of the United States, outside established harbor lines, or where no harbor lines have been established, except on plans recommended by the Chief of Engineers and authorized by the Secretary of War; and it shall not be lawful to excavate or fill, or in any manner to alter or modify the course, location, condition, or capacity of, any port, roadstead, haven, harbor, canal, lake, harbor of refuge or enclosure within the limits of any breakwater, or of the channel of any navigable water of the United States, unless the work has been recommended by the Chief of Engineers and authorized by the Secretary of War prior

to the beginning of same; and whereas, D. M. Cummings, as executor of the estate of C. R. Cummings, and the Calumet Grain & Elevator Company have applied to the Secretary of War for permission to rebuild the dock in front of that part of block 108, in Sections 5 and 6, T. 37, R. 15 E., fronting on Calumet river, south of Ninety-fifth street, Chicago, Illinois, along the lines shown on the attached plans, which have been recommended by the Chief of Engineers; now, therefore, this is to certify that the Secretary of War hereby gives unto said D. M. Cummings as executor of the estate of C. R. Cummings, and the Calumet Grain & Elevator Company permission to rebuild the dock, at said place, along the lines shown on said plans, subject to the following condition: That the work herein permitted to be done shall be subject to the supervision and approval of the Engineer Officer of the United States Army in charge of the locality. Witness my hand this 12th day of May, 1900. ELIHU ROOT, Secretary of War.

The bill then alleged—

That after the granting of permission by the Secretary of War, the plaintiffs became entitled, in virtue of that permission and the provision of the act of March 3, 1899, to build the proposed dock in front of their premises, subject only to the condition that the work should be under the supervision and be approved by the Engineer Officer of the Army in charge of the locality;

That after the action of the Secretary of War they entered into a contract for the building of the dock and were engaged in the prosecution of the work, when, about the 15th of October, 1900, the City of Chicago, by its officers and agents, put a stop to the work by force and threats, asserting that it could not be prosecuted unless a permit therefor be issued by its Department of Public Works;

That this action of the City was taken pursuant to certain ordinances theretofore passed by the City Council and which made it the duty of the City's Harbor Master to require all parties engaged in repairing, renewing, altering, or constructing any dock within the City to produce such permit, and in default thereof to cause the arrest of any parties engaged in the work and the removal of the dock;

That the Engineer Officer in the Department of Public Works of the City, having agreed that the City had no power to interfere with the plaintiffs or prevent the building of said dock by them, agreed that the work should not be interfered with by the City or its agents;

That the plaintiffs thereupon resumed the construction of the dock, but they were again stopped by the City through its police, and plaintiffs' contractors, agents and servants were forced to discontinue the work, being threatened with arrest and violence if they should attempt to continue it.

That the City, by its officers and agents, has notified the plaintiffs that they will not be permitted to continue the work or to build the dock in front of their premises, notwithstanding the permission or authority given to them by the Secretary of War, and that, by its police, it would forcibly prevent the building thereof, arrest those engaged in doing the work, and remove any dock built; and,

That the City wholly refuses to recognize the permission and authority given the plaintiffs by the Secretary of War to build said dock, and their right "under the Constitution and laws of the United States, and more particularly

under the said act of Congress of March 3, 1899, to build it by virtue of the said authority and permission granted by the Secretary of War and the approval and recommendation of the plans therefor by the Chief of Engineers of the United States Army;"

That in view of the action taken by the City and its police, they fear that attempts to continue their work will necessarily be futile and lead to breaches of the peace and conflicts between the men engaged in the work and the police of the City of Chicago; and that the right to build said dock in front of their premises in accordance with the permission and authority given them by the Secretary of War on the lines recommended by the Chief of Engineers and within the dock line established by said survey and by the deed to the United States is a property right, which the plaintiffs have as the owners of the premises and of the land upon which the dock is to be built, and that the action of the City in thus preventing the building of the dock is a taking of the property of the plaintiffs "without due process of law, and a taking thereof for public use without just compensation, in violation of the Fifth Amendment of the Constitution of the United States."

The relief asked was a decree enjoining the City, its agents and officers, from interfering with the building of the dock, and that upon the final hearing of the cause, it be adjudged and decreed that under the acts of Congress the plaintiffs have the right, by virtue of the permission granted by the Secretary of War, to build the dock on the lines shown by the plans recommended by the Chief of Engineers, and that the City of Chicago has no right, power or authority to interfere therewith.

1. We hold that the Circuit Court had jurisdiction in this case. That the parties, plaintiffs and defendant, are citizens of the same State is not sufficient to defeat the jurisdiction; for by the act of March 3, 1887, C. 587, as corrected by the act of August 13, 1888, C. 866, the Circuit Courts have jurisdiction, without reference to the citizenship of the parties, of suits at common law or in equity arising under the Constitution or laws of the United States. 24 Stat. 552; 25 Id. 434. The present suit does arise under the Constitution and laws of the United States, because the plaintiffs base their right to construct the dock in question upon the Constitution of the United States, as well as upon certain acts of Congress and the permit (so called) of the Secretary of War, which legislative enactments and action of the Secretary of War were, it is alleged, in execution of the power of Congress under the Constitution over the navigable waters of the United States. That it is a suit of that character appears from the bill itself. The allegations which set forth a Federal right were necessary in order to set forth the plaintiffs' cause of action.

2. The appeal was properly taken directly to this Court, since by the act of March 3, 1891, C. 517, this Court has jurisdiction to review the judgment of the Circuit Court in any case involving the construction or application of the Constitution of the United States. 26 Stat. 834. The present case belongs to that class; for it involves the consideration of questions relating to the power of Congress, under the Constitution, over the navigable waters of the United States.

3. We come now to the merits of the suit as disclosed by the bill. The general proposition upon which the plaintiffs base their right to relief is that the United States, by the acts of Congress referred to and by what has been

done under those acts, has taken "possession" of Calumet river, and so far as the erection in that river of structures such as bridges, docks, piers and the like are concerned, no jurisdiction or authority whatever remains with the local authorities. In a sense, but only in a limited sense, the United States has taken possession of the Calumet river, by improving it, by causing it to be surveyed, and by establishing lines beyond which no dock or other structure shall be erected in the river without the approval or consent of the Secretary of War, to whom has been committed the determination of such questions. But Congress has not passed any act under which parties, having simply the consent of the Secretary, may erect structures in the Calumet river without reference to the wishes of the State of Illinois on the subject. We say the State of Illinois because it must be assumed, under the allegations of the bill, that the ordinances of the City of Chicago making the approval of its Department of Public Works a condition precedent to the right of any one to erect structures in navigable waters within its limits, are consistent with the Constitution and laws of that State and were passed under authority conferred on the City by the State.

Calumet river, it must be remembered, is entirely within the limits of Illinois, and the authority of the State over it is plenary, subject only to such acts as Congress may take in execution of its power under the Constitution to regulate commerce among the several States. That authority has been exercised by the State ever since it was admitted into the Union upon an equal footing with the original States.

In *Escanaba Company v. Chicago*, 107 U. S., 678, 683, the question was as to the validity of regulations made by the City of Chicago in reference to the closing, between certain hours of each day, of bridges across the Chicago river. Those regulations were alleged to be inconsistent with the power of Congress over interstate commerce. This Court said: "The Chicago river and its branches must, therefore, be deemed navigable waters of the United States, over which Congress under its commercial power may exercise control to the extent necessary to protect, preserve, and improve the free navigation. But the States have full power to regulate within their limits matters of internal police, including in that general designation whatever will promote the peace, comfort, convenience and prosperity of the people. This power embraces the construction of roads, canals and bridges and the establishment of ferries, and it can generally be exercised more wisely by the States than by a distant authority. They are the first to see the importance of such means of internal communication and are more deeply concerned than others in their wise management. Illinois is more immediately affected by the bridges over the Chicago river and its branches than any other State, and is more directly concerned for the prosperity of the City of Chicago, for the convenience and comfort of its inhabitants, and the growth of its commerce. And nowhere could the power to control the bridges in that City, their construction, form and strength, and the size of their draws, and the manner and times of using them, be better vested than with the State, or the authorities of the City upon whom it has devolved that duty. When its power is exercised so as to unnecessarily obstruct the navigation of the river or its branches, Congress may interfere and remove the obstruction. If the power of the State and that of the Federal Government come in conflict, the latter must control and the former yield. This necessarily

follows from the position given by the Constitution to legislation in pursuance of it, as the supreme law of the land. But until Congress acts on the subject, the power of the State over bridges across its navigable streams is plenary. This doctrine has been recognized from the earliest period and approved in repeated cases, the most notable of which are *Willson v. the Blackbird Creek Marsh Co.*, 2 Pet. 245, decided in 1829, and *Gilman v. Philadelphia*, 3 Wall, 713, decided in 1865.

To the same effect is the recent decision in *Lake Shore and Michigan Railway v. Ohio*, 165 U. S. 365, 368. See also *Cardwell v. American Bridge Co.*, 113 U. S. 205, and *Huse v. Glover*, 119 U. S. 543.

Did Congress, in the execution of its power under the Constitution to regulate interstate commerce, intend by the legislation in question to supersede, for every purpose, the authority of Illinois over the erection of structures in navigable waters wholly within its limits? Did it intend to declare that the wishes of Illinois in respect to structures to be erected in such waters need not be regarded, and that the assent of the Secretary of War, proceeding under the above acts of Congress, was alone sufficient to authorize such structures?

These questions were substantially answered by this Court in *Lake Shore & Michigan Railway v. Ohio*, above cited, decided in 1896. That case required a construction of the fifth and seventh sections of the River and Harbor act of September 19, 1890, upon which sections the plaintiffs in this case partly rely. In that case this Court said: "The contention is that the statute in question manifests the purpose of Congress to deprive the several States of all authority to control and regulate any and every structure over all navigable streams, although they be wholly situated within their territory. That full power resides in the States as to the erection of bridges and other works on navigable streams wholly within their jurisdiction, in the absence of the exercise by Congress of authority to the contrary, is conclusively determined.

\* \* \* The mere delegation to the Secretary of the right to determine whether a structure authorized by law has been so built as to impede commerce, and to direct, when reasonably necessary, its modification so as to remove such impediment, does not confer upon that officer power to give original authority to build bridges, nor does it presuppose that Congress conceived that it was lodging in the Secretary power to that end. \* \* \* The mere delegation of power to direct a change in lawful structures so as to cause them not to interfere with commerce cannot be construed as conferring on the officer named the right to determine when and where a bridge may be built." Referring to the seventh section of the act of 1890, the Court said: "The language of the seventh section makes clearer the error of the interpretation relied on. The provision that it shall not be lawful to thereafter erect any bridge 'in any navigable river or navigable waters of the United States, under any act of the legislative assembly of any State, until the location and plan of such bridge \* \* \* have been submitted to and approved by the Secretary of War,' contemplated that the function of the Secretary should extend only to the form of future structures, since the act would not have provided for the future erection of bridges under State authority if its very purpose was to deny for the future all power in the States on the subject. \* \* \* The construction claimed for the statute is that its purpose was to deprive the States of all power as to every stream, even those wholly within their borders, whilst the very words of the



statute, saying that its terms should not be construed as conferring on the States power to give authority to build bridges on streams not wholly within their limits, by a negative pregnant with an affirmative, demonstrates that the object of the act was not to deprive the several States of the authority to consent to the erection of bridges over navigable waters wholly within their territory."

The decision in *Lake Shore & Michigan Railway v. Ohio* was rendered before the passage of the River and Harbor Act of 1899. But the tenth section of that act, upon which the permit of the Secretary of War was based, is not so worded as to compel the conclusion that Congress intended by that section to ignore altogether the wishes of Illinois in respect of structures in navigable waters that are wholly within its limits. We may assume that Congress was not unaware of the decision of the above case in 1896 and of the interpretation placed upon existing legislative enactments. If it had intended by the act of 1899 to assert the power to take under national control, for every purpose, and to the fullest possible extent, the erection of structures in the navigable waters of the United States that were wholly within the limits of the respective States, and to supersede entirely the authority which the States, in the absence of any action by Congress, have in such matters, such a radical departure from the previous policy of the Government would have been manifested by clear and explicit language. In the absence of such language it should not be assumed that any such departure was intended.

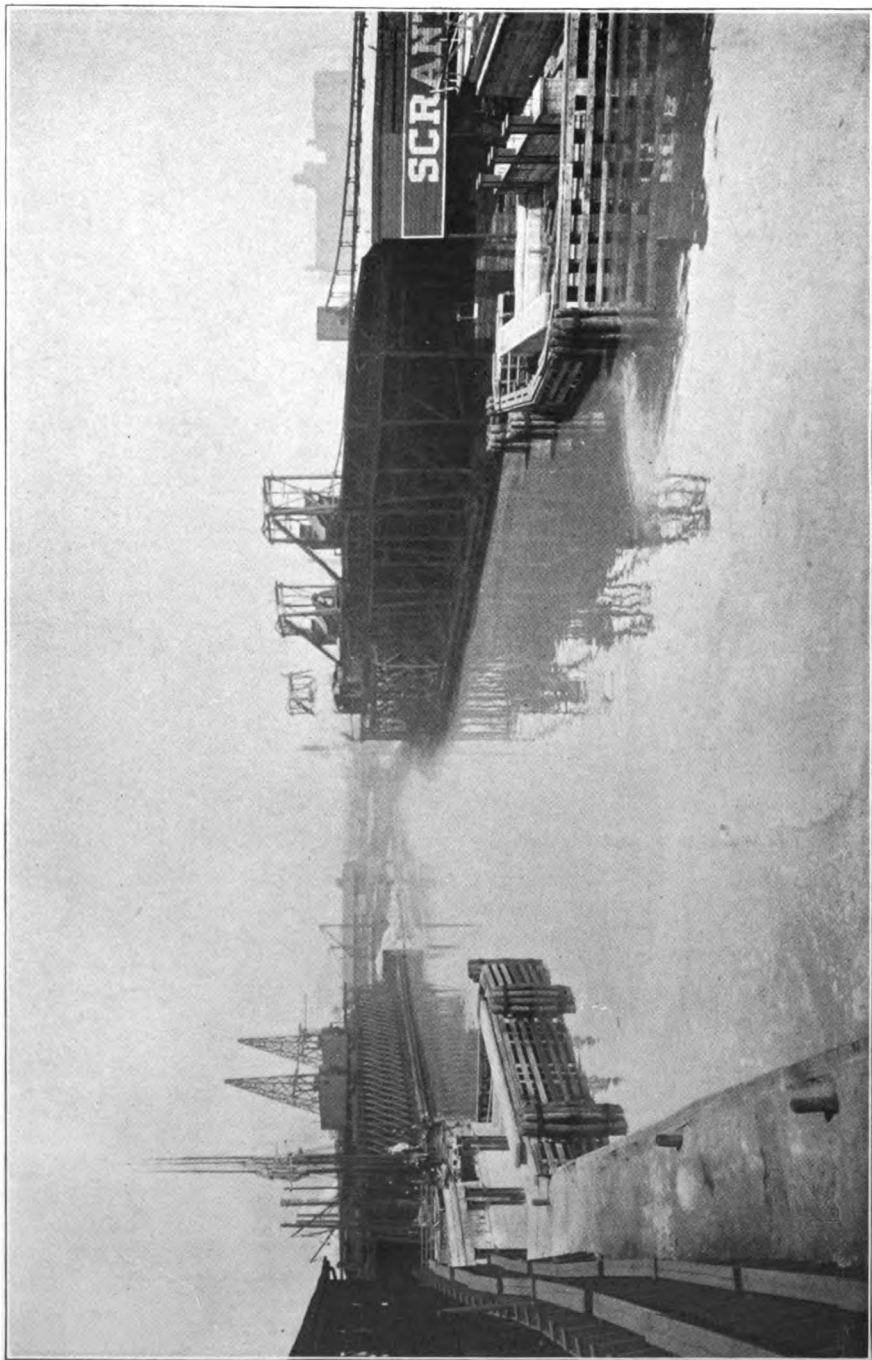
We do not overlook the long settled principle that the power of Congress to regulate commerce among the States "is complete in itself, may be exercised to its utmost extent, and acknowledge no limitations other than are prescribed in the Constitution." *Gibbons v. Ogden*, 9 Wheat. 1, 196; *Brown v. Maryland*, 12 Wheat. 419, 446; *Brown v. Houston*, 114 U. S. 630. But we will not at this time make any declaration of opinion as to the full scope of this power or as to the extent to which Congress may go in the matter of the erection, or authorizing the erection of docks and like structures in navigable waters that are entirely within the territorial limits of the several States. Whether Congress may, against or without the express will of a State, give affirmative authority to private parties to erect structures in such waters, it is not necessary in this case to decide. It is only necessary to say that the act of 1899 does not manifest the purpose of Congress to go to that extent under the power to regulate foreign and interstate commerce and thereby to supersede the original authority of the States. The effect of that act, reasonably interpreted, is to make the erection of a structure in a navigable river, within the limits of a State, depend upon the concurrent or joint assent of both the National Government and the State Government. The Secretary of War, acting under the authority conferred by Congress, may assent to the erection by private parties of such a structure. Without such assent the structure cannot be erected by them. But under existing legislation they must, before proceeding under such an authority, obtain also the assent of the State acting by its constituted agencies.

For the reasons stated the judgment of the Circuit Court is affirmed.

True copy.

(Signed) JAMES H. MCKENNEY,  
Clerk Supreme Court, U. S.





WEST DIVISION STREET BRIDGE — JUNE 26, 1903.

## SUPREME COURT OF THE UNITED STATES.

No. 135—October Term, 1902.

THE CALUMET GRAIN AND ELEVATOR COMPANY,

*Appellant,**vs.*

THE CITY OF CHICAGO.

} Appeal from the Circuit  
 Court of the United  
 States for the North-  
 ern District of Illi-  
 nois.

(February 23, 1903.)

Mr. Justice HARLAN delivered the opinion of the Court.

This case relates to the construction of a dock in Calumet River, on or in front of land belonging to the appellant. The facts upon which that company principally bases its claims for relief are those upon which the plaintiffs relied in *Cummings v. Chicago*, just decided. Upon the authority of the decision in that case, the judgment in this case is affirmed.

True copy.

(Signed) JAMES H. MCKENNEY,  
*Clerk Supreme Court, U. S.*

## CALUMET RIVER AND HARBOR.

During the year the United States dredged in the Calumet river a distance of 1,500 feet south of 106th street, the channel being 200 feet wide and 20 feet deep, and 500 feet northward from 118th street, same width of channel and 14 feet in depth.

From the east end of the breakwater on line of Eighty-fifth street produced, which is 4,400 feet long and ends at 32 feet of water, the United States has commenced the construction of the second breakwater, an extension southeasterly for a distance not to exceed 2,500 feet. Of this 900 feet have been completed this year by Gillen & Gillen, contractors, and stone has been placed along several hundred feet additional for foundations for the cribs. A wharf 300x100 feet has been built 1,000 feet west of the east end of the due east-and-west breakwater, which is used for crib construction, storage of material and maintenance of the working force of the contractor for the southeasterly extension of the breakwater.

The dredging in the Calumet harbor during the year by the United States Government resulted in getting a depth of 21 feet of water below Chicago City datum over most of the harbor area, giving an unobstructed approach to the harbor from deep water in the lake 1,400 feet wide at the 21-foot contour, and 300 feet wide at the entrance to the Calumet river.

The removal of the rock from the Calumet river is under consideration by the United States authorities. The quantity of it and the impenetrable hard pan to be removed to provide a channel 21 feet deep and 200 feet wide, based on soundings made by the United States Engineer's force in February, 1902, is 61,550 cubic yards, which at \$4.50 per yard, and an increase of 15 per cent for contingencies, gives a total of \$318,521.25.

## A NEW CHANNEL TO THE CALUMET.

At Indiana Harbor the construction has been commenced of a channel from Lake Michigan in a southwest direction to the northeast corner of the southeast quarter of Section 20, to the center of the east line of said section, thence along the east line of Sections 20 and 29 (along the east side of East Chicago) to the Calumet river, with which it is to unite at a point about  $1\frac{1}{2}$  miles east of Hammond.

From the point of union with the east line of Section 20 the proposed channel runs due west  $1\frac{1}{2}$  miles to Lake George with which it unites at a point in its southern end  $1\frac{1}{2}$  miles east of the Indiana State line. The first mile next Lake Michigan is under contract.

This channel at the lake is 300 feet wide as far inland as the tracks of the Chicago, Lake Shore & Eastern Railway, Baltimore & Ohio Railway, and Lake Shore and Michigan Southern Railway, after passing which it takes a width of 200 feet at top, 116 feet at bottom, side slopes of one and one-half to one depth of excavation 28 feet, depth of water in proposed channel 20 feet. Reference is herein made to this work because of the influence it may subsequently exercise over the Calumet river or over the projected Sanitary District channel southwesterly along the Calumet valley.

## CHICAGO RIVER AND HARBOR.

The widening of the South branch of the Chicago river is energetically carried out by the Sanitary District. Much property has been acquired by the District adjoining the river and has been removed by dredging. For 1903 the dredging has amounted to 277,426 cubic yards, and the District has constructed 4,148 lineal feet of dock. The total dredging done by the Sanitary District in the Chicago river since the inception of the work in 1897 is 2,941,109 cubic yards of material and the total dock work done amounts to 11,761 lineal feet.

A wide central channel has replaced the narrow double channels by the placing of bascule bridges during the year at the following places: State street, Randolph street and Canal street. By prior construction a wide central channel has been secured at Taylor street, Chicago Terminal Transfer Railroad crossing, Main street and Ashland avenue. Contracts have been let by the Sanitary District which will secure wide central channels at Eighteenth street and Loomis street, and soon like results will be secured for Twenty-second street and Harrison street.

The first example of concrete dock construction in the Chicago harbor has been commenced this year on the west side of the Chicago river between Washington and Madison streets.

During the year the City constructed the following docks:

North end Slip A, Pipe Yard, Jackson & Corbett Co.,	
129.8 lineal feet, at \$20.90.....	\$2,712.82
South of Murray Nelson Elevator, Jackson & Corbett	
Co., 50 lineal feet, at \$21.75.....	1,087.50
<b>Total.....</b>	<b>\$3,800.32</b>

The dock and dredging work stated in former tables herein for the Sanitary District are quantities up to December first; the full year's work appears under this heading.

On May 15, 1899, an ordinance was passed by the City Council for the improvement of the North branch of the Chicago river between Belmont and Lawrence avenues. For two years the City Sewer Department tried to secure right-of-way by understandings with the property owners affected, because the proposed channel was also the outlet from the sewage pumping station at Lawrence avenue; then the matter passed to the Sanitary District, who on April 23, 1902, passed an ordinance, which differs from, and, as far as marine purposes go, is an improvement upon, the lines next south of Irving Park boulevard. The accompanying plat shows the lines of this improvement of April 23, 1902, the City lines next south of Irving Park boulevard being dotted, the district lines being full. The right-of-way for this improvement has been secured by the Sanitary District, and bids for the doing of the necessary work will be received on February 24, 1904.

#### THE ORDINANCE FOR THE IMPROVEMENT OF THE NORTH BRANCH OF THE CHICAGO RIVER,

as passed on April 23, 1902. It was subsequently amended by another ordinance passed on April 29, 1903, which is as follows:

AN ORDINANCE Amending Section One of an ordinance passed April 23, 1902, entitled "An ordinance laying out and establishing a route for an adjunct to the Main Channel to the Sanitary District of Chicago."

SECTION 1. Be it ordained by the Board of Trustees of the Sanitary District of Chicago:

That Section One of an ordinance passed April 23, 1902, entitled "An ordinance laying out and establishing a route for an adjunct to the Main Channel of the Sanitary District of Chicago," be amended so as to read as follows:

SECTION 1. That there be and is hereby laid out and established a route for an adjunct to the Main Channel of the Sanitary District of Chicago, which adjunct shall hereafter be constructed and maintained within the limits of said route, which shall be over, upon and through certain lands lying in the County of Cook and State of Illinois, said lands being situated between the center lines of Lake street, in the City of Chicago, and Lawrence avenue, in said City of

Chicago, and included in the following more particular and fully described boundaries, to-wit:

The South branch of the Chicago river, beginning at the center line of Lake street; running thence north to its junction with the North branch of the Chicago river and the North branch of the Chicago river from its junction with the South branch of the Chicago river; running northwesterly to a line 100 feet south of and parallel with Belmont avenue; thence within certain lines situated 240 feet distant from (measured at right angles) on either side of and parallel to a line commencing at a point 1,125.6 feet west and 100 feet south of the intersection of the center lines of Belmont and Western avenues, and running thence north 40 degrees 20 minutes west 131.05 feet to a point on the center line of Belmont avenue and forming an angle of 130 degrees 16 minutes from east on center line of Belmont avenue to northwest on center of proposed channel; said point being 1,210.3 feet west of said intersection of said center lines of Belmont and Western avenues; thence north 40 degrees 20 minutes west 554.54 feet; thence north 26 degrees 39 minutes 20 seconds west 847.88 feet; thence north 7 degrees 25 minutes 20 seconds west 374.03 feet; thence north 9 degrees 35 minutes 20 seconds west 1,120.97 feet to a point on the center line of Addison avenue and forming an angle of 80 degrees 24 minutes from east on center line of Addison avenue to south on center line of proposed channel, said point being 2,147.15 feet west of the intersection of the center lines of Addison and Western avenues; thence north 9 degrees 35 minutes 20 seconds west 1,008.22 feet; thence north 41 minutes 40 seconds west 350.16 feet; thence north 24 degrees 50 minutes 20 seconds east 853.77 feet; thence north 28 degrees 46 minutes 26 seconds east 583.23 feet; thence north 2 degrees 51 minutes 20 seconds east 1,318.46 feet; thence north 6 degrees 52 minutes west 919.13 feet; thence north 25 minutes west 450.26 feet to a point on the center line of Montrose avenue and forming an angle of 90 degrees 20 minutes 40 seconds from east on center line of Montrose avenue to north on center line of proposed channel, said point being 1,647 feet west of the intersection of the center line of Montrose and Western avenues; thence north 25 minutes west 18.15 feet; thence north 18 degrees 29 minutes 50 seconds west 733.42 feet; thence north 36 degrees 34 minutes 40 seconds west 2,412.12 feet, forming an angle of 53 degrees 38 minutes 40 seconds from south on center line of proposed channel to east on center line of Lawrence avenue, said point being 3,274.75 feet west of the intersection of the center line of Lawrence and Western avenues.

#### MOVEMENTS OF VESSELS.

Of the vessels engaged in our lake commerce, as will appear from the tables herein given of vessel movement in the harbor, 55.54 per cent passed west of Rush street bridge in the Chicago river, the remaining 44.46 per cent taking the Chicago river east of Rush street, and our deep water port in the Calumet river. Of our total trade 11.64 per cent stopped between Rush and Wells street bridges, 43.9 per cent passing west of the latter bridge. There is a movement of vessels between North and South branches of the Chicago river, none of them going east of Wells street bridge; 1,024 vessels going up the north branch and 878 vessels went down the South branch past Lake street bridge.

Of the vessels that passed down in South branch 92.4 per cent went beyond Twelfth street, and 72.15 per cent of them passed south of Twenty-second street bridge, while in the North branch only 39.05 per cent of the vessels that passed Kinzie street passed north of Chicago avenue bridge.

#### LAKE FRONT SURVEY.

The field work of the lake front survey from the mouth of the Chicago river south to the Indiana State line was done at the end of 1902, and the office work of platting the notes was continued in 1903, practically completing the atlas of this survey from Twelfth street south to the State line. In addition a general map of our southern harbor at the Calumet to a scale of 1-3600, embracing the existing hydrographic conditions, was finished. The remaining sheets for the work between Twelfth street and the mouth of the Chicago river, as well as a comprehensive map of the Chicago harbor, on a scale adequate to the representation of its general features, will be made.

The many questions arising affecting riparian or littoral interests attach a particular usefulness to this atlas. Some of the subdivisions that are recorded in the office of the Cook County Recorder by abutting property owners have, in large part, location out into the waters of Lake Michigan, the result of ignorance or fraud, as public title rests in the lands covered by the waters of Lake Michigan.

An appropriation has been asked for the completion of the lake front survey north from the mouth of the Chicago river.

#### LAKE MICHIGAN.

From a consideration of the climatic conditions over the basin of the upper lakes in 1902, as shown on accompanying diagram, it was expected that the elevation of Lake Michigan for the year 1903 would materially increase. This, however, has been only realized in part, an increase of  $1\frac{1}{2}$  inches in the elevation of the lake over that for 1902 having been reached. The precipitation over the basin of the upper lakes during 1903 is practically equal to the normal of the preceding thirty-two years, or about 32 inches. The opening for 1904 shows a slight decrease in precipitation from the normal of thirty-three years. Indications are that the year 1904 will yield a lake elevation about as high as that for 1903, and if temperature is materially lower than the normal, this elevation will probably be exceeded.

A self-registering water gauge was placed during the winter by the United States Engineer at the outer end of the north pier at entrance to Calumet river. It did not show any abnormal changes of lake level until June 30th. There then occurred for several days a series of violent oscilla-



tions, the most remarkable being between 3:12 and 3:52 p. m., June 30th, when the lake surface fell 18 inches; between 7:47 and 8:08 p. m. of the same date, when it rose 21.6 inches; between 10:20 and 10:50 p. m. on same date, when it fell 16.8 inches; and between 12:12 and 12:32 a. m., July 1st, when it rose 18.6 inches. The greatest range during any one day as shown by this gauge was from 1.6 feet above Chicago datum, 8:08 p. m., June 30th, to 0.6 feet below that plane at 10:50 p. m. on the same date, a change of 26.4 inches.

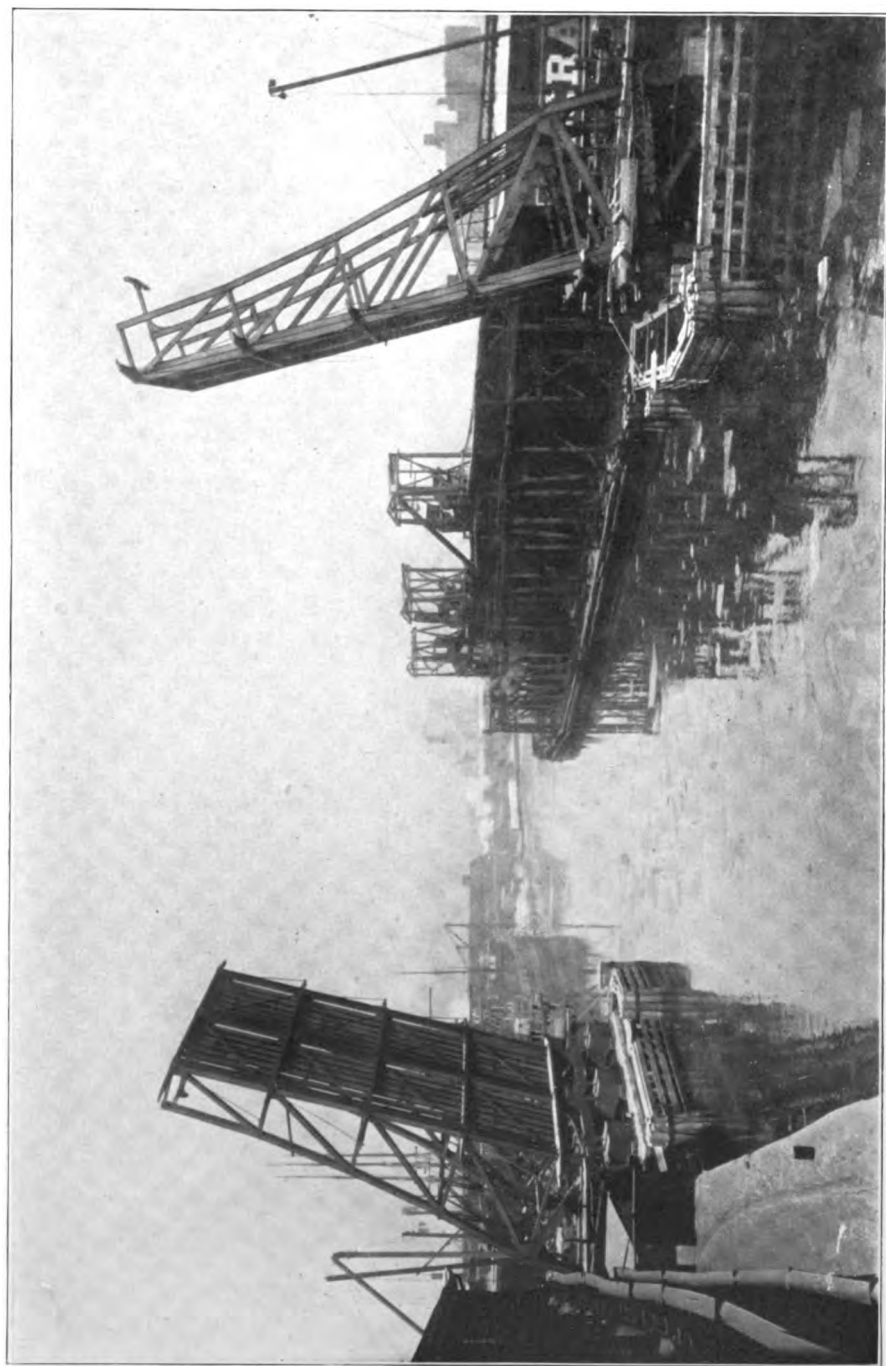
TABLE SHOWING ELEVATION OF SURFACE OF LAKE MICHIGAN, IN FEET, REFERRED TO CITY DATUM BY MONTHS, YEAR 1903, FROM OBSERVATIONS TAKEN AT TWO-MILE CRIB.

MONTHS.	Max.	Min.	Mean.	Range.	REMARKS.	
January .....	0.30	-1.10	-0.46	1.4	Max. Jan. 7	Min. Jan. 10
February .....	0.60	-1.00	-0.81	1.6	" Feb. 4	" Feb. 22
March .....	0.40	-0.70	-0.16	1.1	" Mar. 27	" Mar. 12
April .....	1.10	-0.20	0.30	1.8	" Apr. 14	" Apr. 5
May .....	0.90	0.10	0.36	0.8	" May 30	" May 1
June .....	0.80	-0.30	0.45	1.1	" June 1	" June 30
July .....	0.90	0.10	0.45	0.8	" July 17	" July 1
August .....	1.00	-0.30	0.50	1.3	" Aug. 30	" Aug. 5
September .....	1.10	-0.10	0.49	1.2	" Sept. 15	" Sept. 25
October .....	0.70	-0.10	0.42	0.8	" Oct. 14	" Oct. 7
November .....	1.00	-1.40	0.10	2.4	" Nov. 5	" Nov. 12
December .....	0.40	-1.20	-0.32	1.6	" Dec. 11	" Dec. 15
Year 1903 .....	1.10	-1.40	+0.15	2.5		

TABLE SHOWING ELEVATION OF SURFACE OF LAKE MICHIGAN, IN FEET, REFERRED TO CITY DATUM BY MONTHS, YEAR 1902. FROM OBSERVATIONS TAKEN AT TWO-MILE CRIB. REPRODUCED TO REMOVE TYPOGRAPHICAL ERRORS IN REPORT FOR 1902.

MONTHS.	Max.	Min.	Mean.	Range.	REMARKS.	
January .....	+0.1	-0.9	-0.31	1.0	Max. Jan. 12	Min. Jan. 14
February .....	+0.1	-0.8	-0.39	0.9	" Feb. 17	" Feb. 4
March .....	0.0	-0.8	-0.30	0.8	" Mar. 28	" Mar. 6
April .....	+0.3	-0.5	-0.14	0.8	" Apr. 8	" Apr. 24
May .....	+0.6	-0.4	+0.08	1.0	" May 10	" May 7
June .....	+0.7	-0.6	+0.28	1.3	" June 29	" June 25
July .....	+1.2	0.6	+0.57	1.8	" July 16	" July 16
August .....	+0.9	0.0	+0.52	0.9	" Aug. 6	" Aug. 7
September .....	+1.0	-0.4	+0.32	1.4	" Sept. 24	" Sept. 10
October .....	+0.8	-0.8	+0.17	1.1	" Oct. 4	" Oct. 20
November .....	+0.6	-0.8	-0.02	1.4	" Nov. 27	" Nov. 30
December .....	+0.9	-1.2	-0.18	2.1	" Dec. 18	" Dec. 31
Year 1902 .....	+1.2	-1.2	+0.04	2.4	" July 16	" Dec. 31





NEW BRIDGE AT WEST DIVISION STREET — DECEMBER 31, 1903.

TABLE SHOWING PRECIPITATION AND MEAN TEMPERATURE AND MEAN BAROMETRIC PRESSURE (ACTUAL) IN INCHES AND IN DEGREES FAHR., OVER THE BASIN IN UPPER LAKES, AND MEAN WATER IN LAKE MICHIGAN IN INCHES, BY YEARS, FROM 1871 TO 1903, BOTH INCLUSIVE, WITH THE ANNUAL INCREASE OR DECREASE.

Year	BASIN OF UPPER LAKES.										LAKE MICHIGAN.		
	Precipitation	Difference with Preceding Year		Mean Temp.	Difference with Preceding Year		Pressure.	Difference with Preceding Year			Levels of Mean Water	Difference with Preceding Year	
	Inches	Inc.	Dec.	Deg's.	Inc.	Dec.	Inches	Inc.	Dec.		Inches	Inc.	Dec.
1871	30.75	.....	.....	47.2	.....	.....	29.26	.....	.....		21.24	.....	.....
1872	29.59	.....	1.16	44.2	.....	3.0	29.26	0.00	0.00		9.62	.....	11.62
1873	32.49	2.90	.....	44.3	0.1	.....	29.25	.....	.01		16.80	7.18	.....
1874	29.56	.....	2.93	46.3	2.0	.....	29.31	.06	.....		20.04	3.24	.....
1875	33.06	3.50	.....	42.0	.....	4.3	29.26	.....	0.5		17.40	.....	2.64
1876	28.93	.....	4.13	45.1	3.1	.....	29.25	.....	0.1		30.72	13.32	.....
1877	36.23	7.30	.....	47.5	2.4	.....	29.28	.03	.....		27.72	.....	3.00
1878	38.35	2.12	.....	49.2	1.7	.....	29.22	.....	.06		24.00	.....	3.72
1879	35.51	.....	2.84	46.5	.....	2.7	29.30	.08	.....		12.72	.....	11.28
1880	38.36	2.85	.....	47.0	0.5	.....	29.28	.....	.02		13.92	1.20	.....
1881	42.42	4.06	.....	47.1	0.1	.....	29.29	.01	.....		15.12	1.20	.....
1882	37.28	.....	5.14	48.2	1.1	.....	29.29	.00	.00		24.00	8.88	.....
1883	32.66	.....	4.62	44.4	.....	3.8	29.28	.....	.01		25.20	1.20	.....
1884	34.31	1.65	.....	46.2	1.8	.....	29.28	.00	.00		26.88	1.68	.....
1885	32.99	.....	1.32	43.8	.....	2.4	29.26	.....	.02		28.56	1.68	.....
1886	30.56	.....	2.43	45.8	2.0	.....	29.28	.02	.....		31.68	3.12	.....
1887	29.63	.....	0.93	45.5	.....	0.3	29.29	.01	.....		23.52	.....	8.14
1888	27.57	.....	2.06	43.8	.....	1.7	29.31	.02	.....		15.60	.....	7.92
1889	28.65	1.08	.....	45.9	2.1	.....	29.29	.....	.02		9.24	.....	6.36
1890	34.58	5.93	.....	46.0	0.1	.....	29.30	.01	.....		7.56	.....	1.68
1891	29.62	.....	4.96	46.4	0.4	.....	29.30	.00	.00		0.60	.....	6.96
1892	34.15	4.53	.....	44.7	.....	1.7	29.31	.01	.....		-2.04	.....	2.64
1893	31.46	.....	2.69	43.8	.....	0.9	29.26	.....	.05		-2.35	.....	0.31
1894	29.51	.....	1.95	46.9	3.1	.....	29.28	.02	.....		6.00	8.35	.....
1895	26.03	.....	3.48	44.9	.....	2.0	29.29	.01	.....		-5.88	0.00	11.88
1896	31.59	5.56	.....	46.1	1.2	.....	29.30	.01	.....		-6.96	0.00	1.08
1897	30.36	.....	1.23	45.9	.....	0.2	29.31	.01	.....		+8.96	10.92	.....
1898	31.32	0.96	.....	46.2	0.3	.....	29.27	.....	.04		+5.64	1.68	.....
1899	29.26	.....	2.06	44.7	.....	1.5	29.31	.04	.....		+6.36	.72	.....
1900	31.25	1.99	.....	46.7	2.0	.....	29.31	.....	.....		+1.44	.....	4.92
1901	26.88	.....	4.37	45.0	.....	1.7	29.27	.....	.04		+4.68	3.24	.....
1902	31.21	4.33	.....	44.8	.....	0.2	29.25	.....	.02		+0.48	.....	4.20
1903	31.91	0.70	.....	43.0	.....	1.8	29.27	.02	.....		+1.80	1.32	.....

MAXIMUM, MINIMUM AND MEAN ELEVATION (IN FEET) OF WATER  
IN LAKE MICHIGAN FOR EACH YEAR FROM 1834 TO 1903, INCLUSIVE.

Referred to City Datum (Low Water of 1847.)

YEAR.	LAKE MICHIGAN.			YEAR.	LAKE MICHIGAN.		
	Maximum.	Minimum.	Mean.		Maximum.	Minimum.	Mean.
1854.....			1.88	1879.....	2.51	-0.49	1.06
1855.....	8.45	0.15	1.56	1880.....	2.81	-0.99	1.16
1856.....	3.05	0.42	1.60	1881.....	3.01	-2.19	1.26
1857.....	4.35	0.60	2.42	1882.....	3.01	-0.99	2.00
1858.....	4.69	1.83	2.00	1883.....	3.81	-0.99	2.10
1859.....	4.45	1.31	2.98	1884.....	3.81	-0.01	2.24
1860.....	3.53	1.30	2.54	1885.....	3.71	-0.01	2.48
1861.....	4.40	1.20	2.56	1886.....	4.41	0.01	2.64
1862.....	3.30	0.70	2.50	1887.....	3.11	0.01	1.96
1863.....	3.30	-0.80	2.10	1888.....	3.01	0.01	1.30
1864.....	2.80	-0.40	1.57	1889.....	2.51	-0.79	0.77
1865.....	3.66	-1.08	1.30	1890.....	2.21	-0.99	0.63
1866.....	2.50	0.00	1.07	1891.....	1.61	-2.39	0.05
1867.....	2.60	-0.41	1.49	1892.....	1.80	-3.60	-0.17
1868.....	2.58	-1.00	1.01	1893.....	1.70	-0.30	0.69
1869.....	2.13	0.41	1.13	1894.....	1.80	-1.80	0.50
1870.....	3.25	-0.30	2.09	1895.....	0.00	-1.57	-0.49
1871.....	2.80	-0.40	1.77	1896.....	0.00	-1.70	-0.58
1872.....	1.80	-0.74	0.81	1897.....	1.60	-1.30	0.36
1873.....	2.70	-0.76	1.40	1898.....	1.09	-1.25	0.47
1874.....	2.80	-0.20	1.67	1899.....	2.10	-1.50	0.53
1875.....	3.01	-0.34	1.45	1900.....	1.20	-1.60	0.12
1876.....	4.31	0.24	2.56	1901.....	1.70	-0.90	0.89
1877.....	3.56	1.04	2.31	1902.....	1.20	-1.20	0.04
1878.....	3.14	0.51	2.00	1903.....	1.10	-1.40	0.15

## SUBMERGED LANDS ALONG THE FRONT OF CITY ON LAKE MICHIGAN.

In May of the year 1903 very important enactments were approved by the Governor of the State affecting the status of the submerged lands along the lake front, giving to the Park Commissioners the right to condemn.

## RIPARIAN RIGHTS.

SECTION 1. *Be it enacted by the People of the State of Illinois, represented in the General Assembly:* That Section 2 of an act entitled "An act to enable park commissioners having control of any park bordering upon public waters in this State, to enlarge the same from time to time, and granting submerged lands for the purpose of such enlargement, and to defray the cost thereof," approved June 15, 1895, in force July 1, 1895, be and the same is hereby amended so as to read as follows:

SEC. 2. The riparian rights of the owners of lands along the shore adjoining such submerged land, and such land along the said shore as to the said board shall seem necessary and desirable, the said board of commissioners may acquire by contract with or deeds from any such owner, and in case of inability to agree with any such owner, proceedings may be had to condemn such rights and such lands according to the provisions of Article 9 of an act entitled "An act to provide for the incorporation of cities and villages," approved April 10, 1872, and the amendments thereof.

In all cases in which said board of park commissioners shall have acquired or contracted to acquire the riparian rights of the owners of any land along the shore adjoining such submerged land, the owners of such shore land may file a petition or bill in chancery on the chancery side of the Circuit Court of the county in which said lands are situated, to which bill or petition the said board of park commissioners shall be made defendants, praying that the boundary line between the lands of the petitioners or complainants in said suit and the lands acquired by the said board of park commissioners under this act, may be established and defined by the decree of said Circuit Court. The defendants shall be served with process in the suit so instituted in the same manner as in suits in chancery, and the proceedings in said cause may be conducted in the same manner as in other suits in chancery, and the Court shall have power by its final decree in said cause to establish the dividing or boundary line between the lands of the petitioners or complainants and the lands of the said board of park commissioners adjacent thereto, and the line so established by the decree or judgment of the said Circuit Court shall be the permanent boundary line of said shore lands, which shall not be affected or changed thereafter, either by accretions or erosions, and the owners of said shore lands shall have the right to improve, protect, sell and convey the shore lands up to the boundary line so established, free from any adverse claim in any way arising out of any question as to where the shore line was at any time in the past or as to the title to existing accretions, if any, to said shore land. And in the event that any owner or party interested in any of the said shore lands shall be unable to contract with said park commissioners by reason of minority or other disability, a petition or bill in chancery may be filed by the guardian or next friend of such owner on the chancery side of the Circuit Court in the county in which

such lands are situated, to which the said board of park commissioners shall be made defendants, praying that such proceedings may be had and such order or decree entered as may be necessary or proper to protect the interests of the said petitioner or complainant in said shore lands. The defendants shall be served with process in the same manner as in suits of chancery, and the proceedings in said cause shall be conducted in the same manner as in other suits in chancery, and the Court shall have power by its final decree, upon such terms and conditions as it may deem reasonable and fair, to transfer to said board of park commissioners all the riparian rights of the petitioner or complainant, and also to establish the boundary line between the lands owned by the petitioner or complainants, and the lands of said board of commissioners.

#### EXTENDING PARKS OVER SUBMERGED LANDS.

AN ACT to enable park commissioners having control of a park or parks bordering upon public waters in this State, to enlarge and connect the same from time to time by extensions over lands and the bed of such waters, and defining the use which may be made of such extensions, and granting submerged lands for the purpose of such enlargements.

SECTION 1. *Be it enacted by the People of the State of Illinois, represented in the General Assembly:* That every board of park commissioners existing under the laws of the State, which now has or may hereafter have or acquire control over any public park, boulevard or driveway bordering upon any public works in this State, shall have the power to extend such park, boulevard or driveway over and above the bed of such public waters: *Provided, however,* That no such extension shall be made which shall interfere with the practical navigation of such public waters, for the purpose of commerce, without due authority from the proper official of the United States Government having control thereof.

SEC. 2. Every board of park commissioners existing under the laws of this State which now has or may hereafter have or acquire control over two or more separate public parks, whether they constitute a part of one park system or not, bordering upon any body of public water in this State, shall have power to connect the same by constructing a boulevard, driveway or parkway extending over and upon the bed of such public waters, and over and upon any lands penetrating into such waters, and may extend any such park by constructing a boulevard, driveway or parkway over any private property, and over any navigable river or any part thereof which lies within the territory, the property of which shall be taxable for the maintenance of the park under the control of said board.

*Provided, however,* That no such extension which shall be made, shall interfere with the practical navigation of such public waters or rivers for the purposes of commerce, without due authority from the proper official of the United States Government having control thereof.

SEC. 3. The riparian or other rights of the owners of land on the shores adjoining the waters or rivers in which it is proposed to construct any such extension or connection, the title of the private owners, if any there be, of lands lying beneath such public waters or rivers, and the title of the owners of any lands penetrating into such public waters, or of any land into, upon or over which it is proposed to construct such extension or connection or viaduct,

bridge or tunnel, may be acquired by the said board of park commissioners by contract with, or deeds from, any such owner or owners, and such park commissioners shall have the power to pay for any such rights, lands, or territory thus acquired, out of its general revenue.

SEC. 4. The title to any such extension or connection of such park or parks, boulevards, driveways and parkways, and to the bed thereof, shall be, and thereby become vested in such board of park commissioners for public purposes, and the same shall thereby become a part of the public park or parks under the control of such board, and shall thenceforth be maintained and controlled by such board, in the manner provided by law for the government and maintenance of other parks, boulevards and driveways under its control, and in all cases where any boulevard, driveway or parkway is extended or constructed under the provisions of this act, the title to the submerged lands lying between the shore of such public waters and the inner line of the extension of such boulevard, driveway or parkway, shall be and thereby become vested in such board of park commissioners; and in case any such extension or connection as provided in this act shall be made into, over or upon the bed of Lake Michigan by any such board of park commissioners, then the right, title and interest of the State of Illinois in and to the bed of so much of said Lake Michigan shall be vested in such board of park commissioners as in other cases provided in this act, and for the same purposes and with the same rights and power.

SEC. 5. No such board of park commissioners shall be hereby authorized to extend any of its park or boulevard system outside of or beyond the limits of the district or territory, the property of which shall be taxable for the maintenance of the parks under the control of such board, except into, over, and upon public waters or rivers adjoining or being a part of such district.

APPROVED May 14, 1903.

#### FILLING IN OF GRANT PARK.

AN ACT conveying certain lands to the South Park Commissioners for the purpose of establishing a public park or pleasure ground thereon:

SECTION 1. *Be it enacted by the People of the State of Illinois, represented in the General Assembly:* That the land, including all submerged land, known as Grant Park, in the City of Chicago, County of Cook, and State of Illinois, bounded on the north by the south line of Randolph street, extended in a straight line east from Michigan avenue to the harbor line established by the Secretary of War in Lake Michigan, and bounded on the east by said harbor line, and bounded on the south, east of the right-of-way, easement and grounds of the Illinois Central Railroad Company, by the south line of the street known as Lake Park place (formerly known as Park Row), extended in a straight line east from Michigan avenue to said harbor line, and west of said right-of-way, easement and grounds by the north line of said Lake Park place, and bounded on the west by the east line of Michigan avenue, excepting, however, the right-of-way, easement and grounds of the Illinois Central Railroad Company, extending north and south through said Grant Park, as described in an ordinance of the City Council of the City of Chicago, passed October 21, 1895, and published by authority of the said Council in 1898, in volume 2 of special ordinances of the City of Chicago, at page 657, be and the same is hereby conveyed to the South Park Commissioners, to be held, managed and controlled by said Commissioners as other parks now are under the control of said Commissioners.



SEC. 2. WHEREAS, There is a necessity for the immediate acquisition and improvement of the park contemplated in this act; therefore, an emergency exists, and this act shall take effect and be in force from and after its passage.

APPROVED May 14, 1903.

**TITLE TO SUBMERGED AND ARTIFICIALLY MADE LANDS CONVEYED TO THE SOUTH PARK COMMISSIONERS.**

AN ACT conveying certain lands to the South Park Commissioners for the purpose of establishing public parks and pleasure grounds thereon.

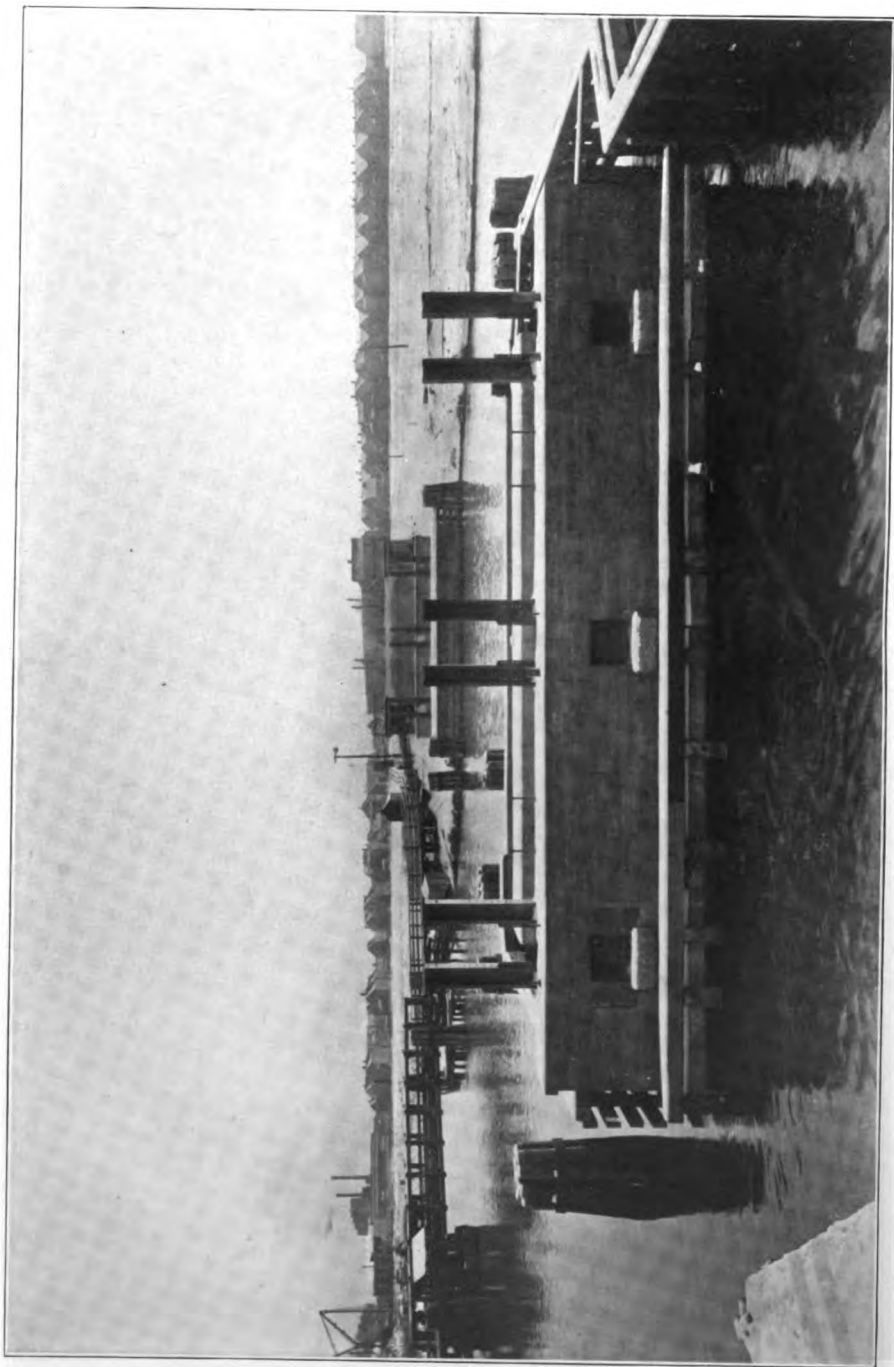
SECTION 1. *Be it enacted by the People of the State of Illinois, represented in the General Assembly:* That the land, including all submerged and artificially made land, lying within the south boundary line of Jackson Park and the south line of Seventy-ninth street as extended one thousand feet into Lake Michigan, and a line easterly of and parallel with the shore line of said lake and the shore line of such lake, and also the land, including all submerged and artificially made land lying within the north line of Ninety-fifth street extended to its intersection with the boundary line of Indiana and Illinois as extended and the shore line of Lake Michigan, all of such lands being situated in the City of Chicago, County of Cook and State of Illinois, be and the same are hereby granted and conveyed to the Board of South Park Commissioners and their successors in office, to be held, managed and controlled by them for the same uses and purposes as other parks now under their control.

APPROVED May 14, 1903.

**COMMERCE BY LAKE.**

Considering the tables of commerce of the City by lake leads to very gratifying results. Our trade in the ten years ending 1881 yielded an average annual increase for each of these years of 1,998,610 tons, or 39.2 per cent over the average annual tonnage for the prior ten years ending in 1871, and the average cargo for the ten years ending in 1881 gains 80 tons, or 34.6 per cent over that for the ten years ending in 1871. A more marked improvement is presented by the record for the eleven years ending in 1892, as during that period the average annual tonnage increased 2,081,412 tons, or 29.3 per cent over that for the prior ten years, while the average annual number of vessels decreased 379, or 1.7 per cent from that for the ten years ending in 1881, and in consequence giving a marked increase of 98 tons, or 31.5 per cent over the average annual cargo for the prior ten years. The good results shown by the returns for the eleven years 1882 to 1892, both as to volume and vessel capacity, are greatly surpassed by the showing for the last eleven years, which gives an average annual increase of our trade of 4,058,940 tons, or 44.2 per cent over our average annual tonnage for the eleven preceding years, while the average annual number of vessels during these past eleven years has fallen off 5,605 or 25 per cent as against that for the preceding eleven years, the capacity or average annual cargo making the great increase of 379 tons, or 92.7 per cent over the average annual cargo from 1882 to 1892. This result, it is believed, is not equaled by any other port in the world.





**NORTH WESTERN AVENUE BRIDGE — DECEMBER 31, 1903.**

TABLE SHOWING MOVEMENTS OF COMMERCE BY LAKE IN PERIODS FROM 1863 TO 1903, BOTH INCLUSIVE.

PERIOD.	YEARLY AVERAGE TONNAGE.			YEARLY AVERAGE NO. VESSELS.			YEARLY AVERAGE CARGO.		
	Tons.	Increase or Decrease.		No.	Increase or Decrease.		Tons.	Increase or Decrease.	
		Tons.	Per Cent.		No.	Per Cent.		Tons.	Per Cent.
1863 to 1871	5,098,157	.....	.....	22,014	.....	.....	231	.....	.....
1872 to 1881	7,091,767	+1,998,610	39.2	22,787	+773	3.5	311	+80	34.6
1882 to 1892	9,173,179	+2,061,412	29.3	22,408	-379	-1.7	409	+98	31.5
1893 to 1903	13,232,119	+4,058,940	44.2	16,803	-5,605	-25.0	788	+379	92.7

## VESSELS BUILT IN DISTRICT OF CHICAGO, 1903.

CLASS	NAME	Built of	Tons	Cost
Screw steamer.....	Charles M. Warner.....	Steel	2,733	\$ 230,000.00
Screw steamer.....	Duluth.....	Steel	.....	275,000.00
Screw steamer.....	Geo. B. Leonard.....	Steel	2,844	240,000.00
Screw steamer.....	Geo. C. Howe.....	Steel	955	150,000.00
Screw steamer.....	John Lambert.....	Steel	929	150,000.00
Screw steamer.....	John Crevar.....	Steel	955	150,000.00
Screw steamer.....	Perry G. Walker.....	Steel	3,143	275,000.00
Screw steamer.....	R. L. Ireland.....	Steel	3,143	260,000.00
Screw steam yacht...	Fortuna.....	Steel	83	30,000.00
Steam yacht.....	Marcia.....	Wood	15	10,000.00
Gasoline launch.....	Grace J.....	Wood	17	3,500.00
Sloop yacht.....	Iris.....	Wood	7	1,500.00
Sloop yacht.....	Thor Bjorn.....	Wood	8	1,500.00
	Total.....		14,832	\$1,776,500.00

## TONNAGE OF THE DISTRICT OF CHICAGO, 1903.

ENTERED AT	FROM AMERICAN PORTS.		FROM FOREIGN PORTS.		TOTALS.	
	Vessels	Tonnage.	Vessels	Tonnage.	Vessels	Tonnage.
Chicago .....	7,218	7,317,346	184	205,390	7,347	7,422,736
Michigan City .....	197	51,975	12	3,789	209	55,764
Waukegan .....	94	108,910	.....	.....	94	108,910
Totals .....	7,504	7,378,231	146	209,179	7,650	7,587,410

CLEARED FROM	TO AMERICAN PORTS.		TO FOREIGN PORTS.		TOTALS.	
	Vessels	Tonnage.	Vessels	Tonnage.	Vessels	Tonnage.
Chicago .....	7,151	7,198,363	305	404,915	7,456	7,603,278
Michigan City .....	192	51,244	8	2,306	200	53,550
Waukegan .....	65	63,397	.....	.....	65	63,397
Totals .....	7,408	7,318,004	313	407,221	7,721	7,720,325

## CITY OF CHICAGO—SUMMARY OF COMMERCE BY LAKE, 1903.

	No.	Tons
Entrances .....	7,347	7,422,736
Clearances .....	7,456	7,603,278
Total .....	14,803	15,026,014
Average cargo City of Chicago .....	.....	1,015

The preceding table shows a material improvement in our trade over the conditions shown in 1902. There is a gain of 786,616 tons, or  $5\frac{52}{100}$  per cent., over the total tonnage for year 1902, while the number of vessels carrying this great volume of trade for 1903 decreased by 951 or  $6\frac{14}{100}$  per cent. from the number entered and cleared for the prior year, the average cargo for the city during year 1903 as a direct consequence, increasing to 1015 tons, being a gain of 111 tons or  $12\frac{23}{100}$  per cent. over the average cargo for 1902.

## THE LAKE COMMERCE OF CHICAGO—RECEIPTS—1908.

Commodities	Quantity	Commodities	Quantity
Coal.....tons	1,250,815	Whiting.....bbls.	35,865
Iron ore....."	2,987,798	Asphalt....."	55,085
Hardware....."	25,468	Copper.....bars	106,779
Lumber.....M	455,588	Hides.....bales	35,505
Shingles....."	26,829	Wheat.....bush.	2,633,500
Lath....."	2,100	Flaxseed....."	1,502,100
Posts.....pieces	1,658,161	Oats....."	75,800
Ties....."	1,940,424	Coffee.....sacks	216,529
Poles....."	125,731	Liquors.....pkgs.	45,568
Wood.....cords	9,140	Sugar....."	1,671,981
Salt.....bbls.	1,800,624	Groceries.....tons	247,455
Plaster....."	300,526	Stone....."	15,900
Cement....."	579,888	Unclassified....."	641,965

## THE LAKE COMMERCE OF CHICAGO—SHIPMENTS—1908.

Commodities	Quantity	Commodities	Quantity
Wheat.....bush.	14,989,251	Sugar.....bbls.	47,550
Corn....."	68,017,087	Oil....."	108,415
Oats....."	16,888,857	Pork....."	11,070
Rye....."	2,346,438	Beef....."	500
Barley....."	25,000	Tallow....."	33,813
Flour.....bbls.	2,933,080	Starch....."	77,260
Grass-seeds.....sacks	85,890	Broom-corn.....bales	6,330
Mill stuffs....."	2,580,000	Hides....."	22,380
Malt....."	79,920	Leather....."	9,460
Oil-cake....."	392,150	Wool.....sacks	55,940
Spelter.....plates	72,425	Hardware.....tons	13,655
Lead.....pigs	58,280	Groceries....."	10,930
Glucose.....bbls.	43,925	Unclassified....."	395,700

## MOVEMENTS OF VESSELS IN CHICAGO RIVER FOR THE YEAR 1903.

BRIDGES.	Days in Service.	NUMBER.			AVERAGE.					PERCENTAGE OF TIME.	
		Hours Open.	Vessels Passed.	Swings of Bridges.	Number of Vessels per Day.	Number of Swings per Day.	Time Open per Swing, in Minutes.	Time Open per Hour, in Minutes.	Time Open per Day in Minutes.	Closed.	Open.
Rush street.....	267	284.75	8,222	7,037	30.79	26.35	2.42	2.66	63.98	95.56	4.44
Wells street.....	269	287.25	6,499	5,656	24.16	21.02	2.78	2.89	57.87	96.02	3.98
Lake street.....	269	241.76	4,754	4,149	17.67	15.42	3.49	2.25	53.92	96.25	3.75
Jackson street.....	208	177.96	3,646	3,333	17.53	16.02	3.20	2.14	51.33	96.44	3.56
Van Buren street.....	49	48.65	853	767	17.40	15.65	3.80	2.48	59.57	95.87	4.13
Twelfth street.....	267	224.88	4,892	3,931	16.44	14.68	3.44	2.10	50.52	96.50	3.50
Eighteenth street.....	224	188.06	3,023	2,723	13.49	12.15	3.04	1.54	36.97	97.44	2.56
Twenty second street....	267	226.10	3,480	3,050	12.94	11.42	4.44	2.11	50.80	96.48	3.52
Kinzie street.....	217	224.36	5,549	3,990	25.57	18.38	3.38	2.59	63.17	95.69	4.31
Chicago avenue.....	245	146.88	2,167	1,932	8.84	7.88	4.54	1.49	35.84	97.52	2.48

NOTE.—This table gives time only for actual service per telephone operator at the designated bridges, night and day. This table does not give percentage of time when bridges are being repaired and not in service. Only the number of vessels passing in and out is given.

See foot-note to table, "Operation of Bridges."

YEAR 1903—DETAILS OF VESSEL MOVEMENTS PASSING BRIDGES, BY MONTHS.

MONTHS.	RUSH STREET.			WELLS STREET.			LAKE STREET.			VAN BUREN STREET.			JACKSON STREET.			TWELFTH STREET.			EIGHTEENTH STREET.			TWENTY-SECOND STREET.			KINZIE STREET.			CHICAGO AVENUE.		
	No. Vessels.	No. Swings.	Minutes Open.	No. Vessels.	No. Swings.	Minutes Open.	No. Vessels.	No. Swings.	Minutes Open.	No. Vessels.	No. Swings.	Minutes Open.	No. Vessels.	No. Swings.	Minutes Open.	No. Vessels.	No. Swings.	Minutes Open.	No. Vessels.	No. Swings.	Minutes Open.	No. Vessels.	No. Swings.	Minutes Open.	No. Vessels.	No. Swings.	Minutes Open.	No. Vessels.	No. Swings.	Minutes Open.
April	553	505	1,190	476	436	1,201	362	327	1,167	257	239	889	.....	.....	.....	312	289	1,023	233	215	622	234	215	.....	727	529	1,787	188	182	886
May	938	834	1,574	816	717	1,856	592	523	1,827	596	528	2,030	.....	.....	.....	540	524	1,661	421	376	1,035	430	384	.....	839	627	1,876	277	270	1,309
June	1,045	909	2,137	708	663	1,749	576	505	1,751	.....	.....	.....	544	505	1,641	539	462	1,621	408	369	1,115	410	362	.....	825	648	2,132	266	124	542
July	1,407	1,139	2,690	912	771	2,042	649	546	1,855	.....	.....	.....	612	557	1,820	596	513	1,723	429	391	1,125	437	392	.....	864	645	2,112	287	223	986
Aug.	1,451	1,169	2,867	1,002	863	2,346	630	575	2,040	.....	.....	.....	649	584	1,946	618	534	1,968	473	429	1,343	438	427	.....	910	713	2,596	325	322	1,387
Sept.	1,112	927	2,404	848	717	2,081	580	497	1,696	.....	.....	.....	570	518	1,710	557	498	1,701	421	376	1,196	426	371	.....	459	243	882	311	305	1,318
Oct.	878	736	2,027	834	716	2,044	663	588	2,098	.....	.....	.....	645	582	1,862	637	559	1,969	517	456	1,492	501	446	.....	215	.....	.....	228	226	1,047
Nov.	651	539	1,458	644	589	1,619	508	451	1,611	.....	.....	.....	493	456	1,347	461	416	1,428	121	111	356	390	347	.....	500	411	1,501	192	190	898
Dec.	137	179	438	199	184	497	144	137	471	.....	.....	.....	133	131	352	132	126	396	.....	.....	.....	114	106	.....	210	174	606	93	90	410
Totals	8,222	7,097	17,085	6,499	5,656	15,435	4,754	4,149	14,506	853	767	2,919	3,646	3,333	10,678	4,392	3,921	13,490	3,623	2,723	8,284	3,430	3,050	13,566	5,549	3,990	13,492	2,167	1,932	8,783



## OPERATION OF BRIDGES, YEAR 1903.

PATRICK WHITE, Superintendent.

The following table gives a detailed account of the bridges of the City, showing the average time consumed per swing, also giving an average number of swings that each bridge makes both monthly and annually, also by what kind of power each bridge is operated:

BRIDGES.	Average Time of each Swing in Minutes.	Average Number of Swings Each Month.	Total Number of Swings Annually.
Adams street.....Electricity	5.35	374	4,493
Archer avenue.....Hand	6.93	102	1,225
Ashland avenue (Thirty-ninth street)....."	12.10	6	6
Ashland Avenue (river).....(9½ months) Electricity	3½	149	1,417
Belmont avenue.....Hand			
Blackhawk street....."	4½	240	2,890
Chicago avenue....."	4.54	237	2,016
Chittenden street....."	14	46	304
Clark street.....Electricity	2	502	6,027
Canal street.....(10½ months) "	4.26	250	2,702
Clybourn place....."	3.10	86	1,030
Deering street.....(6 months) Hand	5½	228	1,371
Diversey boulevard....."	5	15	177
Division street (canal).....(9 months) Electricity	5½	71	642
*Division street (river)....."			
Dearborn street.....Electricity	2.3	455	5,471
†Eighteenth street.....(11 months) Steam	3.04	264	2,634
Erle street.....Hand	7½	179	2,147
Fuller street....."	6.7	116	1,160
Fullerton avenue.....Electricity	3½	92	1,107
*Harrison street....."			
Halsted street (canal).....Hand	4.3	266	3,200
Halsted street (South).....Steam	4½	276	3,307
Halsted street (North, river).....Electricity	4	132	1,585
Indiana street.....Hand	5	314	9,436
†Jackson boulevard.....Electricity	3.20	379	4,555
†Kinzle street.....Hand	3.38	380	4,561
†Lake street.....Electricity	3.49	362	4,348
Laurel street.....Hand	5½	1	17
Madison street.....Steam	3.35	345	4,146
Main street.....(11 months) Electricity	3½	197	2,172
North avenue.....Hand	2½	229	2,748
Ninety-second street....."	5½	356	4,270
Ninety-fifth street.....(6½ months) Electricity	5.28	225	1,461
106th street.....Hand	7½	156	1,875
Polk street....."	5	317	3,809
Randolph street.....(4½ months) Electricity	3	357	1,607
Riverdale....."			
†Rush street.....Electricity	2.42	604	7,256
†State street.....(6½ months) "	3	692	4,498
†Taylor street....."	2.93	342	4,109
†Twelfth street.....Steam	3.44	312	3,749
†Twenty-second street.....Hand	4.44	250	3,002
Thirti-fifth street....."	7	31	374
†Van Buren street.....Electricity	3.80	360	4,317
Washington street....."	2.82	348	4,174
Webster avenue.....Hand	3.52	145	1,743
Weed street....."			
†Wells street.....Electricity	2.69	452	5,427
Western avenue (North).....Hand	8	40	481
Western avenue (South)....."	5.34	73	876

\*New bridge under construction.

†Compiled from reports of bridge telephone operators.

‡Bridge was open 1,123 minutes making repairs.

## COMMERCE BY LAKE AND CANAL—CITY OF CHICAGO.

FROM 1848 TO 1908, BY YEARS, WITH POPULATION 1881 TO 1908. COMPILED FROM  
OFFICIAL RECORDS OF THE DEPARTMENT.

Years	VESSELS BY LAKE.			BY ILL. & MICH. CANAL.			POPULATION.	REMARKS.	
	Total No.	Total Tonnage.	Average, Cargo, Ton.	Boats No.	Tonnage.	Tolls, Dollars.			
1848						87,890	20,028		
1849						118,375	23,047		
1850						125,504	28,296		
1851						178,800	34,000		
1852						168,577	38,734		
1853						178,372	60,662		
1854						198,326	65,872		
1855						180,519	80,028		
1856						184,810	86,000		
1857						197,830	98,000		
1858						197,171	84,000		
1859						182,147	94,000		
1860				201	867,487	188,554	109,460		
1861				194	547,295	218,040	120,000		
1862	14,687	3,847,346	262	211	678,590	264,647	137,030		
1863	17,185	4,338,882	252	240	619,599	210,886	150,000		
1864	17,762	4,389,770	244	228	510,286	156,607	161,288		
1865	20,179	4,199,185	208	228	616,140	800,810	178,492		
1866	22,199	4,620,092	208	280	746,815	202,958	200,418		
1867	24,370	5,101,208	209	209	746,954	252,231	225,000		
1868	26,399	6,005,403	265	218	737,527	215,720	252,054		
1869	27,602	6,373,346	227	219	817,788	238,759	290,000		
1870	25,172	6,083,207	239	179	685,970	149,635	298,700		
1871	24,682	6,178,386	251	186	628,975	159,050	334,270		
1872	25,353	6,077,542	239	178	783,641	165,874	367,396		
1873	23,734	6,564,542	239	172	849,533	166,641	380,000		
1874	21,547	6,329,711	294	152	712,020	144,831	395,400		
1875	21,095	6,279,055	298	142	676,025	107,081	407,000		
1876	19,245	6,167,736	320	146	691,946	118,393	420,000		
1877	20,517	6,595,415	321	145	605,912	96,913	439,776		
1878	20,994	7,239,673	345	140	598,792	84,840	450,000		
1879	23,878	7,757,395	325	186	669,559	89,064	475,000		
1880	25,520	9,154,351	345	133	751,360	92,296	503,298		
1881	26,005	8,762,247	337	133	826,133	85,130	540,000		
1882	26,977	9,754,949	362	132	1,011,287	85,947	560,698		
1883	23,982	7,790,337	325	132	925,575	77,975	580,000		
1884	22,826	7,508,696	330	134	956,721	77,102	630,000		
1885	21,542	7,806,222	339	135	827,355	66,800	664,684		
1886	22,372	7,877,080	352	130	808,019	62,516	704,000		
1887	23,972	8,749,852	365	132	742,074	58,024	760,000		
1888	22,095	8,890,668	402	127	751,055	56,028	830,000		
1889	21,788	10,267,831	471	114	917,047	60,605	1,100,000		
1890	20,133	10,116,051	502	104	742,392	65,112	1,203,669		
1891	19,680	10,862,898	522	97	641,156	49,557	1,323,339		
1892	21,123	11,780,398	565	95	733,288	54,937	1,438,010		
1893	17,044	10,788,029	629	82	529,316	38,702	1,502,868		
1894	16,202	10,284,178	635	85	617,811	44,928	1,567,727		
1895	18,232	12,631,180	693	83	591,407	39,106	1,584,070		
1896	16,999	12,965,812	763	67	443,762	34,543	1,600,418		
1897	17,865	14,277,255	799	61	600,000	41,000	1,637,000		
1898	18,512	15,116,426	817	64	395,017	38,570	1,670,000		
1899	16,174	12,599,239	779	64	469,352	41,022	1,698,575		
1900	16,976	13,990,894	824	60	121,759	20,866	1,758,000		
1901	16,274	18,634,904	838	41	81,456	11,151	1,820,000		
1902	15,754	14,239,898	904				1,885,000		
1903	14,808	15,026,014	1,015				1,950,000		

Population,  
Prior Years.

1881	60
1882	600
1883	850
1884	1,800
1885	3,265
1886	4,000
1887	4,179
1888	4,000
1889	4,200
1890	4,470
1891	5,500
1892	6,590
1893	7,580
1894	8,000
1895	12,088
1896	14,169
1897	16,859

## DAMAGE DONE BY VESSELS.

MONTH.	Accidents.	Damage.
January.....		
February.....		
March.....	1	\$ 6.92
April.....	7	1,117.84
May.....	7	933.86
June.....	7	714.24
July.....	5	40.77
August.....	11	946.92
September.....	6	385.42
October.....	14	2,453.12
November.....	11	496.50
December.....	3	420.07
Total.....	72	\$7,514.66

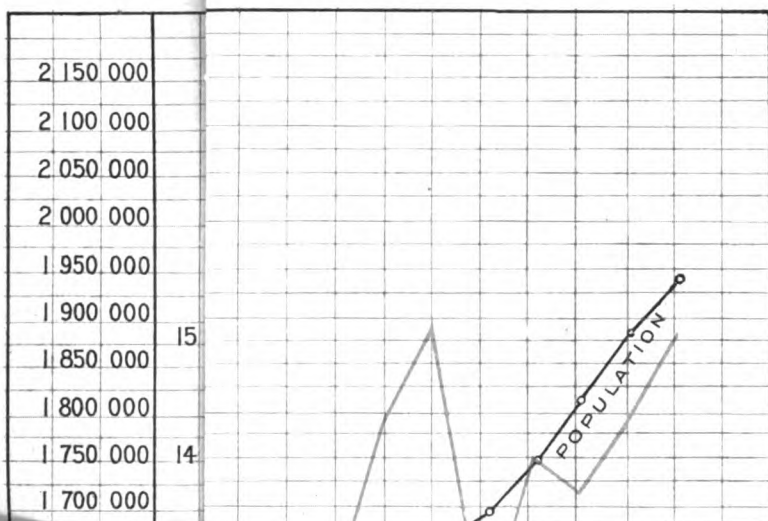
On the afternoon of December 9, 1902, the steamer *Matoa*, owned by the Pittsburg Steamship Company, of Duluth, Minn., ran into and through the breakwater, Calumet harbor, at a point about 1,900 feet from its westerly end, leaving an opening about 36 feet wide by 18 feet deep below water level. The United States authorities have brought suit against the owners for damages.

## CLAIMS FOR DAMAGES BY VESSEL OWNERS AGAINST SANITARY DISTRICT.

Steam barge *S. M. Stephenson*, owner James Sanford, case general No. 9368, District Court of the United States. Owner claimed damages, as the steam barge ran aground in the south draw of Ashland avenue bridge, where the Sanitary District had deposited a large amount of earth and no lights were exhibited to warn vessels. The Court held the Sanitary District liable and referred the case to a Master to ascertain the amount of damages.

Steam barge *Amazon*, owner Franklin Transit Company, case general No. 9554, in the District Court of the United States. Claim was for damages to the *Amazon* caused by its getting fast twice in the draw of the Chicago Terminal Transfer Railway Company's bridge near Twelfth street in the South branch, the channel of which was not of the required width as specified in the permit of the Secretary of War. The Court held the District liable for the damages caused by the first accident, but not for the damages of the second one.

Steamer *S. S. Curry*, owner Hawgood & Avery Transit Company, general No. 9341, in the District Court of the United States. Owners claimed damages for delay caused by the vessel getting fast between the



off  
Rail  
mine  
mail  
the  
for  
amo

Wor  
Stat  
chair  
as a

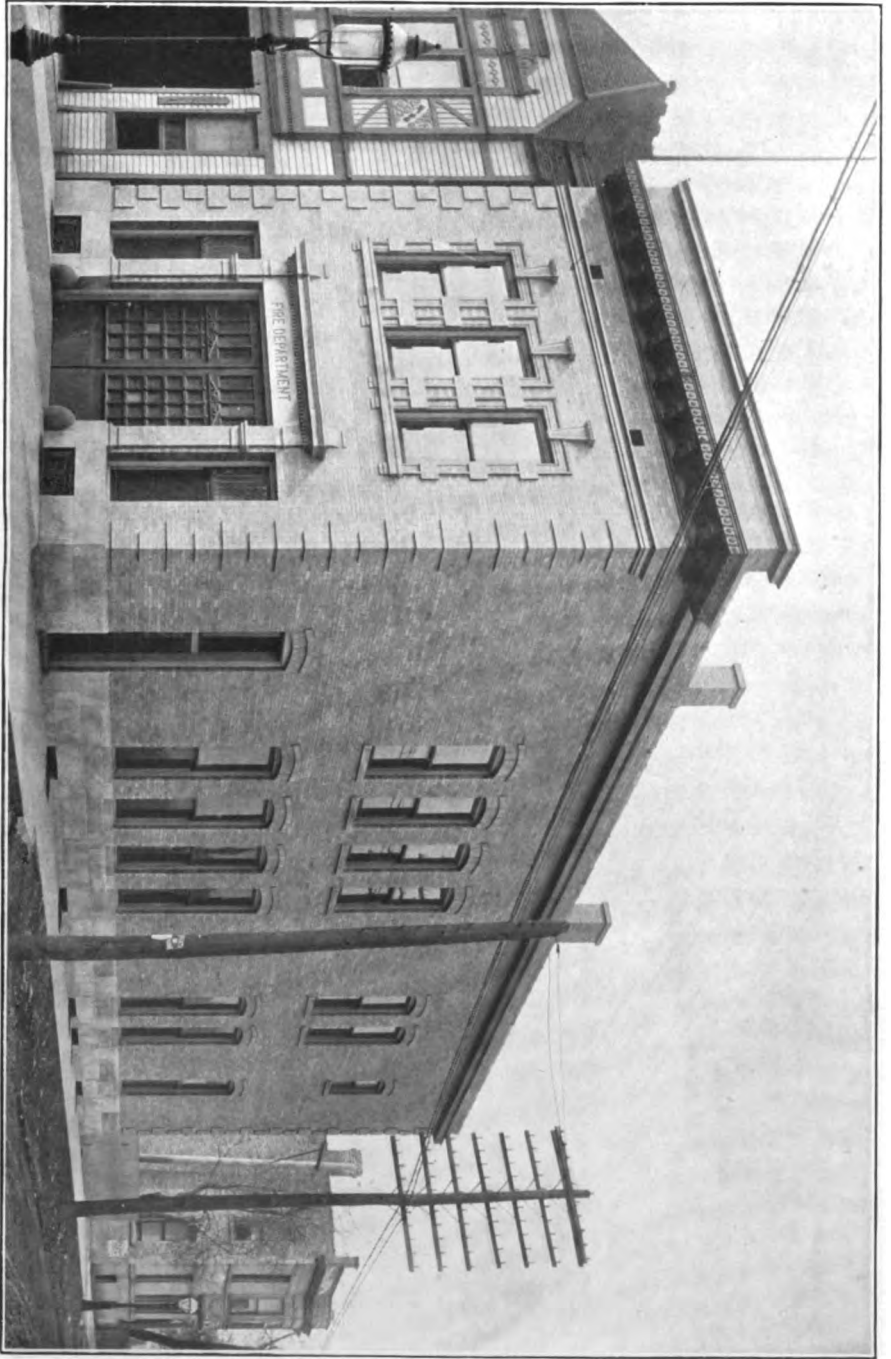
coffer-dam and the old protection piers of the Chicago Terminal Transfer Railroad Company's bridge, the Secretary of War having granted permission to construct the new bridge on condition that the Sanitary District maintain a channel 48 feet wide and 17 feet deep. The Court held that the failure of the District to maintain the required width rendered it liable for the injury and referred the cause to a Commissioner to ascertain the amount of damages.

CLAIMS FOR DAMAGES ON ACCOUNT OF THE CURRENT IN THE  
CHICAGO RIVER.

In the case of W. H. Wallace against the steam barge H. Luella Worthington et al., general No. 9322, in the District Court of the United States, the Court found that the current in the Chicago river, which was claimed to have caused the damages, did not exceed three miles per hour, as alleged by the libellant, and therefore dismissed the petition.

**MONTHLY MEAN BAROMETRIC PRESSURE—(IN INCHES) ANNUAL  
MEANS FROM 1873 TO 1908—FOR CHICAGO.**

YEAR.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Annual.	YEAR.
1873	29.13	29.14	29.14	29.05	29.02	29.10	29.13	29.17	29.17	29.15	29.11	29.21	29.18	1873
1874	.21	.22	.18	.19	.11	.09	.13	.18	.16	.21	.19	.22	.17	1874
1875	.31	.19	.10	.10	.06	.10	.12	.10	.17	.10	.17	.03	.18	1875
1876	.16	.15	.10	.09	.10	.02	.12	.16	.12	.06	.10	.18	.11	1876
1877	.22	.27	.14	.07	.15	.04	.09	.09	.14	.11	.14	.19	.14	1877
1878	.14	.05	.04	28.91	.06	.06	.11	.04	.18	.12	.15	.16	.08	1878
1879	.22	.19	.18	29.18	.16	.13	.10	.11	.21	.25	.18	.19	.17	1879
1880	.13	.16	.19	.06	.11	.10	.12	.16	.18	.18	.28	.21	.16	1880
1881	.23	.21	.00	.13	.15	.07	.15	.15	.09	.20	.18	.21	.15	1881
1882	.23	.13	.16	.15	.11	.02	.15	.12	.21	.14	.25	.20	.16	1882
1883	.23	.35	.15	.07	.06	.06	.12	.20	.20	.22	.19	.19	.17	1883
1884	.25	.13	.13	.07	.07	.16	.06	.17	.15	.24	.19	.20	.15	1884
1885	.22	.10	.18	.13	.05	.15	.10	.11	.16	.11	.09	.15	.18	1885
1886	.15	.17	.08	.17	.09	.12	.11	.11	.17	.30	.18	.27	.16	1886
1887	.16	.23	.18	.07	.11	.11	.10	.14	.20	.17	.17	.16	.15	1887
1888	.31	.14	.20	.25	.04	.05	.16	.16	.19	.09	.24	.17	.17	1888
1889	.03	.21	.11	.13	.07	.10	.10	.20	.14	.25	.18	.15	.14	1889
1890	.28	.16	.18	.21	.14	.11	.14	.19	.23	.06	.17	.20	.16	1890
1891	.16	.11	.14	.12	.23	.07	.16	.12	.25	.22	.17	.14	.16	1891
1892	.20	.20	.17	.15	.02	.06	.20	.15	.21	.18	.17	.20	.16	1892
1893	.08	.19	.11	.01	.03	.10	.10	.15	.12	.18	.14	.18	.11	1893
1894	.17	.20	.11	.12	.07	.13	.16	.17	.17	.06	.17	.19	.14	1894
1895	.10	.22	.14	.12	.13	.17	.14	.08	.14	.18	.21	30.00	.25	1895
1896	29.23	29.04	29.16	29.14	29.07	29.11	29.15	29.16	29.15	29.17	29.21	29.27	29.16	1896
1897	29.20	29.16	29.18	29.17	29.14	29.10	29.08	29.13	29.29	29.20	29.18	29.17	29.16	1897
1898	29.12	29.18	29.20	29.18	29.08	29.13	29.17	29.12	29.15	29.13	29.15	29.16	29.15	1898
1899	29.19	29.15	20.06	29.13	29.14	29.16	29.12	29.11	29.19	29.24	29.17	29.15	29.15	1899
1900	29.16	29.10	29.16	29.16	29.09	29.09	29.10	29.15	29.19	29.21	29.18	29.16	29.15	1900
1901	29.12	29.15	28.93	29.21	29.01	29.04	29.03	29.10	29.14	29.23	29.28	29.13	29.14	1901
1902	29.24	29.11	29.08	29.08	29.13	29.05	29.12	29.13	29.11	29.15	29.18	29.18	29.12	1902
1903	29.06	29.18	29.25	29.03	29.16	29.10	29.12	29.11	29.20	29.21	29.20	29.15	29.15	1903



**FIRE ENGINE HOUSE, CORNER FORTIETH AND WILCOX AVENUES.**





**PRECIPITATION AT CHICAGO, ILL., IN INCHES, BY MONTHS, SEASONS  
AND YEARS, FROM 1843 TO 1903, INCLUSIVE.**

MONTHLY TOTALS.													TOTALS, SEASONS AND YEARS.					
Year.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Spring.	Summer.	Autumn.	Winter.	Annual.	Year.
1843	2.0	1.9	3.0	4.5	4.0	4.6	1.4	2.4	3.0	1.2	5.1	2.4	11.5	8.4	9.3	35.50	1843	
1844	2.8	1.3	1.76	2.76	6.0	5.5	5.0	4.2	0.8	1.6	0.7	0.7	10.52	14.7	8.1	6.5	33.12	1844
1845	2.0	0.5	2.2	6.5	2.0	3.8	3.5	1.2	4.4	1.4	3.3	1.5	10.7	8.5	9.1	8.2	32.30	1845
1846	4.9	1.8	2.6	7.8	2.4	4.3	2.9	1.0	5.0	0.8	1.5	5.0	12.8	8.2	7.3	8.2	40.00	1846
1847	2.3	8.5	1.5	2.1	3.3	1.5	2.8	2.0	8.2	4.6	4.8	1.2	6.9	6.3	12.6	10.8	32.80	1847
1848	1.6	2.4	4.5	8.3	3.8	4.4	3.4	5.1	2.2	3.2	2.1	8.4	11.6	12.9	7.5	5.2	44.40	1848
1849	5.5	1.0	4.7	1.8	3.8	3.6	2.3	3.5	2.6	2.8	1.4	1.2	10.3	9.4	6.8	14.9	34.20	1849
1850	2.1	0.7	2.0	3.8	1.9	3.1	2.1	6.4	1.4	2.0	3.2	1.7	7.7	11.6	7.6	4.0	30.40	1850
1851	1.5	3.8	0.8	4.2	6.7	5.3	3.8	3.1	3.2	2.3	2.3	1.6	11.7	12.2	7.8	7.0	38.60	1851
1852	2.0	1.2	5.5	4.8	2.4	2.5	3.4	0.6	2.3	6.8	4.0	3.8	12.7	6.5	13.1	4.8	38.80	1852
1853	1.4	2.2	1.8	2.8	4.4	4.9	6.1	2.2	4.2	2.0	2.1	2.3	9.0	13.2	9.3	6.9	36.40	1853
1854	1.3	1.9	2.1	2.1	3.1	2.6	3.0	0.9	1.6	3.6	1.0	1.4	7.3	6.5	6.2	5.5	24.60	1854
1855	8.0	0.6	2.6	1.4	2.5	3.7	5.8	8.2	2.3	2.0	2.2	2.0	6.5	12.7	6.5	10.0	36.80	1855
1856	0.9	1.8	0.6	2.6	4.8	2.5	2.1	1.3	2.5	2.1	3.98	3.86	8.0	6.9	8.55	4.7	29.04	1856
1857	1.09	5.43	2.5	2.19	6.33	4.14	8.0	5.0	2.2	4.0	2.7	1.2	11.02	12.14	8.9	10.38	39.88	1857
1858	1.3	1.4	3.0	3.1	7.8	6.3	5.9	8.2	4.0	4.6	4.5	2.0	13.9	15.4	13.1	3.9	47.10	1858
1859	1.4	1.8	5.2	3.4	3.6	1.7	0.9	0.4	2.2	4.1	2.8	1.8	12.2	8.0	9.1	5.2	29.30	1859
1860	1.6	1.6	1.0	2.8	4.6	8.5	5.3	2.6	2.8	4.1	2.3	4.2	8.4	11.4	9.2	5.0	36.40	1860
1861	1.4	8.0	3.4	4.7	3.7	2.1	4.3	2.4	3.4	7.5	1.5	1.9	11.8	6.8	13.4	8.6	39.30	1861
1862	4.0	0.7	2.0	5.2	4.3	2.9	6.7	3.6	5.6	2.92	1.2	1.3	11.5	13.2	9.72	6.6	40.42	1862
1863	2.8	2.6	2.1	2.1	5.1	1.3	2.3	4.2	1.6	4.0	1.9	3.6	9.3	7.8	7.5	6.7	33.60	1863
1864	1.6	0.4	2.1	3.2	1.9	2.1	6.4	1.1	2.1	1.9	3.1	2.5	7.3	9.6	7.1	5.6	28.40	1864
1865	0.4	3.1	3.1	3.8	1.5	5.1	6.1	7.2	4.8	4.0	0.5	0.6	8.4	15.5	9.3	6.0	40.20	1865
1866	2.8	1.6	2.2	2.2	2.0	4.4	4.7	4.2	4.6	2.8	0.8	3.4	7.0	13.3	8.2	5.0	36.30	1866
1867	1.33	2.22	1.5	1.70	4.42	1.86	1.52	2.33	0.57	1.28	1.89	1.11	7.70	5.71	3.74	7.55	22.41	1867
1868	1.28	0.92	5.24	3.00	8.74	3.11	2.87	3.55	7.08	1.69	2.60	1.40	11.98	9.45	11.37	3.31	36.48	1868
1869	1.97	2.23	1.33	4.30	5.69	5.03	3.26	1.32	0.89	1.10	2.42	2.03	11.22	10.61	6.41	5.60	31.57	1869
1870	1.95	0.86	1.81	1.15	0.80	1.70	3.71	2.07	2.82	2.43	1.16	2.46	3.76	7.48	6.41	4.84	22.92	1870
1871	4.13	1.45	2.66	3.79	3.90	5.56	2.52	2.01	0.74	1.88	3.62	3.44	10.35	10.10	12.24	8.04	35.61	1871
1872	0.68	0.84	3.79	3.03	3.24	3.45	3.09	2.59	6.43	0.65	1.06	0.22	10.06	9.18	8.14	5.14	29.07	1872
1873	2.56	0.47	0.89	6.22	7.20	1.44	4.04	1.58	3.53	2.43	1.61	4.44	14.31	7.06	7.57	3.25	36.41	1873
1874	3.47	1.51	2.15	2.67	2.08	3.25	0.58	3.15	3.76	2.55	2.83	0.63	6.90	6.98	9.14	9.42	28.63	1874
1875	0.96	1.99	1.43	2.32	3.64	5.17	7.18	3.28	4.89	4.82	0.75	2.62	7.39	15.60	9.46	3.58	38.06	1875
1876	3.22	3.90	4.04	2.07	1.85	5.96	3.11	3.68	3.74	1.20	3.25	0.48	7.96	12.73	8.29	9.74	36.48	1876
1877	1.91	0.06	5.37	2.42	1.81	6.04	2.98	3.08	2.02	6.15	6.08	2.75	9.60	12.08	14.25	2.45	41.01	1877
1878	1.31	2.12	4.39	5.57	5.22	3.02	6.09	3.68	1.99	5.17	0.83	2.58	15.18	12.77	7.99	6.18	41.95	1878
1879	0.54	1.47	2.37	1.93	3.89	3.18	5.58	0.45	1.18	2.72	4.93	2.47	8.19	9.21	8.83	4.59	30.71	1879
1880	3.53	2.91	2.25	5.20	4.97	3.50	3.07	4.47	2.25	3.19	0.87	1.11	12.42	10.04	6.31	8.91	37.32	1880
1881	0.87	5.38	2.91	1.84	1.85	5.38	4.31	0.54	4.34	6.89	5.97	2.67	6.68	10.78	17.21	8.06	44.18	1881
1882	1.55	2.24	3.43	6.72	5.52	5.71	3.43	4.96	0.91	3.40	1.43	1.99	15.67	14.00	5.97	6.46	41.34	1882
1883	1.74	4.74	0.42	3.72	7.32	5.61	5.53	1.21	1.36	1.36	5.26	1.59	11.46	12.35	13.98	8.47	45.86	1883
1884	1.39	3.27	5.16	3.05	1.53	2.11	8.71	2.50	2.29	3.59	1.80	4.21	9.74	8.32	7.68	6.25	34.61	1884
1885	3.18	2.01	0.67	4.00	3.17	5.20	2.44	11.28	2.97	3.87	2.33	3.35	7.74	18.92	9.17	9.40	44.37	1885
1886	3.56	1.51	1.79	1.29	1.00	0.94	1.53	3.38	6.93	1.42	1.66	1.76	4.08	5.85	10.01	8.42	36.77	1886
1887	3.13	5.10	0.89	0.46	1.38	1.63	1.06	3.35	4.03	2.03	2.41	3.67	2.63	6.03	4.47	9.99	29.13	1887
1888	1.56	1.51	2.99	2.18	6.22	1.66	3.93	2.10	0.98	2.95	2.89	1.94	11.94	7.69	6.72	6.74	30.86	1888
1889	1.64	1.31	1.43	2.35	5.38	2.93	9.56	0.39	2.75	1.82	3.49	1.90	9.18	12.88	8.06	4.09	34.35	1889
1890	2.98	2.42	2.10	3.28	5.13	3.25	2.57	2.58	1.39	4.20	1.59	1.25	10.46	8.40	7.18	7.30	32.69	1890
1891	1.99	1.95	2.13	3.14	2.09	2.42	2.47	4.52	0.82	0.36	2.33	1.32	7.36	9.41	4.51	5.19	26.54	1891
1892	1.99	1.57	2.21	2.17	6.77	10.58	2.23	1.85	1.34	1.54	2.68	1.63	11.15	14.66	5.56	4.88	36.56	1892
1893	2.08	2.44	1.69	4.16	1.93	3.59	3.06	0.18	1.98	1.75	2.45	2.14	7.78	6.85	6.18	6.15	27.47	1893
1894	1.55	2.15	2.66	2.65	3.35	1.96	0.60	0.60	3.28	0.84	1.18	1.66	8.66	3.16	10.30	5.84	27.46	1894
1895	2.15	1.60	1.32	0.83	1.99	1.79	2.42	6.49	0.89	0.51	5.60	6.76	4.17	10.70	7.00	5.41	32.38	1895
1896	1.12	3.48	1.26	2.79	4.16	2.83	3.61	3.52	6.70	1.36	2.16	0.16	8.21	9.36	10.22	11.36	33.14	1896
1897	4.53	2.22	3.56	2.23	0.84	3.60	1.47	1.70	0.84	0.18	3.06	1.62	6.63	6.77	4.06	6.91	25.85	1897
1898	3.54	2.59	4.00	0.76	2.28	5.30	1.94	3.03	3.16	3.26	2.25	1.11	7.59	10.17	8.67	7.24	33.77	1898
1899	0.58	1.60	2.11	0.14	4.35	2.71	6.6	0.91	2.89	2.09	2.78	1.81	6.60	10.28	7.21	3.99	28.08	1899
1900	1.21	3.62	1.58	1.02	3.89	2.06	4.64	4.24	1.56	1.35	3.30	0.58	6.19	10.94	6.21	6.54	28.65	1900
1901	1.15	2.06	3.35	0.33	2.18	2.42	4.25	2.00	2.92	1.39	0.85	1.70	5.89	8.69	5.06	4.90	34.52	1901
1902	0.66	1.53	4.16	2.26	5.06	6.45	5.78	1.44	4.28	1.45	2.08	1.90	11.50	13.67	8.31	3.89	37.57	1902
1903	1.09	3.08	1.67	3.77	0.98	1.62	4.78	3.49	4.00	1.09	0.34	2.28	6.37	9.89	5.43	5.02	31.91	1903

TEMPERATURE BY MONTHS, SEASONS AND YEARS, FROM 1830 TO 1903, BOTH INCLUSIVE—AT CHICAGO, ILL.

Year.	MONTHLY MEANS.												MEANS, SEASONS AND YEARS.					Year.
	January.	February.	March.	April.	May.	June.	July.	August.	Sept.	October.	Nov.	Dec.	Spring.	Summer.	Autumn.	Winter.	Annual.	
1830	28	80	87	58	59	64	75	72	58	57	45	28	49.7	70.8	58.3	.....	50	1830
1831	18	20	37	43	57	69	72	70	51	49	32	15	45.7	70.3	47.3	31.1	45	1831
1832	24	15	37	49	55	68	70.1	71.4	62.9	54	39.9	33.2	47.7	70.3	52.3	18	45	1832
1833	29.7	27.6	33.3	50.5	60.1	63.6	72.4	70.3	64	45.5	39.8	34.1	48	68.8	49.8	30.2	49.2	1833
1834	13.3	34.9	36.6	47.4	54.6	62.9	74.3	71.2	60.1	46.3	40.3	29.6	46.2	69.5	49.8	27.4	47.6	1834
1835	28.1	14	32	42.5	54.6	63.1	67.1	65.2	54.3	47.9	34.2	24.8	43	65.1	45.5	23.9	44	1835
1836	22.4	21.7	26.1	42.4	53.5	58.6	66.5	61.9	56.7	46.8	34.3	24.2	40.7	62.3	45.9	23	42.9	1836
1837	23	25	28	38	48	61	66	65	59	50	40	26	38	64	49.7	24.1	44	1837
1838	25	11	42	40	50	66	74	69	58	48	25	19	44	69.7	43.7	20.7	44	1838
1839	29	28	35	53	54	61	73	66	54	59	31	27	47.3	66.7	48	25.3	48	1839
1840	21	28	37	46	58	66	68	68	56	49	35	26	47	66.7	46.7	25.3	46	1840
1841	22	23	35	41	55	67	69	67	57	48	37	27	43.7	67.7	47.3	23.7	46	1841
1842	25	28	43	52	52	59	67	65	61	52	30	22	49.7	63.7	47.7	26.7	46	1842
1843	26	13	16	45	53	65	71	67	65	44	33	32	38	67.7	47.3	20.4	44	1843
1844	22	30.8	38.4	55.8	58.7	64	73.6	68	68.6	48	34	31	50.8	68.5	50.2	28.3	49	1844
1845	35	33	39	51	58	68	75	70	63	51	37	23	49.3	71	50.3	33	50	1845
1846	39	31	42	49	62	64	78	75	62	53	43	34	51	72.3	54	31	53	1846
1847	20	30	32	47	53	65	76	67	64	51	41	30	44	69.3	52	28	48	1847
1848	32	31	36	46	58	68	69	69	58	55	36	27	46.7	68.7	49.7	31	49	1848
1849	22	21	38	42	50	66	70	66	62	50	45	22	43.3	67.3	52.3	23.3	46	1849
1850	30	32	34	41	51	66	74	71	61	51	43	26	42	70.4	51.7	28	48	1850
1851	28	35	40	45	53	64	71	69	67	51	36	23	46	68	51.3	29.7	49	1851
1852	22	32	34	39	55	66	72	69	59	54	35	28	42.7	69	51	25.7	47	1852
1853	29.7	29.1	37	45	52	67	68	68	62	50	39	30	44.7	67.7	50.4	28.9	48	1853
1854	19	29	38	44	54	66	74	72	67	55	38	28	45.3	70.7	53.3	26	49	1854
1855	26	18	31	48	56	62	70	67	62	46	37	22	45	66.6	48.3	24	45	1855
1856	13	17	27	44	51	68	71	65	59	49	35	18.4	40.7	68	47.7	17.3	43	1856
1857	10.7	30.6	27.9	34.6	50.4	63.1	71.5	67.7	62.8	48.9	29.9	31.4	37.6	67.8	47.2	19.9	44.2	1857
1858	33	19	36	43	52	68	73	70	63	50	35	28	43.7	70.4	49.3	27.8	48	1858
1859	27	29	38	41	55	62	74	71	59	49	32.9	15.7	44.7	69	47	20.8	46	1859
1860	18	1	26.8	35.1	42.6	57.7	63	68.2	68.8	57.6	49.5	31.3	45.1	66.7	45.8	20.2	44.9	1860
1861	21.9	29.4	31.7	43	49.1	63.2	66.2	66.5	61	48.4	34.1	28.4	41.8	66	47.8	23.9	45.4	1861
1862	18.2	20.9	32.1	43	51.8	57	68	70.9	63.8	51.2	34.4	30.3	42.3	65.3	49.9	22.5	45.1	1862
1863	33.5	20.6	31.9	41.9	52.7	59.4	65.6	65.6	56.9	39.9	33.4	26.3	42.2	63.5	43.4	28.1	44.3	1863
1864	16.2	23.6	27.4	38.6	55.7	60.8	67.9	68	58.4	43	32.5	17.8	40.6	65.5	44.6	22	42.5	1864
1865	17.2	26	32.2	42.5	51.3	66.1	62.9	65.2	66.3	46.6	35.4	20.2	42	64.7	49.4	20.3	44.3	1865
1866	17.7	17.9	26.4	43.8	51.4	69.4	62.2	68.9	60.8	53.8	40.9	25.8	40.5	71.8	51.8	18	46.2	1866
1867	19.9	30.8	29.5	46.5	50.7	72.4	73.1	74.5	67.4	56.1	43.5	28.8	42.2	73.8	55.7	26.5	49.4	1867
1868	17.9	24.7	42.4	44.4	54.2	66	80.6	71.8	61.3	50.8	38	22.6	47	72.9	50	23.8	47.9	1868
1869	31.2	29.8	29.5	45.2	53.1	64.8	71.2	72.1	64.9	43.2	33.9	28.6	42.6	69.2	47.3	27.7	47.2	1869
1870	25.9	27.5	32.5	43.4	61.4	69.3	76.8	72.7	68.7	55.1	42.8	27.1	47.8	72.9	55.4	27.3	50.7	1870
1871	30.9	30.2	41.2	51.2	56.7	66.8	73	72.7	61	54.6	35	20	49.7	70.8	50.2	29.7	49.4	1871
1872	23	25.5	28.1	47.2	56.1	69.2	72.2	71.8	63.9	50.1	31.5	19	48.8	71.1	48.5	22.8	46.5	1872
1873	20.4	24.1	34.3	43	53.8	70.8	70.8	72.1	62.1	48.9	34.3	32	43.7	71.1	48.4	21.2	47.2	1873
1874	28.9	31.4	36.5	38.6	59.3	70.5	74.8	71.8	66.4	53	40.3	33.5	44.8	72.4	53.2	30.4	50.4	1874
1875	17.9	14.7	31.8	42.5	55.5	68.1	68.8	68.4	61	47.5	37	36.8	43.3	66.8	48.5	22	45.4	1875
1876	33	31.8	33.9	46.5	59	67.5	73.5	73.5	61.1	48.8	39.3	20	46.5	71.5	49.7	33.9	49	1876
1877	21.9	36.4	29.4	45.4	56.9	66.1	73.1	71.5	66.5	54.7	39.7	42.8	43.9	70.1	53.6	26.1	50.3	1877
1878	31.2	35.7	44.3	52.2	55.5	65.4	74.8	73.6	65.9	52	43.1	23.7	50.7	71.3	53.7	36.6	51.4	1878
1879	21.4	27.4	39.1	46.8	57.6	64.7	73	72.6	61.2	59.9	41.9	30.3	47.8	70.1	54.3	24.2	49.9	1879
1880	40.1	34.6	37.9	48.5	64.2	69.9	72.4	72.4	62.5	50.8	31.4	23	50.2	71.6	48.2	35	50.6	1880
1881	19.5	24.7	32.2	41.5	61	63	72.9	75	69.5	55.9	39.9	37.1	44.9	70.8	55.1	22.4	49.4	1881
1882	28	32.2	38.3	45.9	51.7	63.6	68.6	71.2	65	56.5	41.7	26	45.3	67.8	54.1	34.5	49.6	1882
1883	16.9	23	31.4	45.6	52.1	64.1	71	68.3	60.7	51.8	41.5	30.1	43	67.8	51.3	21.8	46.3	1883
1884	19.2	27.7	34.2	44.3	56.7	65	69.2	68.8	68.9	56.4	39.6	28.4	45.1	67.7	55	26.7	43.2	1884
1885	18.8	16.8	30	45.3	52.8	65.4	72.8	68.1	63.9	51	41.9	31.1	42.7	69.1	52.3	21.2	46.4	1885
1886	21.4	28.1	36.1	49.1	57	66	71.1	72.4	66.1	56.6	38.2	25	49.7	69.9	53.8	26.9	49	1886
1887	17.8	27.1	31.9	47.4	59.4	67.8	76	69.7	62.5	47.3	38	28.1	46.2	70	49.3	23.1	47.7	1887
1888	15.1	23	30.5	45.4	52.6	67.4	72.6	69.4	59.8	49.1	41.6	32.2	42.8	69.8	50.2	22.1	46.6	1888
1889	29	19.9	33.4	46.6	56.8	62.8	70.5	70.6	62.8	49.4	38.6	40.6	47.7	67.8	50.3	27	48.8	1889
1890	30.8	32.4	39.5	45.6	60.4	70.2	72.1	67.6	60.4	51.4	41.9	30.6	42.8	70	51.2	34.6	48.8	1890
1891	30.2	28.6	30.6	47	53.4	65.7	67	69	69	52.6	33.8	35.4	43.7	67.2	51.8	29.8	43.5	1891
1892	19.5	30.2	31	44	52.4	61.4	71.6	70.9	63.9	53.6	34.7	23.4	42.5	67.9	50.7	28.4	46.6	1892
1893	12	21.5	33.2	44.3	52.4	67.8	73.8	69.8	64.1	52.6	36	25.4	43.3	70.5	50.9	18.9	46.1	1893
1894	27.5	23	41.2	46.8	56.1	71.4	78.4	70.8	66.2	52.1	34.4	32.4	43	72.5	59.9	25.3	49.6	1894
1895	17.5	17	31.7	46.1	59.1	70	70.2	72.5	68.6	46.2	36.5	30	45.6	70.9	50.4	22.3	47.1	1895
1896	27	26.6	31.3	53.4	65.4	67	72.3	72.8	60.5	49.5	38.4	32.1	50	70.7	49.4	27.8	49.8	1896
1897	21.8	28.6	34.7	46	55	65.2	74.2	69	69.5	56.4	38.7	25	45.2	69.5	55.5	27.5	48.8	1897
1898	26.6	27.6	40.4	44.4	56.2	68.8	73.4	71.4	67.6									

**TABLE OF DAILY PRECIPITATION, CHICAGO,  
YEAR 1903.**

DATE.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1.....	.00	.00	T	.33	.00	.01	.00	.00	.00	.04	.00	T
2.....	.28	T	.00	T	T	.11	.11	.06	.00	.00	.00	.00
3.....	.07	.60	T	.34	.01	.00	T	.10	.00	.00	.00	T
4.....	T	.73	.08	.00	T	T	.28	.99	.05	.40	.00	T
5.....	.07	.00	.03	.00	.00	.51	.00	.08	.01	.00	.02	T
6.....	T	.00	.03	T	T	T	.00	.00	.00	T	.03	.00
7.....	.02	.01	.76	.00	.00	.00	.00	.00	.00	.49	.00	T
8.....	T	.53	.00	.00	.00	.00	.11	T	T	.00	.00	T
9.....	.00	.00	T	.00	.00	.05	.03	.00	.20	.00	.00	T
10.....	.00	.00	.05	.36	.00	T	1.09	T	1.34	.00	.00	.02
11.....	.20	.34	.00	.93	T	.00	.73	.00	.00	.00	.08	T
12.....	.00	T	.00	.48	T	.00	.00	.01	.00	.00	T	1.20
13.....	.00	.00	.00	.36	.00	.00	.00	T	.80	.00	.00	.03
14.....	.00	T	T	.33	.00	.00	.00	.00	.24	.03	.00	.00
15.....	.00	.52	T	.12	.00	.00	.00	.68	.88	.08	.00	.00
16.....	.00	.05	T	.00	.00	.21	.00	.01	.09	.04	.01	.06
17.....	.00	.00	.05	.00	.00	.00	.72	.00	.01	.00	T	.00
18.....	T	T	T	.00	.01	.00	.51	.00	.00	.00	.00	.00
19.....	T	T	.01	.09	.00	.03	.00	T	.00	.00	.00	.19
20.....	.00	.04	.52	.00	.00	.02	.00	.00	.00	.00	.00	.07
21.....	.00	T	T	.06	.01	.00	.28	.00	.00	.00	.00	.00
22.....	.06	.00	.00	T	.27	.68	.00	T	.00	.00	.00	.00
23.....	T	T	.04	.00	.04	.00	.00	T	.00	.00	T	.00
24.....	.10	T	.02	.06	T	.00	.00	T	.00	.00	.00	.11
25.....	T	.00	T	.16	.30	.00	.00	T	.00	.00	.00	.26
26.....	.00	.00	.00	.00	T	.00	.00	.08	T	.00	.06	.00
27.....	.27	.21	.08	.00	.12	.00	.00	1.05	.36	.00	.00	T
28.....	.02	T	T	T	.15	.00	.01	.14	T	.00	.14	.24
29.....	T	.....	.00	T	T	.00	.91	.29	.00	.00	T	.07
30.....	T	.....	.00	.15	.02	.00	.00	T	.02	.01	T	.03
31.....	.00	.....	.00	.....	T	.....	.00	T	.....	.00	.....	T

T indicates Trace of precipitation.

TABLE OF MEAN DAILY TEMPERATURE, CHICAGO,  
YEAR 1903.

DATE.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1.....	34	40	21	52	42	50	82	66	65	66	58	24
2.....	33	36	34	59	50	56	80	70	70	61	56	26
3.....	29	30	34	34	44	56	83	76	74	73	57	32
4.....	26	24	37	30	52	61	80	68	68	60	58	26
5.....	24	18	35	40	58	57	68	74	63	56	46	22
6.....	22	20	39	50	52	58	73	70	62	66	34	25
7.....	28	27	50	52	44	68	76	62	74	60	36	28
8.....	15	24	38	55	50	65	82	66	76	52	48	28
9.....	10	27	37	54	60	62	80	64	70	48	50	24
10.....	8	37	38	46	68	54	72	70	60	52	40	18
11.....	6	38	38	58	68	46	72	60	66	54	47	18
12.....	-2	34	41	46	65	50	70	62	75	54	44	18
13.....	10	28	48	40	55	61	67	64	68	56	35	-5
14.....	22	26	42	37	49	70	65	68	72	57	38	0
15.....	32	20	34	39	53	66	63	64	72	58	44	6
16.....	34	7	46	39	62	62	66	67	58	53	42	16
17.....	24	-5	46	43	75	62	70	69	49	46	23	16
18.....	13	-2	58	51	74	67	70	74	49	44	18	26
19.....	22	6	66	49	72	66	70	70	61	54	22	36
20.....	28	18	44	46	72	54	66	70	66	56	26	30
21.....	20	22	35	40	67	58	72	74	68	58	34	31
22.....	24	20	45	36	68	56	66	76	71	50	36	18
23.....	25	32	37	44	70	60	67	82	62	40	36	32
24.....	23	28	30	52	60	60	72	81	50	41	26	34
25.....	28	32	38	40	64	60	80	74	62	46	21	11
26.....	38	36	48	45	70	62	72	65	64	44	18	3
27.....	39	44	42	56	69	66	69	66	50	42	22	21
28.....	44	33	34	63	62	69	80	65	54	50	28	14
29.....	37	.....	34	69	54	77	73	64	64	54	27	12
30.....	17	.....	38	51	52	78	66	58	66	56	24	6
31.....	31	.....	46	.....	50	.....	64	60	.....	59	.....	22

**TABLE OF MAXIMUM DAILY TEMPERATURE, CHICAGO,  
YEAR 1908.**

DATE.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1.....	42	42	29	64	51	53	92	70	70	74	61	28
2.....	35	43	41	77	60	59	90	77	79	64	59	30
3.....	35	32	39	41	49	60	91	86	84	83	61	39
4.....	29	32	39	32	63	66	91	70	73	66	63	32
5.....	29	25	38	49	69	62	72	80	65	58	55	27
6.....	28	26	46	58	61	63	78	74	65	74	38	36
7.....	34	29	56	63	47	77	82	65	86	70	43	31
8.....	22	28	44	64	54	72	92	72	82	55	59	32
9.....	16	35	41	65	68	67	90	67	77	53	62	27
10.....	16	41	40	49	75	63	76	79	65	55	50	24
11.....	16	40	40	72	76	48	76	65	73	57	57	25
12.....	3	37	44	51	73	56	75	64	85	56	53	33
13.....	21	32	60	43	66	73	75	67	76	58	39	3
14.....	28	28	53	38	53	81	69	70	80	59	42	5
15.....	36	27	35	40	59	73	65	69	78	63	51	13
16.....	40	13	57	40	71	72	70	70	66	56	52	22
17.....	33	1	55	47	85	71	76	73	53	51	31	3
18.....	17	6	74	58	81	78	77	83	58	53	22	35
19.....	28	14	73	55	81	76	76	74	72	66	30	37
20.....	35	26	59	49	81	59	72	75	77	58	33	35
21.....	27	27	44	45	75	64	81	84	79	67	40	8
22.....	32	30	54	40	81	57	70	84	80	56	43	24
23.....	29	36	44	51	80	68	71	90	71	43	44	40
24.....	25	34	34	63	72	66	76	92	55	49	29	38
25.....	32	37	47	42	78	64	90	83	74	55	26	30
26.....	45	42	61	52	81	66	79	68	78	48	25	16
27.....	43	49	53	67	74	72	73	70	57	52	27	34
28.....	50	45	36	74	70	74	89	67	59	61	31	25
29.....	51	.....	38	78	57	86	81	69	74	64	31	25
30.....	23	.....	43	67	57	90	71	62	72	62	29	15
31.....	40	.....	54	.....	53	.....	66	64	.....	66	.....	32

TABLE OF MINIMUM DAILY TEMPERATURE, CHICAGO, YEAR 1908.

DATE.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1. ....	25	38	13	41	33	48	73	62	60	58	54	20
2. ....	31	30	26	41	40	52	71	63	61	58	53	23
3. ....	23	27	28	28	39	53	75	67	64	63	53	25
4. ....	23	17	35	29	42	56	70	66	62	54	53	19
5. ....	19	11	32	30	48	52	64	67	61	55	37	17
6. ....	15	13	32	42	44	52	68	65	60	57	31	14
7. ....	22	25	44	40	42	60	71	60	61	51	30	26
8. ....	8	20	33	46	45	58	72	61	71	48	36	24
9. ....	4	19	33	43	52	57	70	60	63	43	38	21
10. ....	0	33	36	42	61	45	68	62	56	50	31	12
11. ....	-4	35	35	45	61	45	68	55	58	50	37	11
12. ....	-6	32	38	40	57	44	66	60	69	52	34	3
13. ....	0	25	37	37	44	49	59	61	59	54	31	-13
14. ....	16	24	32	36	45	60	61	65	65	55	33	-6
15. ....	27	13	32	38	47	59	61	59	66	53	36	-2
16. ....	28	1	35	38	53	52	61	64	49	50	31	10
17. ....	15	-11	36	39	65	52	65	65	45	41	15	10
18. ....	9	-9	42	44	66	56	62	65	40	35	14	18
19. ....	16	-2	59	43	64	55	63	67	50	43	14	34
20. ....	22	10	28	42	62	50	61	64	56	53	20	25
21. ....	13	17	26	34	59	52	64	64	58	50	27	24
22. ....	16	11	36	33	56	54	63	67	62	43	30	12
23. ....	21	27	30	36	59	51	63	73	53	36	28	23
24. ....	21	23	26	40	49	55	67	70	45	33	24	30
25. ....	23	26	29	39	49	55	71	66	49	37	16	-2
26. ....	31	31	36	38	59	57	65	62	49	39	12	-10
27. ....	35	38	31	45	64	59	65	63	44	33	16	11
28. ....	38	21	32	52	53	64	70	63	49	38	24	4
29. ....	23	.....	30	60	52	68	65	58	53	43	23	0
30. ....	11	.....	.....	35	48	67	60	55	61	50	19	-4
31. ....	22	.....	39	.....	46	.....	61	57	.....	52	.....	12

The City is under many obligations to the United States Engineer and his assistants for much valuable information, and to the Collector of the Port, Professor Cox, and the officers in charge of the Weather Bureau Stations at Duluth, Marquette, Sault Ste. Marie, Escanaba, Green Bay, Milwaukee, Alpena and Detroit, for useful climatic and other information.







**KOSCIUSZKO PUBLIC BATH HOUSE, 703-705 HOLT STREET.**

## DIVISION OF ARCHITECTURE.

MR. C. F. HERMANN, Architect.

The following plans for buildings, etc., were made and the construction of same supervised by this division during the year 1903:

### BUREAU OF ENGINEERING.

**SIXTY-EIGHTH STREET PUMPING STATION.**—Plans were made during 1903 for an addition to this station. This addition to contain room for a future engine. The exterior to be built of red pressed brick, stone entrances and trimmings, steel trusses and a tile and slate roof. The interior is to be finished in hard cementine plaster and have encaustic tile floors supported upon I beams. The estimated cost is \$40,000. No contracts have been let.

### BOARD OF LOCAL IMPROVEMENTS.

**JACKSON PARK AVENUE SEWAGE PUMPING STATION.**—Plans were prepared for a sewage pumping station to be erected on the southeast corner of Seventy-fifth street and Jackson Park avenue. This building contains an engine-room, a boiler-room, a fuel room, and the necessary toilet-rooms, offices, etc. The exterior is to be built of sand-moulded red pressed brick with stone entrance and trimmings. The roof to have steel trusses and be covered with tile and slate. The interior will have maple and encaustic tile floors and all brick walls veneered with white glazed brick. The estimated cost is \$75,000. No contracts let.

### FIRE DEPARTMENT.

**MICHIGAN AVENUE HOOK AND LADDER HOUSE.**—Sketches were prepared for a two-story brick truck house, 25x90 feet, to be erected on the northeast corner of Fourteenth and Michigan avenue. Alternative sketches were also prepared for altering the present building located on above premises for use of the department. No contracts were let.

**ROBEY STREET HOOK AND LADDER HOUSE.**—Plans were prepared for a two-story and cellar truck house located at 780 North Robey street 18x75 feet. The exterior of pressed brick with stone trimmings. The general contract was let to W. J. Ryan for \$7,489 and completed in June, 1903.

**ONE HUNDRED AND FOURTEENTH STREET ENGINE HOUSE.**—This building is a two-story frame structure 25x75 feet, located on 114th street near Michigan avenue. The general contract was let to L. Beoursterboer for \$3,421 and completed May 1, 1903.

**FORTY-FIRST COURT ENGINE HOUSE.**—This building, located at 3042 Forty-first court, is of brick, two stories and cellar in height and 25x80 feet in size, pressed brick front, stone trimmings, copper cornice, and mill

construction, with interior walls of white glazed brick. The general contract was let to John A. Larson for \$9,194 and completed in August, 1903.

**WILCOX AVENUE ENGINE HOUSE.**—This is a two-story and cellar brick building, located on the corner of Wilcox and Fortieth avenues; both fronts are of pressed brick, stone trimmings, copper cornice. The general contract was let to the Warner Construction Company for \$9,983 and completed in September, 1903.

**JEFFERSON AVENUE ENGINE HOUSE.**—This building is located at 6843 Jefferson avenue, is two stories and cellar, pressed brick front with stone trimmings, copper cornice, and mill construction, with glazed brick interior walls. The general contract was let to John A. Larson for \$9,000 and completed October 30, 1903.

**EAST CHICAGO AVENUE ENGINE HOUSE.**—This building, located on East Chicago avenue near St. Clair street, is two stories and cellar in height and covers an area of 30x90 feet. The style of the exterior conforms to that used at the Chicago avenue pumping station. It has all exterior wall faces of cut stone. The interior walls are faced with glazed brick, with ceilings of heavy antique oak beams. The entire interior is furnished in oak and stained antique. The furnishings throughout are first-class in every particular. The building is heated with steam. The general contract was let to the McEwen Manufacturing & Building Company for \$19,975 and was completed January 1, 1904.

**SIXTY-EIGHTH STREET ENGINE HOUSE.**—Plans were prepared for a brick engine house to be erected at Sixty-eighth and Justine streets, 25x80 feet in size and two stories and cellar in height. No contracts were let.

#### POLICE DEPARTMENT.

**DOG POUND.**—Plans and specifications were prepared for a brick dog pound, 50x115 feet, one story high and erected on the Bridewell grounds. The labor and materials are to be furnished by the Bridewell authorities.

**MUNICIPAL LODGING HOUSE.**—Plans and specifications were prepared for the remodeling of the three-story and basement building at 12 and 14 North Union street for lodging house purposes. The work was done by the Police Department.

#### HOUSE OF CORRECTION.

Plans were prepared for the walls, gates and towers surrounding the Bridewell grounds. Labor, etc., was done by the Bridewell authorities. Plans are being prepared for a four-story tier of eighty cells, which will connect the north and south tiers of the south cell-house.

**HEALTH DEPARTMENT.**

Plans and specifications were prepared for a two-story and basement brick bath-house No. 5, known as the Kosciusko Bath and erected at 703-5 Holt street. The building is 26x75 feet in size, has pressed brick front with stone trimmings and copper cornice. The general contract was let to John A. Larson for \$4,267 and completed December 31, 1903. The interior is comfortably arranged, first floor having waiting-rooms, private office, and twenty shower baths and one private bathroom. The second story is arranged for usage of the Superintendent and has five rooms and bath.

Plans were also prepared for a two-story and cellar brick bath-house, 25x75 feet, of pressed brick and stone trimmings and containing twenty shower baths, to be erected at 195 Gault court. No contracts were let.

**FINANCE COMMITTEE.**

Plans and estimates were prepared for the numerous buildings damaged by track elevation.

**INTERCEPTING SEWER.**

Plans and estimates were prepared for the various buildings damaged by construction of the Thirty-ninth street intercepting sewer.

**CITY HALL CHANGES.**

Plans were made for new counter partitions, etc., in the following rooms: 101, 113, 200, 206, 306 and 404. The contracts for these were let by the Business Agent.

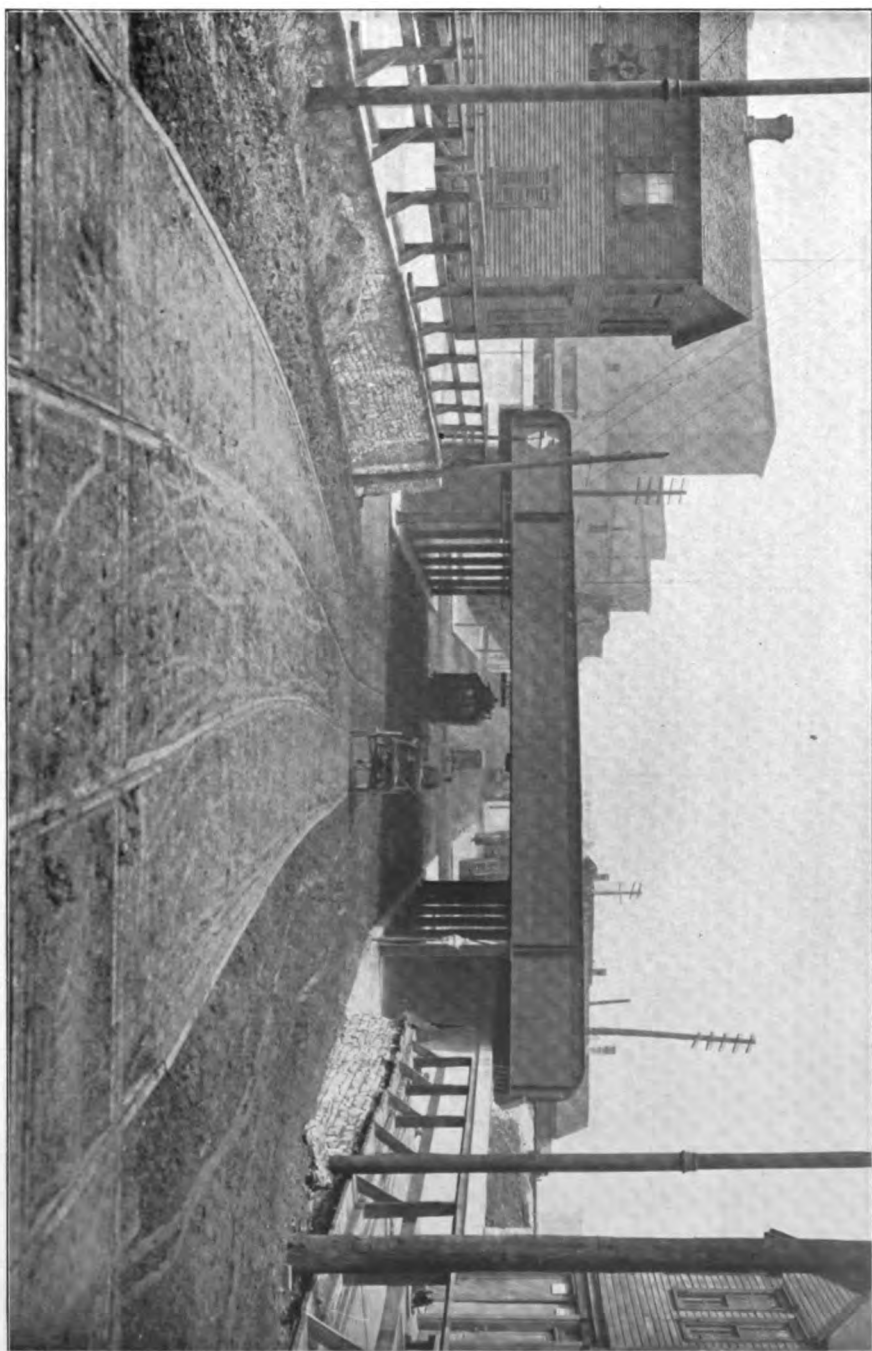
Plans were also made of present City Hall, showing arrangement of partitions, all fixtures, etc., and also a proposed rearrangement of the plumbing of same.

Allow me to express to you my hearty appreciation of the cordial support and co-operation that I have always received at your hands in the conduct of the work of this bureau. I am under obligation also to the heads of the various divisions of this bureau for their faithful and efficient service rendered at all times.

Respectfully submitted,

J. H. SPENGLER,  
*Acting City Engineer.*





EIGHTEENTH STREET ("JOINT TRACK") ELEVATION.—LOOKING WEST ON TWENTY-SECOND STREET.



ANNUAL REPORT  
**Bureau of Water**  
CITY OF CHICAGO  
1903

H. O. NOURSE  
Superintendent





# WATER OFFICE REPORT.

HON. F. W. BLOCKI,

*Commissioner of Public Works.*

DEAR SIR:—Following the usual custom to report the conduct of affairs of the Bureau of Water, I herewith hand you a report for the year 1903, comprised in twenty-eight distinct tables.

**TABLE No. I.**

**SHOWING AMOUNTS UNCOLLECTED DECEMBER 31, 1898, DECEMBER 31, 1899, DECEMBER 31, 1900, DECEMBER 31, 1901, DECEMBER 31, 1902, AND DECEMBER 31, 1903, IN COMPARISON.**

	1898	1899	1900	1901	1902	1903
Amount standing as uncollected on the ward ledgers.....	\$424,431.86	\$378,949.29	\$357,755.98	\$330,028.74	\$761,689.87	\$760,585.86
Amount standing as uncollected on the meter rate ledgers.....	84,252.41	63,019.34	70,180.78	121,839.16	136,826.31	125,006.90
Amount standing as uncollected on the meter mechanical ledgers.....	3,642.56	4,752.47	4,704.58	4,179.02	3,164.63	3,146.00
Amount standing as uncollected in suspense account No. 1.....						28,292.33
Amount standing as uncollected in suspense account No. 2.....						18,664.75
Total.....	\$512,326.83	\$446,721.10	\$432,641.34	\$456,046.92	\$901,680.81	\$935,695.84

Prior to the year 1902 the discount payment period expired with December 31st. The ordinance going into effect in 1902 extending the discount period in certain wards, in some cases as late as February 15th, explains the difference in the uncollected balances on the ward ledgers for the years 1902 and 1903 as compared with the year 1901.

TABLE NO. II.  
SHOWING BUILDINGS EXAMINED BY THE DIVISION OF INSPECTION.

1903	One- Story	Two- Story	Three- Story	Four- Story	Five- Story and Over	Special Examina- tions	New Buildings Examined	Examina- tions for Vacancies	Pipe Petition and Pipe Deposit Examina- tions	Barn Examina- tions	TOTAL
January .....	784	2,153	1,198	380	80	1,169	1,108	442	81	1,182	8,677
February .....	672	2,167	1,344	291	46	624	848	311	345	756	7,874
March .....	168	289	97	5	...	865	483	50	1,005	884	8,296
April .....	2,206	5,679	1,275	757	12	471	803	116	585	1,087	12,991
May .....	3,188	3,867	425	63	16	815	1,618	188	151	1,425	11,746
June .....	1,863	2,472	195	13	2	1,572	1,188	271	821	1,422	9,819
July .....	1,881	2,001	188	14	...	1,325	1,174	286	85	1,279	7,713
August .....	1,531	3,314	376	78	22	1,028	884	311	77	1,083	8,604
September .....	1,099	1,985	215	39	...	407	1,158	115	28	1,242	6,288
October .....	2,518	6,169	1,151	220	18	1,891	1,462	63	307	1,422	15,221
November .....	1,827	3,841	314	156	15	4,397	1,191	145	141	1,164	12,691
December .....	989	1,340	198	74	7	3,876	1,045	116	119	1,063	8,827
Total .....	18,226	34,767	6,946	2,090	218	17,940	2,862	2,394	3,845	13,959	112,747

An annual examination has been completed in the following wards: Thirteenth, Twenty-fifth, Twenty-sixth, Twenty-seventh, Thirty-second, Thirty-third, Thirty-fourth and Thirty-fifth.

**TABLE No. III.**  
**SHOWING NUMBER OF SERVICES METERED AND UNMETERED, METER RATES PER 1,000 GALLONS, POPULATION AND PER CAPITA CONSUMPTION PER DAY OF FOLLOWING PRINCIPAL CITIES.**

NAME OF CITIES.	Services Metered.	Services Unmetered.	Meter Rates Per 1,000 Gallons.	Estimated Population.	Consumption Per Capita Per Day.
*New York.....	35,000	65,000	\$0.18½	3,770,400	121 gallons.
Philadelphia .....	1,775	250,000	.04	1,881,100	237 "
St. Louis .....	4,685	75,000	.30	619,500	125 "
Boston .....			.15½	607,700	120 "
Baltimore .....	2,532	100,600	.06	535,700	125 "
Cleveland .....	25,537	40,773	.05½	422,000	138 "
Buffalo .....	1,893	66,188	.06	837,000	300 "
San Francisco .....	11,000	37,500	.38½	358,500	70 "
Pittsburg .....	598	33,400	.18	849,600	271 "
Cincinnati .....	8,607	33,695	.10½	840,800	125 "
Milwaukee.....	36,000	4,000	.06	319,600	80 "
Detroit .....	5,847	55,618	.05½	314,300	150 "
New Orleans.....	216	10,918	.25	308,800	50 "
Chicago .....	7,298	220,000	.10 (a)	1,903,000	197 "
Chicago .....			.08 (b)		
Chicago .....			.06 (c)		
Chicago .....			.04 (d)		

\*Manhattan borough.

- (a) Rate for first 165,000 gallons used on one premises in one month.  
 (b) Rate for all in excess of 165,000 gallons used on one premises in one month.  
 (c) Rate for all in excess of 5,000,000 gallons used on one premises in one month.  
 (d) Rate for all in excess of 10,000,000 gallons used on one premises in one month.

**TABLE No. IV.**  
**WATER SERVICE PIPES LAID BY CONTRACT DURING THE YEAR 1908,**  
**SHOWING NUMBER OF PIPES AND TOTAL AMOUNT**  
**OF CONTRACT.**

STREET.	FROM	TO	No. of Pipes.	Total Cost.
Augusta.....	Leavitt.....	Western avenue.....	60	\$ 799.20
Cedar.....	Austin avenue.....	Waller avenue.....	52	708.76
Carroll avenue.....	Homan avenue.....	St. Louis avenue.....	14	144.80
Carpenter.....	Eighty-fourth.....	Eighty-ninth.....	153	1,705.73
Drake avenue.....	Huron.....	Ohio.....	30	315.84
Division.....	Central Park avenue	N. Fortieth avenue..	107	1,423.01
Eighty-ninth.....	I. C. R. R. ....	So Chicago avenue..	12	87.12
Eighty-seventh.....	Vincennes road.....	Ashland avenue.....	213	2,296.02
Eighty-sixth.....	Summit.....	Carpenter.....	5	62.00
Eighty-sixth place	Summit.....	Sangamon.....	10	104.80
Forty-ninth place...	Center avenue.....	Lafin.....	10	133.30
Fremont.....	Sheridan road.....	Grace.....	6	82.08
Follansbee.....	Catalpa court.....	Humboldt boulevard.	7	67.83
N. Forty-eighth avenue.....	W. Chicago avenue..	W. North avenue....	118	1,520.36
Fletcher.....	Hoyne avenue.....	Oakley avenue.....	9	117.00
Grenshaw.....	Homan avenue.....	Douglas boulevard..	104	1,086.96
Grace.....	N. Robey.....	Lincoln avenue.....	5	54.12
Greenwood avenue.....	Fifty-first.....	Fifty-fifth.....	45	455.40
Green.....	W. Eighty-fourth...	W. Eighty-sixth.....	45	445.09
Herndon.....	Hawthorne.....	Fullerton avenue....	17	226.10
Hermitage avenue....	W. Fifty-first.....	W. Fifty-fourth.....	103	1,127.25
Halsted.....	Clark.....	Dakin.....	9	135.00
Halsted.....	Seventy-ninth.....	Eighty-fifth.....	220	2,423.00
S. Hermitage avenue.	W. Sixty-seventh...	W. Seventy-first....	103	1,023.00
W. Kinzie.....	N. Fifty-second avenue	Pine.....	11	110.00
Kenmore avenue.....	Evanston avenue.....	Rosemont avenue....	12	132.60
Lafin.....	Garfield boulevard	Sixtieth.....	115	1,170.72
Lakewood avenue....	Granville avenue....	Devon avenue.....	41	450.59
Minerva avenue.....	Sixty-fifth.....	Sixty-seventh.....	42	433.84
Marshfield avenue....	Garfield boulevard	Sixty-third.....	135	1,436.85
Mozart.....	Diversey avenue.....	Avondale avenue....	31	320.85
Morgan.....	W. Eighty-fourth...	W. Ninety-first.....	219	2,605.05
Maplewood avenue....	Diversey avenue.....	Elston avenue.....	10	91.30
Milwaukee avenue....	Lawrence avenue....	C. & N. W. R. R....	12	156.00
Marshfield avenue....	Addison.....	Irving Park boul....	18	212.42
109th place.....	Michigan avenue....	1st alley W. of Princeton ave.	125	1,181.16
111th place.....	Michigan avenue....	Stewart avenue.....	84	884.94
W. Ohio.....	N. Kedzie avenue....	Franklin boulevard..	16	200.94
Parnell avenue.....	Seventy-fourth.....	Seventy-sixth.....	24	258.72
Perry.....	Clybourn avenue....	Diversey avenue.....	23	265.67
S. Peoria.....	W. Eighty-fourth...	W. Eighty-sixth.....	52	635.52
Patterson avenue....	N. Robey.....	Lincoln avenue.....	31	330.54
N. Robey.....	Montrose boulevard	Roscoe.....	52	581.81
Rockwell.....	Elston avenue.....	Diversey avenue.....	32	308.32
E. Ravenswood Park.	Foster avenue.....	Ainslee.....	8	59.28
Sixty-first.....	State.....	Madison avenue.....	19	233.52
Sacramento avenue..	Addison.....	Irving Park boul....	114	1,349.42
W. Superior.....	Central avenue.....	Austin avenue.....	57	699.72
S. Sangamon.....	W. Eighty-fourth...	W. Eighty-seventh...	81	903.92
Summit avenue.....	Halsted.....	Vincennes road.....	26	149.76
Sixty-first.....	Center avenue.....	Ashland avenue.....	77	693.22

TABLE No. IV.—Continued.

STREET.	FROM	TO	No. of Pipes.	Total Cost.
Thirty-first.....	Fortieth avenue.....	Forty-second court..	95	\$ 1,086.00
Talman avenue .....	Wellington .....	Diversey avenue .....	38	498.95
Vernon avenue .....	Sixtieth .....	Sixty-first.....	20	174.66
Whipple.....	Addison .....	Irving Park boul....	76	644.52
N. Western avenue ..	Montrose avenue....	Irving Park boul....	108	1,293.70
Whipple.....	Humboldt .....	Diversey avenue.....	55	566.80
Winchester avenue....	W. Forty-sixth.....	W. Forty-seventh....	19	198.24
Wayne avenue.....	Granville avenue....	Devon avenue.....	44	404.80
Washtenaw avenue ..	W. Wellington.....	Diversey avenue.....	20	201.40
Total .....			3,399	\$37,414.52

Average cost per pipe under contract let in 1902.....\$10.72<sup>1111</sup>Average cost per pipe under contract let in 1903..... 11.00<sup>1111</sup>

TABLE No. V.

## DIVISION OF PERMITS.

## SCREW FERRULES INSERTED DURING THE YEAR 1903.

MONTHS.	$\frac{3}{4}$ -inch Ferrules Inserted.	$\frac{1}{2}$ -inch Ferrules Inserted.	1-inch Ferrules Inserted.	Total of Screw Ferrules Inserted.
January .....	47	90	7	144
February.....	28	35	6	69
March.....	98	95	31	224
April.....	204	282	31	467
May.....	346	702	35	1,083
June.....	196	1,286	24	1,506
July.....	201	1,322	29	1,552
August.....	171	502	21	694
September.....	257	415	33	705
October .....	232	446	28	701
November.....	191	192	20	403
December .....	78	187	22	287
Total.....	2,049	5,454	282	7,785
1902.....	1,755	6,742	296	8,793

**TABLE No. VI.****RE-TAPS INSERTED DURING THE YEAR 1903.**

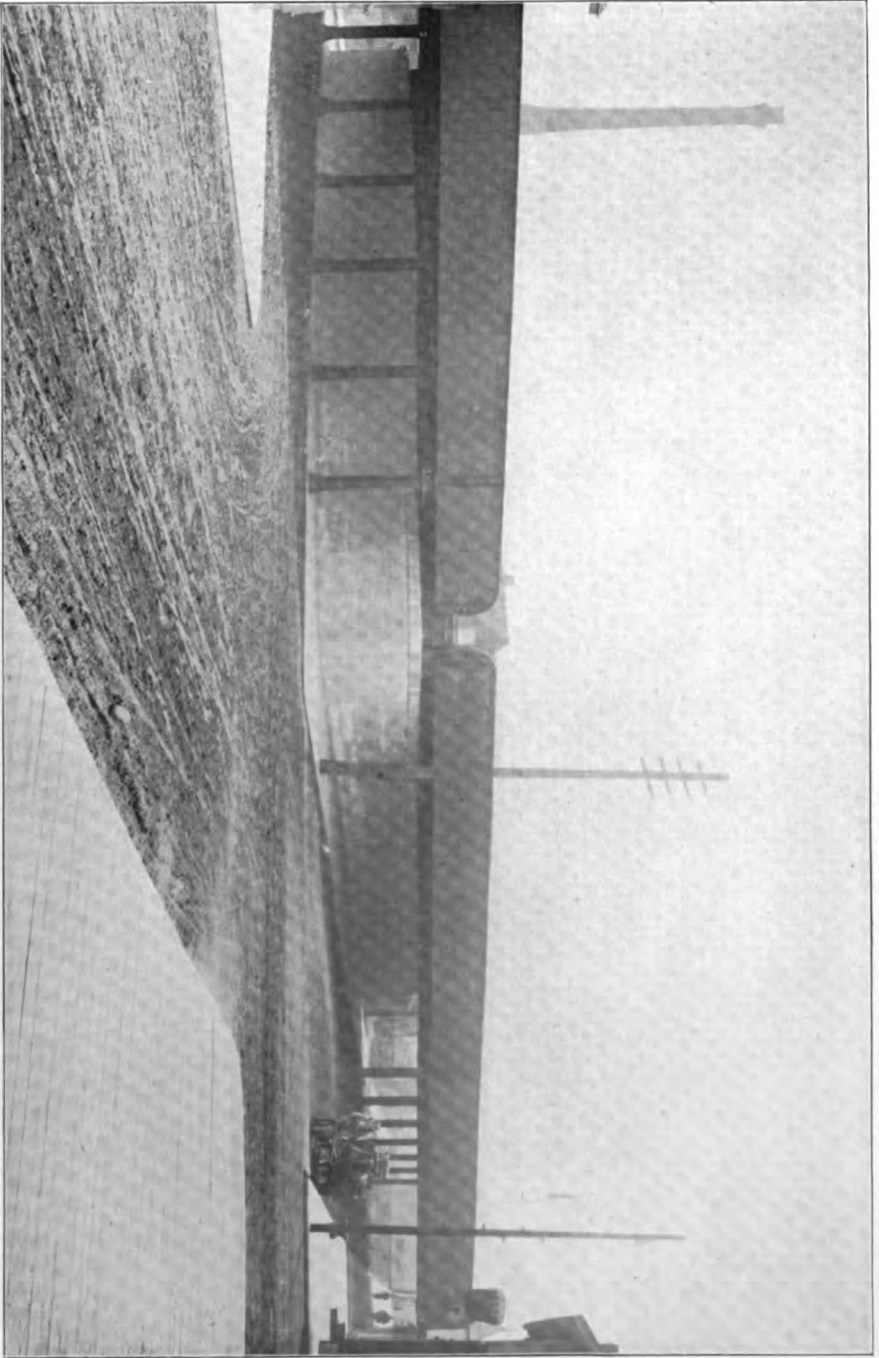
$\frac{5}{8}$ -inch.....	278
$\frac{3}{4}$ -inch.....	185
1-inch.....	28
Total.....	481

The number of applications made at this office for ferrules to water service pipes during the past year (exclusive of city contracts and re-taps) was as follows:

	Ferrules Inserted during 1903.	Ferrules Inserted during 1902.
Inserted in old part of City .....	925	920
Inserted in Calumet .....	185	193
Inserted in Cicero.....	495	314
Inserted in Hyde Park .....	664	487
Inserted in Jefferson.....	603	634
Inserted in Lake View.....	576	478
Inserted in Town of Lake.....	466	808
Total.....	3,914	3,229

**TABLE No. VII.****PERMIT DIVISION.****PERMITS WERE ISSUED DURING THE YEAR 1903 AS FOLLOWS:**

	Permits Issued during 1903.	Permits Issued during 1902.
For tapping water mains for service pipes to inside curb for future use.....	3,390	5,019
For tapping water mains for service pipes to houses for immediate service.....	3,914	3,229
For connection to service pipes inside curb.....	727	506
For 12-inch cast iron pipes to be used as service pipes...	1	2
For 10-inch cast iron pipes to be used as service pipes...	2	.....
For 8-inch cast iron pipes to be used as service pipes....	8	7
For 6-inch cast iron pipes to be used as service pipes....	14	10
For 4-inch cast iron pipes to be used as service pipes....	41	57
For 3-inch cast iron pipes to be used as service pipes....	10	6
For 2-inch "strong" lead pipes to be used as service pipes	95	90
For 1½-inch "strong" lead pipes to be used as service pipes.....	66	89
For 1¼-inch "strong" lead pipes to be used as service pipes.....	119	90
For miscellaneous or special permits.....	628	410
Total.....	9,005	9,515



EIGHTEENTH STREET ("JOINT TRACK") ELEVATION.—LOOKING SOUTH ON CANAL STREET AT TWENTY-SECOND STREET.





TABLE No. VIII.

TABULATED STATEMENT SHOWING THE NUMBER OF FERRULES INSERTED EACH YEAR FOR THE LAST TWENTY-FIVE YEARS, AND THE TOTAL NUMBER IN USE DECEMBER 31, 1903.

Year.	Original Town.	*Lake View.	Hyde Park.	*Town of Lake.	*Calumet.	*Cicero.	*Jefferson.	Total.
<i>a</i> 1880.....	63,510	.....	.....	.....	.....	.....	.....	63,510
1880.....	4,439	.....	.....	.....	.....	.....	.....	4,439
1881.....	5,678	.....	.....	.....	.....	.....	.....	5,678
1882.....	5,213	.....	.....	.....	.....	.....	.....	5,213
1883.....	6,656	.....	.....	.....	.....	.....	.....	6,656
1884.....	6,637	.....	.....	.....	.....	.....	.....	6,637
1885.....	6,555	.....	.....	.....	.....	.....	.....	6,555
1886.....	8,083	.....	.....	.....	.....	.....	.....	8,083
1887.....	8,808	.....	.....	.....	.....	.....	.....	8,808
1888.....	10,089	.....	.....	.....	.....	.....	.....	10,089
1889.....	.....	.....	<i>b</i> 8,775	.....	.....	.....	.....	8,775
1889.....	7,617	889	1,730	1 286	.....	.....	.....	11,522
1890.....	10,127	3,440	3,833	3,951	152	289	20	21,812
1891.....	10,237	2,458	5,658	4,165	234	59	570	23,381
1892.....	7,224	3,173	4,813	3,882	271	63	2,146	21,572
1893.....	7,990	2,334	3,586	4,223	308	153	1,435	20,029
1894.....	6,642	2,271	2,770	1,922	392	843	1,044	15,884
1895.....	5,015	2,262	3,152	1,750	410	750	1,326	14,665
1896.....	3,551	1,927	2,792	1,838	292	1,663	869	12,932
1897.....	2,607	851	891	2,552	197	1,004	1,837	9,939
1898.....	1,183	527	1,765	662	242	516	1,312	6,207
1899.....	2,259	966	1,228	790	504	652	1,116	7,515
1900.....	1,239	588	893	1,420	919	2,350	1,635	9,044
1901.....	1,127	946	1,049	773	857	1,042	1,215	7,009
1902.....	1,619	595	936	895	1,118	1,637	1,458	8,248
1903.....	1,385	394	783	802	1,001	851	2,088	7,304
Total .....	195,490	23,611	44,654	30,911	6,897	11,872	18,071	331,506

\* Number of ferrules inserted in suburbs previous to annexation unknown.

*a* Number of ferrules inserted previous to 1880.

*b* Number of ferrules inserted in Hyde Park previous to annexation.

TABLE No. IX.

## DIVISION OF PERMITS—INCOME ACCOUNT.

## DEBIT.

Stock account, January 1, 1903, per inventory.....	\$ 711.17	
Amount paid for ferrules.....	\$ 4,482.88	
Amount paid for fittings, pipe and miscellaneous material.....	800.16	
		4,732.54
Amount paid for printing and stationery .....	\$ 32.45	
Amount paid for transportation.....	686.95	
Amount paid for tools, etc.....	488.25	
Amount paid for miscellaneous.....	23.75	
		1,231.40
Salaries of clerks.....	\$ 2,033.30	
Salaries of inspectors.....	9,805.12	
Salaries of tappers.....	13,214.50	
Salaries of expressmen.....	11,154.00	
Salaries of foreman.....	900.00	
Salaries of laborers.....	10,129.50	
		47,236.42
		\$53,911.53

## CREDIT.

Amount received for inserting ferrules.....	\$17,128.95	
Earnings for material furnished and labor performed for Bureau of Engineering, etc.....	1,917.77	
		\$19,046.72
Stock on hand January 1, 1904, as per inventory..	1,440.09	
		\$20,486.81
Net loss to the division, 1903 .....		\$33,424.72
Net loss to the division, 1902 .....		37,181.03
Net loss to the division, 1901 .....		81,051.42

**TABLE No. X.**  
**DETAILED STATEMENT OF ASSESSOR'S INCREASE AND DECREASE CHECKS FOR THE YEAR 1908.**

MONTHS.	INCREASE.				DECREASE.			
	Current Tax.	Back Tax.	Shut-off.	Total.	Current Tax.	Back Tax.	Drawback.	Total.
January .....	\$6,754.54	\$ 44.88	\$ 180.75	\$6,980.12	\$2,618.88	\$1,225.74	\$2,867.54	\$6,277.11
February .....	2,821.13	9.50	236.38	3,067.01	1,256.08	761.38	1,508.13	3,525.54
March .....	3,258.77	79.25	182.75	3,518.77	958.98	1,233.46	165.24	2,357.68
April .....	1,917.68	44.50	92.00	2,054.18	698.93	1,007.45	39.17	1,740.55
May .....	7,937.82	640.69	1,351.11	9,929.62	4,994.67	1,979.04	2,046.15	9,019.86
June .....	11,092.84	91.45	231.00	11,414.79	5,197.50	2,384.16	1,860.60	9,392.26
July .....	9,523.28	168.62	241.89	9,933.79	4,718.04	1,444.86	1,431.49	7,599.39
August .....	8,724.92	31.70	416.63	9,178.25	4,195.14	844.09	793.95	5,833.18
September .....	7,518.86	44.00	1,262.87	8,825.73	1,860.05	523.49	92.93	1,966.47
October .....	14,606.66	1,044.88	371.88	16,023.87	2,489.05	1,568.97	53.78	4,060.80
November .....	7,166.27	342.67	549.37	8,058.31	3,106.58	1,281.34	1,958.06	6,345.98
December .....	5,279.37	69.05	52.00	5,400.42	114,161.48	4,977.51	1,498.48	120,637.47
Total 1908 .....	\$ 86,599.64	\$2,611.09	\$5,168.13	\$ 94,378.86	\$145,680.28	\$19,251.49	\$13,814.52	\$178,746.29
Total 1909 .....	101,042.08	2,480.83	7,058.77	110,581.23	161,544.09	83,669.25	14,842.85	209,036.19

Of the total decrease of \$178,746.29 of frontage rates for the year 1908, \$114,303.05 is a result of the decreases to municipal, State, religious, charitable and educational institutions, as provided for under section 24 of the ordinance.

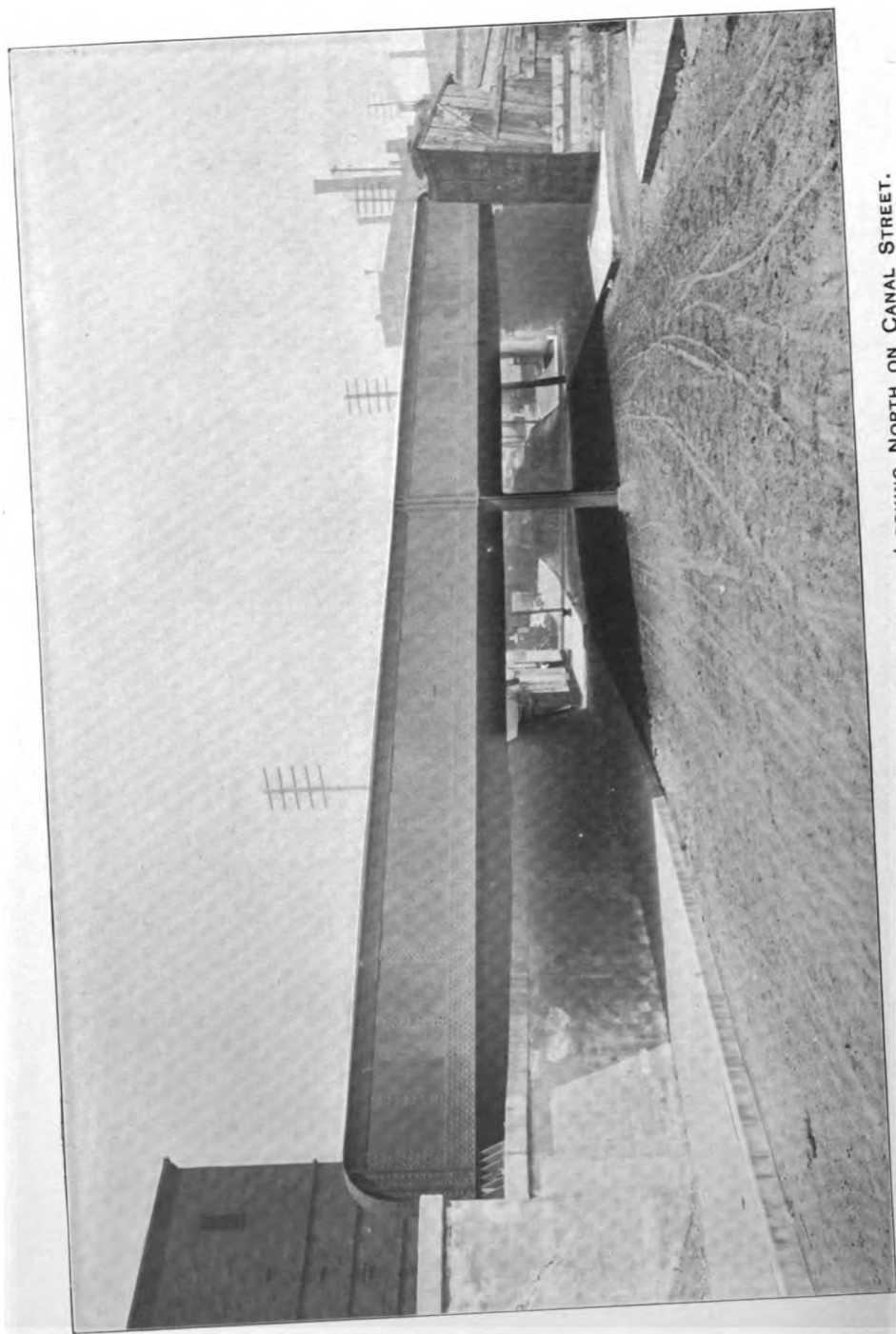
TABLE NO. XI.  
DETAIL OF GENERAL ASSESSMENT FROM MAY, 1903, TO MAY, 1904.

WARD.	Frontage.	Water Closets.	Urinals.	Baths.	Wash Basins.	Extra Rooms and Persons.	Saloons.	Hose Trough and Fountain.	Laundries.	Steam Heating and Engines.	Stables.	Miscellaneous.	Total Assessment.
1st....	\$27,650.50	\$12,503.50	\$1,176.00	\$1,888.50	\$5,782.25	\$6,821.00	\$1,115.00	\$ 997.00	\$113.00	\$1,765.25	\$2,274.50	\$2,122.25	\$64,243.75
2d....	30,391.00	12,244.00	375.50	4,682.50	3,575.50	4,365.00	424.00	3,053.50	138.50	429.00	2,937.00	1,013.00	73,278.00
3d....	32,405.50	12,444.00	498.50	6,888.00	3,540.00	3,540.00	318.00	3,443.50	121.00	517.75	2,588.00	740.00	76,220.25
4th....	35,004.00	10,701.50	387.00	1,857.00	1,449.50	11,408.50	578.00	445.50	45.00	326.75	2,198.50	1,230.75	65,116.25
5th....	39,976.50	7,568.50	410.50	1,625.50	1,473.00	5,960.50	644.00	592.00	6.00	575.00	1,441.00	980.75	61,253.75
6th....	37,906.00	18,764.50	391.00	1,811.50	6,391.00	1,687.50	68.00	9,715.50	126.50	797.90	3,991.00	662.50	113,412.90
7th....	54,878.50	22,081.50	684.50	16,096.50	7,524.00	2,310.50	274.00	6,967.00	201.00	1,997.50	2,685.50	782.00	116,442.50
8th....	43,428.00	7,587.00	489.00	8,290.50	2,444.50	5,714.25	862.00	2,278.00	61.00	1,906.10	1,577.75	1,412.80	70,210.90
9th....	25,984.00	8,354.50	844.50	1,081.50	1,591.00	13,118.75	437.00	334.00	85.00	846.00	2,220.00	1,094.40	55,380.65
10th....	24,344.50	9,703.50	513.00	1,050.50	1,781.50	15,400.00	495.00	357.00	87.00	595.00	2,065.50	1,113.00	57,505.50
11th....	29,919.00	11,845.00	449.50	2,811.00	1,682.50	13,982.50	567.00	538.50	71.00	419.00	1,796.50	65,066.25	65,066.25
12th....	44,941.00	14,327.00	506.00	2,810.00	2,813.00	7,981.50	660.00	909.00	50.00	312.50	1,616.00	1,108.25	80,441.25
13th....	46,272.50	18,104.50	464.00	11,959.00	5,162.00	2,344.00	353.00	3,016.50	46.00	406.00	1,796.50	715.50	91,464.50
14th....	46,272.50	13,368.50	473.50	6,194.00	3,063.50	5,079.50	429.00	1,519.50	163.00	723.00	2,367.00	824.75	89,497.75
15th....	37,711.00	17,535.00	584.50	7,553.50	3,490.00	8,765.50	364.00	1,947.00	53.50	2,437.00	1,671.00	758.00	89,808.00
16th....	32,377.00	12,683.00	379.00	1,653.00	1,699.00	15,767.50	594.00	454.50	59.00	243.00	1,632.00	1,002.25	68,543.75
17th....	36,688.50	18,431.50	662.50	2,183.50	2,697.00	22,708.50	849.00	477.00	141.00	660.50	2,767.00	1,591.50	92,118.00
18th....	38,589.00	11,242.00	668.00	3,295.00	4,668.00	4,585.50	896.00	791.00	120.00	1,238.00	2,553.50	1,638.50	63,205.00
19th....	33,254.50	10,890.50	867.00	3,396.00	2,395.00	11,296.00	645.00	3 0.00	46.00	4,646.00	2,556.50	1,049.00	70,856.50
20th....	41,063.50	16,132.50	584.50	8,579.50	5,235.50	3,064.50	386.00	3,450.50	83.00	883.80	3,793.75	928.00	96,681.55
21st....	34,571.00	17,533.00	558.00	7,090.00	3,109.50	5,708.50	568.00	463.00	134.50	1,325.00	2,813.00	1,322.50	85,518.50
22d....	36,191.00	15,463.00	408.50	5,924.00	3,175.50	10,683.25	390.00	2,237.50	115.00	2,398.50	2,099.00	812.30	73,727.80
23d....	37,390.00	22,192.50	481.00	8,492.50	2,757.50	6,901.00	438.00	1,962.00	62.50	323.00	2,109.00	896.50	73,350.00
24th....	59,330.50	13,663.50	408.50	14,681.00	6,903.00	3,839.50	434.00	11,037.00	163.00	269.00	3,082.00	890.75	123,223.75
25th....	53,455.00	12,427.00	336.00	6,735.00	3,863.00	2,469.00	948.00	7,741.00	26.00	166.75	1,879.00	699.25	89,585.00
26th....	60,329.50	7,361.00	290.50	3,809.50	3,522.75	1,117.50	429.00	3,225.50	5.00	493.00	1,632.25	645.25	81,181.00
27th....	50,195.00	15,863.00	436.00	5,960.00	3,692.75	6,298.50	501.00	2,003.50	23.00	380.50	1,731.00	886.00	86,698.75
28th....	40,329.50	6,399.50	490.50	1,260.50	1,874.00	6,298.50	785.00	640.50	9.00	562.50	1,406.50	1,147.25	69,549.25
29th....	43,863.00	11,702.00	555.00	4,617.00	2,874.00	6,471.50	639.00	1,010.50	38.00	448.80	2,090.75	1,044.00	73,373.55
30th....	55,883.50	13,978.50	487.00	8,450.50	4,116.50	1,267.50	275.00	3,057.00	46.00	685.50	1,986.50	718.75	91,692.25
31st....	50,079.00	10,566.50	429.50	6,569.50	3,767.00	1,267.50	249.00	7,110.50	116.00	641.50	2,112.75	638.10	93,623.35
32d....	54,135.00	7,184.50	437.00	2,979.00	2,013.00	2,969.50	244.00	1,634.00	18.50	123.50	1,319.25	484.50	71,381.25
33d....	31,715.50	7,683.50	277.00	2,927.00	2,114.50	2,770.00	214.00	1,268.00	13.50	330.25	885.50	287.50	51,210.50
34th....	25,066.50	3,877.50	209.50	2,563.50	1,164.50	466.00	123.00	604.00	23.00	377.00	469.00	194.75	35,120.75
Total, 1903	\$1,471,423.00	\$448,584.50	\$16,377.00	\$188,071.00	\$115,508.50	\$235,706.25	\$17,574.00	\$89,706.50	\$2,820.00	\$30,050.05	\$74,613.00	\$34,085.85	\$2,724,632.65
" 1902	1,455,511.50	428,361.00	15,777.50	176,471.50	119,548.50	232,696.75	17,383.00	91,686.50	2,979.50	31,964.00	75,248.00	34,321.85	2,651,088.10
													\$72,844.55

Increase for 1903.

During the year 1902 annual or house-to-house examinations were made in 6 wards, and the general assessment account was increased to the extent of \$91,041.50.  
During the year 1903 annual or house-to-house examinations were made in 8 wards, and the general assessment account was increased to the extent of \$72,844.55.





EIGHTEENTH STREET ("JOINT TRACK") ELEVATION.—LOOKING NORTH ON CANAL STREET.

TABLE NO. XII.

DETAILED STATEMENT OF ASSESSOR'S MISCELLANEOUS RECEIPTS  
FOR 1903.

MONTHS	Cement Walks	Leak and Waste	Shut-off Charges	Sprink- ling	Miscel- laneous	Total
January.....	.....	.....	\$ 2.25	.....	\$ 22.65	\$ 24.90
February.....	.....	.....	12.88	.....	24.00	36.88
March.....	\$ 27.51	.....	10.50	.....	30.80	68.81
April.....	18.88	.....	.....	\$ 112.50	3.00	129.38
May.....	7.96	.....	.....	2,550.00	488.20	2,996.16
June.....	4.54	.....	.....	2,787.50	106.15	2,898.19
July.....	4.88	.....	.....	2,825.00	950.64	3,779.97
August.....	8.05	\$ 1.25	.....	3,000.00	86.75	3,041.05
September.....	4.92	18.75	.....	2,887.50	39.00	2,945.17
October.....	4.62	2.25	.....	1,962.50	79.20	2,048.57
November.....	97.21	5.68	.....	112.50	151.30	366.64
December.....	180.88	4.50	.....	.....	188.25	368.08
Total.....	*\$848.80	\$ 27.88	\$25.18	\$16,387.50	\$2,064.94	\$18,708.25

\*In addition to the above collections by the cashier of the Water Office, the sum of \$2,158.60 was collected by the City Collector for use of water in construction of cement walks.



TABLE No. XIII.

## METER MECHANICAL DIVISION.

Number of meters in service December 31, 1902 .....	7,075
Number of meters set in new location during 1903 .....	888
Total number of meters in service during 1903 .....	<u>7,408</u>
Number of meters removed—property assessed—during 1903 .....	88
Number of meters removed—supply cut off—during 1903 .....	67
Number of meters removed and not replaced during 1903 .....	5
Total number of meters removed permanently during 1903 .....	<u>110</u>
Total number of meters in use December 31, 1903 .....	7,298
Total number of meters in use December 31, 1902 .....	7,075
Increase in number of meters in use year ending December 31, 1903 .....	<u>223</u>
Number of meters set in new location during 1903 .....	888
Number of meters set replacing others during 1903 .....	49
Total number of meters set during 1903 .....	<u>875</u>
Number of meters in stock January 1, 1903 .....	81
Number of meters placed in stock during 1903 .....	59
Number of meters furnished by private parties during 1903 .....	875
Total number of meters on hand during 1903 .....	<u>515</u>
Number of meters set during 1903 .....	875
Number of meters on hand January 1, 1904 .....	<u>140</u>
Number of meters repaired during 1903 for which bills were rendered .....	2,563
Number of meters removed to shop and reset during 1903 .....	<u>286</u>

The net addition to the number of meters in service for the year 1903 is 223, as compared with 347 for the previous year.

The number of meters repaired during the year is 2,563, as compared with 2,760 for the year 1902.

**TABLE No. XIV.**  
**NAMES AND SIZES OF WATER METERS IN USE DECEMBER 31, 1903.**

MAKE.	SIZE.											TOTAL.
	½-inch.	¾-inch.	1-inch.	1½-inch.	2-inch.	3-inch.	4-inch.	6-inch.	8-inch.	10-inch.	12-inch.	
Worthington...	5	208	375	1,131	2	969	960	478	38	7	.....	4,178
Pittsburg.....	.....	95	238	419	74	416	228	75	43	28	.....	1,611
Crown.....	.....	9	96	128	.....	110	121	48	91	26	.....	629
Hersey.....	.....	8	44	70	.....	95	123	70	58	38	.....	501
Nash.....	.....	14	21	46	.....	46	15	3	6	1	.....	152
Thomson.....	.....	1	10	11	.....	39	23	11	14	7	.....	116
Gem.....	.....	.....	.....	.....	.....	.....	16	10	12	14	2	60
Trident.....	.....	2	4	1	.....	6	12	3	1	.....	.....	29
Union.....	.....	9	4	.....	.....	.....	.....	.....	.....	.....	.....	15
Empire.....	.....	1	.....	2	.....	1	1	.....	.....	.....	.....	5
Torrent.....	.....	.....	.....	.....	.....	.....	.....	.....	5	.....	.....	5
Westinghouse.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1
Venturi.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1
Total.....	5	347	792	1,911	76	1,683	1,499	698	263	111	1	7,298

TABLE No. XV.

## METER MECHANICAL DIVISION.

SHOWING WATER METERS IN USE AND HOW DISTRIBUTED.

Stores and flats.....	1,188
Business houses.....	1,129
Residences and apartment buildings.....	1,310
Railroads.....	570
Manufactories.....	1,465
Breweries.....	153
Liveries.....	248
Packing houses.....	185
Laundries.....	142
Hotels.....	261
Office buildings.....	260
Theaters.....	38
Miscellaneous.....	480
Charitable institutions.....	79
Total.....	<hr/> 7,298

**TABLE No. XVI.**  
**METER MECHANICAL DIVISION.**  
**INCOME ACCOUNT.**

**DEBIT.**

Stock account, per inventory, January 1, 1903—			
Comprising material.....	\$ 9,379.33		
and bills receivable .....	3,164.63		
		\$12,543.95	
Amount paid for covers and frames .....	\$ 1,684.36		
Amount paid for fittings.....	5,783.29		
Amount paid for lumber.....	406.47		
		\$ 7,824.12	
Amount paid for transportation .....	\$ 63.20		
Amount paid for horse feed, etc.....	379.15		
Amount paid for tools.....	93.42		
Amount paid for sundries .....	21.92		
		\$ 556.69	
Salary of foreman.....	\$ 1,500.00		
Salaries of clerks .....	2,077.81		
Salaries of meter setters.....	5,225.25		
Salaries of laborers.....	1,639.10		
Salaries of expressmen .....	2,883.00		
		\$13,324.66	
			\$34,249.42

**CREDIT.**

Earnings from labor performed and material furnished in setting of large meters, etc.....	\$ 4,582.75		
Net cash received for material sold from stock on hand and repairing meters .....	12,921.99	\$17,504.74	
Amount due and uncollected for repairs.....		3,146.00	
Amount uncollected for repairs transferred to Suspense Account No. 2 .....		465.00	
Stock on hand, as per inventory, Dec. 31, 1903 ...		9,624.67	\$30,740.41
Net loss to the Division .....			*\$ 8,509.01

NOTE.—The meter Mechanical Division of the Bureau of Water is conducted at a loss to the City, as may be seen by a comparison of the dates and figures following :

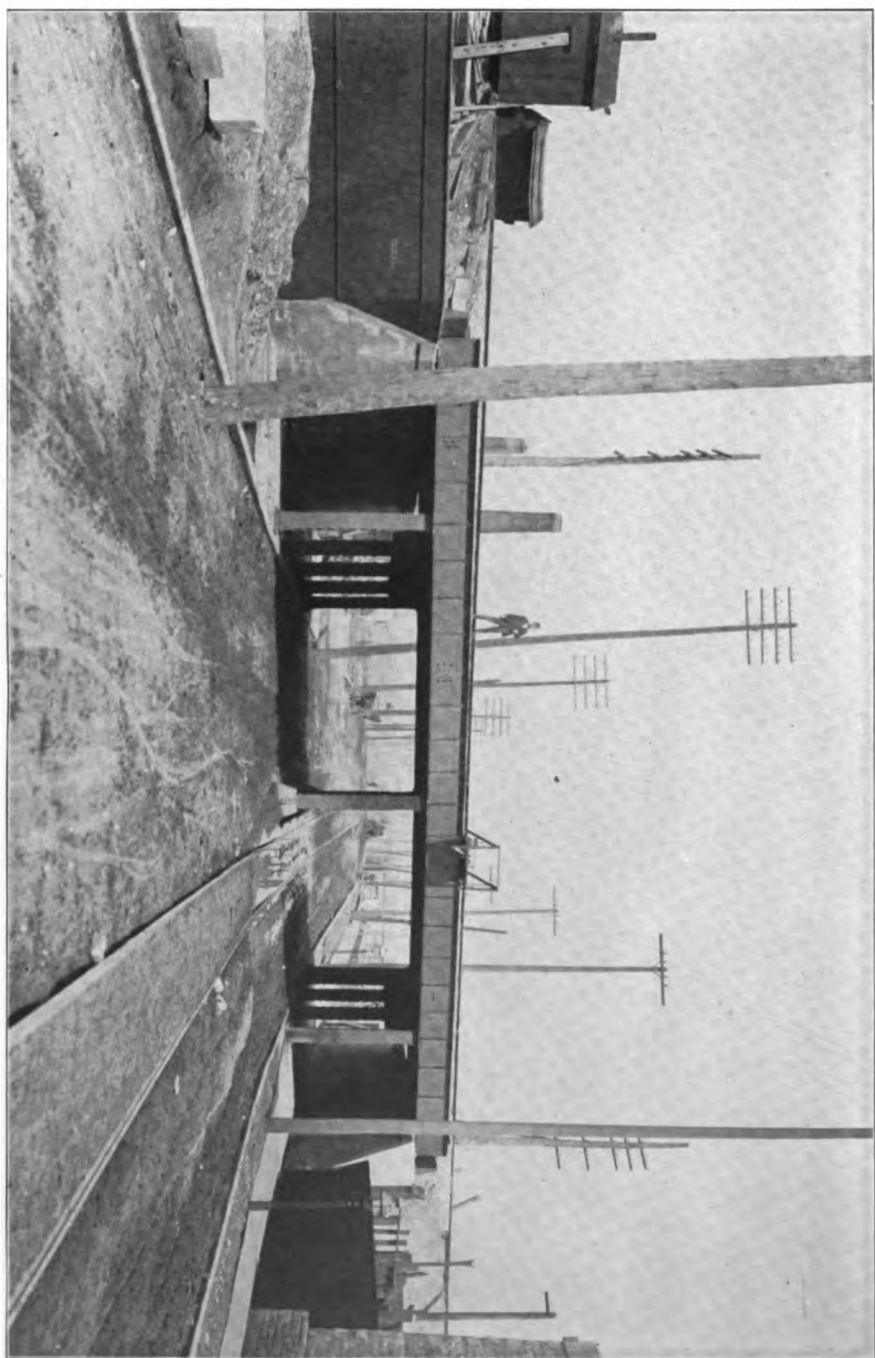
1896. Net loss.....	\$11,812.57
1897. Net loss.....	11,708.05
1898. Net loss.....	8,455.81
1899. Net loss.....	3,234.04
1900. Net loss.....	5,624.84
1901. Net loss.....	5,749.09
1902. Net loss.....	4,128.86

It may be observed by comparing these figures that the loss of this division for the year 1902, was \$4,128.86, and for the year 1903, \$5,292.64.

\*Shop work performed by Water Works Shops, amounting to \$1,783.63, not included.

TABLE No. XVII.  
ANALYSIS OF LEDGER—ASSESSED RATES ACCOUNT.

WARD.	DEBIT.						CREDIT.					
	Balance Jan. 1, 1903.	General Assessment.	Increases.	Refunds.	Discounts.	Sundries	Total.	Decreases.	Discounts.	Collections.	Sundries.	Balance Dec. 31, 1903.
1.....	\$ 9,705.22	\$ 64,243.75	\$ 2,940.47	\$ 315.39	\$ 37.71	.....	\$ 77,242.54	\$ 7,392.04	\$ 7,183.31	\$ 50,603.90	\$ 1,189.04	\$ 10,809.25
2.....	6,431.64	73,278.00	965.92	172.34	21.26	.....	80,869.16	5,284.78	9,235.21	60,068.89	369.23	6,910.05
3.....	6,967.22	75,220.25	1,290.56	193.35	30.79	.....	84,711.17	5,391.26	9,235.21	60,068.89	369.23	8,225.02
4.....	5,293.42	65,116.25	1,650.91	54.09	9.03	\$ 285.59	69,990.11	4,298.22	8,929.92	52,473.19	131.75	7,061.87
5.....	6,922.52	61,253.75	1,587.61	145.01	21.19	.....	69,990.11	3,885.87	7,350.32	50,300.21	732.84	7,061.87
6.....	7,325.45	113,442.90	4,477.52	469.09	68.29	.....	125,753.25	6,486.01	14,693.71	95,089.79	373.72	9,110.02
7.....	18,149.69	116,442.50	6,140.11	508.98	76.78	.....	141,318.36	9,831.55	14,693.71	95,089.79	373.72	125,753.25
8.....	12,195.31	70,210.90	2,735.66	164.02	23.45	.....	85,329.34	6,000.94	9,018.14	57,431.57	1,789.44	16,980.34
9.....	20,372.89	55,380.65	597.73	89.37	14.40	.....	76,455.04	3,988.87	7,000.91	45,882.87	167.57	18,814.82
10.....	18,239.08	57,505.50	1,169.58	61.49	9.01	124.77	77,109.43	3,988.87	7,000.91	45,882.87	167.57	18,814.82
11.....	16,324.57	65,096.25	818.88	104.94	6.81	227.06	82,548.51	4,066.49	9,012.74	53,744.83	75.50	15,619.15
12.....	23,441.19	80,441.25	4,412.47	126.40	18.05	195.36	108,694.72	3,909.41	11,623.40	70,021.97	475.25	23,304.69
13.....	35,554.33	91,464.50	2,592.56	313.38	40.92	11.52	129,977.81	3,603.69	12,638.95	79,695.88	714.25	33,355.04
14.....	37,381.56	82,497.75	1,054.65	182.98	26.27	1.47	121,160.68	4,796.42	11,126.00	70,712.24	445.77	34,080.26
15.....	23,542.59	82,808.00	1,967.87	71.85	10.58	81.78	108,482.67	6,958.86	10,901.90	64,912.54	191.25	25,518.12
16.....	17,545.99	68,543.75	1,126.82	91.96	11.97	24.79	87,345.28	2,768.90	9,406.36	56,002.63	88.25	19,079.14
17.....	33,903.47	92,113.00	557.69	143.86	21.15	.....	126,754.81	5,825.96	12,078.36	72,540.01	577.39	35,733.09
18.....	27,907.65	63,205.00	1,310.35	143.70	21.15	.....	99,668.07	4,390.96	7,820.52	50,451.35	1,750.80	29,000.02
19.....	27,907.65	70,565.50	899.01	113.45	12.97	3.43	99,793.01	7,740.96	8,731.93	53,367.60	952.50	29,000.02
20.....	36,303.51	96,081.55	1,001.93	159.38	19.60	.....	138,127.02	5,868.76	12,143.77	77,361.59	984.32	41,768.58
21.....	36,303.51	85,518.50	1,197.57	209.97	27.68	.....	123,257.23	5,181.12	10,492.80	67,385.46	272.60	39,925.25
22.....	40,340.68	84,343.25	971.46	133.47	20.17	.....	125,609.43	5,983.88	10,808.62	66,036.07	729.63	42,050.83
23.....	31,224.69	75,727.80	704.97	121.79	20.41	.....	107,799.66	4,185.95	10,080.53	60,780.04	308.35	32,444.29
24.....	29,329.83	72,350.00	704.97	121.79	20.41	.....	107,799.66	4,185.95	10,080.53	60,780.04	308.35	32,444.29
25.....	48,822.62	123,223.75	1,100.21	98.19	12.59	33.25	138,154.07	3,416.91	9,597.11	58,171.19	21.88	32,346.98
26.....	36,815.96	89,585.00	7,334.66	509.73	70.03	.....	179,960.69	5,772.49	15,877.99	100,233.38	234.63	57,842.20
27.....	36,815.96	81,181.00	6,255.75	216.69	29.76	32.89	132,937.05	5,104.91	11,710.41	73,298.06	489.26	42,334.41
28.....	15,194.27	86,898.75	2,499.46	153.20	24.80	62.50	121,046.11	6,828.96	11,487.03	75,506.25	813.70	26,116.77
29.....	12,014.69	60,549.25	2,791.62	243.29	30.84	59.66	75,707.38	4,565.24	12,911.10	61,804.28	829.81	7,065.70
30.....	8,417.14	75,373.55	1,615.81	141.69	23.24	79.45	85,591.59	3,885.93	9,894.84	61,180.07	612.13	9,176.13
31.....	19,104.89	91,692.25	2,773.36	212.27	29.56	20.16	113,952.13	5,514.58	12,020.07	76,158.74	3,469.75	16,788.99
32.....	23,186.54	93,625.35	3,883.11	294.65	39.18	139.80	120,892.05	8,697.51	12,020.07	76,158.74	3,469.75	16,788.99
33.....	13,408.21	71,581.25	3,421.48	128.84	20.65	363.27	88,651.90	4,444.81	9,760.75	69,773.12	1,699.35	11,973.87
34.....	12,034.90	51,215.20	4,006.56	83.17	7.53	.....	67,710.12	3,612.07	7,415.57	49,046.30	727.28	6,908.90
35.....	5,555.40	35,120.75	5,883.79	68.67	8.13	.....	46,736.74	2,657.28	5,138.91	33,810.81	211.19	4,918.55
Total	\$761,689.57	\$2,724,352.65	\$94,822.86	\$6,439.57	\$394.62	\$2,464.43	\$9,590,844.00	\$170,028.66	\$359,536.53	\$2,260,808.99	\$90,833.96	\$760,585.86
												\$3,590,844.00



EIGHTEENTH STREET ("JOINT TRACK") ELEVATION.—LOOKING NORTH ON ASHLAND AVENUE.



**TABLE No. XVIII**

**SHOWING NET COLLECTIONS FROM ALL SOURCES FOR THE YEAR  
1903, AS COMPARED WITH 1902.**

SOURCES.	1902.	1903.	Increase.	Decrease.	Net Increase
Assessed rates .....	\$1,835,225.84	\$2,250,210.84	\$414,985.00		
Meter rates .....	1,329,684.69	1,405,440.45	75,755.76		
Permit division .....	16,900.39	19,046.72	2,146.33		
Assessor's miscellaneous .....	13,974.98	20,861.85	6,886.87		
Meter Mechanical divisi'n .....	19,046.41	17,504.74		\$1,541.67	
Water Pipe Extension miscellaneous .....	9,035.24	11,486.37	2,451.13		
Suspense Account No. 1 .....		13.00	13.00		
Suspense Account No. 2 .....		337.35	337.35		
<b>Total .....</b>	<b>\$3,223,867.55</b>	<b>\$3,724,901.32</b>	<b>\$502,575.44</b>	<b>\$1,541.67</b>	<b>\$501,033.77</b>

**TABLE No. XVIII B.**

**CASH COLLECTED BY CASHIER BUREAU OF WATER DURING THE  
YEAR 1903.**

Assessed rates .....	\$2,260,808.99
Meter rates .....	1,406,989.98
Permits .....	17,156.95
Assessor's miscellaneous .....	18,703.25
Meter Mechanical .....	12,997.94
Water Pipe Extension miscellaneous .....	11,486.37
Suspense Account No. 1 .....	13.00
Suspense Account No. 2 .....	337.35
<b>Total .....</b>	<b>\$3,728,493.88</b>
Special deposit fund .....	35,988.51
<b>Total .....</b>	<b>\$3,764,482.34</b>



TABLE No. XIX.

DETAILED STATEMENT OF CASH COLLECTED DURING 1908, AFTER DEDUCTING REFUNDS OCCASIONED BY DUPLICATE, WRONG PROPERTY, AND OVERPAYMENTS, ERRONEOUS ASSESSMENTS, COUNCIL ORDERS, ETC.

1908.	Assessed Rates.	Meter Rates.	Permits.	Assessor's Miscellaneous.	Meter Mechanical Division.	Water Pipe Extension.	Suspense Account No. 1.	Suspense Account No. 2.	Earnings of Meter Division. Large Meters. Etc.	For use of Water in Construction of Cement Walks.	Earnings of Permit Division.	Total.
January.....	\$ 270,041.86	\$ 111,160.55	\$ 913.40	\$ 21.90	\$ 813.40	\$ 248.12	.....	.....	\$282.10	\$ 184.08	.....	\$ 883,647.86
February..	162,458.98	101,688.01	224.90	36.38	916.72	.....	.....	.....	804.98	77.18	\$7.00	285,714.13
March.....	20,359.82	117,886.16	894.80	68.81	1,029.54	.....	.....	.....	340.30	.....	7.50	140,045.43
April .....	7,983.79	96,375.12	902.50	129.33	787.74	4.20	.....	.....	.....	.....	.....	106,182.68
May .....	297,239.45	180,998.80	1,563.80	2,996.16	1,130.65	689.50	.....	20.25	396.72	31.55	.....	435,196.88
June .....	355,496.07	105,873.88	1,433.10	2,898.19	979.76	723.25	.....	79.15	715.65	21.24	.....	468,220.24
July .....	250,032.51	116,796.21	3,175.60	3,779.97	1,053.26	862.00	.....	30.30	.....	21.90	207.41	415,989.16
August ....	187,011.10	133,621.33	2,302.20	3,041.06	876.51	1,246.50	.....	16.25	1,280.45	4.64	.....	329,410.08
September	26,726.01	114,747.86	1,622.85	2,945.17	1,471.89	3,281.00	.....	.....	.....	4.94	1,287.26	152,086.96
October ...	14,106.61	128,185.92	1,849.20	2,048.57	1,080.76	1,612.00	.....	71.70	505.85	54.75	.....	149,515.36
November..	225,337.05	97,053.25	1,446.80	366.64	1,223.80	1,111.80	.....	42.70	941.70	890.54	899.95	327,653.78
December ..	393,308.61	151,613.91	779.80	366.08	1,608.96	1,768.00	\$13.00	77.00	896.00	1,867.88	68.65	551,869.84
Total 1908.	\$2,250,210.64	\$1,405,440.45	\$17,128.95	\$18,703.25	\$12,921.99	\$11,486.87	\$13.00	\$337.35	\$4,582.75	\$2,158.60	\$1,917.77	\$3,794,901.32
Total 1902.	\$1,885,225.64	\$1,329,684.69	\$15,445.70	\$11,276.89	\$14,279.68	\$9,085.24	.....	.....	\$4,766.76	\$2,699.09	\$1,454.63	\$3,223,807.55
Increase ..	414,985.00	75,755.76	1,683.25	7,427.36	.....	2,451.13	\$13.00	\$337.35	.....	.....	468.08	501,088.77
Decrease ..	.....	.....	.....	.....	1,367.67	.....	.....	.....	184.00	540.49	.....	.....

\* Collections through warrants for collection.

**TABLE NO. XX.**  
**DETAILED STATEMENT OF PAY-ROLLS FOR THE YEAR ENDING DECEMBER 31, 1903.**

MONTHS.	DIVISIONS.							
	Assessor's.	Collection.	Inspection.	Meter Rates.	Meter Mechanical.	Permit.	Shut-off.	Total.
January.....	\$ 1,172.51	\$ 3,327.37	\$ 2,149.59	\$ 2,353.27	\$ 1,042.23	\$ 3,531.50	\$ 2,625.00	\$ 16,201.46
February.....	1,172.51	3,040.30	2,237.50	2,226.32	894.25	3,263.75	2,138.25	15,022.88
March.....	2,632.43	7,289.01	4,554.06	3,208.14	1,179.57	5,266.01	2,625.00	26,704.22
April.....	1,659.15	4,392.93	3,058.33	2,641.31	1,087.10	4,063.92	2,562.50	19,465.84
May.....	1,659.15	4,402.71	2,966.39	2,563.73	1,161.53	3,941.53	2,544.50	19,339.64
June.....	1,659.15	4,329.38	2,933.34	2,539.98	1,140.57	3,954.78	2,562.50	19,119.70
July.....	1,659.15	4,196.83	2,947.04	2,622.10	1,142.83	3,865.09	2,656.25	19,069.29
August.....	1,621.65	4,232.26	2,908.33	2,565.80	1,102.33	3,891.99	2,562.50	18,884.36
September.....	1,626.65	4,197.75	2,870.84	2,569.88	1,115.09	4,012.09	2,531.00	18,922.80
October.....	1,654.31	4,258.97	2,855.36	2,632.33	1,160.09	4,007.07	2,595.50	19,213.68
November.....	1,659.15	4,228.90	2,897.50	2,444.79	1,076.84	3,623.09	2,356.25	18,386.52
December.....	1,659.15	4,415.93	2,868.54	2,653.59	1,221.53	3,315.55	2,233.25	18,932.59
Total, 1903.....	\$ 19,884.96	\$ 52,262.34	\$ 35,296.81	\$ 31,075.29	\$ 13,324.66	\$ 47,286.42	\$ 30,052.50	\$ 229,062.98
Total, 1902.....	\$ 18,032.07	\$ 59,417.67	\$ 36,827.37	\$ 31,300.15	\$ 12,698.87	\$ 43,086.17	\$ 29,391.75	\$ 235,754.05

**TABLE NO. XXI.**  
**DETAIL OF MISCELLANEOUS EXPENSES OF THE WATER OFFICE FOR THE YEAR 1903.**

MONTHS.	Binding Vouchers.	Postage.	Railroad Tickets.	Street Car Tickets.	Stationery.	Sundries.	Shut-off Tools.	Total.
January .....	.....	.....	.....	.....	\$ 25.65	\$ 27.40	4.95	\$ 58.00
February .....	.....	.....	.....	.....	46.00	14.60	.....	60.60
March .....	\$ 4.00	.....	\$ 84.00	\$273.05	314.09	354.45	.....	1,029.59
April .....	2.00	\$1,005.00	68.65	486.45	231.97	341.45	.....	2,085.52
May .....	2.00	.....	55.25	245.10	602.98	311.85	.....	1,917.18
June .....	44.00	2,000.00	90.90	317.15	364.61	314.98	.....	2,931.
July .....	.....	1,010.00	16.10	.....	311.61	31.20	.....	1,968.91
August .....	10.00	.....	.....	206.40	88.75	91.10	.....	396.25
September .....	4.00	1,000.00	164.95	428.27	674.42	298.75	31.84	2,522.28
October .....	2.00	.....	40.75	284.85	651.90	298.48	.....	1,157.48
November .....	.....	1,000.00	95.00	245.10	181.20	30.50	.....	1,551.80
December .....	51.50	1,985.00	119.55	227.90	2,061.48	964.35	.....	5,409.78
<b>Total .....</b>	<b>\$119.50</b>	<b>\$8,000.00</b>	<b>\$735.15</b>	<b>\$2,513.77</b>	<b>\$5,454.66</b>	<b>\$2,889.06</b>	<b>\$36.79</b>	<b>\$19,698.98</b>

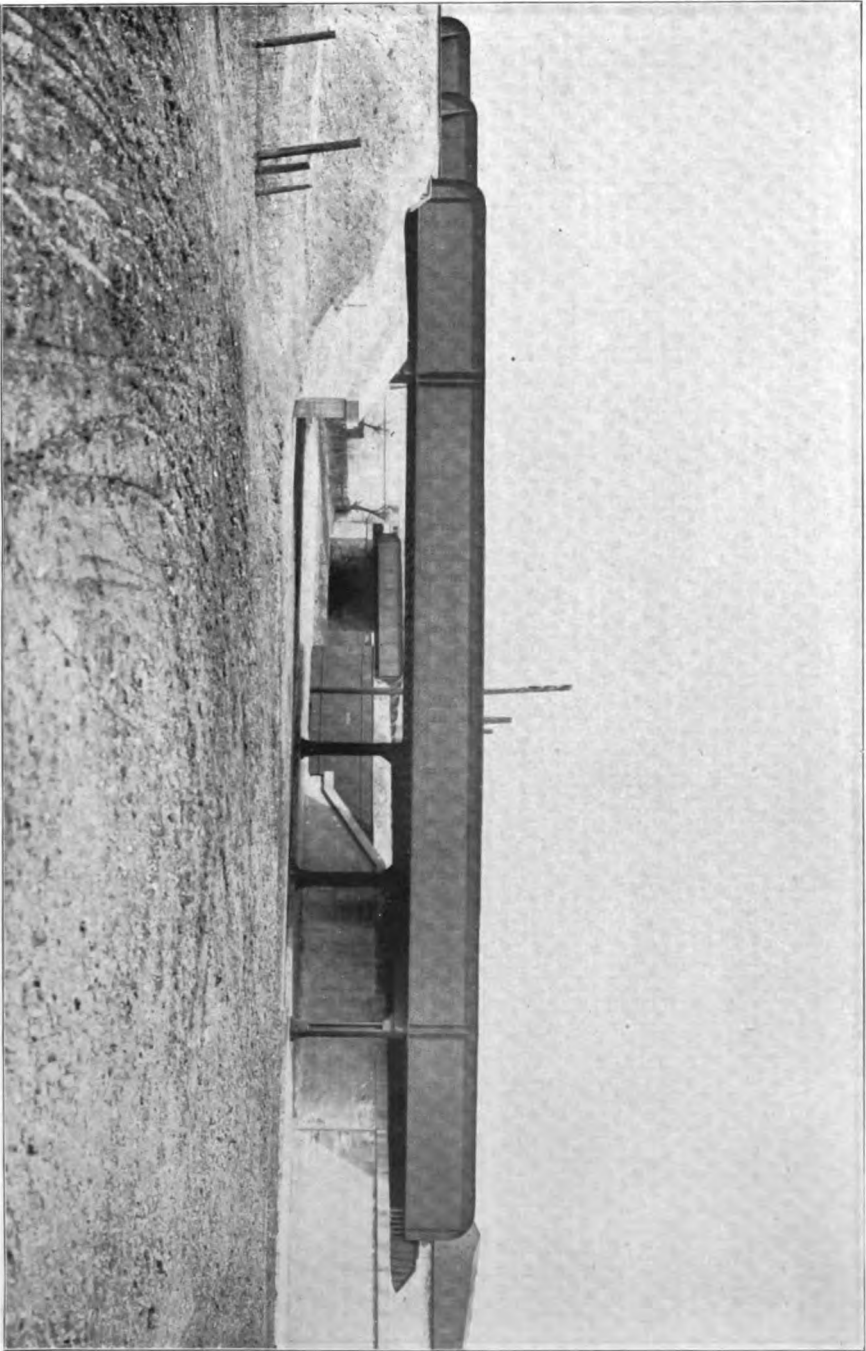
TABLE No. XXII.

## WORK PERFORMED BY THE SHUT-OFF DIVISION.

1908.	Shut Off for Non-payment.	Shut Off by Request of Owner.	Water Turned on and Permits Issued.	Notices Served.	Charges for Shutting Off Water.
January .....	488	145	311	3,214	\$ 180.75
February .....	408	112	244	3,796	256.88
March .....	626	160	357	3,884	182.75
April .....	568	128	340	4,110	92.00
May .....	538	169	295	3,938	1,351.11
June .....	463	276	254	3,609	231.00
July .....	566	155	318	3,953	241.89
August .....	588	168	418	3,553	416.63
September .....	669	94	465	4,606	1,262.87
October .....	736	62	459	3,407	371.88
November .....	617	135	354	2,973	549.37
December .....	525	150	275	3,750	52.00
Total .....	6,777	1,754	4,090	44,793	\$5,168.13

**TABLE No. XXIII.**  
**ACCOUNTING DIVISION.**  
**INCOME ACCOUNT.**

REVENUE.	
General assessment, May 1, 1908.....	\$2,724,582.65
General assessment increase .....	6.00
Increase to back tax.....	2,775.09
Increase to current tax.....	86,599.64
Increase to shut-off.....	5,168.18
	<hr/> \$2,819,081.51
Less—	
Discounts allowed.....	\$358,641.91
Erroneous assessment refunded.....	4,158.58
Decreases on account of municipal buildings, in accordance with Section 24 of the City ordinance :	
City property, including City Hall.....	\$12,321.75
Police stations .....	1,899.50
Public schools.....	53,029.95
Engine houses .....	2,918.00
	<hr/> 70,169.20
Decreased on account of charitable, educational and religious institutions, in accordance with Section 24 of the City ordinance :	
Churches and religious institutions....	\$21,606.85
Schools and colleges.....	13,475.50
Hospitals .....	3,260.00
Asylums, homes, etc.....	5,791.50
	<hr/> 44,133.85
Decreased on account of over-payments, as per affidavits and special examinations, build- ings removed and destroyed, changes to meter control, and other causes.....	50,715.79
Allowance on current bills to cover drawbacks on amounts previously paid on vacant prop- erty, in accordance with City ordinance....	18,514.52
	<hr/> 541,688.85
Net revenue from assessed rates... ..	<hr/> \$2,277,447.66



EIGHTEENTH STREET ("JOINT TRACK") ELEVATION.—LOOKING WEST THROUGH THIRTY-FIRST STREET SUBWAY UNDER C. & A. RY. TOWARDS ROBINSON STREET SUBWAY UNDER A. T. & S. F. AND C. M. & N.



Brought forward .....		\$2,277,447.66
Charges as per meter readings .....	\$1,434,284.38	
Less—		
Decrease on account of charitable, educational and religious institutions, in accordance with Section 24 of the City ordinance:		
Municipal institutions .....	\$2,786.80	
State institutions .....	1,765.70	
Religious institutions .....	5,201.85	
Educational institutions .....	4,951.50	
Asylums and homes .....	2,428.25	
Hospitals .....	2,740.50	
Miscellaneous .....	87.50	
	<u>\$19,856.60</u>	
Decreases on account of erroneous readings...	2,199.64	
		22,056.24
Net revenue from meter rates .....		<u>1,412,178.14</u>
Assessor's miscellaneous charges for sprinkling wagons, construction of cement walks, etc.		20,861.85
Revenue of Water Pipe Extension Division....		11,486.87
		<u>\$3,721,974.02</u>
Less—		
Decrease Suspense Account No. 1 .....	\$ 35.50	
Decrease Suspense Account No. 2 .....	20.00	
Net loss of operation, Division of Permits (see Table No. IX) .....	83,424.72	
Net loss of operation, Meter Mechanical Division (see Table XVI) .....	3,509.01	
		<u>86,989.23</u>
		<u>\$3,684,984.79</u>
<b>EXPENSES.</b>		
Less—		
Binding vouchers .....	\$ 119.50	
Postage .....	8,000.00	
Railroad transportation .....	735.15	
Street car tickets .....	2,518.77	
Printing and stationery .....	5,454.66	
Shut-off tools .....	26.79	
Sundries .....	2,839.06	
Rent .....	11,845.00	
Reimbursing Bureau of Streets .....	20.78	
Attorney's salary .....	1,666.67	
Court costs, witness fees, etc. ....	112.50	
Miscellaneous appropriation items .....	178.81	
Pay rolls (Meter Mechanical and Permit Divisions omitted) .....	168,521.90	
		<u>202,029.09</u>
Net income, Bureau of Water .....		<u>\$3,482,955.70</u>



TABLE No. XXIV.

## BALANCE SHEET.

## DEBIT.

Balance uncollected December 31, 1903.....	\$ 901,680.81	
Inventory, Meter Mechanical Division, December 31, 1902.....	9,879.82	
Inventory, Permit Division, December 31, 1903.....	711.17	
Disbursements during 1903 for Meter merchandise .....	\$ 7,824.12	
Disbursements during 1903 for Permit merchandise .....	4,782.54	
Disbursements during 1903 for salaries.....	229,082.98	
Disbursements during 1903 for postage.....	8,000.00	
Disbursements during 1903 for sundry expenses.....	9,478.95	
Disbursements during 1903 for street car tickets.....	8,998.07	
Disbursements during 1903 for rent.....	11,845.00	
Disbursements during 1903 for reimbursing Bureau of Streets.....	20.78	
Disbursements during 1903 for Attorney's salary .....	1,666.67	
Disbursements during 1903 for Court costs, etc.....	112.50	
Disbursements during 1903 for miscellaneous appropriation items.....	178.31	
	<u>276,984.92</u>	
Net income, 1903, as per income account. (See Table No. XXIII.).....	3,482,955.70	
		\$4,671,661.92

## CREDIT.

Debit balance against Comptroller, December 31, 1903, as follows:		
Net collections made by Bureau of Water...	\$8,716,242.20	
Amount collected by City Collector for Bureau of Water for large meters set, etc.....	4,582.75	
Amount collected by City Collector for use of water in construction of cement walks...	2,158.60	
Amount collected by City Collector for earnings of Permit Division.....	1,917.77	
	<u>\$8,724,901.82</u>	
Inventory Meter Mechanical Division, December 31, 1903.....	9,624.67	
Inventory Permit Division, December 31, 1903.....	1,440.09	
Balance uncollected, December 31, 1903—		
Assessed rates.....	\$ 760,585.86	
Meter rates.....	125,006.90	
Meter Mechanical Division.....	3,146.00	
Suspense Account, No. 1.....	28,222.83	
Suspense Account, No. 2.....	18,664.75	
	<u>985,625.84</u>	
		\$4,671,661.92

TABLE No. XXV.

SHOWING AMOUNT OF WATER TAX OF EIGHT-ROOM TWO-STORY DWELLING SUPPLIED WITH BATH, CLOSET, WASH BASIN, KITCHEN SINK, LAUNDRY TUB AND HOSE FOR SPRINKLING PURPOSES.

NAMES OF CITIES.	Water Tax for Average Eight-room Residence.
Detroit.....	\$ 6.80
Boston.....	19.00
Cincinnati.....	18.65
Milwaukee.....	17.50
New York (Manhattan Borough).....	10.00
Philadelphia.....	18.00
Pittsburg.....	20.50
San Francisco.....	16.80 (b)
St. Louis.....	19.50
Cleveland.....	9.50 (a)
New Orleans.....	30.00 (a) (b)
Buffalo.....	6.00 (a)
Chicago.....	10.50
Chicago.....	8.98 (c)

(a) Without hose.

(b) Private ownership.

(c) Chicago rate for prompt payment, being 15 per cent discount from gross amount.

TABLE No. XXVI.

COMPARISON OF GENERAL ASSESSMENT FOR THE YEARS 1897, 1898, 1899, 1900, 1901, 1902 AND 1903.

	1897.	1898.	1899.	1900.	1901.	1902.	1903.
Frontage.....	\$1,487,077.50	\$1,475,055.25	\$1,358,846.50	\$1,388,697.00	\$1,406,087.50	\$1,435,511.00	\$1,471,428.00
Water closets.....	380,141.75	372,837.00	365,894.00	373,265.00	398,982.00	438,363.00	448,594.50
Urinals.....	10,500.25	12,586.00	12,478.00	13,145.00	14,795.50	15,776.50	16,377.00
Baths.....	141,616.00	147,340.75	149,499.50	158,535.50	165,314.00	176,471.50	188,071.00
Wash basins.....	104,550.50	101,904.50	97,516.50	95,258.50	100,838.25	109,548.50	115,508.50
Extra rooms and persons.....	292,580.75	289,954.25	298,787.50	227,903.50	229,486.50	233,899.75	235,709.25
Saloons.....	30,878.00	18,048.50	16,928.50	16,984.00	16,832.50	17,333.00	17,574.00
Hose, trough and fountain....	105,568.50	82,704.00	80,646.50	87,782.00	92,306.00	91,686.50	89,706.50
Laundries.....	8,365.75	2,971.75	2,639.25	2,702.00	2,833.50	2,979.50	2,820.00
Steam heating and engines....	27,856.45	27,679.40	24,929.55	24,866.80	29,078.95	31,504.00	30,050.05
Stables.....	69,817.00	70,864.50	68,304.75	71,023.00	72,795.50	75,248.00	74,618.00
Miscellaneous.....	85,174.45	83,249.60	30,823.50	81,332.90	81,839.40	84,321.85	84,085.85
Total.....	\$2,619,021.90	\$2,585,185.50	\$2,487,194.05	\$2,489,544.70	\$2,560,646.60	\$2,651,688.10	\$2,724,532.65

TABLE No. XXVII.

SHOWING NET RECEIPTS AND EXPENSES, AND PER CENT OF  
EXPENSES TO COLLECTIONS, FOR THE YEARS  
1891 TO 1903, INCLUSIVE.

YEAR.	Receipts.	Expenses.	Per Cent.
1891.....	\$2,331,236.20	\$308,879.86	13
1892.....	2,592,111.67	336,956.79	13
1893.....	2,837,327.35	294,968.60	10 $\frac{1}{2}$
1894.....	3,010,259.92	287,306.92	9 $\frac{1}{2}$
1895.....	3,215,187.10	309,373.80	9 $\frac{1}{2}$
1896.....	3,003,692.61	288,497.34	9 $\frac{1}{2}$
1897.....	3,177,706.83	281,878.72	8 $\frac{1}{2}$
1898.....	3,489,390.87	293,982.07	8 $\frac{1}{2}$
1899.....	3,203,569.71	285,887.71	8 $\frac{1}{2}$
1900.....	3,243,411.36	264,648.64	8 $\frac{1}{2}$
1901.....	3,397,923.87	253,132.64	7 $\frac{1}{2}$
1902.....	3,223,867.55	252,810.28	7 $\frac{1}{2}$
1903.....	3,728,493.83	252,533.26	6 $\frac{1}{2}$

During the year the United States Express Company, under the contract with the Department of Public Works, made the following collections:

	Number of Bills.	Amount.
From January 5 to August 31, 1903.....	63,250	\$277,722.84
From September 1 to January 1, 1904.....	29,228	171,819.96
Total for 1903.....	92,478	\$449,542.80
Total for 1902.....	69,077	\$320,451.21

### INSPECTION DIVISION.

The work performed by the force in the Inspection Division shows steady improvement over the preceding years.

During the year 1902 the total number of examinations was 94,835. With an average of two less inspectors the number of examinations for 1903 was 112,747. For the year 1902 the annual, or house-to-house, examinations were made in six wards. For the year 1903 the annual, or house-to-house, examinations extended over eight wards in the outlying sparsely settled districts of the City, comprising wards Thirteen, Twenty-five, Twenty-six, Twenty-seven, Thirty-two, Thirty-three, Thirty-four and Thirty-five.

The increase of the general assessment for the year 1902 was \$91,041.50. For the year 1903 the increase is \$72,844.55. The explanation for the difference in the increase of the general assessment lies in the facts above stated, that the examinations were made in the outlying and sparsely settled districts where the revenue-producing character of the premises are not in keeping with the more thickly populated districts embodied in the wards examined previously.

### METER DIVISION.

There are in service 7,298 meters, of which number 223 (net increase) were installed during the year. There have been repaired 2,563 meters. The net collections from all sources of this division of the bureau for the year 1903 were \$1,422,945.19, as compared with \$1,348,731.10 for the year 1902, making an increase of \$74,214.09 for the year 1903.

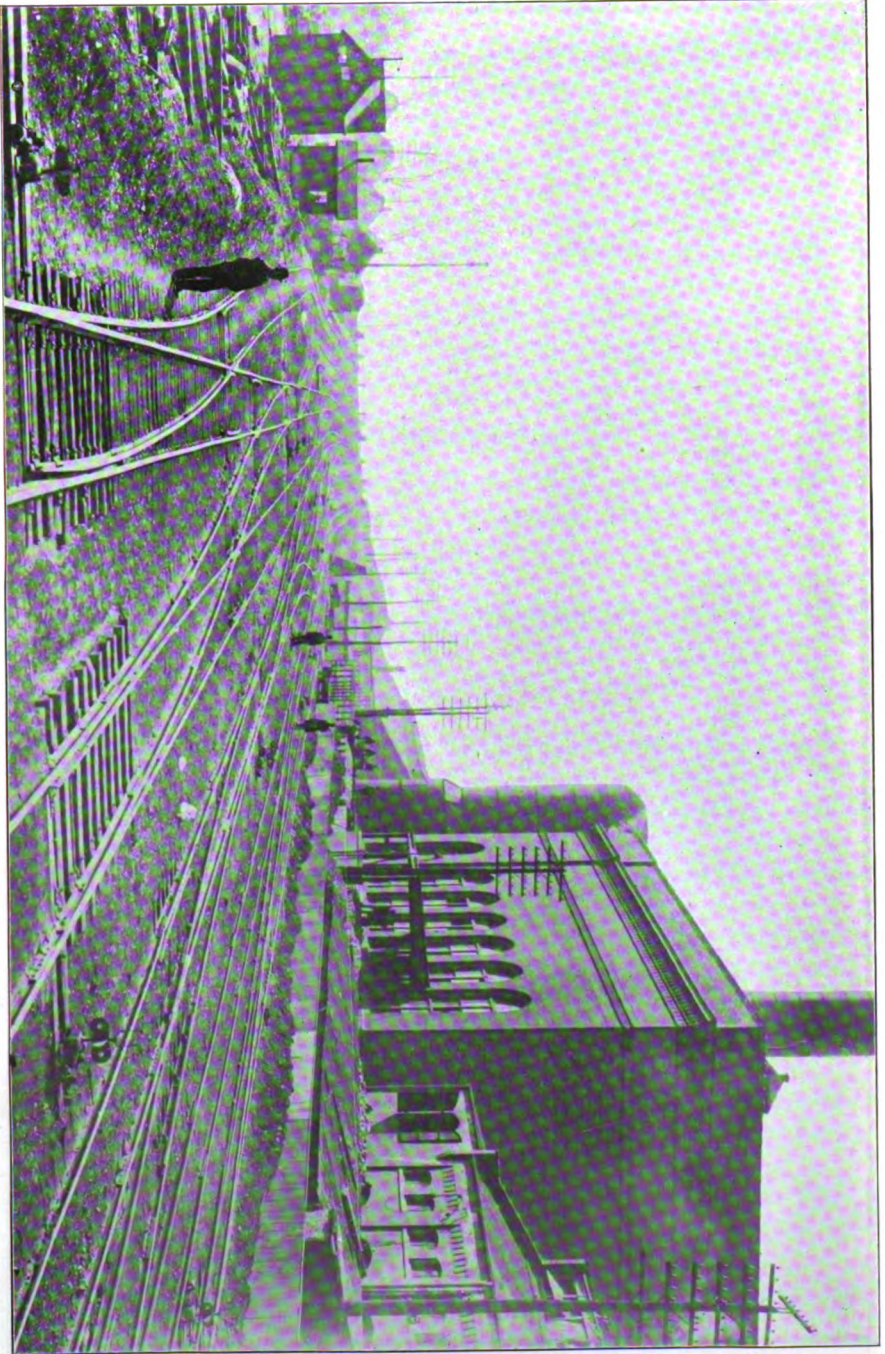
There have been investigated about 2,200 complaints growing out of alleged excessive meter bills. Fully 90 per cent of these complaints were found to be the result of leakage.

### ASSESSOR'S DIVISION.

Contracts were let for laying water service pipes in sixty streets as compared with seventy-six streets for the previous year.

Estimates for laying service pipes in one hundred and twelve streets have been prepared and returned to the Board of Local Improvements, as compared with 104 streets for the year 1902.

During the year five plat books of one hundred and forty pages each have been added to the seventy-seven plat books completed at the beginning of the year 1903.



C. & W. I. R. R. TRACK ELEVATION.—LOOKING SOUTH FROM FIFTY-FIFTH STREET.



## COLLECTION DIVISION.

The work in the Collection Division, notwithstanding the severe reduction in the clerical force, has been quite satisfactorily accomplished. It was necessary to work the force at night for a considerable portion of the time, and a recommendation has been made to have the force increased for the coming year.

The year 1903 is the first year since the redistribution of the City by wards and since the extension of the discount period with which comparison could be made.

The collections for the year from assessed rates were \$2,260,808.99, as compared with \$1,844,468.55 for the year 1902, showing an increase of \$416,340.44.

## SHUT-OFF DIVISION.

With the reduced number of men the ordinance requiring the water to be shut off where there are "buffalo" or "shut-off boxes" has been fully complied with.

The amount shown as back taxes against premises where there are no "buffalo" or "shut-off boxes" has been largely reduced as a result of cutting off the water in the streets.

## GENERAL.

While the collections for the bureau have been greater than any year in the history of the City of Chicago, the expenses of the collections have been less than any year since the time when the City was half its present population. Records of expenditures date back only to 1891. The expenditures of the year 1903 are less than any year within that time. In this connection attention is called to table No. 27.

Notwithstanding the increased business of the bureau, the space in which the work of the bureau is conducted has been curtailed by taking away that space represented in rooms 111 and 113, comprising nearly 20 per cent of the entire floor space occupied by the bureau for the past ten years, and for which the bureau pays into the general fund an annual rental of \$11,845. The space of which the bureau has been deprived has been assigned to another department, and should be restored to the bureau or a like amount of space provided.

The vault space of the bureau is crowded to overflowing and is totally inadequate if the records of the bureau are to be preserved with proper care. More vault space should be provided.

Your approval of a recommendation for an attorney to be used in this



bureau has proven to have been wise. The accounts of the bureau have been incumbered for years with items which in regular mercantile businesses would have been written into an account headed "Profit and Loss," but which by virtue of the regulations under which this bureau is conducted, no provision having been made by the law or ordinances for such disposition of questionable accounts, have from time to time been carried as an incumbrance to the bureau.

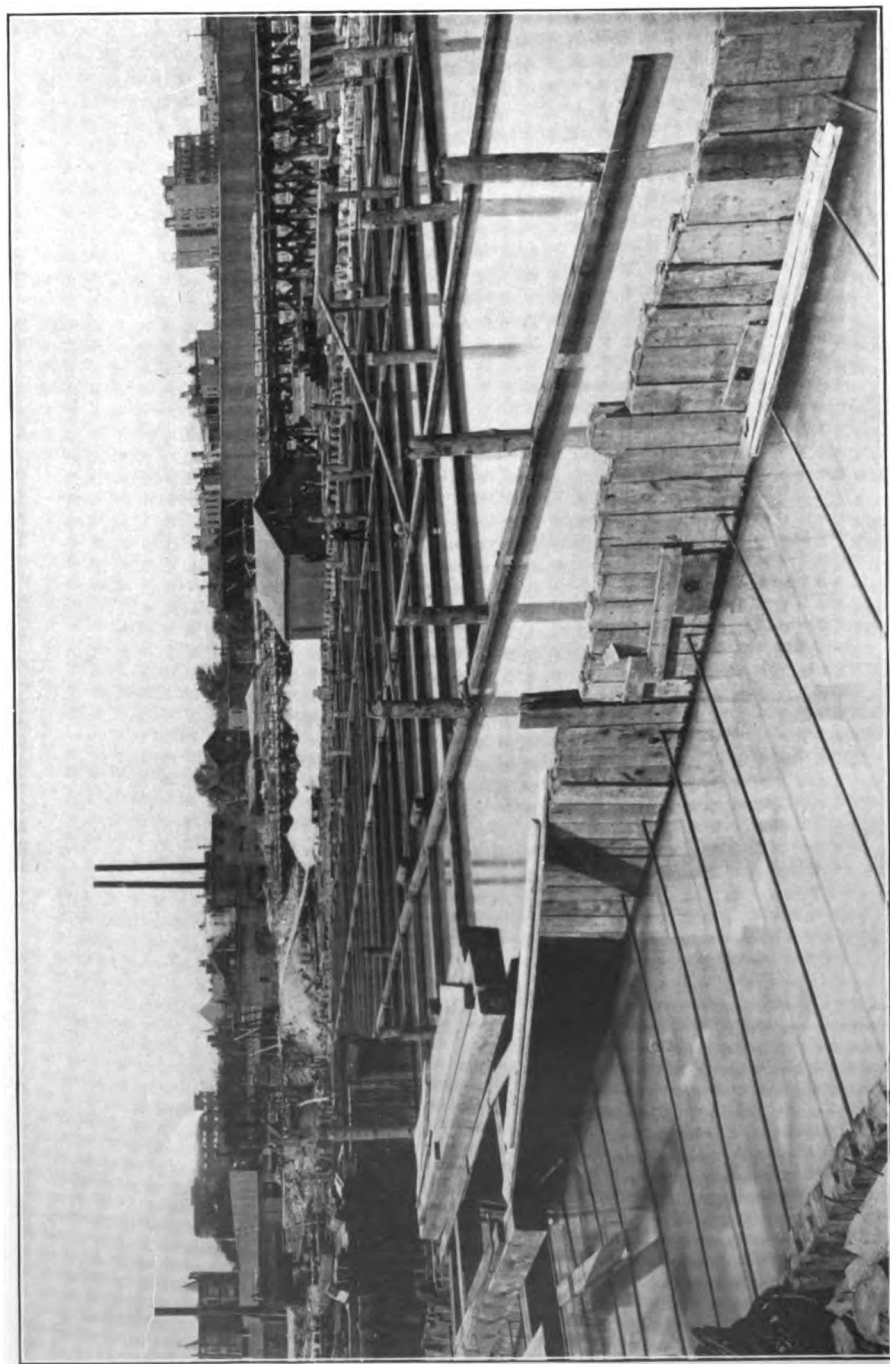
The appointment of an attorney and the duties assigned him have resulted very beneficially, and he is making satisfactory progress in the disposition of the accounts which cannot be collected or disposed of in any other manner that I could have suggested.

Permit me in closing to express to his Honor, the Mayor, and to yourself, the thanks of the employes of this bureau for the appreciation and consideration extended to them and to the undersigned during the year.

Very respectfully yours,

H. O. NOURSE,  
*Superintendent of Water.*





NO. 1. COFFER-DAM, THIRTY-NINTH STREET PUMPING STATION, NOT PUMPED OUT. — JULY 18, 1903.

ANNUAL REPORT  
**Bureau of Sewers**  
CITY OF CHICAGO  
1903

WM. E. QUINN  
Superintendent



# BUREAU OF SEWERS.

HON. F. W. BLOCKI,

*Commissioner of Public Works.*

DEAR SIR: I beg to submit herewith the Annual Report of the Bureau of Sewers for the year ending December 31, 1903, being the Twenty-eighth Annual Report of the Bureau under the Department of Public Works, and the Forty-eighth Annual Statement of the work done in connection with the sewers of the City, as follows:

## EXPENDITURES.

General Fund (maintenance of sewers).....	\$ 288,188.58
Water Fund (intercepting sewers).....	886,767.73
Water Fund (Fullerton avenue pumping station).....	19,592.38
Total.....	<u>\$1,144,498.54</u>

Distributed as follows:

## GENERAL FUND.

House drains.....	\$ 88,770.18
Sixty-ninth street pumping station.....	8,811.70
Woodlawn pumping station (including reserve on coal).....	16,882.66
Seventieth street pumping station (including reserve on coal).....	8,884.67
Seventy-third street pumping station (including reserve on coal).....	6,290.70
Kensington pumping station (including reserve on coal).....	6,767.61
Pullman pumping station (including reserve on coal).....	8,974.88
Rogers Park system .....	8,447.04
Repairing sewers, catch-basins, etc .....	45,813.45
Repairing covers .....	21,375.68
Cleaning sewers and catch-basins.....	114,856.87
Building new catch-basins.....	1,883.82
Removing sewer, Buena Park .....	925.02
Unpaid bills.....	279.38
Bench monuments.....	3,116.87
Restoration of streets .....	2,274.88
Miscellaneous work for department and public.....	1,989.70
Office salaries and expense.....	8,945.12
	<u>\$288,188.58</u>

## WATER FUND.

Fullerton avenue pumping station (including reserve on coal) .....	\$ 19,592.28
Section C, Thirty-ninth street conduit.....	217,608.18
Section D, Lawrence avenue conduit (pumping) .....	1,814.65
Section G, Thirty-ninth street to Fifty-sixth street .....	58,700.65
Section G-3, Fifty-first street to Fifty-sixth street .....	1,562.94
Sections H-1 and 2, Fifty sixth street to Seventy-third street.....	368,598.09
Section L, Main conduit, Thirty-ninth street produced .....	20,443.98
Section M, intake, breakwater and pier, Thirty-ninth street produced...	17,890.04
Section O, pumping station, Thirty-ninth street.....	82,700.89
Section S, machinery, Thirty-ninth street pumping station .....	33,325.44
Pumping at Halsted street .....	13,515.00
Temporary pump at Thirty-ninth street .....	1,746.66
Pumping at Lake Michigan.....	8,014.59
Office expenses.....	10,751.72
	<hr/>
	\$856,859.96

**SEWERS AND CATCH-BASINS CLEANED (BY DIVISIONS) IN THE CITY OF CHICAGO  
DURING THE YEAR 1908.**

METHOD.	District No. 1.		District No. 2.		District No. 3.		District No. 4.		Total.		Average Cost per 100 Feet.
	Feet Cleaned.	Cost.	Feet Cleaned.	Cost.	Feet Cleaned.	Cost.	Feet Cleaned.	Cost.	Feet Cleaned.	Cost.	
Flushing.....	579,300	\$5,337.14	818,600	\$ 9,599.28	68,700	\$ 459.87	5,400	\$ 24.25	1,461,900	\$15,450.04	\$1.06
Iron scraper.....	1,800	249.78	67,400	1,753.88	129,050	6,887.92	97,650	5,238.53	295,400	14,069.11	4.76
Wood scraper.....	198,000	3,078.81	.....	.....	.....	.....	.....	.....	198,000	3,078.81	1.59
<b>Total</b> .....	774,100	\$8,695.73	881,000	\$11,352.16	192,750	\$7,387.29	108,050	\$5,252.78	1,950,900	\$32,597.96	.....
Opening inlets to catch-basins, attending complaints, etc. ....											
<b>Total</b> .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	No.	Cost.	No.	Cost.	No.	Cost.	No.	Cost.	Total No.	Cost.	Average Cost per Basin.
Catch-basins closed.....	6,956	\$24,077.15	4,309	\$13,908.95	1,520	\$4,239.18	1,898	\$5,983.86	14,683	\$48,208.64	\$3.28
Cost of cleaning sewers and catch-basins.....											
Miscellaneous bills, tools, supplies, etc. ....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Amount paid Rogers Park Water Company for water used in flushing sewers.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
<b>Total</b> .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	



**AMOUNTS EXPENDED FOR REPAIRS OF SEWERS, MANHOLES AND CATCH-BASINS, DURING THE YEAR 1908.**

No.	DESCRIPTION OF WORK DONE.	Cement	Brick	Iron Covers		WOOD COVERS		IRON COVERS		WOOD LIDS		IRON LIDS		Grates	Labor and Teaming	Material	Total Cost					
				Wood Covers	Iron Covers	Manhole.	Catch-Basin	Manhole.	Catch-Basin	Manhole.	Catch-Basin	Manhole.	Catch-Basin									
8	New manholes built.....	1,107	259,000	219	37	284	2,039	567	138	97	32	106	16	18	15	25	15	49	5	\$41,445.08	\$5,701.69	\$47,146.77
20	New catch-basins built .....																					
275	Manholes repaired .....																					
904	Catch-basins repaired.....																					
414	Feet of 6-inch drains repaired .....																					
2892	Feet of 9-inch drains repaired....																					
652	Feet of 12-inch drains repaired ..																					
231	Feet of 15-inch drains repaired ..																					
43	Feet of 18-inch drains repaired ..																					
366	Feet of 2-foot sewers repaired ..																					
280	Feet of 2½-foot sewers repaired ..																					
118	Feet of 3-foot sewers repaired ..																					
53	Feet of 4-foot sewers repaired ..																					
52	Feet of 5-foot sewers repaired ..																					
333	Feet new 12-inch sewer built .....																					
		WOOD COVERS		IRON COVERS		WOOD LIDS		IRON LIDS		LABOR AND TEAMING		MATERIAL		TOTAL COST								
		Manhole.	Catch-Basin	Manhole.	Catch-Basin	Manhole.	Catch-Basin	Manhole.	Catch-Basin	Manhole.	Catch-Basin	Manhole.	Catch-Basin	Grates								
Manhole and catch-basin covers rep'd		169	164	47	23	2,538	2,225	198	28	\$15,851.59		\$5,524.09		83			\$21,375.68					
Total.....																		\$68,522.45				

9,114 Complaints were attended to by this Bureau during the year.

THE FOLLOWING STATEMENT SHOWS THE AMOUNT EXPENDED PER MILE PER YEAR FOR THE PAST SEVENTEEN YEARS, IN CLEANING SEWERS AND CATCH-BASINS.

YEAR.	Miles of Sewer to Maintain.	Cost of Cleaning Sewers and Catch-Basins.	Cost per Mile of Cleaning Sewers and Catch-Basins per Year.
1887	474	\$ 50,264.65	\$106.04
1888	492	52,423.41	106.55
1889	712	61,508.01	86.38
1890	785	107,878.84	137.43
1891	888	123,620.44	139.21
1892	992	142,720.52	143.87
1893	1,145	132,633.51	115.84
1894	1,211	154,225.45	127.35
1895	1,248	134,424.44	107.71
1896	1,306	96,901.65	74.20
1897	1,345	91,414.89	67.96
1898	1,388	92,961.88	66.98
1899	1,424	72,439.07	50.92
1900	1,453	80,985.64	55.78
1901	1,475	94,369.87	63.98
1902	1,501	99,372.58	66.20
1903	1,529	118,308.41	77.37

## SEWAGE PUMPING STATIONS, 1903.

WILLIAM DONLAN, Chief Mechanical Engineer.

## SEVENTIETH STREET STATION.

This station has been managed very satisfactorily during the year. Operating expenses including coal reserve, \$8,334.68. Total pumpage, 2,854,000,000 gallons.

Repairs made during the year: Engine No. 1.—Lining up main shaft, new wrist pin put on low-pressure connecting rod, valve stems bushed, new pin made to fit same, low-pressure piston rod extended through head, threaded and nut put on to prevent rod from pulling through, crank and wrist brasses rebabbitted to fit pins, new coupling made to connect engine and pump shaft, pump shaft turned up and brasses made to fit same.

Engine No. 2.—The brass bushings in pump wore down  $\frac{3}{8}$  inch, causing the disc on pump to rub against the casing, increasing the friction on engine; the pump was taken apart, the brass bushings on each side taken out and turned half around, the disc was put back in place. It was necessary then to line up engine shaft to line with pump shaft; since then the engine utilizes less steam. Also a new set of rubber valves were put in air-pumps.

Boilers Nos. 1 and 3.—Grates repaired, brickwork under boiler put in good shape, new disc put in valves on boiler header, old 4-inch valve on main steam pipe leading to engine No. 2 taken off and new valve put in its place, float in well used for injection water repaired.

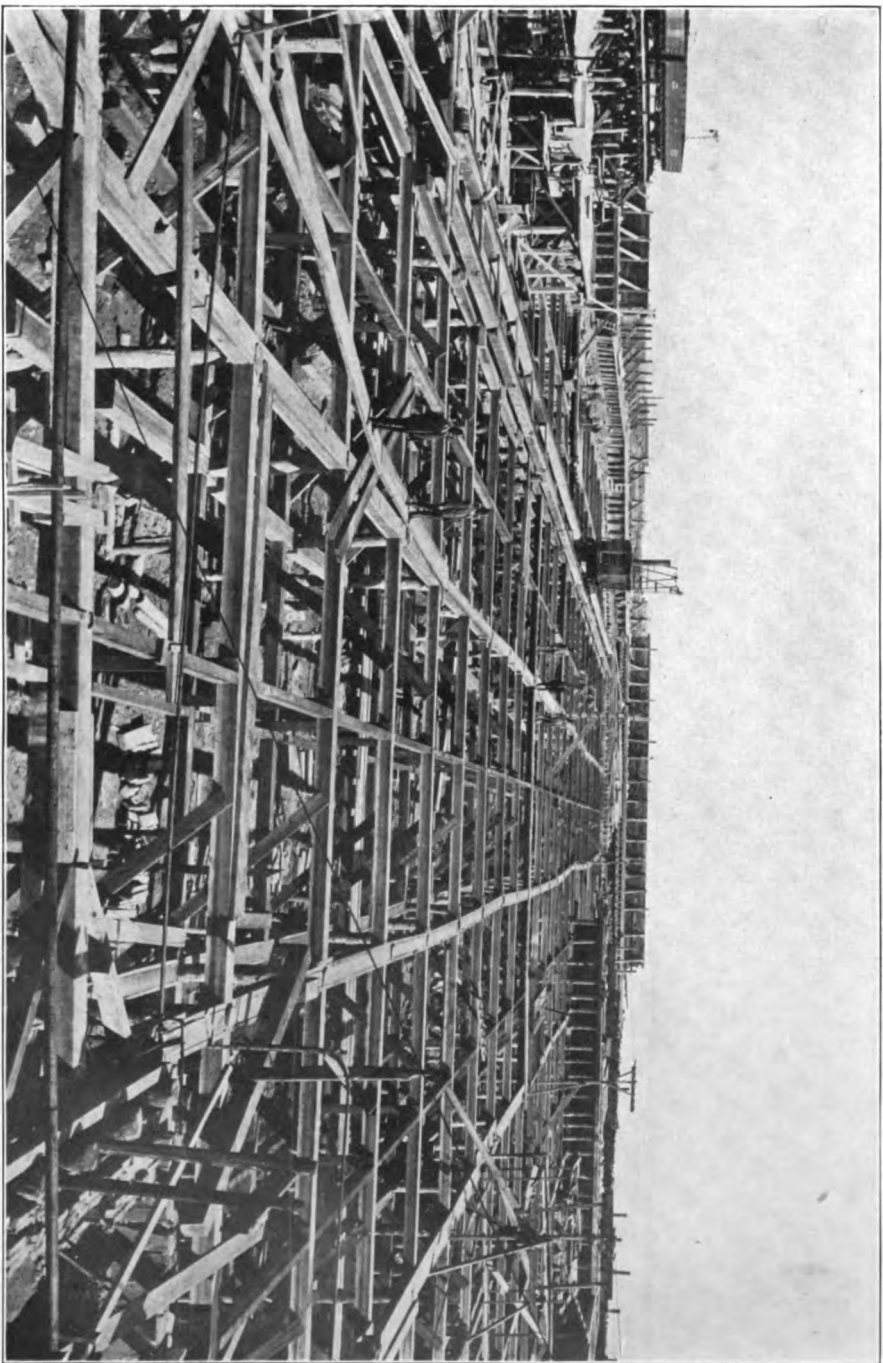
Repairs necessary during the coming year: Engine No. 1 needs a new set of brasses for high and low pressure connecting rods; crank and wrist pins turned up.

Engine No. 2.—Crank and wrist pins turned up and brasses refitted; air-pump connection bushed, pins turned up and brasses refitted; new piston rings for low pressure; piston made to extend through piston head, threaded and nuts put on; small tank made for boiler compound; hot well remodeled to prevent oil from getting in boilers. Under present condition it is impossible to keep oil out of boilers.

## SEVENTY-THIRD STREET STATION.

This station was run very economically during the year. Operating expenses, including coal reserve, \$6,290.70. Sewage pumped during the year, 1,977,000,000 gallons. A few minor repairs incidental to its operation were made.

Engine No. 1.—The valve stem bonnet on low-pressure engine broke, a new bonnet and valve stem were furnished.



NO. 2. COFFER-DAM, THIRTY-NINTH STREET PUMPING STATION, PUMPED OUT — SEPTEMBER 26, 1903.



Engine No. 2.—Main shaft bearing taken apart, brasses rebabbitted and fitted to shaft, crank pin brasses rebabbitted and fitted to pin.

Boilers, Nos. 1, 2 and 3.—Old valves on header taken off and new valves put on.

Building.—The gutter on engine and boiler roof was in bad shape and had to be replaced. Considerable repairs will have to be made during the year; both engines need a general overhauling; the brickwork under boilers needs repair; breeching to chimney is badly corroded and will have to be patched.

#### PULLMAN STATION.

At this station one pump is in operation continuously; in rainy weather it is necessary to run both pumps. Operation expenses, including coal reserve, \$8,974.83. Sewage pumped during the year, 687,000,000 gallons. A few alterations were made to steam connections; two new steam traps were connected to steam jackets of cylinders; some changes were made to feed and blow-off pipes; also drain pipes put on main header to prevent condensation from accumulating in main steam pipe; brick arch under boiler No. 2 was repaired and put in good shape.

Repairs that will be necessary during the coming year: Water ends of both pumps need a general overhauling and rubber hoods put in; air-pump on engine No. 1 needs a new rocker-arm; piston-rod turned up and glands bushed and new rubber valves; air-pump on engine No. 2 needs new rubber valves; piston-rod turned up and glands bushed.

#### KENSINGTON STATION.

This station was managed very economically during the year, the usual amount of repairs necessary to its operation being made. Operating expenses, including coal reserve, \$6,767.60. Sewage pumped during the year, 666,000,000 gallons.

Repairs made during the year: Engine No. 1.—Old bushing taken out of steam chest and replaced with new; rebabbiting and fitting brasses on both high and low pressure connecting rods; new ring in piston valve; rocker arm bushed and new pin fitted.

Engine No. 2.—New brasses fitted to high-pressure crank and wrist pin; low-pressure connecting rod brasses lined up; new steam bushing and ring for steam chest; rocker arm bushed and eccentric straps repaired.

Boiler No. 2.—Brickwork under boiler repaired and one defective flue taken out and new one put in.

Repairs to be made during the coming year: To overhaul both boiler feed pumps and air pump, put in new rods, turn up stems, reseal valves and bush pins, repair brickwork under boiler No. 1, patch roof and calcimine interior of engine and boiler room.

## SIXTY-NINTH STREET STATION.

The electric motor pump was kept in good running order during the year. Since the motor room has been enlarged and ventilating pipes put in, it has improved the condition in the operation of motor. Operating expenses, \$3,311.70. Sewage pumped during the year, 1,323,000,000 gallons. The rheostat used for starting motor was removed from street corner and put down in motor room; the feed wires from Sixty-fourth street electric light plant, and the Chicago City Railway wires were connected up to a double throw switch, the power to be used from the Sixty-fourth street plant as much as possible. If the current were cut off for any cause, the Chicago City Railway's current could be used. Owing to the rearranging of machines at Sixty-fourth street plant the generator to furnish current to motor has not been connected up; as soon as these connections are made everything will be in good shape to use the current direct from the plant.

The vertical pump shaft has worn down  $\frac{3}{4}$  inch out of line with motor, due to weight of gear, disc, and its own weight. It was necessary to raise the gear on shaft to bring it in line with motor gear. To prevent further trouble of shaft wearing down I would recommend that a roller bearing be used to suspend shaft, placed under gear wheel and rest on main bearing of shaft. It would also reduce the friction on pump and require less current to operate motor. Considerable trouble is experienced in preventing the sewage from flooding the motor-room when the water is high in sewers. I would recommend that a gear attachment be connected to valve stem to close valve when motor is stopped for any cause.

The roof on old section of steam plant leaks badly and will have to be reshingled.

## WOODLAWN STATION.

At this station the pumpage gradually increases each year; the pumps are taxed to their full capacity. Operating expenses, including coal reserve, \$16,332.66. Sewage pumped during the year 2,592,000,000 gallons.

Repairs made during the year: Pump No. 1.—Piston head repaired and rings adjusted in high-pressure cylinder; new brass sleeves made and turned to fit plunger; old piston rods taken out and replaced with new ones, glands bushed to fit same; suction and discharge valves repaired on water end.

Pump No. 2.—Old brass sleeves removed and hard cast-iron sleeves substituted, plungers turned to fit same; end of plungers bored; flanges put on to fit piston rods; new piston rods furnished and glands bushed; suction and discharge valves repaired.

Pump No. 3.—New piston rods made and put in; suction and discharge valves overhauled.

Boiler Feed Pump No. 1.—New piston rod and valve stems; valves faced and resealed; pins on link motion bushed.

Boiler Feed Pump No. 2.—New piston rod and glands bushed.

Firebox Boiler.—Patch repaired in firebox; six old flues taken out and replaced with new ones; 4-inch valves put in header.

Boiler No. 2.—Old 6-inch cast-iron flange on blow-off taken off by order of City Boiler Inspector and new steel flange put on; new back skeleton arch put in back end of boiler; brickwork around boiler repaired; new set of Whelan grates furnished.

Boiler No. 3.—New back skeleton put in back end of boiler; thirty flues taken out and replaced with charcoal iron flues; riveting patch under boiler, and brickwork repaired. Coal shed roof shingled and sliding doors made for coal bin; plant in good condition.

In this station the pumps are of the direct acting type. Owing to the grit and dirt in the sewage, the sleeves and piston rods become so badly cut that they must be replaced with new ones every year. These sleeves are made of brass and are expensive to replace. Last August I had hard cast-iron sleeves made for pump No. 2, twice as long as the brass sleeves designed for the pump, at considerably less cost. Since that time the pump has run more satisfactorily, there is less slippage, the packing and rods are in better condition, with increased area of sleeves the plungers are kept in line with engine and apparently will wear longer than the brass.

Repairs to be made during the coming year: New hard cast-iron sleeves and piston rods for water end of pumps Nos. 1 and 3 and eight rubber hoods for valves. The old water supply pipe under floor is badly corroded and will have to be replaced with new pipe above the floor and connected to boiler feed pump No. 2, both air pumps, and to valve chambers of all the sewage pumps for priming.

#### FULLERTON AVENUE STATION.

This station has had very important repairs made during the year, consisting of an extension shaft and journal box attached to the front end of the large water wheel in the tunnel; this journal box is held up by a suspension rod from the engine-room floor and relieves the stern pipe bearing from need of journal brasses—the stern pipe being merely packed to keep the water out. This new bearing sustains three-fourths of the weight of the water wheel, and is so arranged that the amount of wear on the journal gib can be taken up from the engine-room floor. From this point, too, grease is pressed into the journal box to such an extent as to exclude the water, and so that the journal is always lubricated. Another feature of this arrangement is, that when the journal brass is worn out, a new one can be put in by the City diver without having to close down



the gates and pump out the tunnel. A new one-half of main coupling has been put on by the shrinking process and is very complete. The pumpage averages about 17,000,000 cubic feet per twenty-hour hours, and reaches 4,665,000,000 cubic feet for the year. The accumulation of ice around the intake in the winter season—when certain conditions prevail—causes a suspension of pumpage for the reason of choking the water flow. Operating expenses, including coal reserve, \$19,592.23.

The most important repairs that are necessary during the coming year are reboring engine cylinder, facing and reseating valves, refit wrist pin brasses, making new body for right hand engine air-pump; brickwork around boilers Nos. 1 and 2 need repairs, and the radiators or coils in engine-room are badly corroded and wasted away and must be attended to.





NO. 3. EXCAVATING IN COFFER-DAM, THIRTY-NINTH STREET PUMPING STATION, BELOW DREDGED LINE — SEPTEMBER 26, 1903.

**RECEIPTS OF HOUSE DRAIN DIVISION FOR THE YEAR 1908.**

DIVISION.	Extension Permits.	Fee Permits.	Credits by Cancellation.	Receipts.	Junctions 6-inch.	Receipts.	Junctions 9-inch.	Receipts.	Junctions 12-inch.	Receipts.	Council Order Drains.	Special Inspection Receipts.	Guarantee Fund Receipts.	Warrant No 15117 Cr.	Total Receipts.
North.....	725	627	\$ 20.00	\$ 3,115.00	67	\$167.50	22	\$110.00	.....	.....	80	\$ 45.00	\$48.00	.....	\$ 3,485.50
South.....	1,512	1,221	115.00	5,990.00	120	800.00	62	310.00	4	\$30.00	.....	.....	.....	.....	6,680.00
West.....	2,094	1,791	90.00	8,865.00	102	255.00	49	245.00	3	22.50	172	135.00	50.00	\$8.60	9,681.10
Totals.....	4,331	3,639	\$225.00	\$17,970.00	289	\$722.50	133	\$665.00	7	\$52.50	252	\$180.00	\$98.00	\$8.60	\$19,696.60

Total receipts for regular house drain permits.....	\$17,970.00	Total number of house drain extensions and repairs.....	4,331
Total receipts for extra junctions.....	1,440.00	Total number of house drains by permit.....	3,639
Total receipts for miscellaneous engineering and inspections.....	180.00	Total number of house drains by Council order.....	252
Total receipts for miscellaneous guarantee fund.....	98.00	Total number of house drains by special assessment.....	3,383
Total receipts for special assessment warrant No. 15117.....	8.60		
Total receipts for drain layers' licenses.....	1,785.00		
<b>Grand total receipts .....</b>	<b>\$21,481.60</b>	<b>Grand total new house drains ..</b>	<b>11,606</b>

**INSPECTIONS.**

Total number of house drain inspections, extensions and repairs.....	4,331
Total number of house drain inspections, new permit connections.....	3,639
Total number of house drain inspections, new junctions set.....	429
Total number of house drain inspections, Council orders.....	262
<b>Grand total number of house drain inspections.....</b>	<b>8,661</b>

## SEWERS CONSTRUCTED BY PRIVATE CONTRACT DURING THE YEAR 1908.

STREET.	FROM	TO	Diam. in Feet.	Length.	NAME OF CONTRACTOR.
Alley E. of Michigan avenue	112th	112th	$\frac{3}{4}$	600	M. J. Joyce.
Alley E. of Clark	378 ft. N. of Montrose ave.	Sunnyside avenue	$\frac{3}{4}$	217	Wm. F. Healy.
Alley E. of Dover	Montrose avenue	Sunnyside avenue	$\frac{3}{4}$	619	Wm. F. Healy.
Alley S. of W. Twenty-sixth.	Clifton Park avenue	St. Louis avenue	$\frac{3}{4}$	214	Wm. F. Healy.
Alley S. of 111th	Indiana avenue	Curtis avenue	1	387	M. J. Joyce.
Alley S. of 111th	Curtis avenue	Alley E. of Michigan avenue	$\frac{3}{4}$	218	M. J. Joyce.
Aldrie place	Evanston avenue	Sheridan road	1	383	Wm. F. Healy.
Alexander place	Evanston avenue	Sheridan road	1	595	Wm. F. Healy.
N. Avers avenue	Augusta	Iowa	$1\frac{1}{4}$	660	McNichols & Co.
N. Avers avenue	Iowa	Alley N. of Chicago avenue	1	497	McNichols & Co.
N. Clark	Byron	Grace	1	631	Wm. F. Healy.
Clifton avenue	Lawrence avenue	Evanston avenue	1	384	Wm. F. Healy.
Curtis avenue	Alley S. of 111th	297 ft. S. of 112th	1	844	M. J. Joyce.
W. Division	Forty-eighth avenue	Forty-seventh avenue	$1\frac{1}{4}$	698	Nash Bros.
Dover	Montrose avenue	125 ft. N.	1	115	Wm. F. Healy.
N. Fiftieth court	Chicago avenue	Iowa	$1\frac{1}{4}$	664	Nash Bros.
N. Fiftieth court	Iowa	Augusta	1	648	Nash Bros.
S. Francisco avenue	Thirty-sixth	Thirty-fifth	1	608	Wm. F. Healy.
N. Hermitage avenue	Schieber avenue	Devon avenue	1	402	Wm. F. Healy.
S. Hermitage avenue	Sixty-fourth	Sixty-seventh	1	2,018	Nash Bros.
Hood avenue	Southport avenue	Perry	$1\frac{1}{4}$	666	Wm. F. Healy.
Hood avenue	Perry	N. Clark	1	625	Wm. F. Healy.
N. Hoyne avenue	W. Addison	W. Waveland	1	490	Wm. F. Healy.
Irving avenue	Lawrence avenue	Alsille	1	640	Wm. F. Healy.
Irving avenue	Irving Park boulevard	Byron	$1\frac{1}{4}$	660	Wm. F. Healy.
Leavitt	Lawrence avenue	Alsille	1	660	Wm. F. Healy.
Lewis	Waveland avenue	Grace	1	708	Wm. F. Healy.

S. Marshfield avenue.....	W. Sixty-sixth.....	W. Sixty-seventh.....	1	670	Nash Bros.
Montrose avenue.....	Alley E. of Clark.....	Dover.....	1	139	Wm. F. Healy.
Mozart.....	Thirty-sixth.....	Thirty-fifth.....	1	620	Wm. F. Healy.
Oakley avenue.....	Irving Park boulevard.....	Byron.....	1½	660	Wm. F. Healy.
Ogden avenue.....	Forty-fifth avenue.....	Forty-sixth avenue.....	{ D. R. }	684	Byrne Construction Co.
112th.....	Indiana avenue.....	Alley E. of Michigan avenue..	{ 2 }	617	M. J. Joyce.
N. Paulina.....	Schreiber avenue.....	Devon avenue.....	1	402	Wm. F. Healy.
S. Paulina.....	W. Sixty-fourth.....	W. Sixty-seventh.....	1	2,015	Nash Bros.
Racine avenue.....	Grace.....	300 ft. N.....	1	361	Wm. F. Healy.
E. Ravenswood Park.....	Schreiber avenue.....	Alley N. of Devon avenue...	1	223	Wm. F. Healy.
Schreiber avenue.....	E. Ravenswood Park.....	Alley W. of Clark.....	1	947	Wm. F. Healy.
W. Twenty-second.....	S. Forty-fifth avenue.....	S. Forty-sixth avenue.....	{ D. R. }	632	McNichols & Co.
			{ 2 }		

**NEW SEWERS AND CATCH-BASINS BUILT DURING THE YEAR 1903,  
AND THE COST OF SAME.**

Length.	DIAMETER IN FEET.	Cost.
*88,448	1 .....	\$186,678.10
*14,269	1¼ .....	78,561.98
*6,916	2 .....	18,984.50
*8,615	2 Double invert .....	85,787.10
*635	2½ .....	1,968.50
*8,263	2½ Double invert .....	11,011.40
*397	2½ Double ring .....	1,560.12
*2,780	4 .....	17,792.00
†1,868	¾ .....	2,478.20
†16,628	1 .....	24,499.81
†4,008	1¼ .....	6,888.88
†1,296	2 Double ring .....	7,387.20
‡1,840	1¼ .....	} 646,464.81
‡892	12¼ .....	
‡4,656	18¼ .....	
‡2,487	18½ .....	
‡622	15¼ .....	}
188,460		\$989,502.55

\* Special assessment.

† Private contract.

‡ Intercepting sewers.

**TOTAL COST OF THE CONSTRUCTION OF SEWERS AND CATCH-BASINS  
AND MAINTAINING SAME, SINCE THE ESTABLISHMENT OF THE  
SEWERAGE SYSTEM IN 1855 TO JANUARY 1, 1904.**

Year.	Lineal feet of Sewers Bult.	No. of Catch- Basins Bult.	No. of Man- holes Bult.	No. of House Drains Put in.	Cost of Clean- ing Sewers and Catch-Basins.	Street Inter- sections and Repairs of Sewers.	Cost of Construction.
Previous to 1861	283,586	1,174	2,103	2,194	\$ 5,619.48	No. aunts. found on reports.	\$665,188.46
1861.....	2,826	18	33	248	1,715.60	\$ 2,951.76	3,617.31
1862.....	15,676	72	66	365	4,897.24	3,024.07	57,036.42
1863.....	39,605	192	204	536	5,065.40	2,058.11	169,527.38
1864.....	25,021	189	183	512	9,417.81	4,597.63	87,221.48
1865.....	29,948	223	168	1,288	13,818.07	7,493.56	137,613.02
1866.....	48,127	327	271	3,732	28,445.16	773.65	225,564.53
1867.....	89,681	418	555	3,703	26,540.81	9,581.42	416,730.51
1868.....	47,841	480	293	3,261	26,954.06	11,287.08	197,152.92
1869.....	139,705	771	928	3,979	26,015.68	7,537.16	654,141.26
1870.....	78,166	626	468	5,187	21,464.30	10,954.74	258,664.70
1871.....	50,716	277	357	3,093	17,415.46	42,557.72	153,295.36
1872.....	47,842	245	341	1,435	21,484.16	16,975.40	173,255.76
1873.....	146,702	897	1,015	4,691	31,229.27	29,781.97	450,222.90
1874.....	222,322	1,054	1,474	6,292	36,884.57	21,996.72	587,507.38
1875.....	120,971	958	789	3,865	32,098.23	28,107.40	342,932.89
1876.....	15,248	155	75	1,172	29,545.41	19,803.29	79,545.28
1877.....	64,666	363	431	1,822	35,763.33	16,959.44	291,829.63
1878.....	88,081	492	603	1,514	25,704.37	19,259.49	37,264.97
1879.....	145,381	820	1,043	2,953	29,286.67	10,649.69	130,840.50
1880.....	79,128	271	554	4,196	25,561.48	25,068.11	92,544.08
1881.....	132,076	548	917	4,810	34,512.15	30,967.89	452,310.06
1882.....	98,515	792	725	5,677	33,969.35	26,618.05	224,450.16
1883.....	75,364	835	497	5,963	34,749.74	25,140.81	231,084.33
1884.....	101,547	751	654	5,957	43,678.03	37,893.29	258,020.91
1885.....	118,647	796	854	6,325	46,532.18	45,333.02	203,188.03
1886.....	103,193	734	723	7,441	51,110.46	50,707.64	177,647.24
1887.....	90,584	756	605	8,100	50,264.65	48,789.60	186,496.98
1888.....	104,903	816	674	8,152	52,422.41	53,782.07	228,567.57
1889.....	171,023	1,351	1,190	4,303	61,503.01	63,459.25	350,234.54
Annexed Districts } previous to 1890 }	993,573	6,102	8,620	Estimate d cost of construction, cost of maintenance not known			2,614,224.75
1890.....	379,203	2,986	2,604	9,279	107,873.34	83,383.08	826,718.67
1891.....	546,918	3,979	3,736	11,312	123,620.44	95,906.75	1,532,990.44
1892.....	549,258	3,866	3,714	12,562	142,720.52	70,747.83	1,290,017.98
Norwood and Rogers Park annexed previous to 1893	96,697	326	231	No. of house drains and cost of construction not known.			172,846.30
1893.....	708,176	4,811	4,825	14,198	132,633.51	114,702.78	1,606,720.09
1894.....	350,944	2,597	2,259	8,928	154,225.45	130,749.03	1,014,489.86
1895.....	196,349	1,515	1,409	1,621	134,424.44	93,713.66	856,950.01
1896.....	303,172	2,201	1,990	6,161	96,901.65	91,339.54	721,869.88
1897.....	206,450	1,842	1,550	8,241	91,414.89	90,651.29	446,249.53
1898.....	256,618	1,812	1,916	2,635	92,961.88	100,986.06	682,229.10
1899.....	191,790	1,466	1,384	2,647	72,439.07	84,004.87	793,623.28
Part of town of Cicero annexed previous to 1900	154,895	995	1,075	No. of house drains, cost and cost of construction			
1900.....	155,866	1,591	1,176	4,750	80,985.64	102,677.89	475,733.36
1901.....	117,546	899	906	5,598	94,369.87	Sewer Repairs. 55,965.24	454,273.53
1902.....	138,311	1,326	927	8,482	99,372.58	57,492.79	1,398,329.60
1903.....	188,793	1,795	1,351	6,107	118,303.41	68,522.45	989,502.50
Totals.....	*8,311,100	57,510	53,465	214,872	\$2,405,715.23	\$1,916,948.69	\$22,901,495.45

\* Of this amount 56,330 feet have been taken up and replaced by sewers of larger size, leaving in place January 1, 1904, 8,254,770 lineal feet, or 1,563 miles. Of this amount 567.45 miles are of brick construction and 995.55 miles are of vitrified tile pipe.

† Of this number 395 manholes have been abandoned, leaving in place, January 1, 1904, 58,070.



## SEWERS CONSTRUCTED BY SPECIAL ASSESSMENT DURING THE YEAR 1908.

STREET	FROM	TO	Diam. in Feet.	Length.	NAME OF CONTRACTOR.
Alley S. of Garfield boulevard.	S. Robey.....	S. Hamilton avenue.....	1 1/4	1,000	J. H. McCarthy.
Alley S. of Garfield boulevard.	S. Hamilton avenue.....	100 ft. W.....	1	180	J. H. McCarthy.
Aberdeen.....	W. Eighty-eighth.....	W. Eighty-ninth.....	2 1/4	685	Wm. F. Healy.
W. Adams.....	S. Fifty-second avenue.....	S. Fifty-third avenue.....	1 1/4	684	P. J. McNulty.
W. Adams.....	S. Fifty-third avenue.....	109 ft. W. of Walnut.....	1	1,394	P. J. McNulty.
W. Adams.....	Central avenue.....	109 ft. W. of Walnut.....	1 1/4	664	P. J. McNulty.
W. Alnelle.....	Norwood Park avenue.....	N. Fifty-first avenue.....	1	1,015	Nash Bros.
W. Argyle.....	N. Fifty-second avenue.....	N. Fifty-third avenue.....	1 1/4	670	Nash Bros.
W. Argyle.....	N. Fifty-third avenue.....	N. Fifty-fourth avenue.....	1	640	Nash Bros.
W. Argyle.....	N. Fifty-second avenue.....	N. Fifty-first avenue.....	1	670	Nash Bros.
N. Avers avenue.....	Montrose avenue.....	Sunnyside avenue.....	1 1/4	692	J. H. McCarthy.
Butler.....	W. 115th.....	W. 116th.....	1	670	Wm. F. Healy.
S. Carpenter.....	W. Seventy-first.....	W. Seventy-third.....	1	1,332	Nash Bros.
Castello avenue.....	N. Forty-third avenue.....	N. Forty-fourth avenue.....	1	680	Nash Bros.
Castello avenue.....	Lawndale avenue.....	Alley W. of Central Park ave.	1	480	Nash & Dowdle.
Clifton Park avenue.....	W. Twenty-eighth.....	Alley S. of W. Twenty-sixth.....	1	1,132	Wm. F. Healy.
Cornelia avenue.....	N. Springfield avenue.....	Avers avenue.....	1 1/4	338	Con. Hogan.
Cornelia avenue.....	Avers avenue.....	N. Hamlin avenue.....	1	333	Con. Hogan.
W. Cornelia avenue.....	N. Forty-second avenue.....	N. Forty-first court.....	1	335	J. H. McCarthy.
W. Cuyler avenue.....	N. Western avenue.....	N. Campbell avenue.....	1	635	J. H. McCarthy.
Drew.....	W. 106th.....	125 ft. N. of W. 107th.....	1	515	Wm. F. Healy.
Drexel avenue.....	Sixty-third.....	Sixty-fourth.....	1 1/4	661	Jas. H. Roche.
Drexel avenue.....	Sixty-fourth.....	Sixty-fifth.....	1	672	Jas. H. Roche.
W. Dunning.....	N. Seventy-first court & of Dunning.....	N. Seventy-first court N. of Dunning.....	1 1/4	173	P. J. McNulty.
W. Eddy.....	N. Troy.....	Alley W. of Albany avenue.....	1	166	Wm. F. Healy.
W. Eddy.....	Alley E. of N. Fortieth avenue.....	N. Hamlin avenue.....	1	1,174	Con. Hogan.
W. Eddy.....	N. Hamlin avenue.....	Avondale avenue.....	1	1,113	Con. Hogan.
W. Eddy.....	N. Forty-second avenue.....	N. Forty-first court.....	1	327	J. H. McCarthy.
Eggleson avenue.....	W. 115th.....	W. 116th.....	1	669	Wm. F. Healy.
S. S. W. Eighty-seventh.....	Vincennes road.....	Justine.....	1	4,580	Andrew Maloney.
S. Elizabeth.....	W. 108d.....	W. 102d place.....	2	488	Andrew Maloney.
S. Elizabeth.....	W. 102d place.....	235 ft. N. of W. 101st place.....	1 1/4	593	Andrew Maloney.
S. Elizabeth.....	235 N. of W. 101st place.....	100th place.....	1	605	Andrew Maloney.
Ellis avenue.....	Sixty-seventh.....	Sixty-sixth.....	1 1/4	660	M. J. Joyce.
Ellis avenue.....	Sixty-sixth.....	Sixty-fifth.....	1	640	M. J. Joyce.

Evergreen court.....	Humboldt boul.-vard.....	320 ft. Southeasterly.....	1	871	W. F. Healy.
N. Fifty-second avenue.....	W. Lawrence avenue.....	Norwood Park avenue.....	$\left\{ \begin{array}{l} D. B. \\ 2\frac{1}{2} \end{array} \right\}$	897	Nash Bros.
N. Fifty-second avenue.....	Norwood Park avenue.....	W. Argyle.....	2	938	Nash Bros.
N. Fifty-third avenue.....	Strong.....	70 ft. W. of Argyle.....	1	285	Nash Bros.
N. Fifty-third court.....	Grand avenue.....	Humboldt avenue.....	$1\frac{1}{4}$	1,018	McNichols & Co.
N. Fifty-third court.....	Humboldt avenue.....	Alley S. of W. Fullerton ave.....	1	1,159	McNichols & Co.
W. Fifty-seventh.....	S. Hamilton avenue.....	S. Robey.....	2	1,000	J. H. McCarthy.
W. Fifty-seventh.....	S. Hamilton avenue.....	100 ft. W.....	1	185	J. H. McCarthy.
N. Fifty-seventh court.....	Grand avenue.....	Dickens avenue.....	$1\frac{1}{4}$	518	M. Donohue.
N. Fifty-seventh court.....	Dickens avenue.....	Armitage avenue.....	1	428	M. Donohue.
N. Forty-first court.....	W. Addison.....	W. Waveland avenue.....	$1\frac{1}{4}$	628	McNichols & Co.
N. Forty-first court.....	W. Addison.....	W. Grace.....	1	697	McNichols & Co.
N. Forty-second avenue.....	W. Waveland avenue.....	W. Waveland avenue.....	$1\frac{1}{4}$	628	McNichols & Co.
N. Forty-second avenue.....	W. Addison.....	W. Grace.....	1	676	McNichols & Co.
N. Forty-second avenue.....	Ogden avenue.....	Cornelia avenue.....	1	491	J. H. McCarthy.
N. Forty-second court.....	W. Addison.....	125 ft. S. of W. of 22d.....	1	545	W. F. Healy.
N. Forty-second court.....	W. Waveland avenue.....	W. Waveland avenue.....	$1\frac{1}{4}$	629	McNichols & Co.
S. Forty-fourth avenue.....	Ogden avenue.....	W. Grace.....	1	674	McNichols & Co.
N. Forty-fourth avenue.....	Ogden avenue.....	Alley S. of W. Twenty-second.....	1	1,125	McNichols & Co.
N. Forty-fourth court.....	Milwaukee avenue.....	150 ft. S. of Grace.....	1	525	Nash Bros.
N. Forty-fourth court.....	Milwaukee avenue.....	W. Grace.....	1	880	Wm. F. Healy.
N. Forty-sixth court.....	W. Lawrence avenue.....	W. Leland avenue.....	$1\frac{1}{4}$	662	Andrew Maloney.
N. Forty-sixth court.....	W. Leland avenue.....	W. Wilson avenue.....	1	670	Andrew Maloney.
N. Forty-seventh avenue.....	W. Lawrence avenue.....	W. Leland avenue.....	$1\frac{1}{4}$	685	J. H. McCarthy.
N. Forty-seventh avenue.....	W. Leland avenue.....	W. Wilson avenue.....	1	670	J. H. McCarthy.
N. Francisco avenue.....	W. Addison.....	W. Waveland avenue.....	$1\frac{1}{4}$	685	Wm. F. Healy.
N. Francisco avenue.....	W. Waveland avenue.....	W. Grace.....	1	669	Wm. F. Healy.
Gladys avenue.....	S. Fifty-second avenue.....	S. Fifty-third avenue.....	$1\frac{1}{4}$	680	Thos. Burke.
Gladys avenue.....	S. Fifty-third avenue.....	109 ft. W. of Walnut avenue.....	1	1,270	Thos. Burke.
Greenwood avenue.....	119 ft. W. of Walnut avenue.....	Central avenue.....	$1\frac{1}{4}$	690	Thos. Burke.
Greenwood avenue.....	Sixty-seventh.....	Sixty-sixth.....	$1\frac{1}{4}$	660	M. J. Joyce.
Grenshaw.....	Sixty-sixth.....	Sixty-fifth.....	1	643	M. J. Joyce.
Gunnison.....	S. Central Park avenue.....	20 ft. W. of Alley R. of Douglas boulevard.....	1	920	Nash & Dowdle.
S. Hamilton avenue.....	N. Fifty-second avenue.....	N. Fifty-first avenue.....	1	670	Nash Bros.
W. Harrison.....	W. Fifty-second avenue.....	Alley S. of Garfield boulevard.....	1	1,088	J. H. McCarthy.
W. Harrison.....	S. Fifty-second avenue.....	S. Fifty-third avenue.....	$1\frac{1}{4}$	685	M. J. Joyce.
W. Harrison.....	S. Fifty-third avenue.....	109 ft. W. of Walnut avenue.....	1	1,370	M. J. Joyce.
W. Harrison.....	109 ft. W. of Walnut avenue.....	Central avenue.....	$1\frac{1}{4}$	675	M. J. Joyce.
Harvard avenue.....	W. 116th.....	114th.....	1	1,840	Wm. F. Healy.

## SEWERS CONSTRUCTED BY SPECIAL ASSESSMENT DURING THE YEAR 1903—CONTINUED.

STREET.	FROM	TO	Diam. in Feet.	Length.	NAME OF CONTRACTOR.
Harvard avenue.....	W. 118th .....	114th .....	1	668	Jas. H. Roche.
Harvard .....	S. Lawndale avenue.....	290 ft. W.....	1	840	Wm. F. Healy.
S. Hermitage avenue.....	W. Sixty-seventh.....	W. Seventieth .....	1	2,000	Nash Bros.
S. Hoyne avenue.....	W. Fifty-seventh.....	Alley S. of Garfield Blvd.....	1	1,088	J. H. McCarthy.
N. Lawndale avenue.....	W. Addison.....	Cornelia avenue .....	2	680	Con. Hogan.
N. S. Lawrence avenue.....	Lincoln avenue .....	N. Irving avenue .....	1 1/4	898	John S. McCarthy.
N. S. Lawrence avenue.....	N. S. Lawrence avenue .....	N. Leavitt .....	1	319	John S. McCarthy.
Lexington avenue.....	Sixty-seventh .....	Sixty-sixth .....	1 1/4	660	M. J. Joyce.
Lexington avenue.....	Sixty-sixth .....	Sixty-fifth .....	1	673	M. J. Joyce.
Lowell avenue.....	W. Addison.....	W. Cornelia .....	1 1/4	636	John Green.
Lowell avenue.....	W. Cornelia.....	W. Roscoe .....	1	666	John Green.
Loomis .....	W. Eighty-eighth .....	W. Eighty-seventh.....	1 1/4	640	Andrew Maloney.
Lowe avenue.....	W. 115th .....	W. 116th place.....	1	804	Wm. F. Healy.
S. Madison .....	S. Forty-eighth avenue .....	S. 52d avenue .....	4	2,780	Con. Hogan.
S. Marshall avenue.....	W. Sixty-seventh.....	W. Seventieth .....	1	2,000	P. J. McNulty.
McLean avenue.....	N. Fortieth avenue .....	C. M. & St. P. Ry.....	1	583	Nash Bros.
W. Melrose avenue.....	N. Washtenaw avenue .....	Alley E. of California avenue.....	1	586	McNichols & Co.
Monroe avenue .....	Sixty-seventh .....	Sixty-first.....	{ 1, 1 } 2	3,981	John H. McCarthy.
Monroe avenue .....	Sixty-first .....	Alley S. of Sixtleth .....	1 1/4	500	John H. McCarthy.
S. Morgan .....	W. Seventy-third.....	W. Seventy-fifth .....	1	1,126	Wm. F. Healy.
W. Ninety-third.....	S. Winchester avenue .....	S. Robey .....	1 1/4	445	Thomas Burke.
Norwood Park avenue .....	N. Fifty-second avenue .....	740 ft. N. W.....	1	783	Nash Bros.
Norwood Park avenue .....	N. Fifty-third avenue .....	76 ft. S. of W. Argyle.....	1	686	Nash Bros.
W. 100th place.....	S. Elizabeth .....	S. Center avenue .....	1	363	Andrew Maloney.
W. 101st place.....	S. Elizabeth .....	C. R. I. & P. Ry.....	1	350	Andrew Maloney.
W. 102d place.....	S. Elizabeth .....	C. R. I. & P. Ry.....	1	350	Andrew Maloney.
W. 103d place.....	Wentworth avenue.....	1st Alley W. of Michigan ave.....	1	2,016	Thos. Burke.
W. 106th .....	Prospect avenue .....	Drew.....	{ 1, 1 1/2 } 1 1/2	750	Wm. F. Healy.
W. 106th place.....	Wentworth avenue .....	State .....	1 1/4	1,310	P. J. McNulty.
W. 106th place.....	Wing sewer .....	State .....	1	945	P. J. McNulty.
107th .....	Wentworth avenue.....	State .....	2	1,310	P. J. McNulty.
107th .....	State .....	100 ft. W. of Michigan avenue.....	1	525	P. J. McNulty.
109th .....	Wentworth avenue.....	State .....	1 1/4	1,310	P. J. McNulty.

109th place .....	Wentworth avenue .....	State .....	1 1/4	1,810	P. J. McNulty.
110th .....	Wentworth avenue .....	State .....	1 1/4	1,810	P. J. McNulty.
110th place .....	Wentworth avenue .....	State .....	1 1/4	1,810	P. J. McNulty.
W. 118th .....	Center of Wentworth avenue ..	W. line of Center avenue ..	1 1/4	85	Jas. H. Roche.
W. 118th .....	W. line of Wentworth avenue ..	Stewart avenue .....	{ p. 1. }	1,289	Jas. H. Roche.
W. 115th .....	Wentworth avenue .....	Butler .....	{ 2 1/4 }	1,974	Wm. F. Healy.
W. 115th .....	Butler .....	Halsted .....	{ p. 1. }	1,984	Wm. F. Healy.
W. 116th .....	Princeton avenue .....	Low avenue .....	{ 2 }	2,878	Wm. F. Healy.
W. 116th .....	Alley W. of Lowe avenue .....	Alley E. of Halsted .....	1	574	Wm. F. Healy.
W. 116th place .....	Alley W. of Lowe avenue .....	Alley E. of Halsted .....	1	575	Wm. F. Healy.
Parnell avenue .....	W. 115th .....	W. 116th .....	1	670	Wm. F. Healy.
S. Peoria .....	W. 119th .....	W. 117th .....	1 1/4	1,840	Nash Bros.
Perry avenue .....	106th place .....	220 ft. N. of same .....	1	255	P. J. McNulty.
Princeton avenue .....	W. 118th .....	W. 114th .....	1	667	Jas. H. Roche.
Princeton avenue .....	W. 116th .....	125 ft. S. of W. 114th .....	1	1,185	Wm. F. Healy.
E. Ravenswood park .....	Montrose avenue .....	Cullom avenue .....	1 1/4	649	Wm. F. Healy.
E. Ravenswood park .....	Cullom avenue .....	Berteau avenue .....	1	674	Wm. F. Healy.
N. Richmond .....	W. Addison .....	W. Grace .....	1 1/4	1,285	John H. McCarthy.
Ridge road .....	N. Clark .....	Peterson avenue .....	1 1/4	661	John H. McCarthy.
Ridge road .....	Peterson avenue .....	E. Ravenswood park .....	1	867	John H. McCarthy.
S. Robey .....	W. Ninety-fifth .....	W. Ninety-second .....	1	1,970	Thos. Burke.
S. Robey .....	W. Ninety-fifth .....	W. Ninety-sixth .....	1	670	Thos. Burke.
N. Sacramento avenue .....	W. Addison .....	W. Grace .....	1 1/4	1,298	Jas. Healy.
N. Sacramento avenue .....	W. Grace .....	W. Irving park blvd. ....	1	1,885	Jas. Healy.
S. Sangamon .....	W. Seventy-fourth .....	W. Seventy-fifth .....	1	495	McNichols & Co.
S. Sangamon .....	W. 119th .....	W. 118th .....	2	670	M. Donahue.
S. Sangamon .....	W. 118th .....	W. 117th .....	1 1/4	670	M. Donahue.
S. Seeley avenue .....	W. Fifty-seventh .....	Alley S. of Garfield blvd ..	1	1,038	J. H. McCarthy.
N. Seventy-first avenue .....	W. Fullerton avenue .....	W. Wrightwood avenue .....	1 1/4	1,309	Thos. Burke.
N. Seventy-first avenue .....	W. Wrightwood avenue .....	Schubert avenue .....	1	673	Thos. Burke.
W. Seventy-first place .....	S. Ashland avenue .....	Bishop .....	1 1/4	887	Andrew Maloney.
W. Seventy-first place .....	Bishop .....	S. Ada .....	1	880	Andrew Maloney.
N. Seventy-first court .....	S. Center avenue .....	24 ft. E. of S. Ada .....	2	882	Nash Bros.
N. Seventy-first court .....	Grand avenue .....	W. Dunning .....	2	595	P. J. McNulty.
N. Seventy-first court .....	W. Dunning .....	W. Wrightwood avenue .....	1 1/4	654	P. J. McNulty.
N. Seventy-first court .....	W. Wrightwood avenue .....	Schubert avenue .....	1	669	P. J. McNulty.
W. Seventy-second .....	S. Center avenue .....	24 ft. E. of S. Ada .....	1	881	Nash Bros.

## SEWERS CONSTRUCTED BY SPECIAL ASSESSMENT DURING THE YEAR 1903—CONTINUED.

STREET	FROM	TO	Diam. in Feet.	Length.	NAME OF CONTRACTOR.
W. Seventy-second	S. Ashland avenue	Bishop	1 1/4	887	Andrew Maloney.
W. Seventy-second	Bishop	S. Ada	1	890	Andrew Maloney.
W. Seventy-fourth	Yates avenue	55 ft. W. of Phillips avenue	1	853	Wm. F. Healy.
Seventy-fourth	Coles avenue	Railroad avenue	1	480	Nash & Dowdle.
W. Seventy-fourth	S. Center avenue	24 ft. E. of S. Ada	1	831	Nash Bros.
W. Seventy-fourth place	S. Center avenue	24 ft. E. of S. Ada	1	880	Nash Bros.
N. Sixtieth avenue	Grand avenue	Belden avenue	1 1/4	883	Thos. Burke.
Sixtieth avenue	Belden avenue	Alley S. of Fullerton avenue	1	493	Thos. Burke.
W. Sixty-sixth	S. Halsted	145 ft. W. of Union avenue	1	880	McNichols & Co.
S. Springfield avenue	W. Twenty-second	C. B. & Q. Ry.	1	790	Thos. Burke.
N. Springfield avenue	W. Addison	Cornelia avenue	3	130	Con. Hogan.
State	108th place	11th	1	2,970	P. J. McNulty.
State	108d	103d place	1 1/4	883	Thos. Burke.
Stewart avenue	W. 116th	W. 115th	1	698	Wm. F. Healy.
Strong	N. Fifty-second avenue	N. Fifty-first avenue	1	670	Nash Bros.
Strong	N. Fifty-second avenue	N. Fifty-third avenue	1 1/4	674	Nash Bros.
W. Superior	Prairie avenue	Franklin avenue	1 1/4	580	McNichols & Co.
W. Superior	Franklin avenue	Austin avenue	1	749	McNichols & Co.
W. Thirty-third place	S. Wood	400 ft. W.	1	413	Wm. F. Healy.
W. Thirty-fourth	S. Lincoln	180 ft. W.	1	217	Con. Hogan.
Throp	W. Eighty-eighth	W. Eighty-seventh	1 1/4	640	Andrew Maloney.
Tripp avenue	W. Fullerton avenue	W. Dunning	1 1/4	663	Nash Bros.
N. Troy	W. Addison	W. Eddy	1	287	Wm. F. Healy.
N. Troy	W. Addison	W. Waveland avenue	1 1/4	629	Jas. Healy.
N. Troy	W. Waveland avenue	W. Grace	1	677	Jas. Healy.
W. Twenty-fourth	S. Forty-first court	235 ft. W.	1	275	Wm. F. Healy.
Union avenue	W. Ninety-ninth	W. 101st	1 1/4	1,830	John Green.
Union avenue	W. 101st	1st alley N. of W. 103d	1	1,147	John Green.
Union avenue	W. 115th	W. 116th	1 1/4	893	Wm. F. Healy.
Union avenue	W. 116th	W. 116th place	1	400	Wm. F. Healy.
W. S. Vincennes	W. Eighty-eighth	W. Eighty-seventh	2	660	Andrew Maloney.
N. Washenaw avenue	W. Belmont avenue	W. Melrose	1 1/4	278	McNichols & Co.
Wallace	W. 115th	W. 116th	1	667	Wm. F. Healy.
W. Webster avenue	C. & N. W. Ry. (Mil. Div.)	75 ft. W. of N. B. Chicago River	1 1/4	878	Con. Hogan.
N. Whipple	W. Addison	W. Waveland avenue	1 1/4	633	Wm. F. Healy.

N. Whipple.....	W. Grace.....	1	672	Wm. F. Healy.
S. Winchester avenue.....	First alley north of W. 39th.....	1 1/4	507	McNichols & Co.
Winnemac avenue.....	150 ft. E. of Lincoln avenue.....	1	530	J. H. McCarthy.
W. Western avenue.....	W. 100th place.....	1 1/4	1,070	McNichols & Co.
W. Ninety-ninth.....	Vincennes Road.....	1	940	McNichols & Co.
W. One-hundredth place.....	First alley N. Garfield Blvd.....	1	475	J. H. McCarthy.
W. Fifty-fourth.....	W. Seventieth.....	1	660	J. H. McCarthy.
S. Wood.....		{ D. I. }	2,650	Nash Bros.
S. Wood.....	Sixty-seventh.....	{ 2 }		
Woodlawn avenue.....	W. 114th.....	1	1,808	Wm. F. Healy.
Yale avenue.....	C. & E. I. Ry.....	1	532	Jas. H. Roche.
Yale avenue.....				

## DRAINS CONSTRUCTED BY SPECIAL ASSESSMENT DURING THE YEAR 1908.

STREET	FROM	TO	No. of Drains	Length.	Price, per Foot.	COST.
N. Albany avenue.....	W. Irving Park boulevard.....	Elston avenue.....	107	2,660	\$0.25¾	\$ 684.95
Austin avenue.....	South boulevard.....	Madison.....	19	556	.27¼	155.40
S. Avers avenue.....	W. Fourteenth.....	W. Fifteenth.....	27	875	.28¼	158.62
S. Avers avenue.....	W. Sixteenth.....	Ogden avenue.....	89	2,225	.28	511.75
W. Belle Plaine avenue.....	N. Western avenue.....	N. Campbell avenue.....	21	525	.19	99.75
W. Berteau avenue.....	N. Western avenue.....	N. Campbell avenue.....	38	900	.19	171.00
S. Carpenter.....	W. Eighty-fourth.....	N. Campbell avenue.....	36	900	.19	171.00
S. Carpenter.....	W. Eighty-seventh.....	W. Eighty-seventh.....	104	2,600	.26¼	689.20
Carroll avenue.....	N. St. Louis avenue.....	W. Eighty-ninth.....	87	925	.27	249.75
Cedar avenue.....	Austin avenue.....	N. Homan avenue.....	17	425	.20	85.00
Central avenue.....	Thomas.....	Waller avenue.....	75	1,875	.28¼	534.88
Cortland.....	N. Hamlin avenue.....	Chicago avenue.....	48	472	.21	127.12
W. Cuyler avenue.....	N. Hamlin avenue.....	N. Central Park avenue.....	46	1,150	.32	868.00
Devon avenue.....	N. Campbell avenue.....	N. Western avenue.....	34	850	.31	178.50
Eddy.....	N. Clark.....	Ridge avenue.....	22	463	.37	263.34
W. Eighty-sixth.....	Racine avenue.....	N. Clark.....	16	412	.39	160.88
W. Eighty-sixth place.....	Summit avenue.....	S. Sangamon.....	5	120	.26¼	81.80
N. Fifty-first court.....	Summit avenue.....	S. Sangamon.....	8	192	.26¼	50.88
S. Fifty-first court.....	132 ft. south of Ontario.....	231 ft. north of Ontario.....	27	675	.32	216.00
N. Forty-eighth avenue.....	Park avenue.....	Randolph.....	19	475	.34¼	118.88
N. Francisco avenue.....	W. Chicago avenue.....	W. North avenue.....	187	4,136	.66	2,729.76
Greshaw.....	W. Addison.....	W. Grace.....	61	1,501	.24¼	871.49
N. Hamlin avenue.....	W. Eighty-fourth.....	W. Eighty-sixth.....	48	1,200	.26¼	816.00
S. Green.....	Douglas boulevard.....	S. Central Park avenue.....	62	1,550	.26¼	410.75
N. Hamlin avenue.....	Cortland.....	Armitage avenue.....	14	350	.33	112.00
S. Harding avenue.....	W. Fourteenth.....	W. Sixteenth.....	46	1,150	.28	264.50
Herndon.....	Fullerton avenue.....	Hawthorne.....	16	400	.41	164.00
S. Homan avenue.....	W. Twelfth.....	C. G. W. Ry.....	16	400	.28	112.00
N. Humboldt.....	W. Addison.....	W. Grace.....	81	2,050	.25¾	527.88
Lafin.....	Garfield boulevard.....	W. Fifty-ninth.....	118	2,712	.18¼	501.72
N. Lawndale avenue.....	Armitage avenue.....	Bloomington avenue.....	37	925	.26¼	236.88
S. Marshfield avenue.....	W. Sixty-first.....	W. Sixty-third.....	53	1,272	.27	843.44
Michigan avenue.....	Ninety-ninth.....	103d.....	91	2,256	.43¼	1,002.86
Minerva avenue.....	Sixty-fifth.....	Sixty-seventh.....	49	1,325	.57	698.25
Monticello avenue.....	Armitage avenue.....	Bloomington avenue.....	41	1,025	.25¼	261.88
Monticello avenue.....	W. North avenue.....	Bloomington avenue.....	25	625	.28	175.00





## DIVISION OF STANDARD BENCH MONUMENTS, BENCH MARKS AND STREET GRADES.

W. H. HEDGES, Bench and Street Grade Engineer.

### STANDARD BENCH MONUMENTS.

During the year ending December 31, 1903, no new concrete bench monuments were built. In the appropriation ordinance, passed March 16, 1903, provision was made for building forty-two new concrete bench monuments, in the south and southwest parts of the City, where they are much needed. But it was finally found impossible to provide the money for that work, so that no new concrete bench monuments were built in 1903.

As stated in the Annual Report for 1902, eighty-two of these monuments have been built in the North and West divisions of the City and in a part of the town of Hyde Park, and the exact levels have been run establishing their elevations. Therefore, as there were no new monuments built in this year, no new lines of exact levels could be extended in the town of Hyde Park and into the towns of Lake and Calumet. The extension of these levels south and west is of great importance to those localities, and it is to be hoped that the year 1904 will not only see this work included in the appropriation, but that the necessary funds will actually be provided. If further information is desired on this point, it can be found on page 186 of the Twenty-sixth Annual Report (1901) of the Department of Public Works.

### BENCH MARKS.

As the establishing of the ordinary exact level bench marks, located on buildings, curbstones, etc., is done in connection with, and along the lines of, the exact levels run to establish the elevation of the concrete bench monuments, it follows that no new exact level bench marks were established during the year 1903.

As stated in the Annual Report for 1902, nine hundred and thirty-five of these exact level benches were then recorded in the books of this department. During this year, in addition to the records describing the location of these benches, we have made complete tracings of the whole City (in 4 sheets), and shown thereon the location of all exact level bench monuments and benches. Blue line prints have been made from these tracings and given out to the civil engineers in the different City departments, and to civil engineers and surveyors through the City. These prints, as expected, are found to be a great convenience in determining the nearest benches for use at any given or desired point. The failure in 1903 to extend the regular



NO. 4. CONCRETE FLOOR AND WALL IN COFFER-DAM, THIRTY-NINTH STREET PUMPING STATION, AND FORMS  
FOR CONTINUATION — DECEMBER 4, 1903.



system of exact levels has made it necessary for the Bench Engineer to spend considerable time in running levels for temporary use at points not yet reached by the exact levels. This expenditure of time is not desirable, but will continue to be necessary wherever the exact levels have not been extended.

This consideration is one of the many reasons for urging the immediate building of more concrete bench monuments in the south and southwest parts of the City.

#### STREET GRADES.

Although the Bench Engineer has had no exact levels to run this year, his time has been fully occupied in connection with the street grade work.

During the year ending December 31, 1903, the City Council has by ordinance established sixteen hundred and seventy-three (1,673) street grades, that were prepared and presented for Council action by this division of the Bureau of Sewers. The establishing of hundreds of these grades involved a great deal of field work, as they required the running of special levels in each case and a careful examination of each point in question, these points being scattered over the whole City. The making up of the grade ordinances, the keeping a careful and proper record of all these grades in the grade books, and the placing of the grades on the grade maps, altogether require a great deal of office work; in addition to which all the estimates and ordinances for street and sidewalk improvements now have to be examined and the grades accepted by the Grade Engineer before they pass into the Special Assessment Department.

From this statement it will be seen that if an appropriation, with money to carry it out, is made this year for the building of more concrete bench monuments and the extension of the system of exact levels, the whole time of the Bench Engineer will be required on that work; and it will be necessary in that appropriation to provide the Bench Engineer with an assistant engineer and rodman to carry on the grade work under the direction and supervision of the Bench Engineer.

## DIVISION OF INTERCEPTING SEWERS.

WILLIAM S. MACHARG, Consulting Engineer.

The work in this division in connection with the southern system of intercepting sewers has made good progress during this year. The work in the North division has been delayed pending a decision by the Supreme Court of the Hanreddy case in which the City was enjoined from proceeding with the Lawrence avenue conduit by day labor.

In the southern system the 20-foot main conduit, known as Sections C and L, from Lake Michigan to Halsted street slip, has been completed and cleaned. The work included in the contract with John P. Agnew for the completion of this conduit was finished in July. Mr. Agnew presented claims for additional compensation amounting to about \$125,000 which claims were taken up by the Commissioner of Public Works in conjunction with the Chairman of the Committee on Finance, the Consulting Engineer and the Corporation Counsel, and Mr. Agnew and his counsel, and the whole amount of claims was settled for \$30,219, which sum was ordered paid and the contract closed by the City Council September 28, 1903. This conduit in Thirty-ninth street and in the prolongation of the street to the shore of Lake Michigan is 12,123 feet in length. Of this, 2,125 feet were built in open cut of a horseshoe section 22 feet in width and 18½ feet in height. The remaining 9,988 feet were built in tunnel, of which 4,159 feet were built by the Chicago Star Construction & Dredging Company, and the remaining 5,839 feet were built by John P. Agnew. The tunnel section is circular, 20 feet inside diameter.

The work on the grounds and walls for the pumping station at Thirty-ninth street produced and Lake Michigan has been very much delayed both this year and the year previous by the constant northerly winds. The location of this station is in Lake Michigan, as shown in the last annual report, and the driving of the piles enclosing the site of the station and forming the protection pier was completed and work started on the cofferdam in which the water channels and wells and the foundations of the pumping engines are now building. This cofferdam encloses an area of about an acre and a half, and is one of the largest, if not the largest ever built in open water. This work was completed so that the laying of concrete was commenced September 28, 1903.

After the area was enclosed and it could be safely done, a test pit was sunk near the southwest corner of the excavation to determine accurately the character of the foundation. Borings had been made, but these were not trustworthy, and by excavation in the test pit a very hard, dry clay or hard-pan was found at a depth of 31 feet below City datum and rock was



NO. 5. FORM FOR BOTTOM AND WALL, ONE OF MAIN CHANNELS, THIRTY-NINTH STREET PUMPING STATION — DECEMBER 4, 1903.



found at a depth of 41 feet below City datum. As the excavation for the floor and walls was from 21 to 24 feet below City datum, the use of piles, contemplated in the original plan, was abandoned and concrete piers under the walls substituted therefor. A secure foundation for these was obtained on the hard-pan and a much more satisfactory structure will result. The whole amount of concrete to be laid in the walls of these wells and channels and in the pump foundations is about 25,000 cubic yards, of which about 8,000 yards were in place when the work was closed down on the 10th of December, 1903.

A series of plates showing the condition and progress of work on the cofferdam and concrete walls from July 18, 1903, to December 4, 1903, may be found in connection with the report. The first shows the cofferdam before it was completely filled, and shows the top bracing put in at the level of the lake. The second shows the cofferdam pumped out and the second line of bracing put in ten feet below the lake level. The third shows the excavation of the bottom below a point in which earth was removed by dredging. The fourth shows the excavation to grade, 23 feet below top line of braces or lake level, together with the timber forms, concrete bottom partially in place, and on the left the wall which is still to be carried to a point 10 feet above the top braces. The forms built upon ribs, like the ribs of a ship, seen in the background, form the channels for the main discharge of the large screw pumps which are to be installed for the supply of lake water to the tunnel and Halsted street slip. The fifth shows the detail of the rib forms which give the shape to these main channels.

As reported last year, the contract for the engines was let and they are in process of construction, and it is expected to have the buildings erected and the engines running by the end of next year.

As the southern intercepting sewer has been completed nearly to Seventy-first street, we have entered into a contract with Thomas F. Drury to install and operate a temporary pumping plant on the Illinois Central right-of-way just south of Thirty-ninth street, consisting of two 15-inch centrifugal pumping engines capable of delivering about 7,000 gallons of sewage per minute each, and it is proposed in the spring to connect the sewers south of Thirty-ninth street now crossing the main intercepting sewer so that the daily flow of sewage may be discharged to these pumps and be pumped over into the main conduit, discharging into the Halsted street slip. Storm water still necessarily will be allowed to flow to Lake Michigan, but the removal of this large quantity of sewage now flowing constantly into the lake will afford very great relief from pollution of the lake, with a corresponding improvement in public health.

When the work closed down December 10th on the southern intercepting sewer, the work had been completed from Thirty-ninth street to a



point on Stony Island avenue midway between Seventieth street and Seventy-first street, leaving to be completed of this South side system about 1,700 feet of 12½-foot sewer on Stony Island avenue, about 1,200 feet of 4-foot sewer in Sixty-third street from Stony Island avenue to the location of the present Woodlawn pumping station and about 2,900 feet of 6½-foot sewer from Thirty-ninth street to Thirty-fifth street. This work, together with the reversal of the sewers now flowing into Lake Michigan east of Stony Island avenue, will easily be done during the coming year, so that the whole South side system may be in complete operation with the starting of the main pumps at the Thirty-ninth street station.

This work on Stony Island avenue has been carried on by day labor as in previous years, with entirely satisfactory result. Notwithstanding an increase in the cost of labor and material of from 17 per cent. to 30 per cent. these sewers have been built for less than they would have cost at the prices bid in 1899, and it is evident that had prices remained stationary or fallen, the gain to the City would have been considerable, and it is also evident from the knowledge gained of the natural and artificial difficulties involved in the construction of the work, that the City has escaped claims for extra compensation very considerable in amount. It was the belief that such claims would arise which led the City to attempt the construction of this work by day labor, and the correctness of this judgment has been demonstrated as the work progressed.

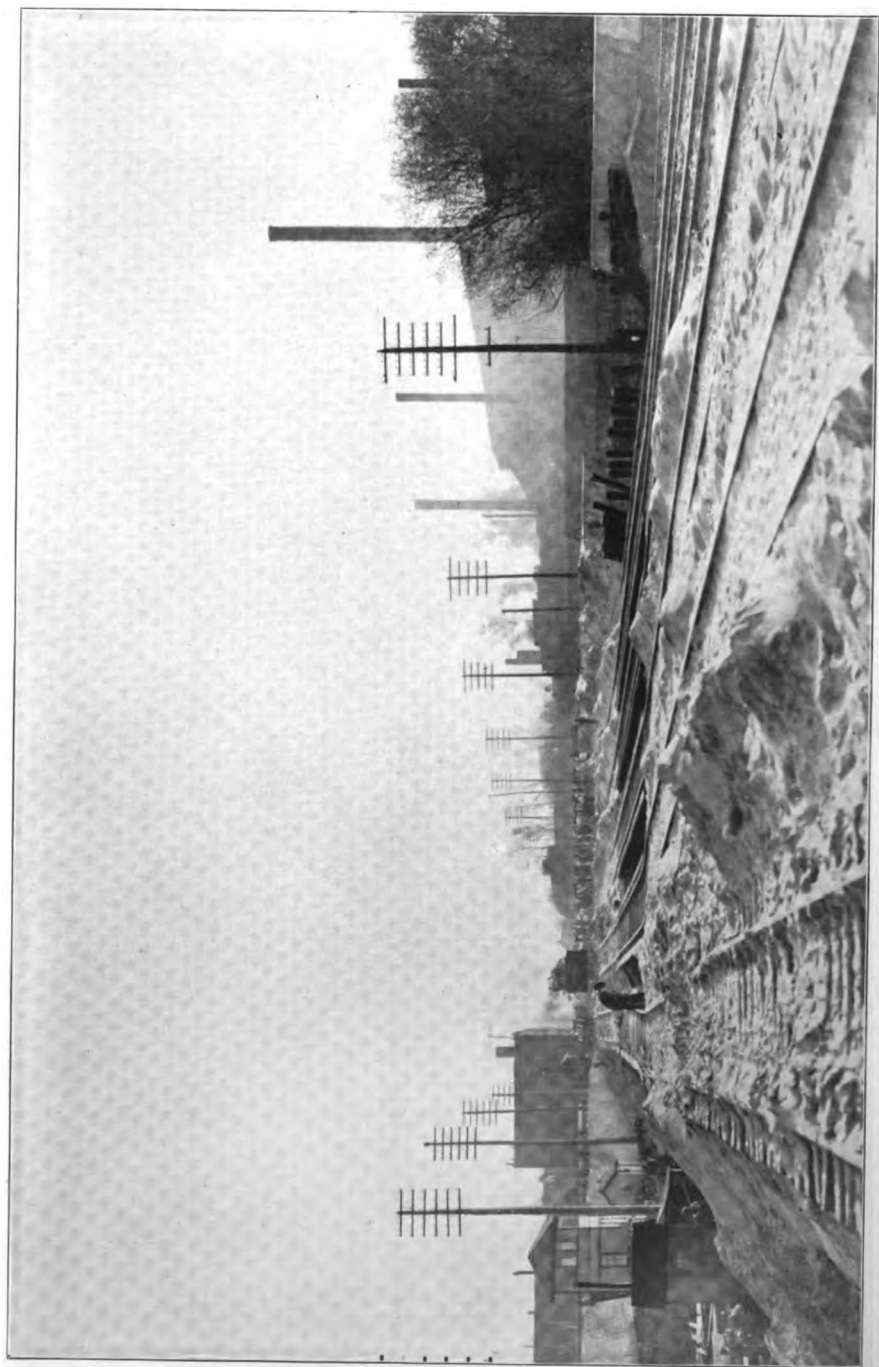
The City has maintained during this year the temporary pumping station on Lawrence avenue at Lake Michigan to relieve the constructed portion of the Lawrence avenue conduit of such sewage as flows into it, and has also maintained the temporary pumping plant at Halsted street and Thirty-ninth street, at Thirty-ninth street and Dearborn street, and since the completion of Mr. Agnew's contract and the contract for cleaning the Star Construction & Dredging Company work, a temporary plant at Thirty-ninth street and Lake Michigan. These three plants will be dispensed with as soon as the temporary plant for the care of sewage in the southern intercepting sewer is set in operation, affording a considerable reduction in expense.

Respectfully submitted,

WM. E. QUINN,

*Superintendent Bureau of Sewers.*





C. & W. I. R. R. TRACK ELEVATION.—LOOKING SOUTH AT FIFTY-EIGHTH STREET.  
GIRDERS ALL SET DECEMBER 22, 1903.

ANNUAL REPORT

**Bureau of Streets**

CITY OF CHICAGO

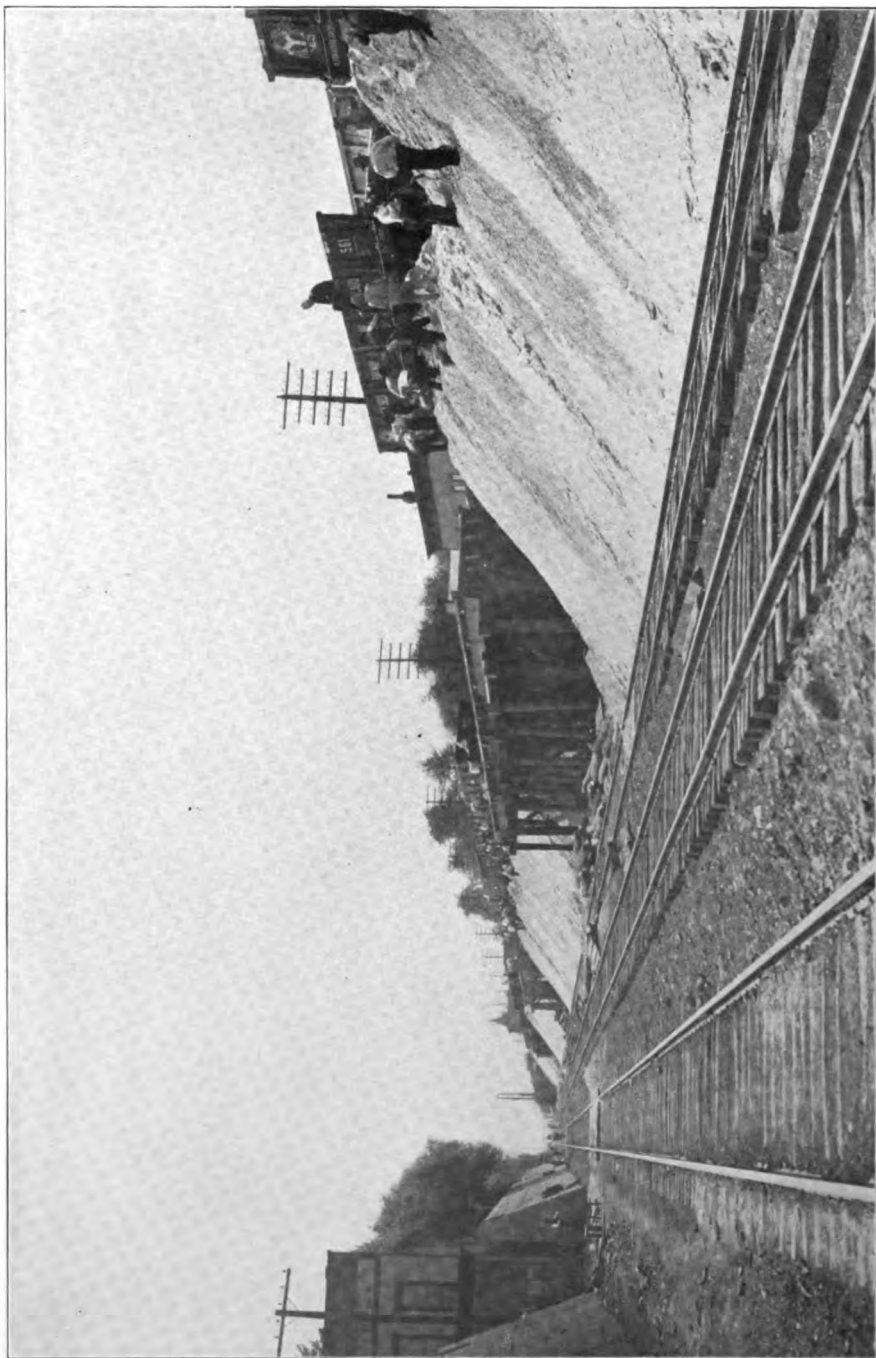
1903

M. J. DOHERTY  
Superintendent

•







C. & W. I. R. R. TRACK ELEVATION.—LOOKING SOUTH AT SIXTY-FIRST STREET.

# BUREAU OF STREETS.

HON. F. W. BLOCKI,

*Commissioner of Public Works.*

DEAR SIR: I have the honor to submit herewith the Twenty-eighth Annual Report of the Bureau of Streets for the year ending December 31, 1903.

## FINANCIAL STATEMENT.

### APPROPRIATIONS FOR 1903.

For removal of garbage, street and alley cleaning, repairing improved and unimproved streets and alleys, repairing sidewalks, miscellaneous.....	\$ 961,050.00
Special appropriation .....	88,600.00
Removing snow, First ward.....	58,100.00
Restoration of streets.....	39,464.82
Maintenance of dumps .....	40,800.00
Rental ward yards .....	10,000.00
Corporation inspectors' salaries.....	40,000.00
Maintenance of City parks .....	21,000.00
Office salaries .....	19,970.00
Obstruction inspectors' salaries.....	9,000.00
Office expenses.....	1,500.00
Engineer steam roller, etc.....	1,680.00
Children's playgrounds .....	1,000.00
Repairing snow dumps .....	3,000.00
Ward superintendents' salaries .....	50,400.00
Purchase of sweepers and sprinklers.....	5,990.64
Purchase and construction of plant to destroy garbage.	130,000.00
Bill of James Stanton.....	62.00
Bill of Thos. Little.....	48.75
Bill of J. B. Smith & Co.....	12.38
Bill of W. J. Quan.....	6.85
Bill of West Disinfecting Company.....	34.66
Bill of Union Plumbing Company.....	284.00
Bill of P. S. Peterson & Company.....	5.00
	<hr/> \$1,429,458.60

### SPECIAL APPROPRIATIONS.

Repairing asphalt streets out of reserve.....	\$ 20,535.18
Repairing culvert at Seventy-seventh street.....	850.00
Carried forward .....	<hr/> \$ 20,885.18
	\$1,429,458.60

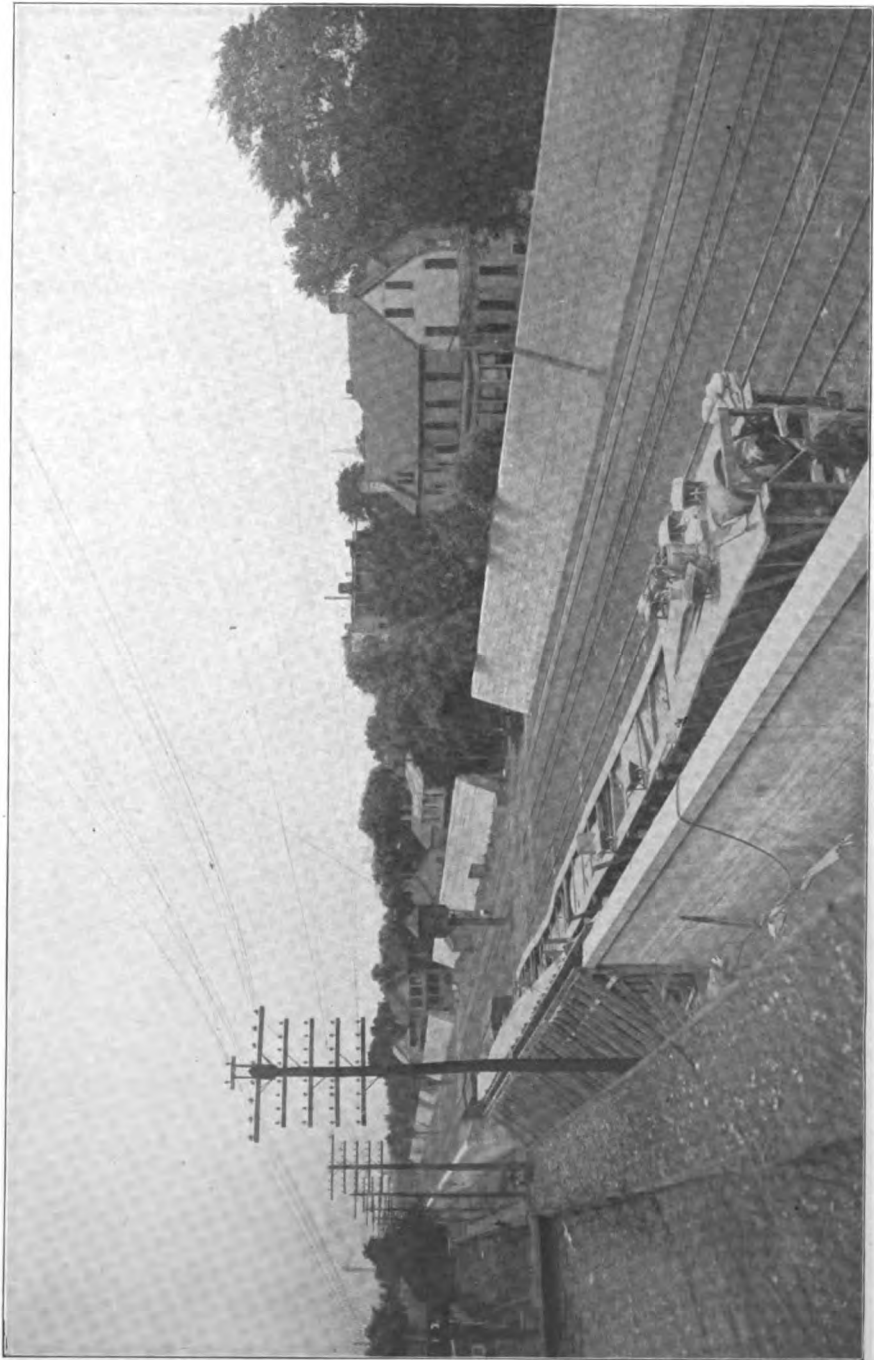


Brought forward .....	\$ 20,885.18	\$1,429,458.60
For cement walk at Washington Square park .....	1,865.00	
Repairing right of way of traction companies .....	60,000.00	
Cleaning right of way of traction companies .....	200,000.00	
Cresosoting plant, House of Correction. ....	20,000.00	
Widening roadway, W. Lake street, Rockwell street, and Hoyne avenue .....	40,000.00	
Special ward appropriations .....	21,510.00	
		863,760.18
		<u>\$1,793,218.78</u>

## DISBURSEMENTS.

For removal of garbage .....	\$ 648,427.30	
For street and alley cleaning .....	244,225.57	
Repairing improved streets .....	80,676.95	
Repairing unimproved streets .....	32,089.08	
Repairing sidewalks .....	80,867.62	
Miscellaneous .....	7,156.17	
Removing snow, First ward .....	58,079.59	
Restoration of streets .....	18,891.40	
Maintenance of City dumps .....	40,237.57	
Rental ward yards .....	5,843.31	
Corporation inspectors' salaries .....	26,772.19	
Maintenance of City parks .....	19,087.24	
Office salaries .....	19,938.06	
Obstruction inspectors' salaries .....	7,425.00	
Office expenses .....	1,492.06	
Engineer steam roller .....	1,630.00	
Children's playgrounds .....	988.88	
Repairing snow dumps .....	2,646.94	
Ward superintendents' salaries .....	49,371.80	
Purchase of sweepers and sprinklers .....	3,721.50	
Purchase and construction of plant to destroy garbage		.....
Bill of James Stanton .....	62.00	
Bill of Thos. Little .....	48.75	
Bill of J. B. Smith & Co. ....	12.88	
Bill of W. J. Quan .....	6.85	
Bill of West Disinfecting Co. ....	34.66	
Bill of Union Plumbing Co. ....	284.00	
Bill of P. S. Peterson & Co. ....	5.00	
Repairing asphalt streets out of reserve .....	20,535.18	
Repairing culvert at Seventy-seventh street .....	349.67	
For cement walk at Washington Square park .....		.....
Repairing right of way of traction companies .....		.....
Cleaning right of way of traction companies .....		.....
Cresosoting plant, House of Correction .....		.....
Widening roadway, W. Lake street, Rockwell street and Hoyne avenue .....		.....
Special ward appropriations .....	20,436.40	
Unexpended balance .....	506,876.14	
		<u>\$1,793,218.78</u>





C. & W. I. R. R. TRACK ELEVATION--LOOKING NORTHEAST AT SIXTY-THIRD STREET FROM ROOF OF BUILDING AT NORTHWEST CORNER.

## GARBAGE.

During the year 1903 there were removed 1,367,550 cubic yards of garbage, or 273,926 loads, at a cost of \$643,427.30. There were 919 garbage complaints, in comparison with 1,417 during 1902.

On March 16th the garbage teamsters received another increase of 50 cents per day and are now receiving \$4.50 per day. Prior to July, 1902, they received \$3.50 per day, and from July, 1902, to March 16, 1903, they received \$4 per day. Notwithstanding the fact that the appropriation for the year would not warrant such increase, the department was compelled to grant the demands for same, and the records show an increase of more than a thousand loads of garbage hauled over the year 1902.

In my report for the year 1902 I called attention to the urgent necessity for action tending towards a more modern disposition of the garbage of this City. Had it not been for the increased output of ashes during the year, owing to the unusual severity of the weather, which enabled us to fill in many unimproved streets and alleys without objection on the part of citizens, as the household output makes a most desirable filling where the greater portion is ash, the department would be without an available dumping place by the first of April.

During the year a committee was appointed by the Mayor to visit a number of eastern cities and investigate the various methods of disposing of garbage. On its return the committee submitted a report of its findings, but is divided as to the relative merits of reduction and incineration. This bureau has at all times advocated incineration, but will welcome a more modern method than the present dump for the disposition of the household output, and earnestly hopes the Council may be able to see its way clear to immediately giving some relief to the citizens and this department.

## STREET AND ALLEY CLEANING.

During the year there were cleaned 15,079 $\frac{3}{4}$  miles of streets and alleys, necessitating the removal of 117,223 loads of street dirt; 1,245,002 lineal feet of weeds were cut; 224,848 inlets to catch basins were opened and cleaned. The total cost of street and alley cleaning, opening of inlets and cutting of weeds was \$244,225.57. Of this amount \$37,120.43 was charged to street car companies for cleaning their various rights of way.

Owing to the advance of the teamsters' pay to \$4.50 per day, the appropriation for street cleaning was soon exhausted and the bureau was unable to do any work outside of the downtown section of the City, with the exception of the annual spring cleaning, and in the Twenty-fifth ward, where the appropriation was not even sufficient for the removal of garbage, no street cleaning was attempted. However, taking into consideration the

amounts appropriated in other cities for this important branch of the work, it can readily be seen how seriously handicapped this bureau is; but, notwithstanding this fact, the downtown section compares favorably with the business section of any of our large cities, and it is a matter of regret to the bureau that we are unable to give the balance of the City more attention.

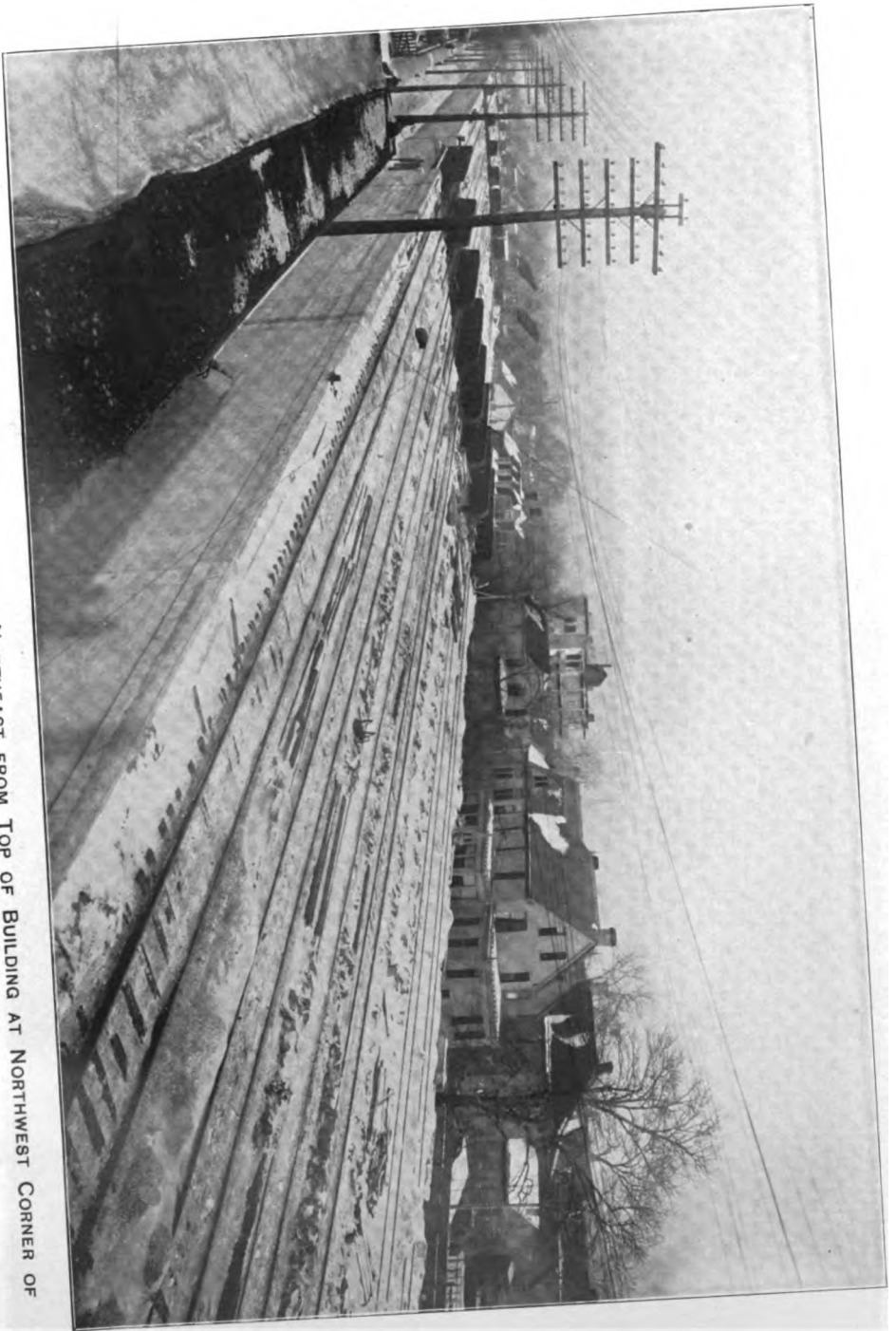
Forty-seven thousand six hundred and eighty-eight loads of snow were removed at a total cost of \$58,079.59. The appropriation for the removal of snow was \$50,000, but the City will be reimbursed for the amount it exceeded its appropriation, \$8,079.59, by virtue of the charges to the different traction companies for the removal of snow from their various rights of way in the downtown district. The department also compelled the traction companies to remove snow from the prominent intersections and crossings in the balance of the City to such an extent as they were able to secure men and teams to do the work. In some cases this bureau cleaned the intersections for the traction companies, charging the expense thereof to them.

In the removal of snow this bureau was greatly helped by the information furnished in the weather reports which are received at the bureau daily. When snow was predicted instructions were issued to the ward superintendents as to number of men and teams required; those who should take charge of the work, and other important details, thereby enabling bureau to handle the work in the most effective manner.

An item that cut into the appropriation for street cleaning, especially in the First ward, was the expense attached to hauling away debris after fires. This bureau expended a considerable amount as a result of the Iroquois Theater disaster, hauling away debris. Several men were also employed for at least six weeks in assisting the City Custodian. In connection with the removal of debris, the only remedy for this would be to bill the insurance companies or owners of building, and moneys obtained in this way should revert to this bureau to cover the expense attached to removal of debris.

During the year this bureau submitted reports giving detailed information relative to sidewalk space, bay window space, and coal vault space through the City, and a "Committee on Compensation" is to take action in the matter. This will mean a large revenue to the City and all moneys obtained from these sources, if possible, should be turned over to this bureau to be used in cleaning and repairing streets.

In the spring of the year this bureau is put to a great deal of trouble and expense in the extreme southern portion of the City and in the territory lying west of Western avenue and south of Thirty-ninth street on account



C. & W. I. R. R. TRACK ELEVATION.—LOOKING NORTHEAST FROM TOP OF BUILDING AT NORTHWEST CORNER OF SIXTY-THIRD AND WALLACE STREETS.



of floods which inundate these districts. We are compelled to put on large forces of men to clean culverts and open inlets in order to enable the residents to get to and from their homes to their places of business and the children to their schools. This expense could be avoided by the introduction of a sewer system and I would suggest that the Board of Local Improvements push the matter of sewers in this territory as speedily as possible, as this is the only means of relief.

The following number of dead animals were removed during the year, at no expense to the City:

Horses .....	3,936
Cows .....	74
Dogs .....	12,350
Calves .....	84
Goats .....	115
Sheep .....	54
Colts .....	52
Total .....	<u>16,665</u>

#### REPAIRING IMPROVED STREETS AND ALLEYS.

During the year the following repair work was done :

9,338 $\frac{1}{4}$ square yards of new cedar blocks were laid.
8,498 square yards of old cedar blocks were relaid.
7,285 square yards of granite blocks were relaid.
1,861 $\frac{1}{4}$ square yards of macadam laid.
896 $\frac{1}{2}$ square yards of brick laid.
488 square yards of asphalt.

In connection with which the following material was used :

Gravel.....	582.8 cubic yards.
Crushed stone.....	1,504.2 cubic yards.
Clinders and spawls .....	21,837.2 cubic yards.
New lumber.....	29,547 lineal feet.
Old lumber .....	7,696 lineal feet.

At a total cost of \$30,676.95.

#### REPAIRING UNIMPROVED STREETS AND ALLEYS.

During the year the following work was done on unimproved streets and alleys :

Grading.....	1,191,529 lineal feet.
Ditches opened and cleaned.....	660,260 lineal feet.
Aprons, new and repaired .....	385
Crossings, new and repaired .....	1,814
Culverts, new and repaired.....	1,601
Box drains, new and repaired.....	40



In connection with which the following material was used :

New lumber .....	247,501	lineal feet.
Old lumber .....	70,786	lineal feet.
Kegs of Nails .....	102½	
Cinders and spawls .....	59,959	cubic yards.

At a total cost of \$32,089.08.

### SIDEWALK REPAIRS.

During the year the following work was done on sidewalks :

Intersections, new and repaired.....	1,906
General repairs made .....	16,776

In connection with which the following material was used :

New lumber .....	442,934	lineal feet.
Old lumber.....	1,168,653	lineal feet.
Kegs of nails.....	478	
Loads of cinders.....	1,073	

At a total cost of \$30,867.62.

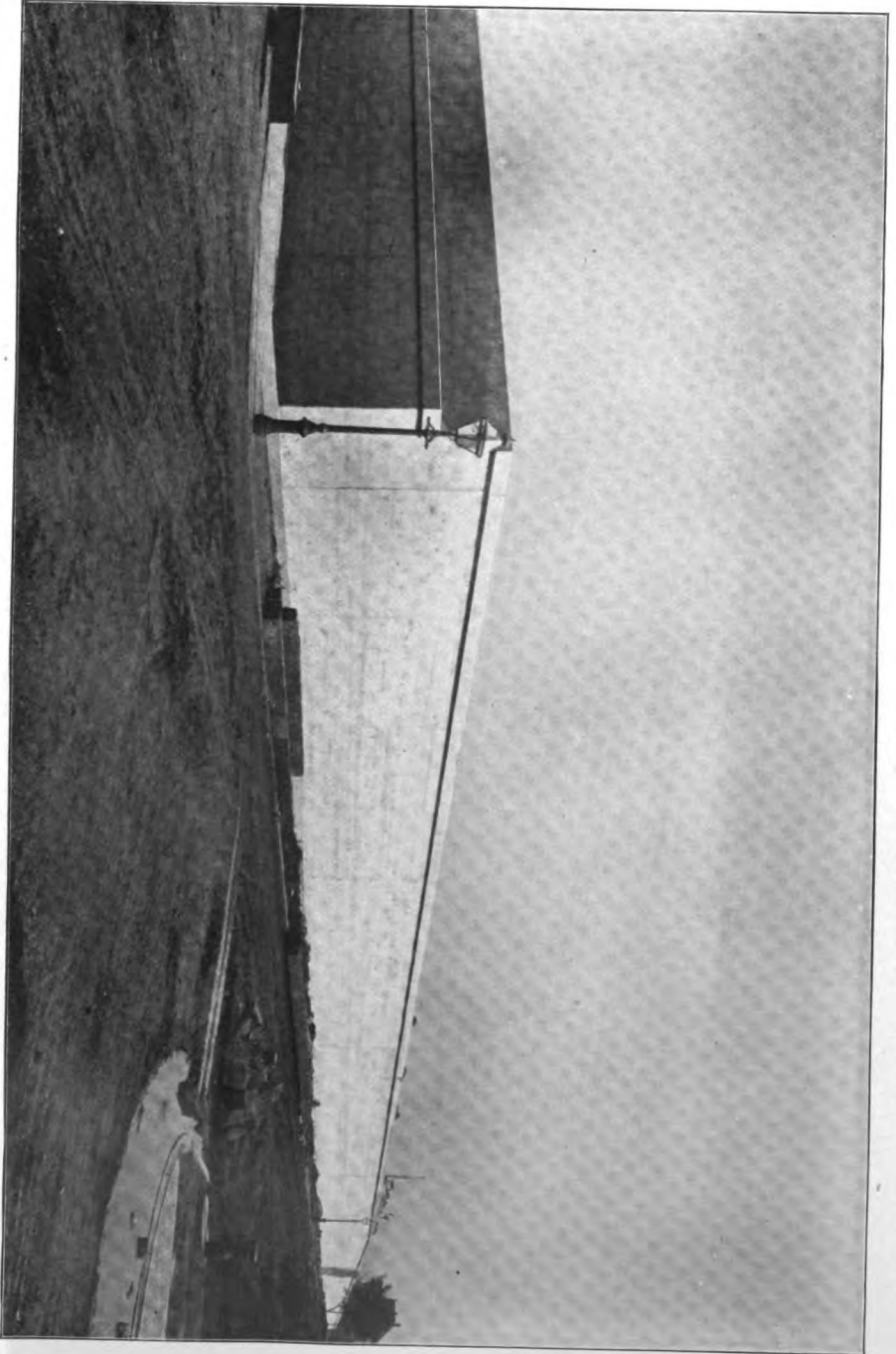
### SPECIAL APPROPRIATIONS.

#### FIFTH WARD.

Appropriation for grading and ditching.....	\$ 975.00
Grading .....	71,610 lineal feet.
Ditching .....	1,660 lineal feet.
Expense for labor.....	975.00

#### EIGHTH WARD.

Appropriation for repairing and ditching Seventy-ninth street from Stony Island avenue to the Lake.....	\$ 747.50
Ditching.....	5,280 lineal feet.
Ten box drains built and repaired, on which the following material was used :	
Lumber.....	12,500 lineal feet.
Kegs of nails.....	8
Labor on same.....	\$ 415.00
Material.....	92 50
Total expense.....	\$ 507.50
Appropriation for repairing and ditching territory between Commercial and Anthony avenues, Seventy-third and Seventy-fourth streets.....	585.00
Ditching.....	19,670 lineal feet.
Material used :	
Cinders and slag.....	164 loads or 328 cubic yards.
New lumber .....	1,590 lineal feet.
Old lumber.....	1,125 lineal feet.
Expense for labor and material.....	585.00



C. & W. I. R. R. TRACK ELEVATION.  
LOOKING SOUTHEAST FROM CORNER OF SIXTY-FOURTH STREET AND LOWE AVENUE.



Appropriation for repairing and ditching from 108d street to 108th street on	
Ewing and Indiana avenues .....	\$ 890.00
Ditching .....	25,500 lineal feet.
Lumber .....	2,791 lineal feet.
Kegs of nails .....	8
Slag .....	122 loads or 366 cubic yards.
Expense for labor and material .....	889.25

## TWELFTH WARD.

Appropriation for repairing Western avenue between Sanitary District	
bridge and Illinois and Michigan canal bridge .....	\$ 500.00
Labor and material .....	500.00

## TWENTY-SIXTH WARD.

Appropriation for ditching .....	\$ 812.50
Ditching .....	28,550 lineal feet.
Expense for labor .....	811.88
Appropriation for repairing Western avenue .....	1,625.00
Lumber .....	81,000 feet.
Expense for labor and material .....	1,459.18

## TWENTY-SEVENTH WARD.

Appropriation for repairing and ditching Milwaukee and Lincoln avenues...	\$2,437.50
Grading .....	39,500 lineal feet.
Ditching .....	24,800 lineal feet.
Slag .....	577 cubic yards.
Gravel .....	125 cubic yards.
Expense for teams and men .....	\$1,942.50
Expense for material .....	495.00
Total expense .....	\$2,437.50

Appropriation for Norwood Park and Peterson avenue .....	1,150.00
Scraped .....	30,880 lineal feet.
Ditching .....	7,920 lineal feet.
Dirt .....	1,500 loads.
Expense for teams and labor .....	1,150.00

Appropriation for repairing Grand avenue .....	650.00
Grading .....	7,920 lineal feet.
Ditching .....	850 lineal feet.
Scraping .....	5,200 lineal feet.
Dirt removed .....	2,520 cubic yards.
Expense for men and teams .....	650.00

## TWENTY-NINTH WARD.

Appropriation for ditching .....	\$1,800.00
Ditching .....	126,940 lineal feet.
New and repaired crossings and culverts ..	100
New lumber .....	6,365 lineal feet.
Old lumber .....	1,488 lineal feet.
Kegs of nails .....	8
Cinders .....	408 loads or 1,630 cubic yards.
Expense .....	1,800.00

## THIRTY-FIRST WARD.

Appropriation for repairing Western avenue from Seventy-first street to Ninety-fifth street .....	\$4,000.00
Grading .....	10,560 lineal feet.
Gravel .....	506 cubic yards \$ 55.00
Seventeen cars (freight charges) .....	87.50
Slag .....	2,014 cubic yards 1,510.50
Labor, teams, etc. ....	1,941.75
Expense .....	<u>\$8,224.75</u>
Appropriation for ditching .....	1,800.00
Ditching .....	11,500 lineal feet.
Grading .....	15,840 lineal feet.
Expense for teams and labor .....	<u>1,296.50</u>

## THIRTY-SECOND WARD.

Appropriation for repairing Vincennes road, between Eighty-ninth street and 101st street .....	\$ 812.50
Expense for teams and labor .....	812.50
Appropriation for ditching .....	487.50
Ditching .....	25,780 lineal feet.
Expense for teams and labor .....	<u>487.50</u>

## THIRTY-THIRD WARD.

Appropriation for repairing Michigan avenue from 119th to 123d street and ditching .....	\$3,275.00
Ditching .....	12,950 lineal feet.
Grading .....	18,910 lineal feet.
Filling .....	1,871 cubic yards.
Labor, teams, etc. ....	\$1,845.12
Material .....	172.41
Expense .....	<u>\$2,017.58</u>

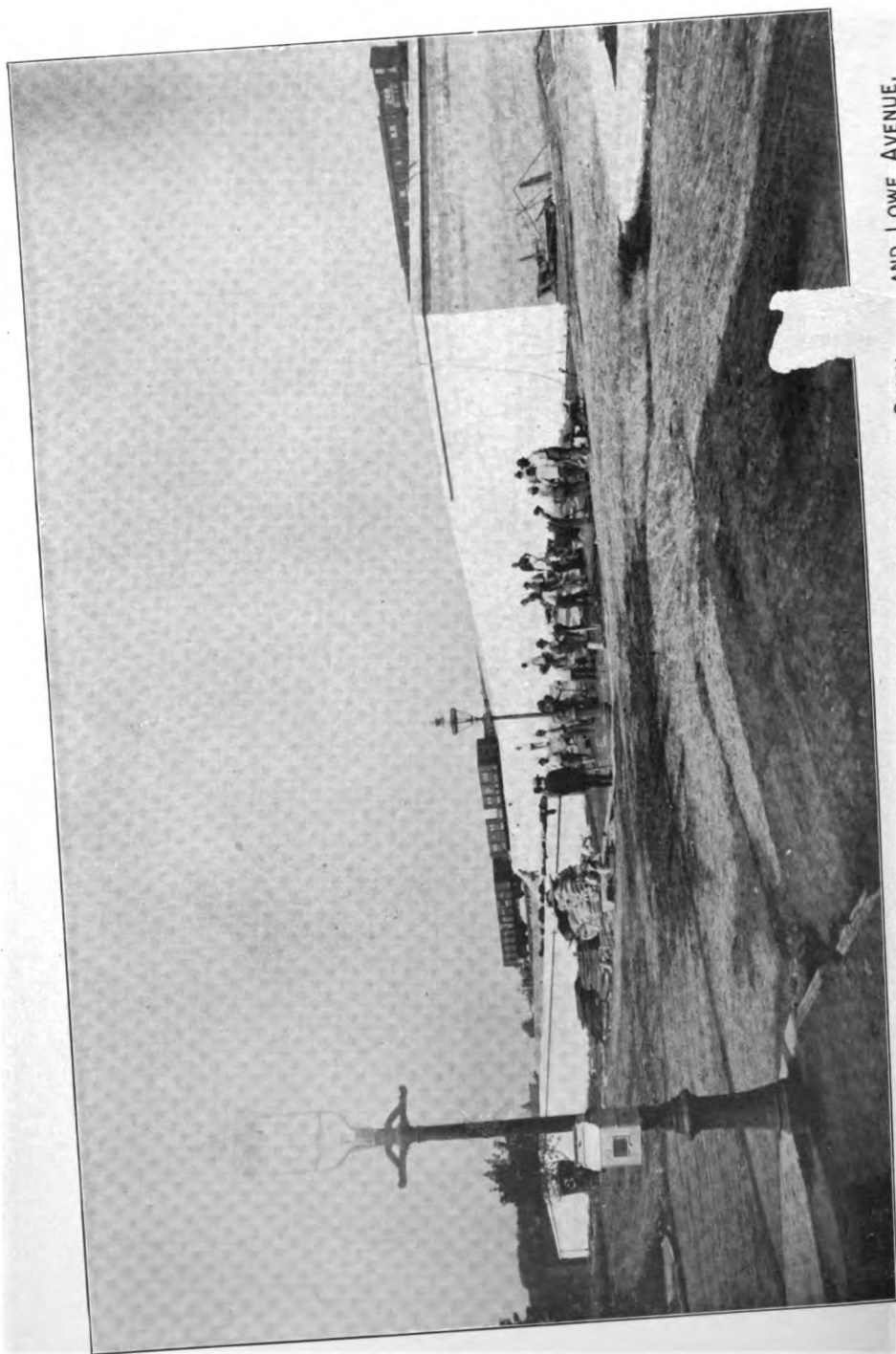
## THIRTY-FOURTH WARD.

Appropriation for grading and repairing Forty-fifth avenue from Twelfth street to Twenty-second street .....	\$ 487.50
Grading .....	3,640 lineal feet.
Expense for teams and labor .....	<u>487.50</u>

## THIRTY-FIFTH WARD.

Appropriation for repairing and grading Fifty-second avenue from North avenue to Augusta street .....	\$ 975.00
Clinders .....	288 cubic yards.
Slag .....	159 cubic yards.
Stone .....	89 cubic yards.
Ashes .....	60 cubic yards.
Weeds cut .....	13,150 lineal feet.
Teams and labor .....	\$ 603.75
Material .....	371.06
Expense .....	<u>\$ 974.81</u>

1



AND LOWE AVENUE.

C. & W. I. R. R. TRACK ELEVATION.—LOOKING NORTHEAST FROM CORNER SIXTY.

Appropriation for repairing and resurfacing asphalt streets out of reserve..	\$20,000.00
Resurfaced.....	2,264.49 square yards.
Repaired.....	7,518.18 square yards.
Expense for same.....	20,585.18
Transferred from the Restoration of Streets account .....	585.18

### SMALL PARKS.

The appropriation for the maintenance of the thirty-two parks under the jurisdiction of this bureau was \$21,000.00; \$19,087.24 of this sum was expended. In improving and beautifying the parks 1,125 cubic yards of soil were used, 7,800 plants and 135 trees were planted and water in several of the parks. Special attention was given to the following parks: Congress, Normal, Fernwood, Jefferson, Irving, Barnard, and East-end parks. In the improvement of East-end park 20,000 loads of rubbish were removed. A fence was also put around this park. All parks improved prior to 1903 were maintained and kept in good condition throughout the year, and on an average sixteen laborers and gardeners were employed during the year.

At the close of the year 1902 I made an urgent appeal for better police protection for the parks, and also stated that it would be well to have an examination for "skilled laborers" to take care of the parks. As yet nothing has been done in either direction, and I beg to call attention to these matters again.

### PERMITS.

During the year permits were issued to open improved streets as follows:

People's Gas Light and Coke Company.....	10,488
Chicago Edison Company.....	636
Commonwealth Electric Company.....	27
Chicago Telephone Company.....	218
Ogden Gas Company.....	222
Various Corporations.....	137
Plumbers and Sewer Builders.....	1,392
City Departments .....	1,818
Unimproved Street Opening Permits.....	3,447
Use of streets .....	582
Inspection Permits .....	83
Manure Vault Permits.....	23
Miscellaneous Permits.....	2,806
<b>Total number of Permits .....</b>	<b>21,114</b>



**PAVEMENTS REPAIRED BY THE PEOPLE'S GAS LIGHT AND COKE  
COMPANY ON STREET OPENING PERMITS.**

Square Yards, Cedar.	Square Yards, Macadam.	Square Yards, Granite.	Square Yards, Brick.	Square Yards, Asphalt.
64,200	20,862	11,182	1,228	1,157

**PAVEMENTS REPAIRED BY THE CHICAGO EDISON COMPANY ON  
STREET OPENING PERMITS.**

Square Yards, Cedar.	Square Yards, Macadam.	Square Yards, Granite.	Square Yards, Brick.	Square Yards, Asphalt.
4,858	50	6,672	1,482	1,056

**PAVEMENTS REPAIRED BY THE COMMONWEALTH ELECTRIC  
COMPANY ON STREET OPENING PERMITS.**

Square Yards, Cedar.	Square Yards, Macadam.	Square Yards, Granite.	Square Yards, Brick.	Square Yards, Asphalt.
5,295	350	85	453	1,041

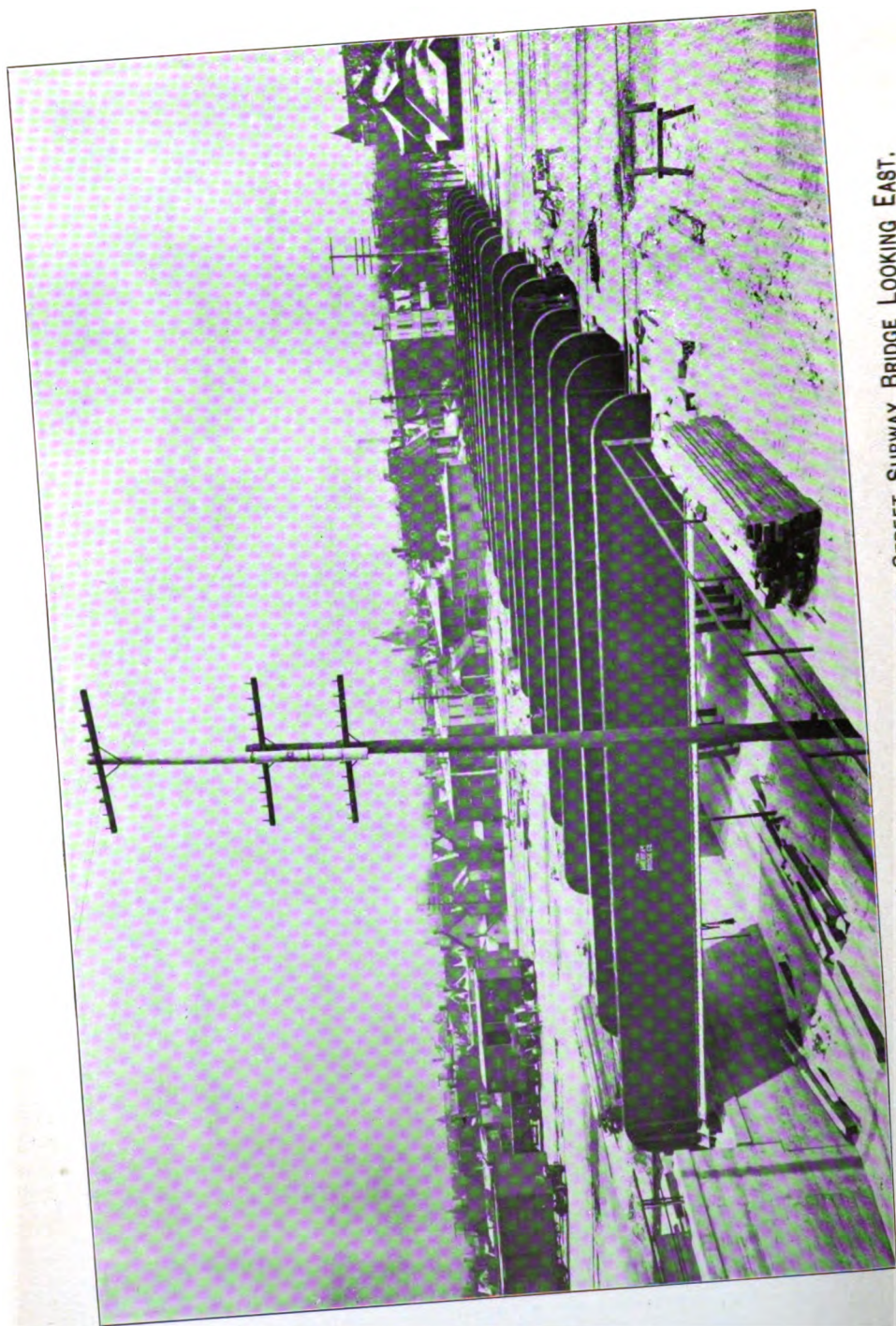
**PAVEMENTS REPAIRED BY THE CHICAGO TELEPHONE COMPANY  
ON STREET OPENING PERMITS.**

Square Yards, Cedar.	Square Yards, Macadam.	Square Yards, Granite.	Square Yards, Brick.	Square Yards, Asphalt.
10,085	14,367	2,750	453	1,105

**PAVEMENTS REPAIRED BY THE OGDEN GAS COMPANY ON STREET  
OPENING PERMITS.**

Square Yards, Cedar.	Square Yards, Macadam.	Square Yards, Granite.	Square Yards, Brick.	Square Yards, Asphalt.
1,230 $\frac{1}{2}$	215 $\frac{1}{2}$	.....	87 $\frac{1}{2}$	4 $\frac{1}{2}$





C. & W. I. R. R. TRACK ELEVATION.—SIXTY-FIFTH STREET SUBWAY BRIDGE LOOKING EAST.

## ANNUAL REPORT OF HOUSE MOVING, 1908.

MONTHS.	No. Permits Issued.	DIMENSIONS.				DIVISION.			FEES.		AMOUNT.	REMARKS.		
		Stories High.		Front Width	Description	North.	South.	West.	One Doll.	Five Doll.				
		One.	Two.										Three.	Lineal Feet.
January.....	19	7	10	..	406	16	1	8	10	8	11	\$ 63.00	Two cables moved.	
February.....	23	7	14	..	417	21	..	2	11	7	16	87.00	Two cables moved.	
March.....	47	19	24	1	928	30	14	5	16	29	18	119.00	{ Three cables moved. No. J648-49-50 used for sample copies.	
April.....	74	32	41	1	1,600	63	11	16	38	22	35	37	240.00	{ Two cables moved. J700 sample copy. 740 held up for water tax. Two bldgs. moved on 698-721.
May.....	70	35	36	..	1,458	66	5	7	36	29	36	32	208.00	{ One cable moved. 801-802 sample copies. 740 issued for April. Two buildings moved on 812-819.
June.....	55	25	27	..	1,115	44	8	8	20	38	21	140.00	{ Three cables moved. Two bldgs. moved on 879.	
July.....	59	27	33	..	1,182	54	6	2	29	28	22	37	207.00	{ One cable moved. J900 sample copy. J921-928 held up for water tax. Two bldgs. moved on 897.
August.....	41	15	24	..	842	37	2	4	19	18	23	18	113.00	Two cables moved. 972-980 spoiled.
September.....	48	27	19	1	950	42	5	10	24	14	24	23	149.00	{ J1001 to 1005 inclusive sample copies. J928 held up in April issued this mo.
October.....	43	16	26	1	894	35	8	5	10	28	26	17	111.00	{ Two bldgs. moved on 988.
November.....	29	9	16	..	534	21	4	2	10	17	13	16	93.00	{ Four cables moved. J1101 sample copy.
December.....	17	7	8	..	383	13	2	2	6	9	11	6	41.00	Two cables moved.
Total.....	525	226	278	4	10,657	442	66	64	235	231	267	252	\$1,571.00	

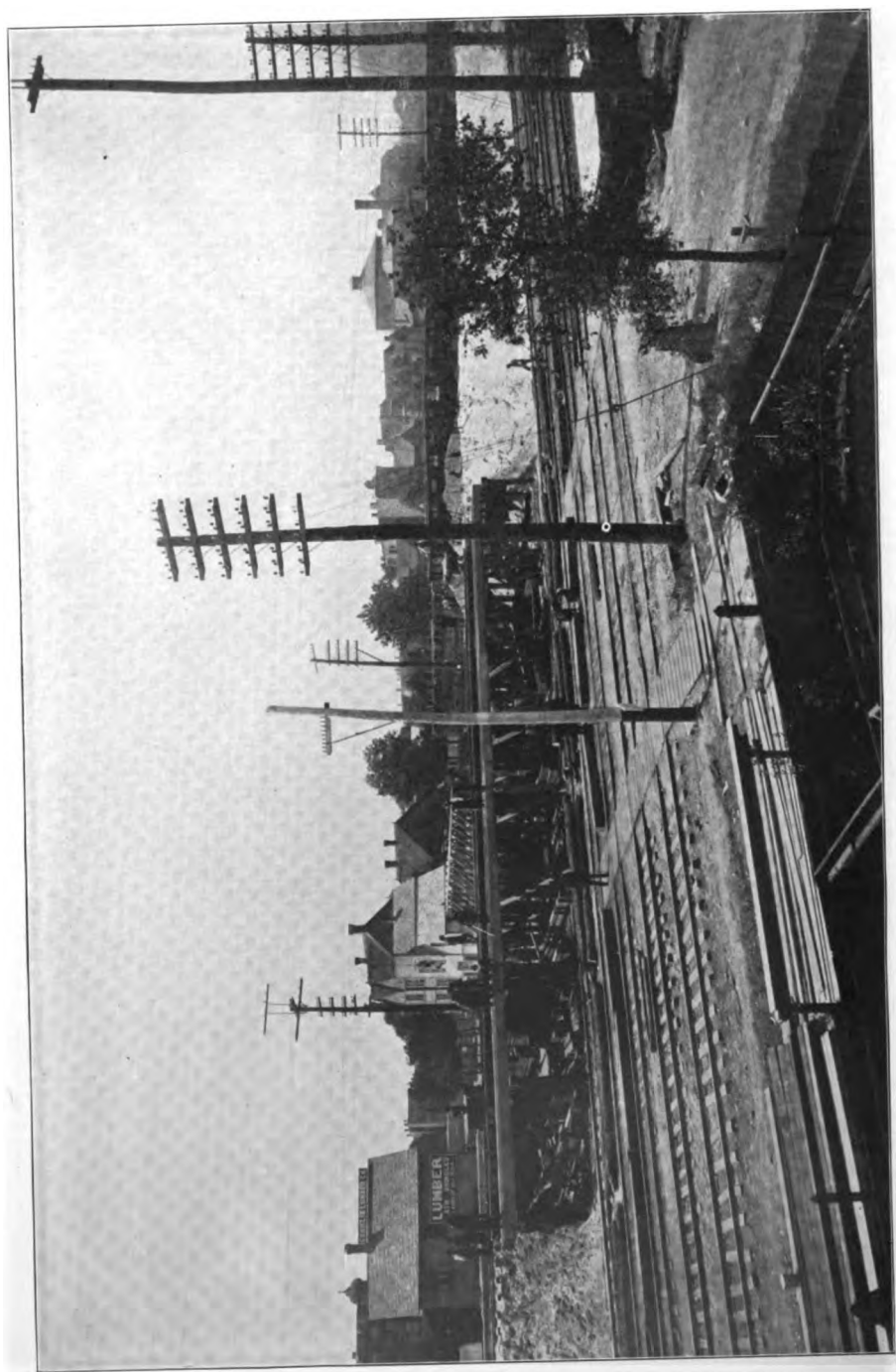
In conclusion, I wish to say that I consider the work accomplished by the bureau very gratifying, and desire to thank the assistant superintendents and the various employes connected with the bureau for their hearty co-operation.

Respectfully submitted,

M. J. DOHERTY,

*Superintendent of Streets.*





C. & W. I. R. R. TRACK ELEVATION.  
LOOKING NORTHWEST AT SIXTY-SIXTH STREET FROM REAR OF 8802 PARNELL AVENUE.

ANNUAL REPORT  
**Bureau of Maps and Plats**  
CITY OF CHICAGO  
1903

CHAS. J. BUHMANN  
Superintendent





# BUREAU OF MAPS AND PLATS.

---

CHICAGO, January 1, 1904.

HON. F. W. BLOCKI,

*Commissioner of Public Works.*

DEAR SIR: I have the honor herewith to submit to you the Annual Report of the Bureau of Maps and Plats for the year ending December 31, 1903.

I beg to call your attention to the increased amount of work and kinds of work performed and accomplished by this department.

In previous years the work done consisted mostly, almost exclusively, in preparing plats for estimating and assessments of street and sidewalk improvements, and an occasional petition to verify; but in the year just passed many additional duties and responsibilities have been added, which has somewhat put us behind in our work to be made for the Board of Local Improvements.

Among the added duties are the investigating, platting and reporting on all street and alley obstructions, the examining and platting of all neighborhoods within one-eighth of a mile surrounding the location of protested applications for saloon licenses, and the making of drawings of all public bath-houses for the Department of Health, to be exhibited at the Louisiana Purchase Exposition at St. Louis.

Since the installment of the system of billing water tax bills to the house number of the property, instead of to the legal description of the same, as formerly done by the Bureau of Water, many, in fact an overwhelming number, of incorrect house numbers are brought to our notice, necessitating an examination of the vicinity in which the same are found, and the sending of notices to the incorrect house numbers ordering the changes. This alone has required the continuous attention of two employees of this bureau. In connection with the above I would like to call your attention to the necessity of urging the immediate convening of the Com-

mittee of Street Nomenclature and House Numbering to devise means and ways for installing a simple and systematic method of naming streets and numbering houses, to avoid the duplication of names and numbers as they now exist.

We have also been instrumental in preventing many vacations of streets and alleys which were attempted by means of filing on record instruments pretending to vacate such parcels of ground. In many cases we have forced the beneficiaries of such vacations to come to the City Council for an ordinance authorizing such vacation and exacting a payment therefor; thereby indirectly producing revenue. Among others, the following is a list of streets and alleys which have thus been preserved to the public or payment exacted therefor :

Leavitt street and part of alley, attempted April 4, 1902; forced to come to City Council and vacated by ordinance January 11, 1904, on payment of \$500.

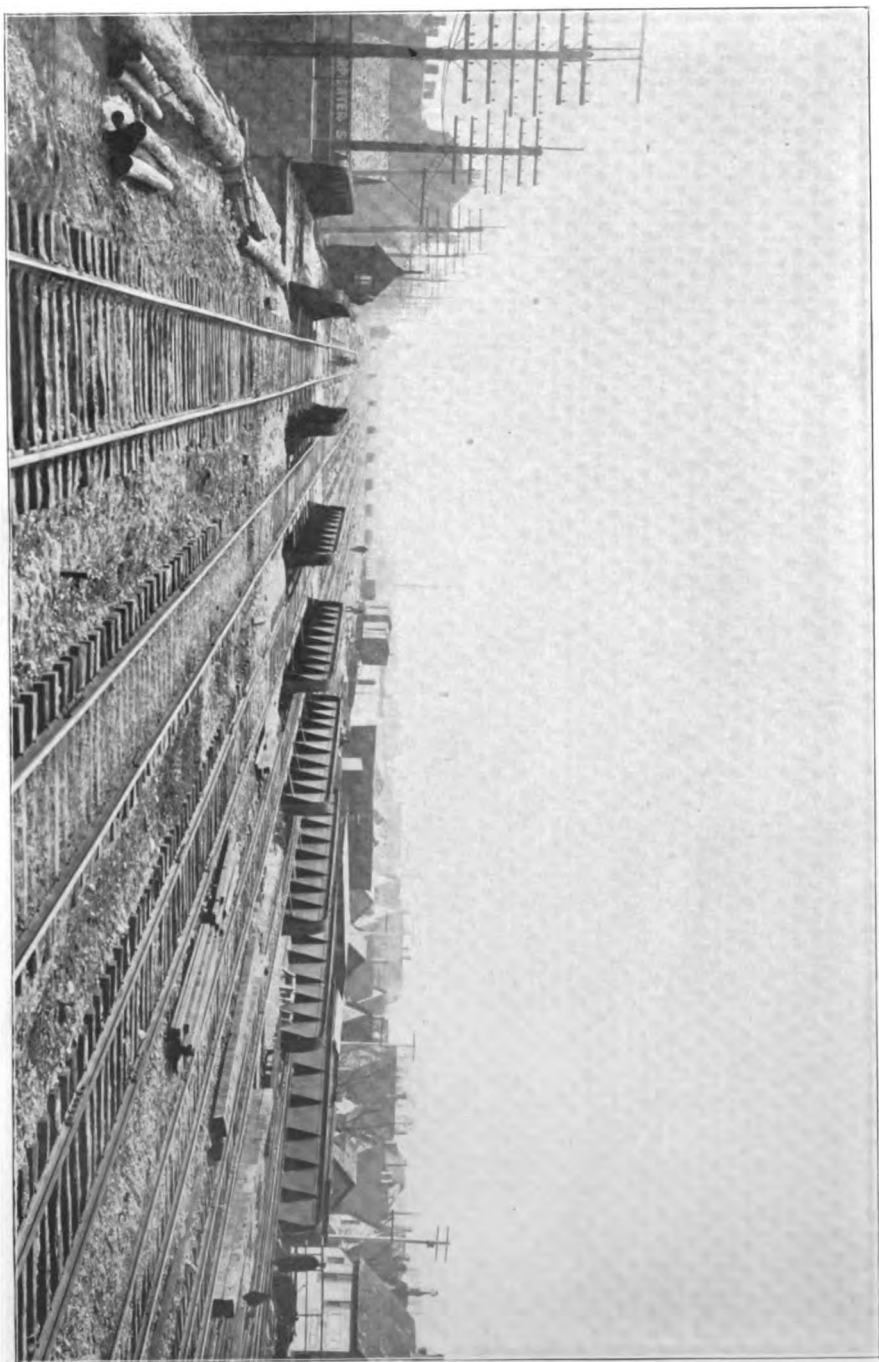
Blocks 4, 5 and 6 and streets in Dunning subdivision of section 19, township 40, range 13, attempted June 10, 1902; referred to City Council and by them placed on file.

Dix street, between blocks 6 and 7, Wright's addition, section 5, township 39, range 14, attempted July 18, 1902; streets ordered cleared of obstructions.

Huber street, attempted July 6, 1903; forced to come to City Council and ordinance passed granting same December 21, 1903, conditional on filing of bond for \$10,000 to observe certain restrictions.

There are still quite a number filed with the Corporation Counsel for opinions as to their legality which have not yet been rendered. The other work performed in this bureau during the year 1903 is as follows:

No.	MILES.
363 Assessment plats, street improvement, containing.....	247.30
307 Estimate plats, street improvement, containing.....	199.43
363 Assessment plats, sidewalk improvement, containing.....	595.88
172 Assessment plats, drains, containing.....	118.26
97 Assessment plats, water pipe extension, containing.....	49.72
141 Assessment plats, sewers extension, containing.....	211.51
20 Survey plats, containing.....	14.50
5 Condemnation plats, for record, containing.....	.75
21 Street and alley opening plats, containing.....	12.56
4 Lamp-post assessment plats, containing.....	.40
7 Vacation and dedication plats, containing.....	1.85
28 Miscellaneous plats for record, containing.....	7.01
<b>1528 Total number of plats, containing, miles.....</b>	<b>1,458.67</b>



C. & W. I. R. R. TRACK ELEVATION.—LOOKING SOUTH AT SIXTY-SIXTH STREET.



## MISCELLANEOUS PLATS FOR VARIOUS DEPARTMENTS AND OFFICIALS.

For Commissioner of Public Works, obstruction plats.....	17
For Building Department.....	4
For the Mayor.....	14
For the City Engineer.....	1
Map of fire limits.....	1
For Aldermen (miscellaneous).....	26
For the City Collector.....	10
For the Corporation Counsel to be used in court (City of Chicago vs. Union Trac- tion Co.).....	3
For the Corporation Counsel, other.....	12
For the City Law Department.....	4
For the Commissioner of Public Works, miscellaneous.....	8
For the Street Department.....	8
Map of the City of Chicago.....	1
Sectional Map of Chicago.....	1
Prohibition District Map of Chicago.....	1
Pound Limits Map of Chicago.....	1
Real estate maps for Comptroller.....	11
For the City Council, miscellaneous.....	12
Signs for various departments.....	19
<b>Total.....</b>	<b>154</b>
Verified miscellaneous petitions, viz.: Electric light, street railway, saloon license protests, etc.....	23
Verified house-moving petitions.....	199
<b>Total.....</b>	<b>222</b>

## OUTSIDE WORK OF MISCELLANEOUS CHARACTER.

1 man 149 days, house numbers.	
1 man 87 days, obstruction investigation.	
1 man 27 days, license protest investigation.	
1 man 18 days, miscellaneous for Aldermen.	
<b>4</b>	<b>276 days.</b>

## OTHER MISCELLANEOUS LABORS PERFORMED BY THIS DEPARTMENT.

1 man 68 days on atlas work.	
1 man 7 days searching fire limits ordinance.	
1 man 27 days searching records in Recorder's office.	
1 man 22 days checking house-moving petitions.	
1 man 38 days checking miscellaneous petitions.	
<b>5 men</b>	<b>162 days.</b>
<b>Grand total: 9 men 438 days.</b>	

2,779 legal descriptions issued, at 25c.

8,762 legal descriptions issued free.

6,436 house numbers issued free.

17,977 people requiring the services of an employe in this bureau.

Following were the changes in street names ordered by the City Council :

*Coventry Street* changed to *Beasley Court*.

*Basil Avenus* changed to *Whipple Street*.

*Richmond Avenus* changed to *Humboldt Street*.

*Seipp Avenus* changed to *East End Avenus*.

New street—*Airdrie Place*.

233 new subdivisions were entered on our atlases, containing 595.55 acres.

9.25 miles of streets added during the year.

1.84 miles of streets vacated during the year.

8.41 miles of streets net added during the year.

10.248 miles of alleys added during the year.

3.988 miles of alleys vacated during the year.

6.26 miles of alleys net added during the year.

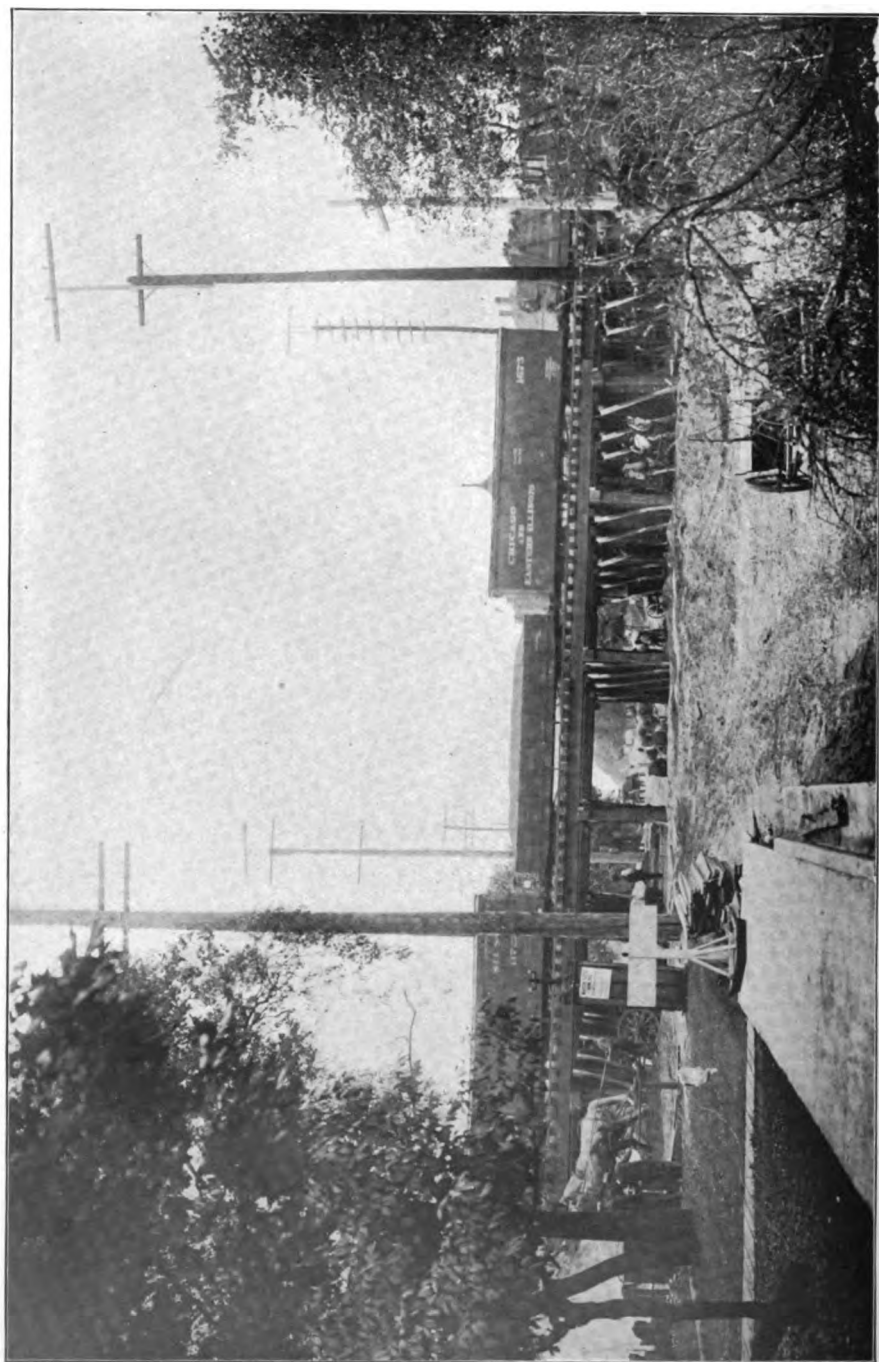
In conclusion I beg to extend my sincere appreciation for the assistance and courtesy extended to me by yourself and the various officials with whom my labors have brought me in contact.

Very respectfully submitted,

CHAS. J. BUHMANN,  
*Superintendent of Maps and Plats.*







C. & W. I. R. R. TRACK ELEVATION.—LOOKING WEST ON SIXTY-SEVENTH STREET.

ANNUAL REPORT  
**Department of Track Elevation**  
CITY OF CHICAGO  
1903

JOHN O'NEILL  
Superintendent



# DEPARTMENT OF TRACK ELEVATION

---

## REPORT FOR THE YEAR 1903.

---

The year 1903 has proved to be the most remarkable year we have had in the elevation of the roadbed and tracks of railroads and the construction of subways for the elimination of grade crossings in the City of Chicago. I presume that the amount of work done by the railroad companies this year over former years is owing to the delay made on account of the advances in labor and material, and as the time drew near under which the work was to be completed under ordinances passed and accepted, they were compelled to commence and hurry up the work, and the years 1904, 1905 and 1906 will without doubt be the same or the railroad companies will not complete the work of elevation in the time specified by ordinances.

The different railroad companies commenced the work of elevation this year in the month of May, and since that time they have placed upon their right of way over 2,000,000 cubic yards of sand, confined between over 84,500 cubic yards of retaining and abutment walls of concrete masonry, and eliminated forty-one grade crossings, all of which are open to traffic though not fully completed. When completed these forty-one subways will be spanned by over two hundred and thirty-four iron bridges, sixty-six feet in length and weighing about 1,700 pounds per running foot.

The work of elevation of railroad tracks in the City of Chicago has given in all of its ramifications employment to over 45,000 men this last year, all the expense of which has been borne by the railroad companies. The amount paid by the City has been the expense of this office, the appropriation for this department being \$6,000 net, of which amount there will be a small unused balance.

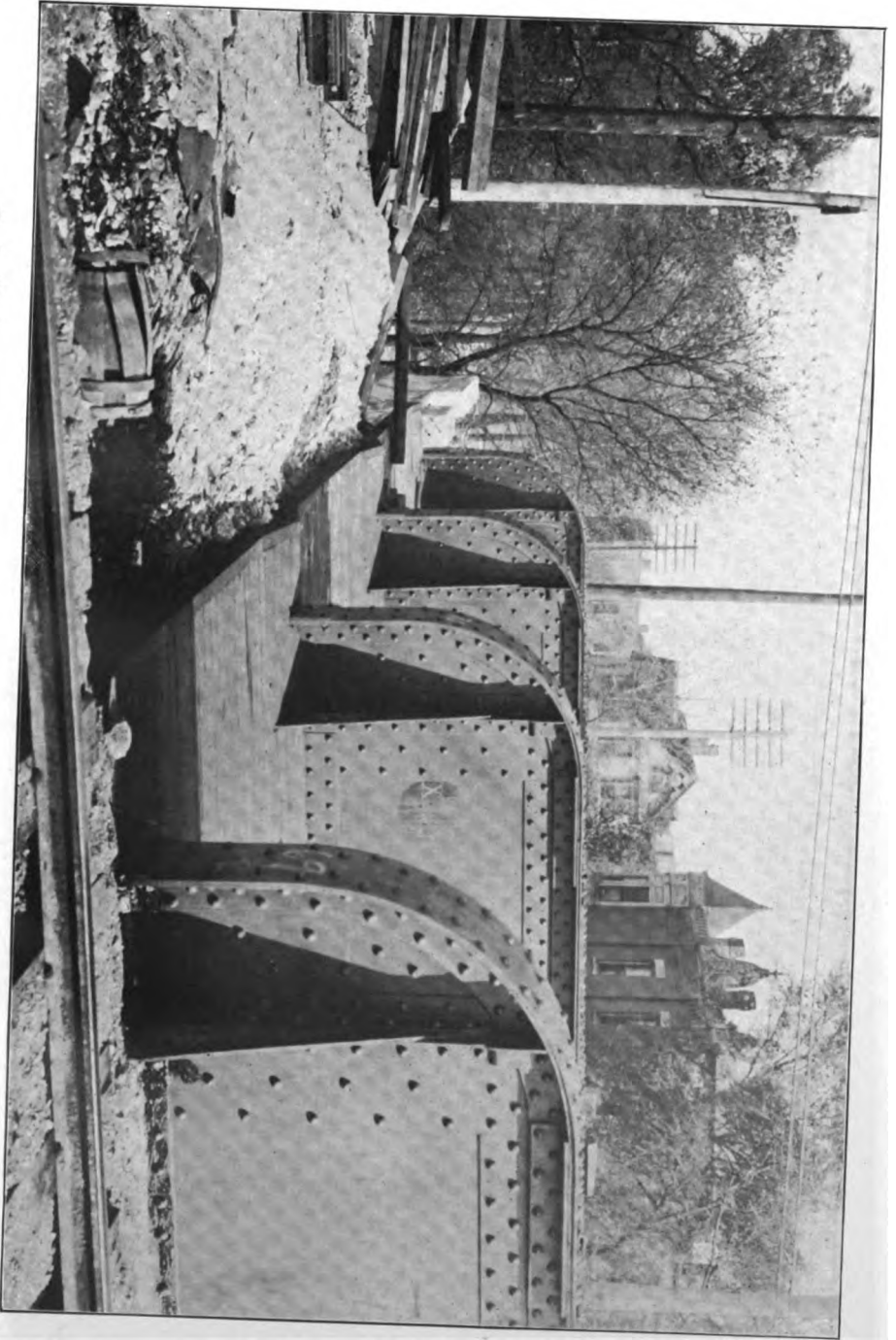
March 16, 1903, an ordinance was passed and accepted for the elevation of the roadbed and tracks of the Chicago Junction Railway from the Union Stock Yards to a junction with the Illinois Central Railroad Company's tracks. This ordinance calls for the elevation of about 3.5 miles of

main tracks and about 19 miles of all tracks, eliminating twenty-nine grade crossings by subways, as follows: South Halsted street, Emerald avenue, Union avenue, Wallace street, Butler street, Princeton avenue, Fifth avenue, Wentworth avenue, Armour avenue, Dearborn street, State street, alley east of State street, Wabash avenue, Michigan avenue boulevard, Indiana avenue, Prairie avenue, Calumet avenue, alley east of Calumet avenue, Grand boulevard, Vincennes avenue, Langley avenue and Fortieth street, Cottage Grove avenue, Drexel boulevard, Ellis avenue, Lake avenue, Ashland avenue, and viaduct in Stewart avenue, at an estimated cost for the entire work of \$1,200,000.

March 23, 1903, an ordinance was passed and accepted for the elevation of the roadbed and tracks of the Chicago & North-Western Railway from Balmoral avenue to the City limits. This ordinance calls for the elevation of about 2.5 miles of main track and about 7.5 miles of all tracks, eliminating fifteen grade crossings by subways, as follows: Bryn Mawr avenue, Rosehill Cemetery entrance, Peterson avenue, Ridge avenue, Granville avenue, Thome avenue, Devon avenue, Albion avenue, Pratt boulevard, Morris avenue, Lunt avenue, Greenleaf avenue, Estes avenue, Touhy avenue, and Foster avenue, at an estimated cost for the entire work of about \$1,200,000.

Under the ordinance passed June 18, 1900, for the elevation of the railroad and tracks of the Pittsburg, Fort Wayne & Chicago Railway there has been elevated almost the entire yards of this company between Garfield boulevard and Forty-seventh street. Commencing the work of elevation the seventh day of May last, this company has placed in position under their tracks in the yards between Garfield boulevard and Forty-seventh street and extending from Forty-seventh street to Forty-third street, 150 to 175 carloads of sand per day with an average of about 30 cubic yards to the car, or about 725,000 cubic yards in all. This embankment is confined by retaining walls of concrete masonry on the east side of their right of way from Fifty-first street to Forty-third street. Subways have been constructed under this elevation at Fifty-first street, Forty-seventh street, Forty-sixth street, and Forty-fifth street. They are not quite completed but open to traffic underneath the tracks. The subway at Fifty-first street under the tracks of this company is one of the largest that we have constructed so far in the City of Chicago, being about 900 feet on the level of the floor of the subway. There has been elevated about 1.5 miles of main tracks and about 25 miles of other tracks, eliminating four grade crossings by subways as above. A rough estimate of the cost of the work done by this company the present year is about \$600,000.

Under the ordinance passed October 23, 1899, the Chicago & Western Indiana Railroad Company with its tenant lines have elevated its road-



C. & W. I. R. R. TRACK ELEVATION.—BRIDGE DETAIL AT SIXTY-SEVENTH STREET.



bed and seven main tracks from a point about 600 feet south of Seventy-second street to Garfield boulevard, a distance of two miles. This piece of elevation will compare favorably with any elevation that has been done in any state or city in the United States. The Chicago & Western Indiana Railroad Company commenced this elevation on the 14th day of May last, and since that time they have placed under the seven tracks from 150 to 170 loads of sand daily, averaging 30 cubic yards to the car, or near about 750,000 cubic yards of sand. The embankments comprising this elevation are supported on the east and west sides of the right of way by heavy retaining walls of concrete masonry. They have also elevated their freight yards between Sixty-fourth and Sixty-sixth streets, a distance of 1,320 feet, and between the west line of their right of way and Armour avenue. They have made approaches from Armour avenue for a roadway paved with vitrified brick for the transportation of freight to be loaded and unloaded from cars in these yards. At Sixty-third street they have constructed a magnificent stone depot, which is reached by express wagons and carriages on a terraced driveway running from the north line of Sixty-fourth street up to the elevation of the depot, so that passengers and baggage may be unloaded on the platform. This piece of elevation is not quite completed, but will be about completed before this report becomes public. Under this ordinance they have elevated 2 miles of main tracks and about 17 miles of other tracks, eliminating seventeen grade crossings by subways, as follows: Seventy-first street, Seventieth street, Sixty-ninth street, Sixty-eighth street, Sixty-seventh street, Sixty-sixth street, Sixty-fifth street, Sixty-fourth street, Sixty-third street, Englewood avenue, Sixty-second street, Chestnut street, Sixty-first street, Cleveland avenue, Fifty-ninth street, Fifty-eighth street, and Fifty-seventh street, at an estimated cost to said company of about \$2,000,000, \$325,000 of which was expended in 1900 in the construction of retaining walls and foundations for the abutments.

Under the ordinance passed June 18, 1900, the Pittsburg, Cincinnati, Chicago & St. Louis Railway Company have elevated the roadbeds and tracks of the Englewood connecting branch of said company from its junction with the Pittsburg, Fort Wayne & Chicago Railway tracks at Stewart avenue west and across Halsted street, a distance of about 0.5 miles of main tracks and 1.5 miles of all tracks, eliminating six grade crossings by subways as follows: Butler (or Bissell) street, Wallace street, Lowe avenue, Union street, Emerald avenue, and Halsted street, at an estimated cost of about \$200,000.

Under the ordinance passed May 22, 1899, and the ordinance of January 15, 1900, the Atchison, Topeka & Santa Fe Railway Company, the Chicago, Madison & Northern Railroad Company, and the Chicago & Alton Railroad Company have completed the elevation of their roadbed and



tracks at Canal and Twenty-second streets by the construction of two magnificent subways at an estimated cost of about \$150,000. The Chicago & Alton Railroad Company under their ordinance of January 15, 1900, have partially elevated their roadbed and tracks between Thirty-fourth street and Washtenaw avenue, but on account of a dispute between the company and the South Park Board of Commissioners they have done nothing toward the elevation of the tracks at Western avenue boulevard and Western avenue. They have made it passable for traffic at Hoyne avenue, Thirty-fifth street, Leavitt street, and Thirty-sixth street, coming to grade for the present at the east line of Western avenue boulevard. They have also constructed a subway at Rockwell street, open for traffic, and a passageway at Washtenaw avenue, as provided for under the ordinance, at an estimated cost of about \$50,000.

Under the ordinance passed May 22, 1899, the Pittsburg, Cincinnati, Chicago & St. Louis Railway Company, the Chicago Terminal Transfer Railroad Company, and the Union Stock Yard & Transit Company have elevated their roadbeds and nine main tracks between the bridge across the Illinois and Michigan Canal and south to Forty-third street, a distance of about 1.5 miles, elevating 1.5 miles of main tracks and about 18 miles of other tracks, eliminating six grade crossings by the construction of six joint subways at Thirty-fourth street, Thirty-fifth street, Thirty-sixth street, Archer avenue, Western avenue, and Western avenue boulevard. This work is not yet completed, but work has been done by these companies at an estimated value as follows: The Pittsburg, Cincinnati, Chicago & St. Louis Railway Company, \$240,250; Chicago Terminal Transfer Railroad Company, \$150,000, and the Union Stock Yard & Transit Company, \$150,000, making a total amount of work done, \$540,250.

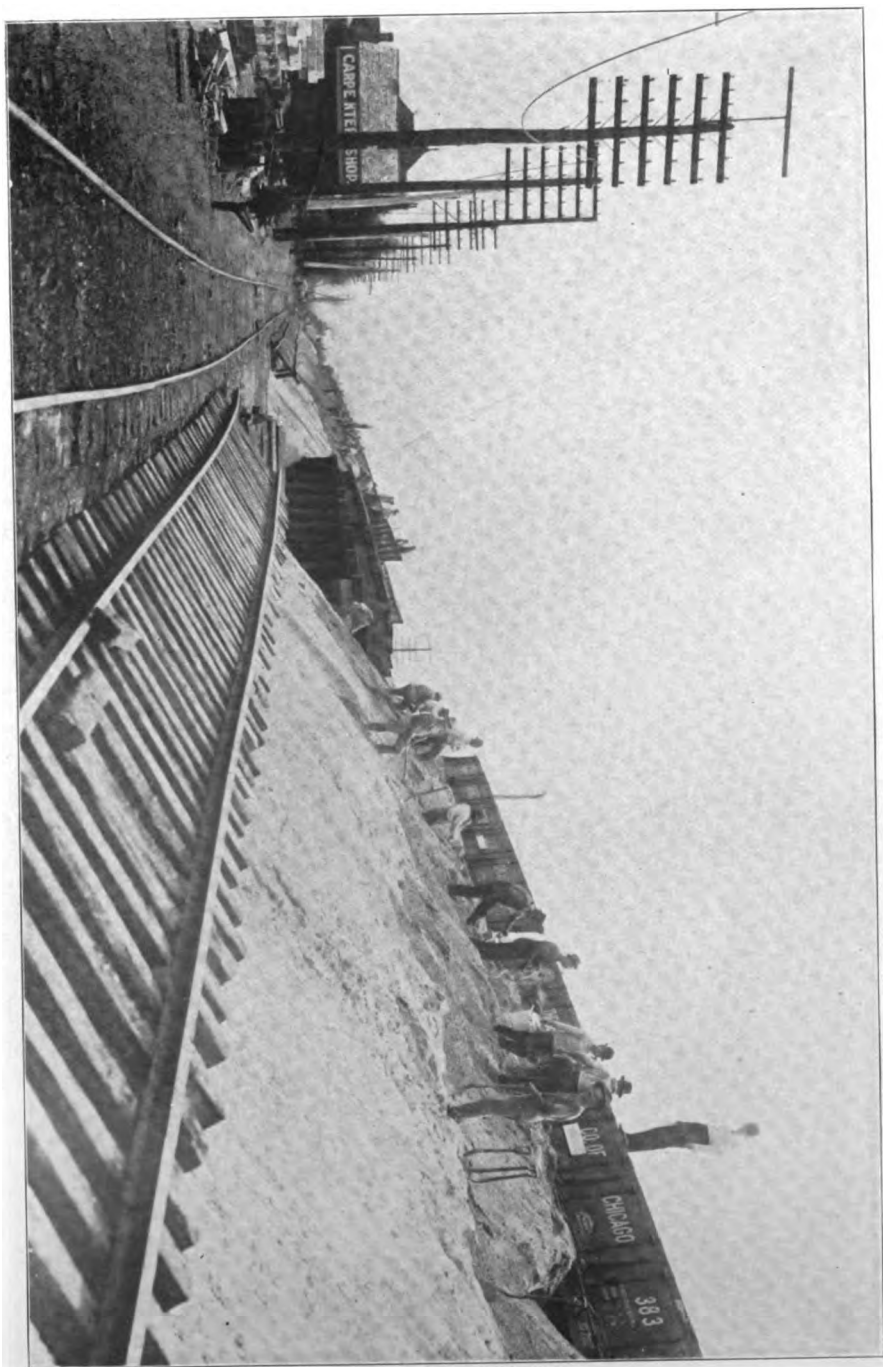
#### SUMMARY.

Ordinances have been passed and accepted by the different railway and railroad companies this year for the elevation of their roadbeds and tracks as follows:

Total number miles of main tracks to be elevated....	6.0
Total number miles of other tracks to be elevated.....	26.5
Total number subways to be constructed.....	44
Total estimated cost of entire work when completed..	\$2,400,000

Work of elevation done the past year under ordinances passed, as mentioned in this report, as follows:

Total number miles of main tracks elevated.....	3.25
Total number miles of other tracks elevated.....	66.50
Total number of subways constructed.....	41
Total estimated cost of entire work.....	\$3,165,250



C. & W. I. R. R. TRACK ELEVATION.—LOOKING SOUTH AT SIXTY-SEVENTH STREET.



GRAND SUMMARY.

Ordinances passed by the City Council and accepted by the railroad companies for the elevation of their roadbed and tracks from May 23, 1892, to December 31, 1903, covering the following amount of work:

Total number miles of main track to be elevated...138.10  
 Total number miles of other track to be elevated.....709.95  
 Total number of subways to be constructed..... 537  
 Total estimated cost of entire work when completed.\$43,540,250

Amount of elevation that has been done from May 23, 1892, to December 31, 1903, as follows:

Total number miles of main tracks elevated..... 80.67  
 Total number miles of other tracks elevated.....420.19  
 Total number of subways constructed..... 351  
 Total estimated cost of work done.....\$25,445,250

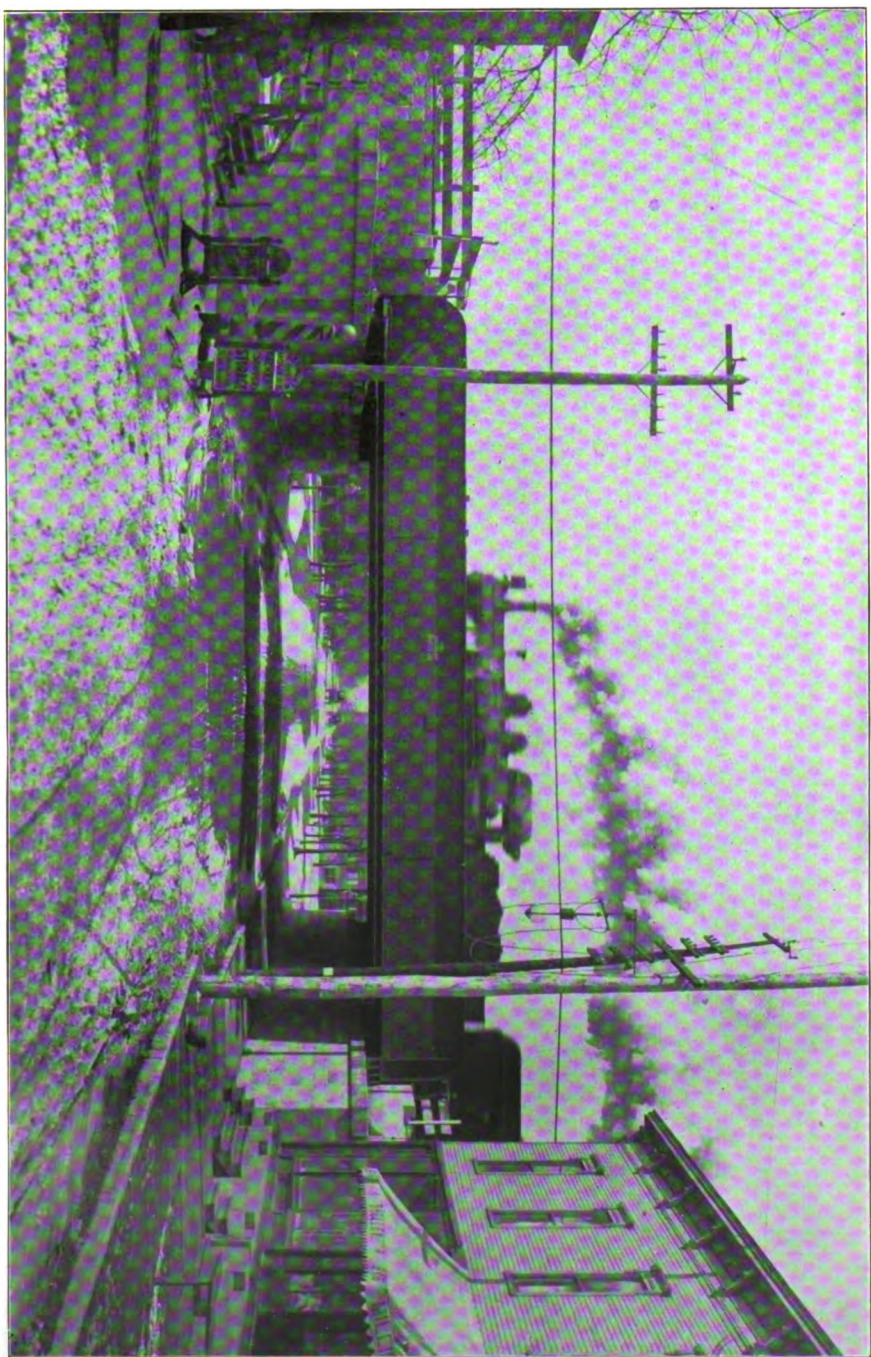
Leaving work to be done under all ordinances that have been passed from May 23, 1892, to December 31, 1903, as follows:

Total number of miles main tracks yet to be elevated... 57.43  
 Total number of miles of other tracks to be elevated...279.76  
 Total number of subways yet to be constructed..... 186  
 Total estimated cost of work yet to be completed.\$18,095,000

Respectfully yours,

JOHN O'NEILL,  
*Superintendent Track Elevation.*





C. & W. I. R. R. TRACK ELEVATION.—LOOKING WEST ON SIXTY-EIGHTH STREET.

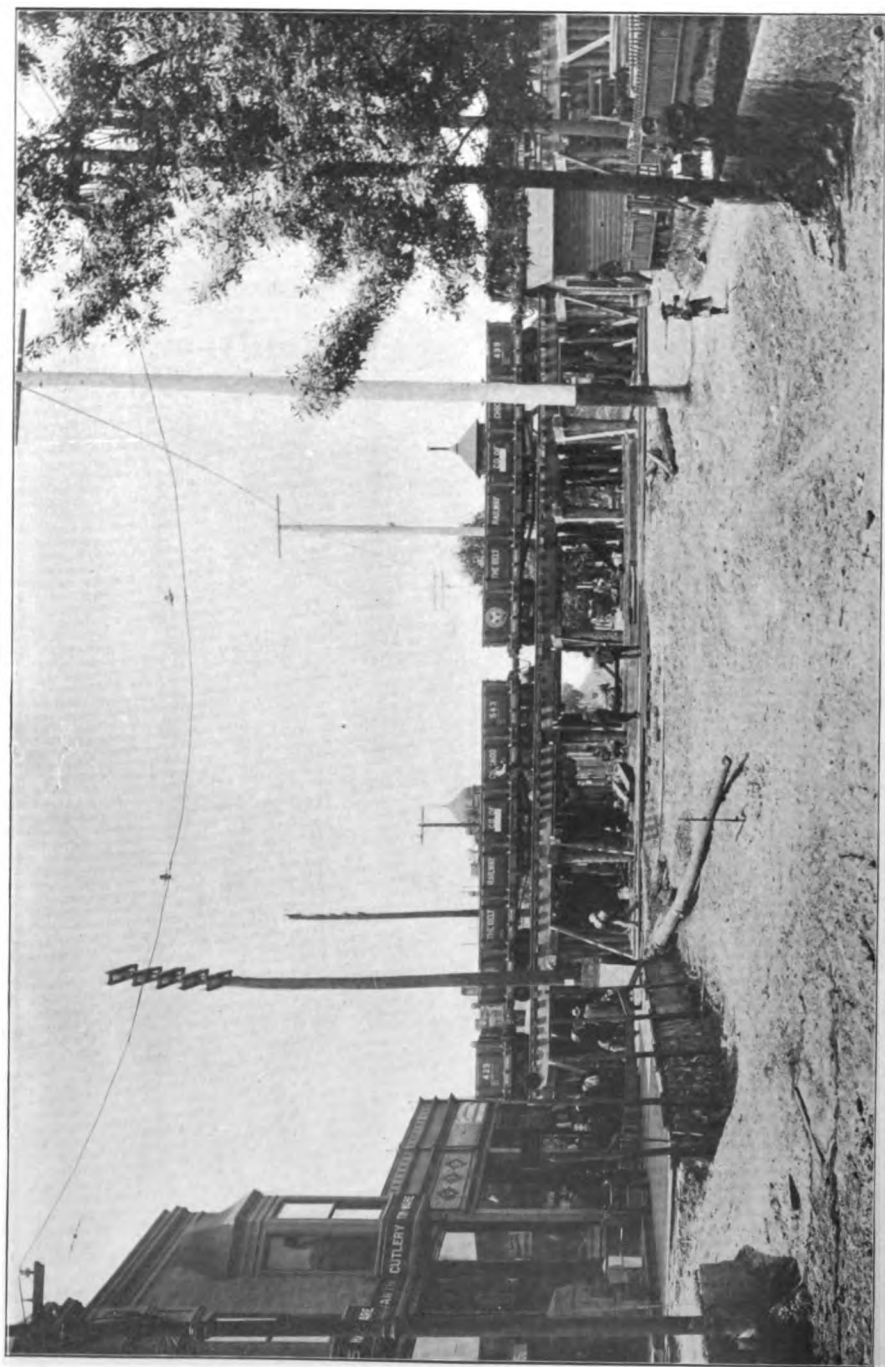


REPORT OF  
**Special Park Commission**  
1903









C. & W. I. R. R. TRACK ELEVATION.—LOOKING WEST ON SIXTY-NINTH STREET.

# SPECIAL PARK COMMISSION.

---

CHICAGO, January 1, 1904.

*To the Honorable the Mayor and City Council of the City of Chicago.*

The Special Park Commission herewith submits its report for the year 1903:

## PARKS—SOUTH DIVISION.

An agreement was reached between your Commission and the South Park Board as to amendatory legislation affecting the speedy establishment of small parks and playgrounds on the South side. The title of the act was changed to remove certain technical doubts as to validity of the bond issue. In addition the Park Board contended that all provision for maintenance should be stricken from the small park act and instead a half mill tax should be added to the general revenue, or "charter" act, with the understanding that the proceeds of such tax should be used to maintain small parks. We believed that the interests of these recreation spaces would be safeguarded best by an amendment which would bind future boards to use the revenue exclusively for that purpose. It was agreed accordingly that the maintenance tax should be retained in the small park act. So that there might be no doubt in the future what were the parks contemplated in the act the definition "having an area of not to exceed ten acres each" was inserted.

Believing that the half mill maintenance tax which yields more than \$100,000 under the present assessment, would be more than sufficient to maintain such parks and playgrounds as might be acquired from the \$1,000,000 bond issue, your Commission secured the addition of a clause providing that the Park Board can use any surplus in the purchase, improvement and maintenance of additional small parks. This amendment provides a permanent endowment fund. An agreement was also reached that under the amended act the Park Board would receive from the City Council and maintain, as they were able from time to time, certain South side parks now under jurisdiction of the Department of Public Works. Your Commission sent representatives to Springfield and assisted in securing the enactment of the legislation mentioned.

Under another bill which was passed by the General Assembly and approved by the Governor the South Park Commissioners are authorized to acquire and improve additional park lands not contiguous to existing parks and boulevards, to issue bonds to pay for the same, provided the proposition is approved by a majority of voters in the park district voting thereon. The Commissioners decided to issue \$3,000,000 of bonds under this act and at the June election the proposition was approved by a large majority of voters. A separate act was passed for an increase of a half mill in the park tax for maintenance of Grant Park and new parks to be acquired under the \$3,000,000 bond issue. Your Commission assisted in the passage of these bills and in securing approval of the bond issue.

July 2d the South Park Commissioners advertised for proposals to sell lands for park purposes under both the small park act and the Lundberg act. The proposals called for tracts of not less than 5 acres nor more than 10 acres in the towns of South Chicago, Hyde Park and Lake; tracts of not less than 40 acres between Fifty-first and Seventy-ninth streets, Stewart and Western avenues and not less than 80 acres between Fifty-fifth and Seventy-ninth streets and Western and Fortieth avenues.

Bids were opened by the Park Board July 29th, at which time a public meeting was held to hear delegations in behalf of the many claims for park sites. Since then the Board's committee on new parks has considered the various proposals and the recommendations of your Commission, making a careful and comprehensive study of the park and playground needs of the entire district. When your Commission made its report to the Park Board in October, 1902, the enlargement of the system under the Lundberg act was not contemplated. Consequently, when this act became effective our distribution of small park areas was disturbed in certain parts of the district. The changes made meet with our approval. In some cases our sites have been enlarged to come within the Lundberg act, while in other cases they have been abandoned in favor of nearby larger parks.

In October the South Park Board sold \$500,000 of small park bonds and \$1,500,000 of bonds under the Lundberg act. Of this sum \$283,000 has already been paid for the purchase of three sites entire. The Board is now engaged in condemnation proceedings to acquire other sites and in negotiating with other owners of small and large lots, many of which have been bought.

The small park sites selected aggregate a net acreage of 51.57 and a gross acreage (including streets and alleys) of 63.

The larger park sites selected aggregate a net area of 551.32 acres and a gross area of 584.65 acres.

The total net area of the fourteen sites selected is 602.89 acres and the total gross area 647.65 acres. This is an addition of less than

two-thirds of the park acreage on the South side when the system was laid out in 1870. Then the South side had a population of 82,000. The 1900 census gave the South side a population of 650,000, an increase of 800 per cent.

The estimated cost of acquiring the seven small parks is \$450,000 and of the same number of larger parks, \$1,100,000.

Of the sites recommended by your Commission the Park Board has selected three, either without change or merely adding to the area, enlarged two sites and took them out of the small park system and selected five sites close to others recommended.

Following are the sites selected under the small park act:

Block bounded by Twenty-fifth, Twenty-sixth and LaSalle streets and Wentworth avenue. Net area, 3.60 acres; gross, 5 acres. Site recommended.

Tract bounded by Twenty-ninth, Thirtieth and Halsted streets and Poplar avenue. Net area, 10 acres; gross, 10.5 acres. Site recommended.

Tract bounded by Thirty-third and Thirty-fourth streets, Shields and Fifth avenues. Net area, 8.21 acres; gross, 10 acres. Bought for \$50,000. One block west of site recommended.

Tract bounded by Forty-fourth, Forty-fifth, Wallace and Butler streets. Net area, 8.21 acres; gross, 10 acres. Three blocks from site recommended.

Tract bounded by Forty-fourth and Forty-fifth streets, Marshfield and Hermitage avenues. Net area, 8.25 acres; gross, 10 acres. Two blocks north of site recommended.

Tract bounded by Wood, Lincoln, Fiftieth and Fifty-first streets. Net area, 8.3 acres; gross, 10 acres. Site recommended in part.

Tract bounded by Eighty-third street, Eighty-third place, Houston and Bond avenues. Net area, 5 acres; gross, 7.5 acres. Four blocks from site recommended.

Following are the sites selected under the Lundberg act:

Tract bounded by Fifty-second and Loomis streets, Garfield boulevard and Center avenue. Net area, 55.68 acres; gross, 60.6 acres. Site recommended in part. Bought for \$183,000.

Tract bounded by Sixty-fourth, Sixty-seventh and Loomis streets and Center avenue. Net area, 56.57 acres; gross, 60.54 acres. Three blocks west of site recommended. Estimated cost, \$170,000.

Tract bounded by Seventy-second and Seventy-fourth streets, Western Indiana Railroad and Lake Shore and Rock Island Railroad tracks. Net area, 27.55 acres; gross, 29.95 acres. Estimated cost, \$125,000.

Tract bounded by Lake Michigan, Ninety-ninth and 102d streets, Avenue G and Chicago, Lake Shore & Eastern Railroad tracks. Net area, 44.56

acres; gross, 45.5 acres. Estimated cost, \$180,000. Site recommended in part.

Tract bounded by 111th and 113th streets, Indiana and South Park avenues. Net area, 36 acres; gross, 40 acres. Bought for \$50,000.

Tract bounded by Sixty-seventh and Seventy-first streets, California and Central Park avenues. Net area, 312.55 acres; gross, 325.72 acres. Estimated cost, \$250,000.

Tract bounded by Muskegon and South Chicago avenues, Eighty-ninth and Ninety-first streets. Net area, 18.41 acres; gross, 22.88 acres. Estimated cost, \$140,000.

Taken as a whole the Park Board's selection of small and large sites is a commendable one and your Commission desires to express its appreciation of the business-like manner in which its report has been treated by that body. It is to be regretted that the Board felt constrained to abandon purchase of the site recommended at Forty-seventh and Paulina streets on the score of cost and objections of owners to being dispossessed of their homes and places of business and instead selecting two cheaper sites farther from the center of population. We also feel that the needs of residents of the Thirtieth ward would be satisfied better by having two small recreation grounds as recommended—one in the northwest and one in the southeast parts of that ward—than by selecting one larger site in the West end.

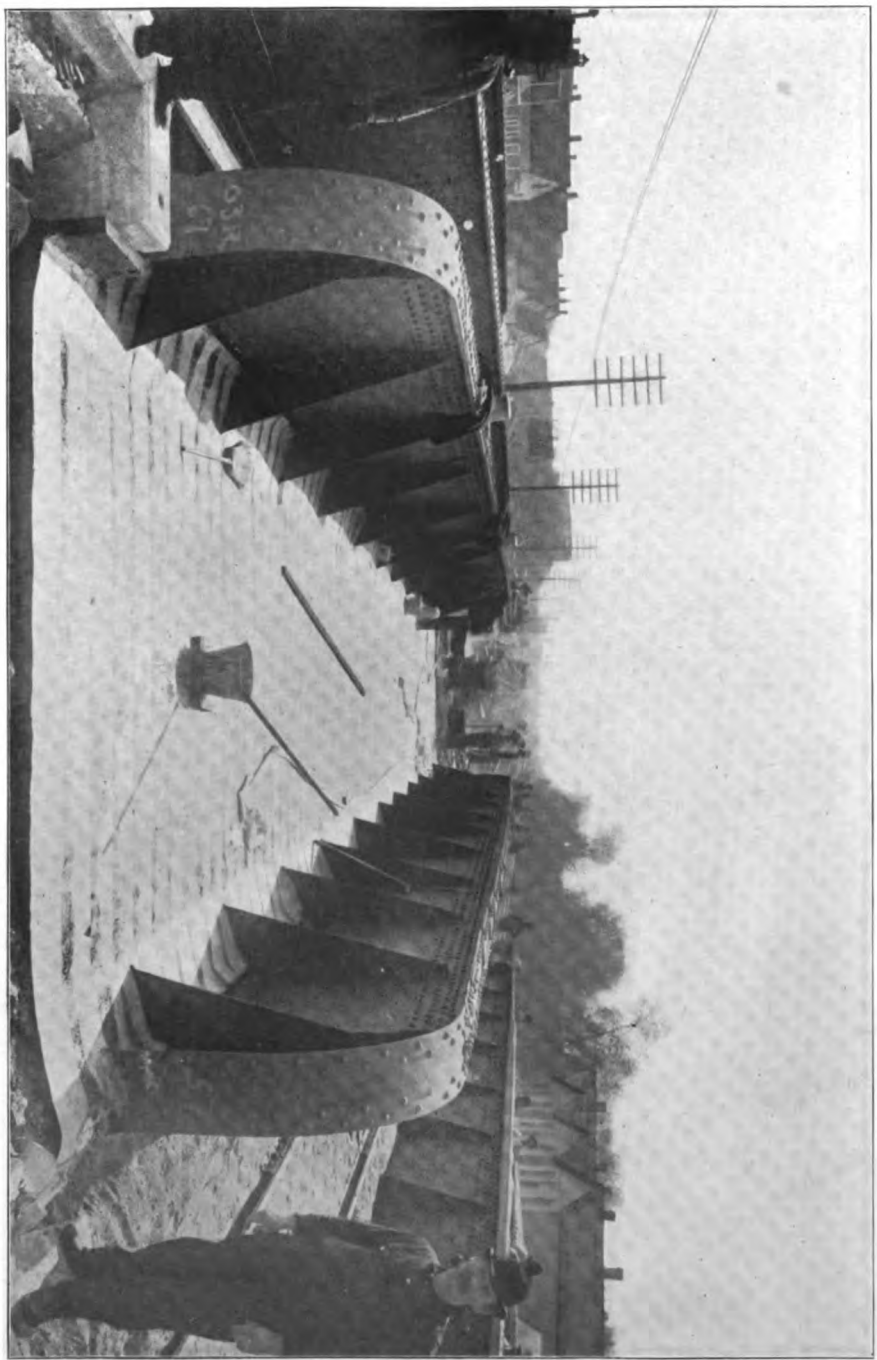
Plans are being drawn for improvement of small and large park sites. Work of removing buildings and preparing the ground will be started early in April. The first to be improved will be the sites at Thirty-third street and Fifth avenue and Forty-fourth street and Marshfield avenue.

Before your Commission organized in May, 1900, none of the Park Boards had made a move in the direction of park extension. Now authority has been obtained to expend \$6,500,000 by bond issues for this purpose, besides providing additional taxes for maintenance. Of the resources available the South side has \$4,000,000, the West side \$1,000,000 and the North side \$1,500,000.

The South Park Board is also negotiating with the owner of the Walker tract of land and riparian rights between Twenty-fourth and Twenty-fifth streets, South Park and Lake Park avenue, for a large park, recreation pier and bathing beach on the lake front, as recommended by your Commission. This is the only lake frontage available for park purposes between Park Row and Fifty-first street.

#### PARKS—NORTH DIVISION.

Your Commission submitted to the Commissioners of Lincoln Park at their meeting February 3, 1903, a report covering conditions, needs and sites of small parks and playgrounds in the town of North Chicago. This



C. & W. I. R. R. TRACK ELEVATION.—BRIDGE FLOOR DETAIL AT SIXTY-NINTH STREET.





territory was divided into three districts and recommendations made as follows:

Lower district—One park and playground and one additional playground within the boundaries of Chicago avenue, Division street, Wells and Larrabee streets.

Middle district—One park and playground within the boundaries of Division street, North avenue, Sedgwick and Halsted streets.

Upper district—One park and playground within the boundaries of North avenue, Center street, Cleveland avenue and Dayton street.

The following sites were recommended:

Lower district—Tract on south side of Oak street, between Gault court and Milton avenue; area, 1.3 acres. Also block bounded by Elm, Hill, Sedgwick and Orleans streets, occupied by House of the Good Shepherd; area, 1.7 acres.

Middle district—Tract of between 3 and 4 acres to be taken from a 6.5-acre tract bounded by Larrabee, Rees and Vedder streets and the Schiller school property.

Upper district—Part of block fronting on Burling and Orchard streets, north of Willow street, 80 feet north of Newberry School land; area, 2.9 acres.

After an inspection of these sites they were approved by the Park Commissioners. However, months were allowed to elapse before any further action was taken to acquire these much needed breathing spaces and recreation grounds. In November the Board decided to follow the plan adopted by the South Park Commissioners, that of advertising for proposals to sell property for park and playground purposes. The boundaries given in your Commission's report were followed in the advertisement. Nothing was accomplished when the bids were opened December 21st beyond getting a proposition to sell the House of the Good Shepherd site for \$125,000 and offers to sell pieces of property on the Oak street site. According to valuations made for the Board and propositions from owners the latter site will cost about \$75,000 for land and improvements. The Park Commissioners are now negotiating for the purchase of the House of the Good Shepherd property.

November 18th the Lincoln Park Board adopted a resolution requesting authority from the County Treasurer and City Clerk to issue \$500,000 of bonds for the purchase and improvement of small parks and playgrounds in the town of North Chicago. In order to leave no doubt as to the legality of the bond issue the Board has also decided to obtain authority from the County Commissioners. Authority to issue these bonds has not been given yet, but in the meantime the Board is having the prospective sites appraised

by the Real Estate Board's Valuation Committee and making other arrangements preliminary to purchase by contract or condemnation proceedings.

At the last session of the General Assembly a bill was passed and approved giving authority to the Commissioners to issue \$1,000,000 of bonds for the extension of Lincoln Park. By filling in the lake front between Fullerton avenue and Cornelia street 215 acres of land will be reclaimed, making a strip three-quarters of a mile wide. The cost will be borne only by the taxpayers of Lake View. In July the Park Board asked and was given authority to issue the bonds by the City Clerk and County Treasurer. The bonds have not been sold, but negotiations are proceeding with property owners for the purchase of holdings and riparian rights. At the judicial election the bond issue was approved by a majority of the Lake View voters. The sale of these bonds will prevent the establishment of any small parks and playgrounds in the town of Lake View until the Lincoln Park extension bonds are retired or the assessed valuation of property in that town is sufficiently increased to allow of a further bond issue to keep within the 5 per cent constitutional limitation.

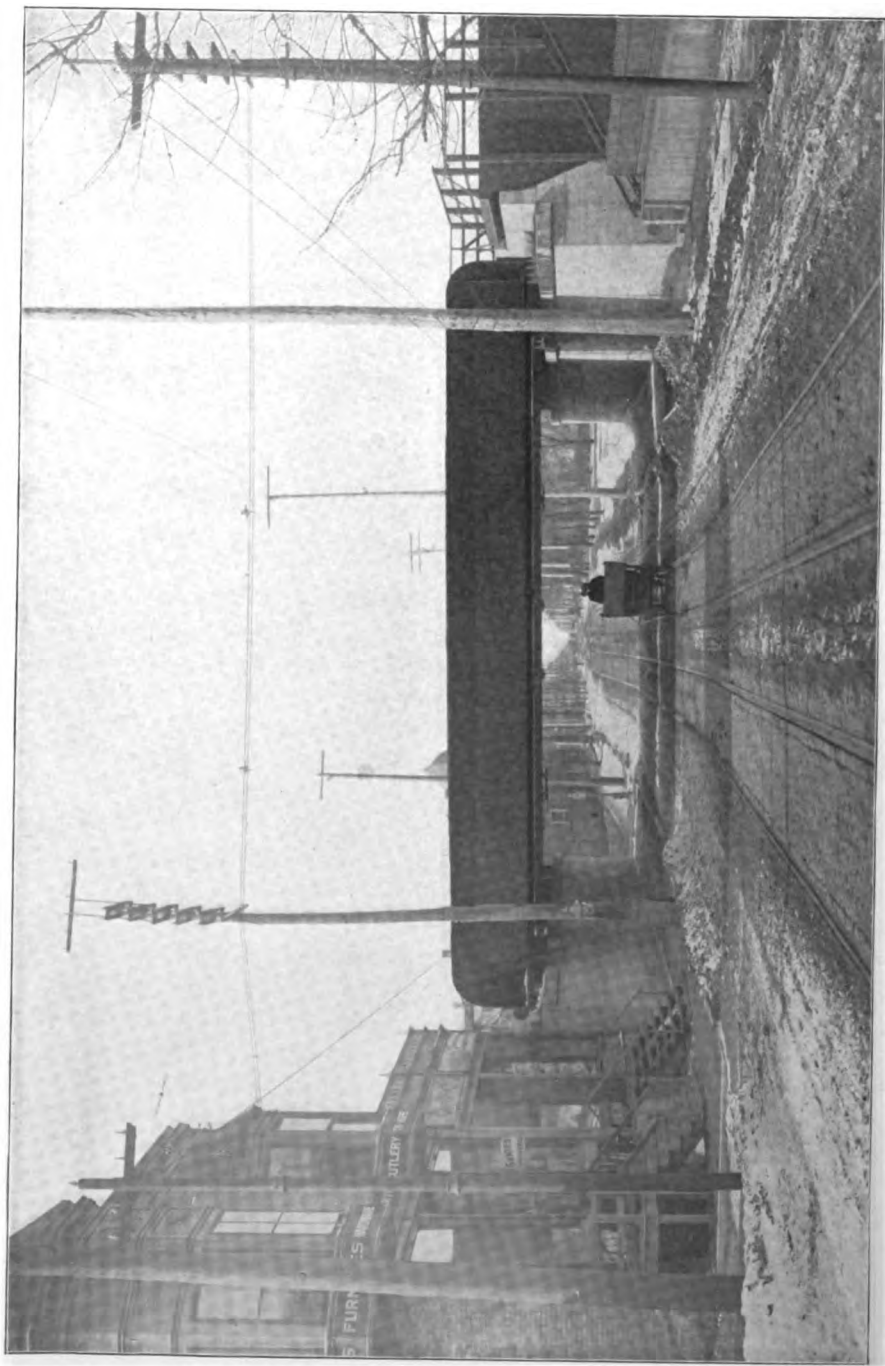
#### SMALL PARKS—WEST DIVISION.

In June the West Chicago Park Commission offered for sale by public advertisement \$250,000 of the authorized \$1,000,000 bond issue for the acquisition and improvement of small parks and playgrounds. The only bid received was from the Home Savings Bank, subject to the approval of its attorney as to the validity of the bond issue. The bank's attorney, John R. Montgomery, gave an opinion to the effect that the act authorizing the bond issue was unconstitutional, being in the nature of special legislation, inasmuch as the act was applicable only to the West Park Board. On the strength of that opinion the bidder refused to take the bonds.

This legal objection tied up the whole project of getting breathing spots in that portion of Chicago where they are most sorely needed and the West Park Board has shown no lively disposition since then to relieve this deplorable situation. As an offset to the opinion upon which purchase of the bonds was refused is the fact that \$2,000,000 of bonds for West Park purposes have been sold under acts of similar construction as the one authorizing the small park bonds and no question of validity has ever been raised. The West Park Board has been apathetic towards the small park project from the time the act was passed.

While the last General Assembly was in session the attention of the Park Commissioners was called repeatedly to certain doubts which had been raised as to the sufficiency of the act, and the Board was advised to obtain amendatory legislation if it was considered necessary. No intimation was conveyed to your Commission that any flaw existed in the act until Mr.





C. & W. I. R. R. TRACK ELEVATION.—LOOKING WEST ON SIXTY-NINTH STREET.  
OPENED PERMANENTLY NOVEMBER, 1903.

Montgomery's opinion was made known. By that time the legislature had adjourned.

Your Commission interested the City Homes Association, which has offered to pay the cost of bringing an injunction suit—in the name of some West town taxpayer—against the Park Board to prevent the issue of small park bonds so as to determine in a friendly manner the question of validity before the Supreme Court. The Park Board has the Association's proposition under advisement. Some pressure is being brought to bear from financial quarters to have the Park Board change the bonds to the serial form, the same as on the South side, or to increase the interest rate. To all inquiries and urging the President of the West Park Board has replied: "We cannot sell the bonds." If the proposed plan of testing the validity of the act is not adopted the only recourse is to wait until the Legislature meets in 1905 and amend the act to fit the views of bond attorneys.

#### PROPOSED METROPOLITAN PARK SYSTEM.

Having disposed of the more urgent business of making reports to the park boards on the subject of small parks and playgrounds in the thickly populated parts of Chicago your Commission turned its attention to another duty with which it is charged under the resolution of November 6, 1899—that of preparing a report relating to a metropolitan system of parks, parkways and boulevards within Cook county. The sum of \$1,500 was set aside from the current appropriation towards making this report.

By authority of the Council, granted September 28th, your Commission induced Dwight H. Perkins, one of its members and chairman of the Metropolitan Park Report Committee, to undertake the preparation of this report for the amount appropriated. A contract was executed between Mr. Perkins and the Commission providing for the presentation of his report by March 1st next.

August 3d, following a communication from President Henry G. Foreman, the Commissioners of Cook County adopted a resolution providing for the organization of a Commission for the Creation of an Outer Belt Line of Parks and Boulevards for the County of Cook and City of Chicago, the Commission to devise plans and ways and means to carry the project to a successful conclusion. The resolution provided for a Commission to consist of four members of the County Board in addition to its President, the Mayor of Chicago, and four members of the City Council, three members each of the South Park Board, the West Chicago Park Board and the Lincoln Park Board, five representative residents of Chicago and five residents of Cook County outside Chicago.

The invitation to the Mayor and City Council to appoint four aldermen was referred to your Commission and reported back favorably, the Mayor

at the same time being requested to invite the County Board to appoint two of its members to represent the County on your Commission. Following is the personnel of the Commission provided for by resolution of the County Board:

Citizens representing County and City—Daniel H. Burnham, John P. Wilson, John J. Mitchell, Charles L. Hutchinson, Judge P. S. Grosscup, John Barton Payne, Dr. J. B. Murphy, E. A. Cummings, D. H. Perkins, W. H. Miller.

For the City of Chicago—Mayor Harrison, Aldermen Herrmann Friedstedt, Harkin and Bradley.

For the South Park Board—Commissioners Best, Hodgkins and Walton.

For the West Chicago Park Board—Commissioners Bangs, Peters and Norden.

For the Lincoln Park Board—Commissioners Simmons, Gansberger, and Hirsch.

For the County Board—Commissioners Boeber, Walker, Carolan and Flanagan.

President Foreman and Commissioner Garner were appointed by the County Board to be members of your Commission.

#### PLAYGROUNDS.

A new recreation ground was established close to the most densely populated part of the North side, partly from private contributions and partly from funds at the disposal of the Commission. The playground is located at Orleans street and Institute place on land owned by the Northwestern Elevated Railroad Company, the area being 240 by 109 feet. At present only that portion of the ground west of the railroad tracks is used, but the east end is vacant and available for play purposes. A proposition to provide a place for juvenile recreation in this congested district was made first to the Vacation School Board by Miss Margaret S. Watson, of Evanston, in a commendable public spirit. The Secretary of your Commission, as a member of the Vacation School Board, was asked to undertake the work of obtaining a site and raising funds to equip the playground. Clarence Buckingham, President of the Northwestern Elevated Railroad Company, generously offered the free use of the only adequate vacant land in the neighborhood. This makes the second site the use of which that corporation has tendered free of cost to the City for playground purposes.

The following contributions were received for this playground from Evanston and Chicago citizens: Miss Margaret S. Watson, for equipment and maintenance, \$585; Miss Julia M. Watson, \$75; Mrs. Janet Watson Hubbard, \$50; Mrs. H. D. Cable, \$20; Mrs. Julia Watson Thompson, \$50; Franklin MacVeagh, \$25; Mrs. E. L. Patten, \$10; Mrs. Joseph T. Bowen,

\$100; total, \$915. Mr. Buckingham paid for grading and clearing the ground. At the outset the Commission helped this playground with an appropriation of \$500 and building material taken from the Ogden Island playground. The ground was equipped and operated under the personal direction of the Secretary of your Commission. Later on it was considered proper and expedient in the interest of the playground that it should be transferred to our control and maintained as one of the municipal playgrounds. Additional apparatus was put in and a storehouse and office built.

At first the unruly, hoodlum element of the neighborhood was a discouraging factor in the administration of this playground. Even men and women were trespassers at night, when the grounds had to be closed for lack of electric lights. With the aid of police protection after dark and vigorous superintendence these harassing forces were suppressed. The large attendance from the opening day in August to the closing day, December 1st, proved that the playground was a boon to the children of the neighborhood.

At the other municipal playgrounds the most important improvement made during the year was in the beautifying of six grounds by the planting of trees, vines and shrubs and the sodding of parkways between the sidewalk and curb. As this work was done in the fall the full effect has not been demonstrated, but enough can be seen to show how the otherwise dull playground landscape will assume a bright, park-like appearance in springtime. In neighborhoods where some opposition to a playground had been shown because of the inseparable noise, this beautifying plan has disarmed hostility on the part of property owners. In indifferent and less pretentious localities this improvement, it is hoped, will induce the neighbors to make their own surroundings more attractive.

Sixteen elms, fifty-three shrubs and other plants and a large number of vines were planted at the Adams playground, inside the ground and along the space between curb and sidewalk. The wire construction used for all the playground fences makes convenient climbing places for the vines, which will form a picturesque screen between playground and street and exclude the summer dust and dirt. At all the grounds the planting was done in such a way that it will not interfere with the free play room.

At the Northwestern Elevated playground ten Carolina poplars were planted close to the Alaska street fence on the inside. This was the only practical plan for beautifying this ground, which is a narrow strip, mostly underneath the railroad tracks.

Eleven Carolina poplars were planted at the Webster playground, set in double rows inside the north section and in the Thirty-third street parkway to supplement the old willows already there. Vines were set along the entire fence lines in the north section.



At the Moseley grounds eighteen Carolina poplars were set in the 400 feet of parkway fronting on Wabash avenue and on Twenty-fourth street and some poplars inside the south section of the grounds and on the edge of the athletic field. Vines were planted along the whole of the fence lines in the south section and the entire parkway sodded.

Nine Carolina poplars were set in the parkway of the McLaren playground and inside the south section, vines planted along the fences in the same part and the parkway sodded.

Vines were planted along the fence lines in the north section of the Holden playground. At all the grounds 684 yards of earth were excavated and 765 yards of black soil put in.

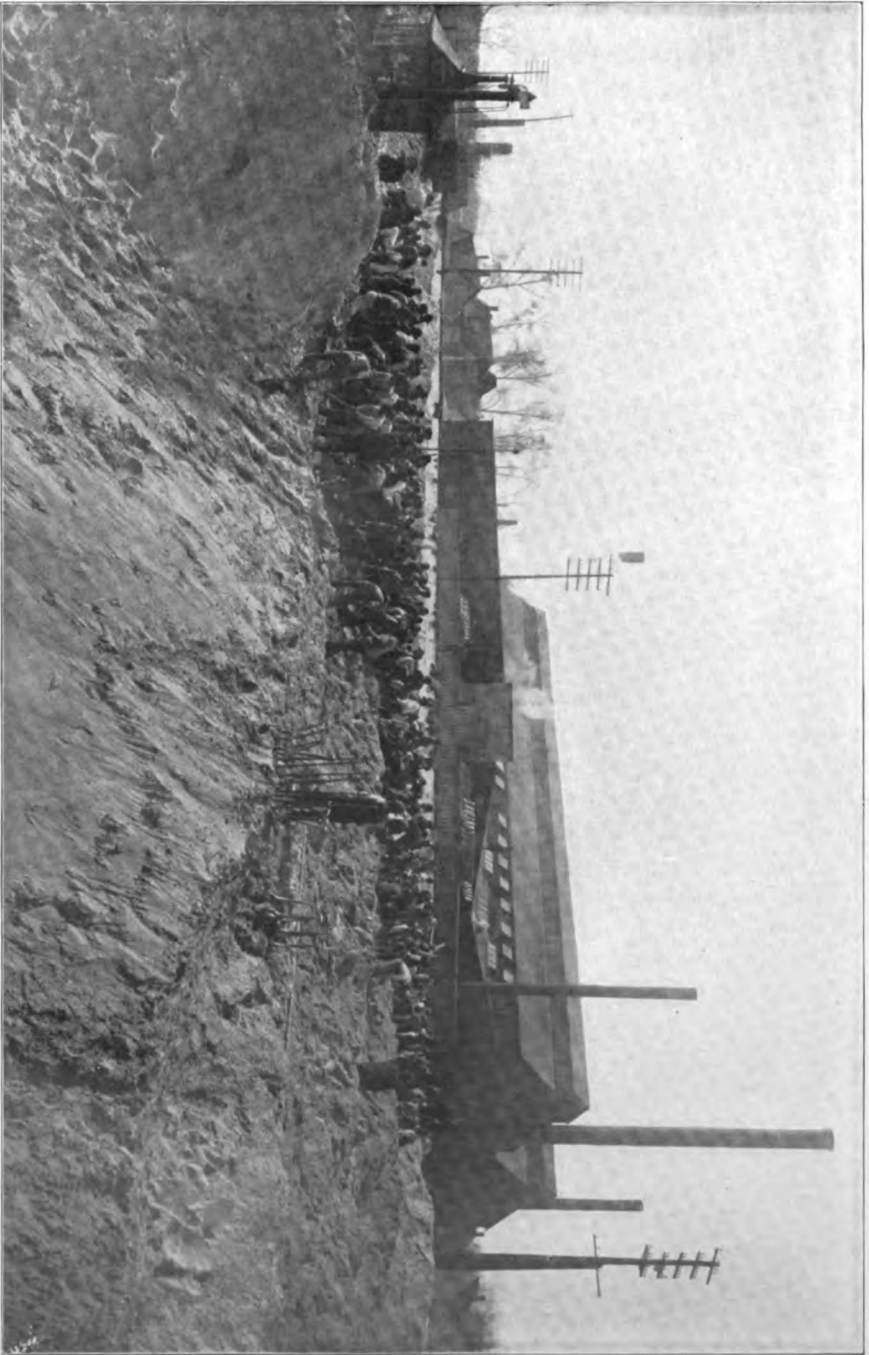
A cinder running track, eleven laps to the mile, was laid in the athletic field of the Moseley playground level with the ground so that the size of the field for skating purposes was not reduced. At the same time the whole field was leveled.

At the Webster grounds the large athletic field was filled with earth and graded to a level. This improvement provided the public with a first-class resort for all kinds of track and field sports. It also allowed the enlargement of the skating pond 107 by 260 feet, making its present dimensions 285 by 260 feet. This is the largest skating pond in the City outside the big parks and is used daily by thousands of men, women and children. In fact, people prefer to skate there, not only because of the saving in time and car fare, but because of the superior condition of the ice and the fact that they can depend on it always being kept clear of snow. Next year the skating area will be increased to the circumference of the running track, embracing the entire athletic field. The track was resurfaced and rolled into first-class condition, so that it will require little attention in future.

Cinders and tile drains were put in the south section of the McLaren playground. A 3-inch water pipe was laid from the main to the athletic field so that it can be flooded easily and quickly without calling on the fire department for a supply of hose.

Earth filling was put in the Adams playground and the ground leveled. A bed of black soil was made along the Seminary avenue fence for planting vines and flowers.

Through the efforts of Alderman Beilfuss the Commission was able to make a start on another West side playground. J. A. Spoor, acting for the owners of a vacant tract of land on West Chicago avenue, east of Lincoln street, 200 by 125 feet in area, gave the Commission control of the land for playground purposes as long as it remained unsold, free of cost to the City. Material was brought from the Ogden Island playground and a fence constructed around this playground. The ground has been partly filled and graded.



C. & W. I. R. R. TRACK ELEVATION. - LOOKING SOUTHWEST FROM SIGNAL TOWER AT FORD STREET CROSSING.



The playground employes have succeeded in impressing upon the great majority of children and older persons attending the grounds that they are part proprietors and consequently the few cases of vandalism have been reported by children to the directors. The helpfulness of the children has also extended to assisting the directors in cleaning up the grounds, repair work and looking after the smaller children. At first older visitors who came to the grounds, mostly in the evening, out of idle curiosity or for want of a better loafing place, now come to take an active part in the games, athletic sports and gymnastics.

Among the little ones there has been a decided improvement in this branch of the work, which is in charge of women assistant directors during the summer vacation. Mothers came to make inquiries and were surprised to learn that instruction in raffia weaving and other outdoor kindergarten features was given free. They brought or sent their children regularly and older girls came to acquire the art of raffia weaving. The children now look to the directors as their leader and confidant, and infractions of the rules are of rare occurrence. Only seven arrests were made during the year at all the grounds, mostly for rowdiness, and dealt with in the police courts. All the offenders were strangers at the grounds.

Individual and team work in athletics and gymnastics was carried on at the playgrounds with gratifying success by each director under the supervision of the general director, Max Beutner. Track and field teams, named after each ground, were organized and meets arranged between the different teams. These teams were made up of boys between 12 and 18 years of age, both school children and working boys. The Websters were the leading team because of the superior facilities. They competed 17 times during the summer, winning every meet and scoring 394 points to their opponents' 182. The latter were teams of high school boys, athletic clubs and social settlement teams.

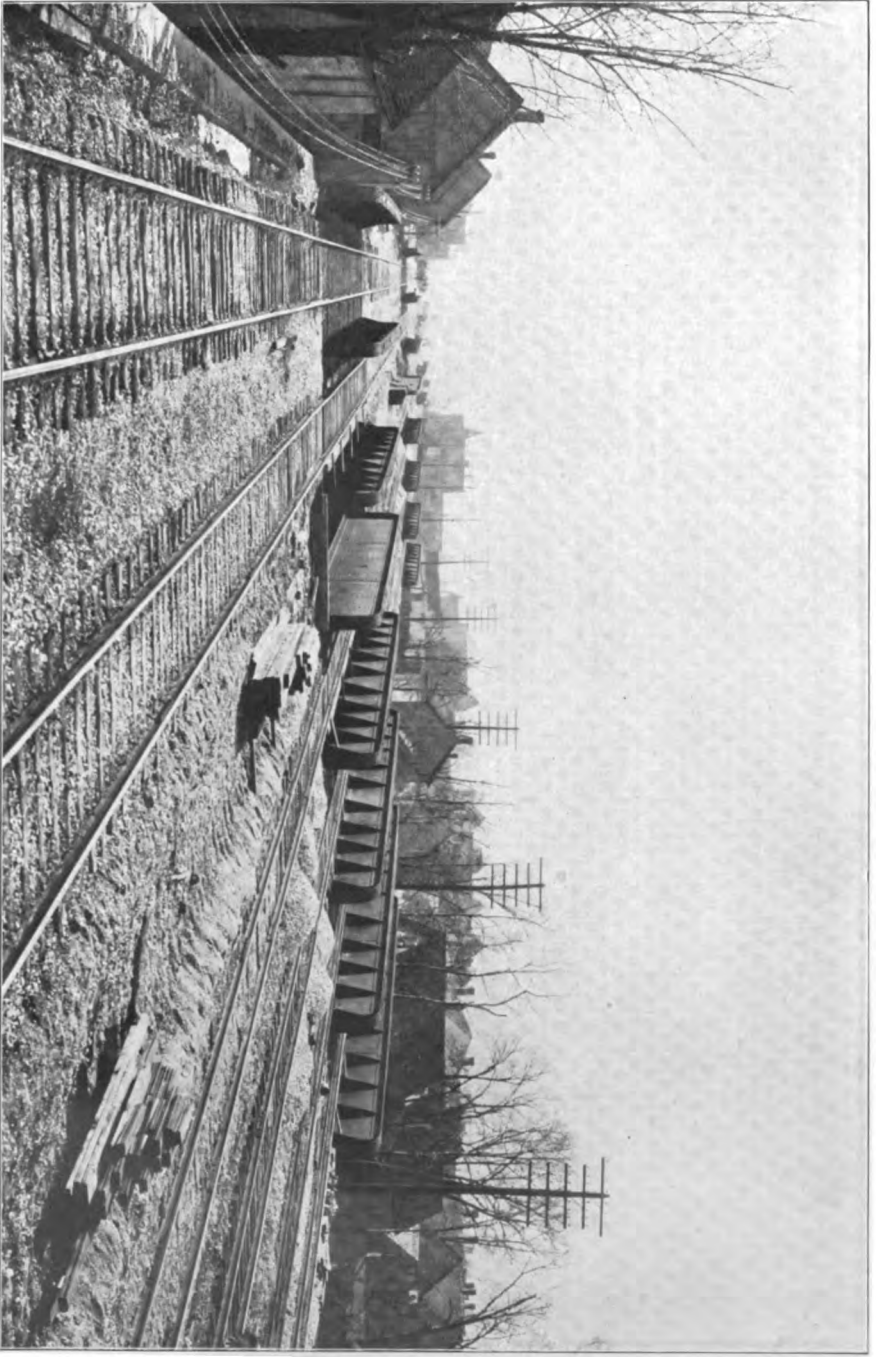
Since the Webster field has been equipped with a fifth of a mile running track, two baseball diamonds, football gridiron, shower bath house and dressing rooms, boys and young men have crowded the grounds day and night to learn and compete. When these grounds were opened two years ago the facilities for healthful recreation and athletic sports possessed little attraction to the average youth of this neighborhood. Now the capacity of the playground is taxed every pleasant day of the year without any urging. The street gangs have become the playground gangs, protectors of public property, leaders in observance and enforcement of the rules, eager contestants for supremacy in track and field sports. The night playground has proved its social usefulness. Crimes and minor offenses have decreased in the neighborhood of the playgrounds and the police credit the lightening of their labors to this new agency.

The Webster is the only complete athletic field in Chicago free to everybody. New York, Boston, Philadelphia and other metropolitan cities each have three or four such fields, but most of them are under private ownership and conducted for profit. On the Webster field last summer the chance visitor could see the university student training with the eighth grade grammar school youngster, aspiring athletes from high school and Armour Institute, the messenger "kid" killing time and the tenement-bred youth whose playground had been the street and alley. Additional popularity was given the Webster field by opening it on Sunday. This was done in order to give the football and baseball teams, who could not play any other time, a chance to play match games. Thousands came to see the football contests, which resulted in the Websters winning four and tying two of the six games played. This team was organized among boys between sixteen and eighteen years, about 150 boys competing to make the team when practice started. In baseball the "Websters" are well known members of the City League, winning second place in an organization of forty clubs. The playground nine is made up of young men twenty to twenty-five years old living in the neighborhood, who practice by electric light.

The second annual inter-playground track and field meet was held on the Webster field Saturday, September 5th. Prizes of gold, silver and bronze medals and useful presents were awarded the winners of the eleven events for boys and girls. The Merchants' Club made its second gift of \$100 for that purpose. About 250 youngsters from the city playgrounds contested for the prizes, each playground team being selected after hundreds had "tried out" during the summer. These annual sports were enjoyed by thousands of spectators.

#### ATTENDANCE FOR THE YEAR 1903 AT THE MUNICIPAL PLAYGROUNDS.

DATE.	Webster.	McLaren.	Moseley.	Holden.	Adams.	Jones.	Northwestern Elevated.	Orleans.
January .....	10,040	8,620	10,420	9,815	2,800	1,900	Closed	.....
February .....	6,525	2,340	4,320	5,670	1,020	1,540	Closed	.....
March .....	12,860	5,620	8,640	8,378	3,100	1,325	Closed	.....
April .....	15,100	10,070	9,990	9,456	4,280	2,175	4,040	.....
May .....	16,280	12,275	10,120	11,005	6,310	2,420	4,890	.....
June .....	18,100	14,120	10,230	10,110	7,540	2,040	5,917	.....
July .....	18,285	15,025	12,505	11,347	7,675	2,015	6,425	.....
August .....	20,850	16,980	10,075	8,440	9,805	4,280	9,200	4,500
September .....	32,150	14,620	10,150	9,210	8,160	6,480	6,840	7,800
October .....	24,175	17,925	13,905	14,525	4,565	6,250	8,800	5,595
November .....	18,625	7,905	7,830	6,905	2,910	4,675	4,180	4,690
December .....	12,580	8,415	4,865	4,400	1,845	2,560	Closed	Closed
Totals .....	204,570	128,915	112,550	108,261	59,410	38,160	50,242	22,585
Total attendance at all playgrounds.....								734,693



C. & W. I. R. R. TRACK ELEVATION.—LOOKING SOUTH AT CHESTNUT STREET.



Following is a statement of expenditures for the year:

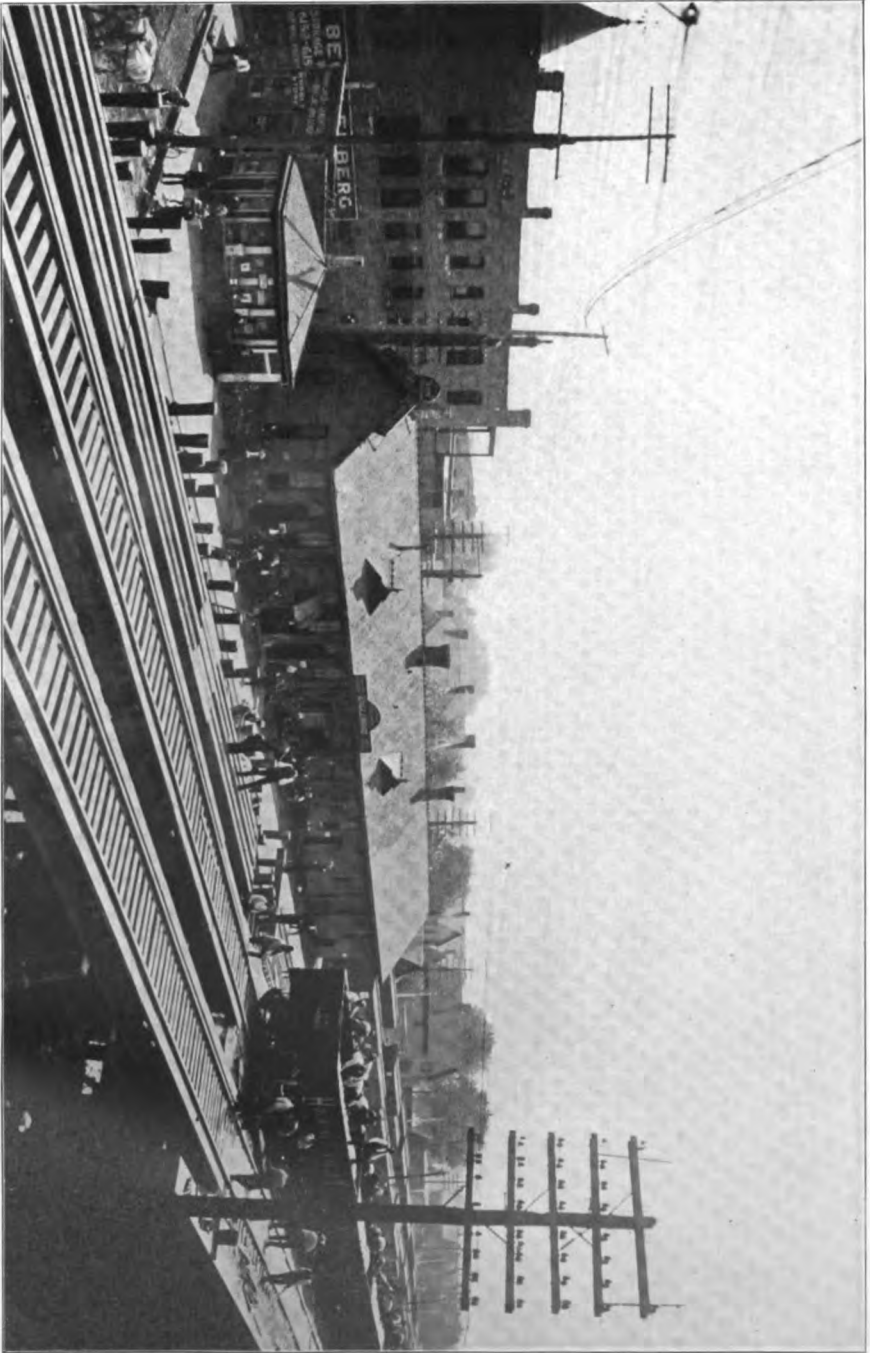
Planting of trees, vines and shrubs, excavating, black soil, sodding and superintendence at Webster, Moseley, Adams, McLaren, Holden and Northwestern Elevated playgrounds.....	\$ 2,252.99
Installing electric light on temporary playground, West Division street and Artesian avenue.....	45.00
Sand for baseball field, Flournoy street and Campbell avenue.....	4.40
Supplies, labor, electric lights, teaming, all playgrounds.....	517.32
Draughtsmen's work on maps and plats.....	50.00
Office supplies, maps, printing.....	123.86
Expenses of Secretary and Playground Superintendence, promotion of legislation at Springfield, street car transportation.....	374.60
Director of Athletics and Gymnastics.....	1,200.00
Secretary .....	1,700.00
<b>Total .....</b>	<b>\$ 4,015.18</b>
<b>Webster Playground, Thirty-third and La Salle streets:</b>	
Resurfacing running track, filling and grading athletic field, supplies, repairs, apparatus and painting.....	\$ 989.29
Playground Director .....	886.07
Assistant Director, July and August.....	100.00
Labor .....	395.00
	<b>2,870.86</b>
<b>Moseley Playground, Twenty-fourth street and Wabash avenue:</b>	
Laying cinder running track, apparatus, repairs, supplies and painting .....	\$ 667.54
Playground Director .....	1,022.90
Assistant Director, July and August.....	100.00
	<b>1,790.44</b>
<b>McLaren Playground, West Polk and Lafin streets:</b>	
Apparatus, supplies, repairs, water pipe to skating pond, teaming, painting .....	\$ 490.90
Playground Director .....	1,036.00
Assistant Director, July and August.....	100.00
	<b>1,626.90</b>
<b>Holden Playground, Bonfield and West Thirty-first streets:</b>	
Supplies, apparatus, repairs, painting and teaming.....	\$ 464.31
Playground Director .....	1,021.73
Assistant Director, July and August.....	100.00
	<b>1,586.04</b>
<b>Adams Playground, Seminary avenue and Center street:</b>	
Apparatus, supplies, repairs, grading and filling, fencing, planking .....	\$ 441.35
Playground Director .....	1,030.79
Assistant Director, July and August.....	100.00
	<b>1,572.14</b>
<b>Jones Playground, Plymouth court and Harrison street:</b>	
Apparatus, supplies, repairs, painting.....	\$ 126.40
Playground director .....	870.00
	<b>996.40</b>
<b>Carried forward.....</b>	<b>\$16,210.45</b>



Brought forward.....	\$16,210.45
Orleans Playground, Orleans street and Institute place:	
Fencing .....	\$ 445.00
Storehouse and office.....	200.00
Apparatus, repairs and supplies.....	196.75
Playground Director and Watchman.....	139.30
	<hr/>
	981.05
Northwestern Elevated Playground, Larrabee and Alaska streets:	
Supplies, repairs and apparatus.....	\$ 63.51
Playground Director .....	487.73
	<hr/>
	551.24
Ogden Island Playground, West Division street and Hickory avenue:	
Watchman, labor and repairs.....	\$ 90.00
Taking down and removing buildings and fences.....	367.00
	<hr/>
	457.00
West Chicago Avenue Playground, Lincoln street and West Chicago avenue:	
Grading and filling ground.....	\$ 132.50
Building fence .....	257.00
	<hr/>
	389.50
Grand total .....	<hr/>
	\$18,589.24
Under contract for Metropolitan Park Report.....	1,500.00
	<hr/>
Total expended and under contract.....	\$ 20,089.24

After considering conditions surrounding the Ogden Island playground your Commission concluded that additional expenditures for equipment and maintenance of this large field were not justified. Since this playground was started two years ago the building of new bridges over the canal and river precluded further expenditures as long as the grounds remained in such an isolated position. Parents were not inclined to have their children visit this field. In addition, there was much damage to and theft of property, the community surrounding the playground evincing no desire to aid in affording protection. Principally because of the small attendance which could be drawn to this field the Commission had the buildings and fences removed. Good use was made of the material in the same ward—at the Orleans street playground—and in the fencing of the West Chicago avenue playground. We take this opportunity of thanking the Chicago, Milwaukee & St. Paul Railway Company and its President, A. J. Earling, for granting the City free use of the Ogden Island site.

The need of a comprehensive, systematic and sympathetic policy on the part of the Board of Education in the interest of establishing outdoor playgrounds adjoining public schools exists in the same measure today as it



C. & W. I. R. R. TRACK ELEVATION.—LOOKING SOUTHEAST AT ENGLEWOOD STATION FROM TOP OF BUILDING AT NORTHWEST CORNER.



did two years ago, when your Commission first reported these conditions and needs to the Council. Nothing has been done by the Board of Education towards equipping and maintaining outdoor playgrounds, contenting itself with purchasing land for that purpose at different schools and paving them with brick, but to a large extent neglecting the needs of schools in the most congested districts. We believe the Council, through your Committee on Schools, should impress vigorously upon the Board of Education the necessity of providing properly equipped playgrounds on school lands in the densely populated districts as a vital part of its educational system. We believe that the Board should share responsibility with the City Council and Park Boards for the welfare of children of Chicago outside the school-room.

The Foster estate gave \$400 to be expended by the Board of Education in the equipment of an outdoor playground on school land adjoining the Foster school in the heart of the densely populated Jewish district. The school principal reports the playground a failure because apparatus was not constructed properly, because there was a wrong apportionment of apparatus between boys and girls, no supervision by a paid director and no provision to prevent damage to apparatus. This is the first outdoor playground with which the School Board has had any official connection. Apparatus has been put on other school grounds in various parts of the City, but funds have been provided by principals, teachers, pupils and friends of the school. In every case this limited playground equipment has proved an attractive feature of school life and less fortunate school communities are pleading for something similar.

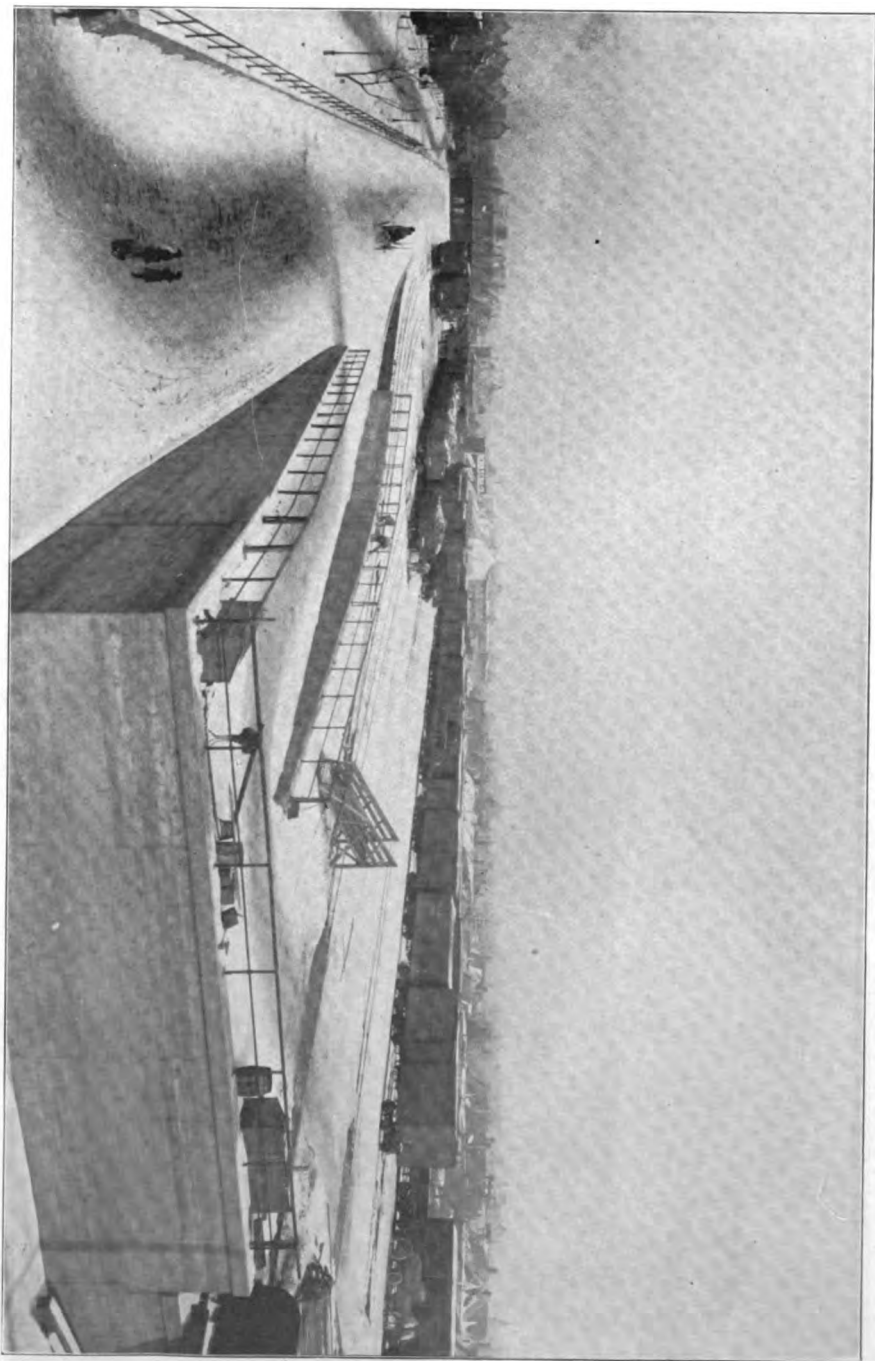
Your Commission desires to thank Miss Margaret Watson and her fellow subscribers to the Orleans playground fund, President Clarence Buckingham and the Northwestern Elevated Railroad Company for providing that site, clearing and grading the land, and the Merchants' Club for giving the athletic meet prizes. Wealthy men of Chicago could not make a more practical, philanthropic gift than by following the example of those women who brought happiness, health and athletics within reach of thousands of North side children.

Respectfully submitted,

ERNST F. HERRMANN, *Chairman.*

A. W. O'NEILL, *Secretary.*





C. & W. I. R. R. TRACK ELEVATION.—APPROACH TO NORTH END OF ENGLEWOOD YARD.



# **Bookkeeper's Statement**





# BOOKKEEPER'S STATEMENT.

HON. F. W. BLOCKI,

*Commissioner of Public Works.*

DEAR SIR: I herewith respectfully submit statement in detail of the receipts and expenditures of your department for the fiscal year ending December 31, 1903:

## CORPORATE FUND.

### REVENUE, JANUARY 1 TO DECEMBER 31, 1903.

Bureau of Maps—Fees.....	\$ 694.75
Bureau of Engineering—Permits.....	1,851.52
Bureau of Engineering—Bridges and Viaducts.....	12,272.48
Bureau of Engineering—Miscellaneous.....	2,445.00
Bureau of Streets—Permits.....	1,590.00
Bureau of Streets—Space Permits.....	530.00
Bureau of Streets—Dumps.....	256.00
Bureau of Streets—Sidewalk Certificates.....	531.00
Bureau of Streets—Corporation Inspectors and Miscellaneous.....	81,768.69
Bureau of Sewers—Permits.....	18,025.00
Bureau of Sewers—Mason Junction Setters.....	1,380.00
Bureau of Sewers—Miscellaneous.....	3,400.85
Total.....	\$124,745.29

## EXPENDITURES.

	Appropriation, 1903.	Expenditures, 1903.	Unexpended Balance Transferred to General Fund.
<b>ORDINARY EXPENSES.</b>			
<b>OFFICE OF COMMISSIONER OF PUBLIC WORKS.</b>			
Office salaries—10 per cent.....	\$ 1,695.00	\$ 1,672.64	\$ 22.36
Office expenses, printing, etc.—10 per cent— (including unpaid bills).....	453.07	276.33	176.74
<b>BUREAU OF MAPS AND PLATS.</b>			
Office salaries—25 per cent.....	4,804.50	4,717.87	86.63
Office expenses, drawing material, etc.—25 per cent.....	582.50	180.81	352.19
New drafting tables and fixtures—25 per cent	125.00	77.16	47.84
<b>BUREAU OF ENGINEERING.</b>			
City Architect: Office salaries—10 per cent..	285.00	182.80	102.20
City Engineer: Office salaries—10 per cent..	1,808.00	1,277.24	530.76
Carried forward.....	\$ 9,708.07	\$ 8,884.35	\$ 1,818.72

## CORPORATE FUND — CONTINUED.

	Appropriation, 1903.	Expenditures, 1903.	Unexpended Balance Transferred to General Fund.
Brought forward.....	\$ 9,703.07	\$ 8,384.35	\$ 1,318.72
Office expenses, stationery, etc.—10 per cent..	250.00	134.24	115.76
Bridges and viaducts:			
Repairs and renewals.....\$108,684.00			
By transfer from appropriation for East Division street bridge, ordered by the City Council...	29,265.72		
By transfer from appropriation for Ninety-fifth street bridge, ordered by the City Council...	28,419.26		
	\$166,368.98		
Less transfer to City Hall, repairs and renewals, ordered by the City Council.....	275.00		
	166,093.98		
Expenditures as follows:			
Labor.....	\$93,927.52		
Material and supplies and con- tract work.....	60,059.29		
15 per cent reserve, withheld on contracts.....	6,520.47		
		160,507.28	5,586.70
Unpaid bills.....	504.90	504.90	
Repairs of viaducts for account of railway companies (expenditures not to exceed re- ceipts), including \$249.12, 15 per cent re- serve on contracts.....	50,000.00	4,577.58	45,422.42
Bridge tenders—salaries.....	102,030.00	95,993.43	6,036.57
Superintendent of bridge tenders—salary..	2,616.00	2,616.00	
Bridges, operation:			
Fuel, including \$453.83, 15 per cent re- serve on contracts.....	6,000.00	5,390.47	609.53
Electric current, material and supplies...	12,700.00	12,685.89	14.11
Chicago Harbor:			
Salaries.....	20,320.00	19,986.41	333.59
Removal of obstructions.....	2,000.00	101.50	1,898.50
Removal of City docks.....	5,000.00	3,843.68	1,156.32
Survey of Lake front.....	2,500.00	179.67	2,320.33
Draftsmen to plat survey.....	1,080.00	720.00	360.00
Work for Board of Local Improvements:			
Salaries.....	11,538.00	4,936.05	6,601.95
Supplies.....	200.00	74.04	125.96
Inspection and engineering, to be refunded by corporations.....	15,000.00	2,659.50	12,340.50
BUREAU OF STREETS.			
Office salaries.....	19,970.00	19,938.06	31.94
Inspectors of street openings and obstructions, salaries.....	9,000.00	7,425.00	1,575.00
Office expenses.....	1,500.00	1,492.06	7.94
Thirty-six ward superintendents, salaries....	50,400.00	49,371.80	1,028.20
Steam roller, salaries.....	1,630.00	1,630.00	
Carried forward.....	\$ 490,035.95	\$ 403,151.91	\$ 86,884.04

## CORPORATE FUND — CONTINUED.

	Appropriation, 1902.	Expenditures, 1903.	Unexpended Balance Transferred to General Fund.
Brought forward.....	\$ 490,085.95	\$ 408,151.91	\$ 86,884.04
Snow removals, salaries.....\$50,000.00			
Additional appropriation, Council order, July 6, 1903..... 8,100.00			
	58,100.00	58,079.59	20.41
Snow dump repairs.....	3,000.00	2,646.94	353.06
City dumps (4 per cent of ward appropria- tions).....	40,800.00	40,237.57	62.48
Rental of ward yards.....	10,000.00	5,848.81	4,156.69
Purchase and maintenance of sweepers and sprinklers:			
Unexpended balance of appropriation of 1902.....	5,990.64		
Expenses vouchered.....\$ 2,761.50			
Unexpended balance to be carried forward..... 960.00			
		3,721.50	2,269.14
Cleaning right of way for account of street railway companies.....	200,000.00		200,000.00
Unpaid bills.....\$ 164.14			
Less transfer, Council order, Octo- ber 5, 1903, to City Hall..... 7.50			
	156.64	156.64	
Corporation and sub-corporation inspectors, salaries.....	40,000.00	26,772.19	18,227.81
Restoration of streets.....\$40,000.00			
Less transfer, Council order, No- vember 2, 1903..... 585.18			
	39,464.82	18,891.40	20,578.42
Repairing right of way for account of street railway companies.....	60,000.00		60,000.00
Repairs of asphalt streets (outside of contract reservations).....\$20,000.00			
By transfer, Council order, No- vember 2, 1903..... 585.18			
	20,585.18	20,585.18	
Small Parks:			
Ellis and Douglas Monument Parks and Aldine square, including unpaid bills....	3,005.00		
Expenses as follows:			
Ellis Park.....\$ 1,020.84			
Douglas Monument Park..... 1,084.48			
Aldine square..... 827.82			
		2,882.59	122.41
Washington square, Green Bay and Oak Parks.....	2,500.00		
Expenses as follows:			
Washington square.....\$ 2,022.08			
Green Bay Park..... 252.27			
Oak Park..... 155.55			
		2,429.85	70.15
Lakewood Park.....	300.00	165.52	184.48
Kedzie Park.....	500.00	388.58	111.42
Carried forward.....	\$ 978,888.28	\$ 585,902.77	\$ 387,985.46

## CORPORATE FUND — CONTINUED.

	Appropriation, 1903.	Expenditures, 1903.	Unexpended Balance Transferred to General Fund.
Brought forward.....	\$ 973,888.23	\$ 585,902.77	\$ 387,985.46
Two triangular pieces of ground between Ogden, North Clark and Wells streets, and North Clark street, Belden avenue and Sedgwick street.....	300.00		
Expenses vouchered.....\$ 278.00			
Unexpended balance carried for- ward to 1904.....	27.00		
		300.00	
Sundry parks and squares.....\$ 5,700.00			
Unpaid bills.....	284.00		
	5,984.00		
Expenditures as follows:			
Bickerdyke square.....\$535 15			
Congress Park.....	935.23		
Irving Park.....	462.00		
Jefferson Park.....	809.87		
Gross Park.....	278.25		
DeKalb square.....	434.85		
Norwood Park.....	453.94		
Dauphin Park.....	255.88		
Austin Park.....	74.00		
Eldred Park.....	392.25		
Merrick Park.....	175.75		
Holden Park.....	920.08		
	\$5,727.20		
Balance carried forward to 1904 ..	256.80		
		5,984.00	
Normal Park.....	1,000 00		
Expenses vouchered.....\$ 728.16			
Balance carried forward to 1904...	216.20		
		944.86	55.64
Fernwood Park.....	1,000.00	845.20	154.80
Temporary playgrounds.....	1,000.00	998.88	1.12
Seventy-second Street Park.....	500.00	340.46	159.54
Patterson Park.....	200.00	188.99	11.01
Barnard Park.....	500.00	414.00	86.00
East End Park.....	5,000.00	4,982.19	17.81
Triangular strip of ground at intersection of Canalport avenue and West Eighteenth street.....	500.00		500.00
Culvert on Seventy-seventh street.....	350.00	349.67	.33
Repairing and ditching Lincoln avenue, Twenty-seventh ward.....	812.50	812.50	
Repairing and ditching Milwaukee avenue, Twenty-seventh ward.....	1,625.00	1,625.00	
Repairing and ditching Norwood Park ave- nue, Twenty-seventh ward.....	650.00	650.00	
Repairing and ditching Grand avenue, Twenty- seventh ward.....	650.00	650.00	
Repairing and ditching Seventy-ninth street, Eighth ward.....	747.50	507.50	240.00
Carried forward.....	\$ 994,707.23	\$ 605,495.52	\$ 389,211.71

## CORPORATE FUND — CONTINUED.

	Appropriation, 1903.	Expenditures, 1903.	Unexpended Balance Transferred to General Fund.
Brought forward.....	\$ 994,707.23	\$ 605,495.52	\$ 389,211.71
Repairing and ditching territory between Com- mercial and Anthony avenues, Ninety-third and Ninety-eighth streets.....	585.00	585.00	
Repairing and ditching 108d and 108th streets and Ewing and Indiana avenues.....	390.00	389.35	.75
Cement walks in and around Washington Square Park.....	1,865.00		1,865.00
Repairing Michigan avenue from 119th street to 128d street; 123d street from Michigan avenue to Indiana avenue; Indiana from Michigan to Laydon; Cottage Grove avenue from Ninety-fifth to 108d street; 111th street from Chicago & Eastern Indiana Railway to Halsted; Laydon avenue from Indiana to 138th street, Thirty-third ward.....	1,625.00	1,457.16	167.84
Ditching in Thirty-third ward.....	650.00	560.37	89.63
Repairing and crowning with slag: Western avenue from Roscoe boulevard to Howard avenue; California from Devon to Howard avenue; Patterson avenue from Clark street to Western avenue; Devon from Clark street to Kedzie avenue, Twenty-sixth ward.....	1,625.00	1,459.18	165.82
Ditching in Twenty-sixth ward.....	812.50	811.88	.62
Repairing Vincennes road, Thirty-second ward	812.50	812.50	
Ditching in Thirty-second ward.....	487.50	487.50	
Repairing and ditching Fifty-second avenue from North avenue to Augusta street; Forty- eighth avenue from Chicago to North ave- nues; Thomas street from Forty-eighth to Fiftieth avenues; Division street from Forty-eighth to Fifty-second avenues, Thirty-fifth ward.....	975.00	974.81	.19
Repairing Western avenue, Thirty-first ward.	4,000.00	3,594.75	405.25
Repairing Western avenue between Sanitary District bridge and Illinois and Michigan canal bridge.....	500.00	500.00	
Repairing and ditching in Twenty-ninth ward	1,800.00	1,300.00	
Ditching in Thirty-first ward.....	1,800.00	1,296.50	3.50
Ditching in Fifth ward.....	975.00	975.00	
Repairing Forty-fifth avenue from Twelfth to Twenty-second streets, Thirty-fourth ward.	487.50	487.50	
Repairing Peterson avenue, Twenty-seventh ward.....	500.00	500.00	
Removal of garbage, street cleaning, etc. (4 per cent of appropriations deducted for City dumps), see detailed statement:			
First ward.....	\$82,100.00		
Additional appropriation.....	2,900.00		
Second ward.....	\$29,375.00		
Additional appropriation.....	3,400.00		
	82,775.00	82,771.88	3.62
Carried forward.....	\$1,180,872.23	\$ 739,348.19	\$ 391,524.04

## CORPORATE FUND — CONTINUED.

	Appropriation, 1903.	Expenditures, 1903.	Unexpended Balance Transferred to General Fund.
Brought forward.....	\$1,130,872.23	\$ 739,348.19	\$ 391,524.04
Third ward.....\$29,375 00			
Additional appropriation..... 3,100.00	32,475.00	32,443.10	31.90
Fourth ward.....\$23,330.00			
Additional appropriation..... 850.00	24,180.00	24,163.00	17.00
Fifth ward.....	23,330.00	22,502.17	827.83
Sixth ward.....\$33,700.00			
Additional appropriation..... 5,200.00	38,900.00	38,877.77	22.23
Seventh ward.....\$34,560.00			
Additional appropriation..... 3,050.00	37,610.00	37,562.37	47.63
Eighth ward.....	23,545.00	21,651.07	1,893.93
Ninth ward.....	23,330.00	23,228.81	101.19
Tenth ward.....	20,735.00	20,373.46	361.54
Eleventh ward.....\$19,870.00			
Additional appropriation..... 200.00	20,070.00	20,039.82	30.18
Twelfth ward.....	21,600.00	21,291.96	308.04
Thirteenth ward.....\$23,395 00			
Additional appropriation..... 3,000.00	26,395.00	26,307.25	87.75
Fourteenth ward.....\$27,650.00			
Additional appropriation..... 150.00	27,800.00	27,777.96	22.04
Fifteenth ward.....	23,760.00	23,675.70	84.30
Sixteenth ward.....	26,785.00	24,843.57	1,941.43
Seventeenth ward.....	23,500.00	28,255.23	244.77
Eighteenth ward.....\$35,855.00			
Additional appropriation..... 50.00	35,905.00	35,878.65	26.35
Nineteenth ward.....	32,315.00	32,252.88	62.12
Twentieth ward.....\$31,105.00			
Additional appropriation..... 2,350 00	33,455.00	33,430.47	24.53
Twenty-first ward.....\$35,425.00			
Additional appropriation..... 2,800.00	38,225.00	38,181.97	43.03
Twenty-second ward.....	27,650.00	27,235.05	424.95
Twenty-third ward.....\$23,330.00			
Additional appropriation..... 1,300.00	24,630.00	24,615.95	14.05
Twenty-fourth ward.....	22,465.00	21,771.75	693.25
Twentieth-fifth ward.....\$25,920.00			
Additional appropriation..... 5,600.00	31,520.00	31,474.30	45.70
Twenty-sixth ward.....	25,920.00	25,860.91	59.09
Twenty-seventh ward.....\$19,450.00			
Additional appropriation..... 450.00	19,900.00	19,871.24	28.76
Twenty-eighth ward.....	23,330.00	22,636.23	693.77
Carried forward.....	\$1,845,202.23	\$1,445,540.83	\$ 399,661.40

## CORPORATE FUND — CONTINUED.

	Appropriation, 1908.	Expenditures, 1908.	Unexpended Balance Transferred to General Fund.
Brought forward.....	\$1,845,202.23	\$1,445,540.83	\$ 899,661.40
Twenty ninth ward.....\$27,215.00			
Additional appropriation..... 1,200.00	28,415.00	28,391.69	23.31
Thirtieth ward.....\$28,080.00			
Additional appropriation..... 400.00	28,480.00	28,472.72	7.28
Thirty-first ward.....	23,330.00	23,316.36	13.64
Thirty-second ward.....\$27,650.00			
Additional appropriation..... 600.00	28,250.00	28,208.62	41.38
Thirty-third ward.....	23,545.00	23,386.39	158.61
Thirty-fourth ward.....	18,060.00	17,408.87	651.13
Thirty-fifth ward.....	15,465.00	15,404.18	60.87
[The above additional appropriations were ordered by the City Council on July 20, 1908, from miscellaneous receipts, for the amount of \$50,000.00, of which only \$45,000.00 has been used. Receipts for cleaning right of way of street railway companies and unexpended balances exceed this additional appropriation.]			
BUREAU OF SEWERS.			
Office salaries.....	9,180.00	8,280.00	900.00
Office expenses, stationery, etc.....	1,000.00	665.12	334.88
Pumping stations—operation:			
Sixty-ninth Street Pumping Station:			
Salaries.....	8,011.25	2,962.79	48.46
Supplies, etc.....	294.75	172.76	121.99
Operating air - compressor, Rogers Park system, including repairs.....	3,500.00	3,447.04	52.96
Woodlawn Pumping Station:			
Salaries.....	5,833.00	5,833.89	19.11
Supplies, etc.....	1,200.00	1,066.68	143.32
Coal.....	6,200.00		
Expenses vouchered..... \$5,252.80			
15 per cent reserve withheld. 641.78		5,894.58	305.47
Seventieth Street Pumping Station:			
Salaries.....	4,221.00	4,221.00	
Coal.....	1,900.00		
Expenses vouchered..... \$1,687.01			
15 per cent reserve withheld. 208.78		1,895.79	4.21
Supplies, etc.....	900.00	887.47	62.53
Seventy-third Street Pumping Station:			
Salaries.....	4,221.00	4,221.00	
Coal.....	1,450.00		
Expenses vouchered..... \$1,172.23			
15 per cent reserve withheld. 111.76		1,283.99	166.01
Carried forward.....	\$2,053,678.23	\$1,650,901.67	\$ 402,776.56



## CORPORATE FUND — CONTINUED.

	Appropriation, 1903.	Expenditures, 1903.	Unexpended Balance Transferred to General Fund.
Brought forward.....	\$2,053,678.28	\$1,650,901.67	\$ 402,776.66
Supplies, including unpaid bills.....	511.60	272.24	239.86
Kensington Pumping Station:			
Salaries.....	4,221.00	4,221.00	
Coal.....	1,850.00		
Expenses vouchered..... \$1,194 17			
15 per cent reserve withheld. 127.99		1,822.16	27.84
Supplies, etc.....	600.00	486.12	113.88
Pullman Pumping Station:			
Salaries.....	4,833.00	4,821.66	11.34
Coal.....	2,900.00		
Expenses vouchered..... \$2,153.71			
15 per cent reserve withheld. 232.92		2,886.68	513.37
Supplies, including unpaid bills.....	1,084.95	682.44	852.51
Pumping stations—repairs and renewals:			
Woodlawn Pumping Station.....	3,600.00	3,547.56	52.44
Seventieth Street Pumping Station.....	1,500.00	1,380.41	119.59
Seventy-third Street Pumping Station.....	700.00	513.47	186.53
Kensington Pumping Station.....	800.00	738.83	61.67
Pullman Pumping Station.....	1,200.00	1,084.10	115.90
Sixty-ninth Street Pumping Station.....	300.00	176.16	123.85
Repairing sewers, catch-basins, etc.:			
Repairing sewers, salaries..... \$36,750.00			
By transfer from appropriation for cleaning sewers, Council order, October 19, 1903.....	3,500.00		
	40,250.00	40,111.76	138.24
Repairing sewers, material and supplies...	5,800.00	5,701.69	98.31
Repairing Madison street sewer outfall....	1,000.00		1,000.00
Removing sewer, block 4, Buena Park.....	1,500.00	925.02	574.98
Unpaid bills.....	279.83	279.83	
Repairing catch-basins:			
Salaries..... \$13,390.00			
By transfer from appropriation for cleaning sewers, Council order, October 19, 1903.....	2,500.00		
	15,890.00	15,851.59	38.41
Material and supplies..... \$4,060.00			
By transfer from appropriation for cleaning sewers, Council order, October 19, 1903.....	1,500.00		
	5,560.00	5,524.09	35.91
Building new catch-basins..... \$5,000.00			
Less transfer to appropriation for cleaning sewers, Council order, December 14, 1903.....	2,500.00		
	2,500.00	1,333.32	1,166.68
Cleaning sewers:			
Salaries..... \$114,500.00			
Carried forward..... \$114,500.00	\$2,150,008 11	\$1,742,260.74	\$ 407,747.37

## CORPORATE FUND — CONTINUED.

	Appropriation, 1903.	Expenditures, 1903.	Unexpended Balance Transferred to General Fund.
Brought forward.....\$114,500.00	\$2,150,008.11	\$1,742,260.74	\$ 407,747.37
Less transfer ordered by the City Council, October 19, 1903:			
To repairing sewers, salaries.....\$3,500.00			
To repairing catch- basins, salaries..... 2,500.00			
To repairing catch- basins, supplies.... 1,500.00			
	\$7,500.00		
By transfer from appro- priation for building new catch - basins, Council order, De- cember 14, 1903..... 2,500.00			
	5,000.00		
	109,500.00		
Expenses vouchered as follows:			
First district..... \$42,075.18			
Second district..... 29,540.70			
Third district..... 20,339.28			
Fourth district..... 17,296.46			
		109,251.57	248.48
Material and supplies.....	7,000.00		
Expenses vouchered as follows:			
First district..... \$1,997.95			
Second district..... 1,588.62			
Third district..... 960.58			
Fourth district..... 1,062.65			
		5,604.80	1,395.20
Bench monuments, salaries.....	8,080.00	8,079.98	.07
New bench monuments.....	1,200.00	86.44	1,163.56
Restoration of streets.....	5,000.00	2,274.88	2,725.12
Miscellaneous work on account of deposits and for other departments.....	5,000.00	1,989.70	3,010.30
House drain division:			
Salaries.....	35,570.00	33,897.15	2,172.85
Other expenses, maps, atlases, etc.....	600.00	372.98	227.02
Total.....	\$2,316,958.11	\$1,898,268.19	\$ 418,689.92
<b>EXTRAORDINARY EXPENSES.</b>			
<b>BUREAU OF ENGINEERING.</b>			
Construction:			
East Division street bridge, ap- propriation..... \$37,000.00			
Less transfer to appropriation for bridge repairs, Council order, October 5, 1903..... 29,265.72			
	\$ 7,734.28	\$ 7,734.28	
Carried forward.....	\$ 7,734.28	\$ 7,734.28	

## CORPORATE FUND — CONTINUED.

	Appropriation, 1908.	Expenditures, 1908.	Unexpended Balance Transferred to General Fund.
Brought forward.....	\$ 7,784.28	\$ 7,784.28	
Ninety-fifth street bridge approp- riation.....\$ 87,000.00			
Less transfer to appropriation for bridge repairs, Council order, October 5, 1908..... 28,419.26			
	8,580.74	8,580.74	
West Division street bridge.....	190,000.00		
Expenses vouchered.....\$148,854.85			
15 per cent reserve withheld and balance to complete con- tract..... 41,645.15			
		190,000.00	
North Western avenue bridge ap- propriation.....\$175,000.00			
By transfer from appropriation for Fuller street bridge, Council order, July 6, 1908.. 50,000.00			
	225,000.00		
Expenses vouchered.....\$102,808.66			
15 per cent reserve withheld and balance to complete con- tract..... 122,891.84			
		225,000.00	
Archer avenue bridge.....	100,000.00	4.16	99,995.84
Removing old bridge from Elgtheenth street to South Western avenue, including new substructure.....	45,000.00	4,650.00	40,350.00
North avenue bridge.....	100,000.00		100,000.00
Halsted street (Canal) bridge.....	115,000.00		115,000.00
Chicago avenue bridge.....	125,000.00		125,000.00
Fuller street bridge, appropria- tion.....\$115,000.00			
Less transfer to appropriation for North Western avenue bridge, Council order, July 6, 1908..... 50,000.00			
	65,000.00		65,000.00
Thirty-seventh street bridge.....	125,000.00		125,000.00
Torrence avenue bridge.....	50,000.00		50,000.00
BUREAU OF STREETS.			
For purchase of sites and construction of plants to destroy garbage.....	180,000.00		180,000.00
For the establishment of a creosoting block plant at the House of Correction.....	20,000.00		20,000.00
For widening roadway and paving widened portion of West Lake street.....	40,000.00		40,000.00
Total.....	\$1,846,815.02	\$ 485,969.18	\$ 910,845.84

## CORPORATE FUND — CONTINUED.

	Appropriation, 1903.	Expenditures, 1903.	Unexpended Balance Transferred to General Fund.
<b>CITY HALL.</b>			
<b>ORDINARY EXPENSES.</b>			
Operation:			
Salaries, appropriation.....\$36,876.80			
Less transfers, ordered by the City Council, December 14, 1903:			
To City Hall, repairs and renewals.....\$826.61			
To City Hall, operation, supplies, etc.....478.89			
<u>1,800.00</u>			
	\$35,576.80	\$35,501.95	\$ 74.85
For coal, supplies, ice for fountain and building, electric current, etc., including unpaid bills, ap- propriation.....\$19,872.32			
By transfers, ordered by the City Council, October 5 and Decem- ber 14, 1903:			
From Bureau of Streets, unpaid bills.....\$ 7.50			
From City Hall, salaries.....478.89			
<u>480.89</u>			
	19,858.21		
Expenditures:			
Coal.....\$18,829.04			
Part of 15 per cent reserve on contract.....84.49			
Oil, waste, etc.....864.87			
Miscellaneous supplies.....5,609.71			
		19,838.11	15.10
Repairs and renewals:			
Repairs to building, boilers, ma- chinery, steamfitting, plumbing repairs, etc., including unpaid bills, appropriation.....\$6,982.19			
By transfers, ordered by the City Council, December 14, 1903:			
From appropriation for bridge repairs.....275.00			
From appropriation for City Hall, salaries.....826.61			
<u>8,088.80</u>			
	8,088.80		
Expenditures:			
Building repairs.....\$4,074.70			
Engine and machinery repairs..1,657.59			
Boiler repairs.....2,850.51			
		8,082.80	1.00
Creating vault room.....	2,000.00		2,000.00
<b>Total.....</b>	<b>\$65,518.81</b>	<b>\$68,422.86</b>	<b>\$2,090.95</b>

## CORPORATE FUND — CONTINUED.

	Appropriation, 1903.	Expenditures Vouchered.	Balances Car- ried Forward, Reserves on Contract, etc.	Unexpended Balances Returned to General Fund.
<b>RECAPITULATION.</b>				
<b>ORDINARY EXPENSES.</b>				
Commissioner's Office.....	\$ 2,148.07	\$ 1,948.97		\$ 199.10
Bureau of Maps and Plats.....	5,462.00	4,975.84		486.66
Bureau of Engineering.....	899,925.88	809,147.26	\$ 7,223.42	88,555.30
Bureau of Streets.....	1,608,211.28	1,285,374.62	1,460.00	816,376.66
Bureau of Sewers.....	806,210.88	286,815.40	1,323.18	18,072.30
	\$2,316,958.11	\$1,888,261.59	\$ 10,006.60	\$418,689.93
City Hall.....	65,518.81	63,388.87	34.49	2,090.95
Total ordinary expenses...	\$2,382,471.92	\$1,951,649.96	\$ 10,041.09	\$ 420,780.87
<b>EXTRAORDINARY EXPENSES.</b>				
Bureau of Engineering.....	1,156,315.02	271,932.69	164,086.49	720,345.84
Bureau of Streets.....	190,000.00			190,000.00
Total.....	\$3,728,786.94	\$2,223,582.65	\$174,077.58	\$1,381,126.71
			\$2,897,660.23	

## EXPENDITURES FOR REMOVAL OF GARBAGE, STREET CLEANING, ETC., 1908.

WARDS.	DISTRIBUTION.						Unexpended Balance.
	Cleaning Streets.	Garbage.	Repairing Streets.	Unimproved Streets.	Repairing Sidewalks.	Miscellaneous.	
First .....	\$ 58,582.91	\$ 19,540.25	\$ 4,329.79	\$ 13.13	\$ 393.06	\$ 2,080.75	\$ 84,889.89
Second .....	6,369.37	25,228.00	947.60	24.75	80.75	170.91	32,771.38
Third .....	4,028.63	26,914.75	587.77	642.50	151.18	168.32	32,443.10
Fourth .....	5,987.90	16,167.00	1,356.88	.....	1,539.67	112.45	24,163.00
Fifth .....	5,753.90	11,988.25	303.67	2,300.00	2,045.95	110.40	23,330.00
Sixth .....	8,928.88	29,594.75	261.75	.....	69.14	23.25	88,900.00
Seventh .....	9,287.09	26,340.51	1,185.44	123.50	504.44	121.89	37,610.00
Eighth .....	3,735.80	9,947.88	639.08	5,077.88	2,002.73	248.20	23,545.00
Ninth .....	5,497.30	15,816.75	1,220.84	132.00	452.30	109.62	23,330.00
Tenth .....	3,671.20	15,088.25	627.56	106.25	739.72	140.48	20,735.00
Eleventh .....	4,626.50	13,641.50	686.45	.....	924.94	160.43	20,039.82
Twelfth .....	5,135.78	11,379.00	1,087.21	880.26	2,334.11	97.61	21,291.96
Thirteenth .....	5,988.80	18,757.50	307.11	177.00	598.52	478.32	26,307.25
Fourteenth .....	4,096.80	22,178.00	148.62	201.25	794.13	859.66	27,777.96
Fifteenth .....	5,146.89	16,372.25	869.63	90.50	1,137.56	58.87	23,675.70
Sixteenth .....	7,273.55	14,318.25	1,512.26	344.25	1,223.48	171.78	24,843.57
Seventeenth .....	5,821.45	21,167.50	458.16	292.92	369.12	146.08	28,255.23
Eighteenth .....	18,044.42	16,556.25	1,087.83	.....	91.89	98.26	35,879.65
Nineteenth .....	6,890.83	24,876.26	148.20	7.00	124.35	206.24	32,252.88
Twentieth .....	5,219.07	27,492.50	482.60	15.75	155.10	85.45	33,430.47
Twenty-first .....	8,308.63	28,660.80	957.73	.....	70.48	184.83	38,181.97
Twenty-second .....	5,769.64	20,644.25	181.02	.....	564.48	65.66	27,225.05
Twenty-third .....	4,076.28	18,849.50	948.83	146.25	494.18	100.91	24,615.95
Twenty-fourth .....	3,441.17	15,682.75	927.92	753.62	803.36	162.93	22,465.00
Twenty-fifth .....	2,312.50	28,039.99	1,007.93	.....	86.25	27.63	31,474.30
Twenty-sixth .....	4,865.75	18,212.00	909.22	950.50	887.75	85.69	25,860.91
Twenty-seventh .....	3,149.38	8,883.75	820.13	4,893.37	1,917.43	207.18	19,871.24
Twenty-eighth .....	4,903.80	15,052.25	1,117.11	55.50	1,426.07	81.50	22,636.23
Twenty-ninth .....	3,342.66	18,899.25	634.87	3,888.75	1,435.46	240.70	28,391.69
Thirtieth .....	4,963.20	22,781.25	548.00	9.00	137.65	33.62	28,472.72
Thirty-first .....	3,517.38	16,546.25	731.10	1,763.25	619.58	188.80	23,316.36
Thirty-second .....	5,992.13	18,649.75	1,001.93	1,051.38	1,406.40	106.53	28,208.62
Thirty-third .....	3,070.87	12,633.86	401.27	5,660.64	1,370.33	249.42	23,386.39
Thirty-fourth .....	3,268.88	8,623.00	1,711.90	1,699.00	1,949.69	156.40	17,408.87
Thirty-fifth .....	2,779.63	8,903.75	599.54	888.89	2,066.42	215.90	15,404.13
Total .....	\$ 244,225.57	\$ 643,427.80	\$ 80,676.95	\$ 32,089.08	\$ 80,867.62	\$ 7,156.17	\$ 997,650.00
							\$ 9,207.31

## WATER FUND.

## REVENUE FOR THE YEAR ENDED DECEMBER 31, 1908.

Assessed rates collected .....	\$2,260,808.99	
Miscellaneous water sales .....	18,708.25	
Meter service .....	1,406,989.98	
Permits .....	19,074.72	
Meter division, miscellaneous receipts .....	17,487.58	
Rent of Rookery .....	35,000.04	
Miscellaneous receipts .....	60,819.55	
		\$3,818,884.11
Extraordinary receipts:		
Water certificates, due January 1, 1905 .....	\$ 250,000.00	
Intercepting sewers, John P. Agnew .....	1,298.62	
Intercepting sewers, Sanitary District of Chicago .....	24,590.00	
Sale of old Town of Lake Pumping Station .....	760.00	
		276,638.63
Total .....		\$4,095,517.73

## EXPENDITURES.

	Appropriation, 1908.	Expenditures, 1908.	Unexpended Balance December 31, 1908.
<b>ORDINARY EXPENSES.</b>			
<b>OFFICE OF COMMISSIONER OF PUBLIC WORKS.</b>			
Office salaries—90 per cent. ....	\$ 15,255.00	\$ 15,053.63	\$ 201.37
Office expenses, printing annual report, stationery, etc., including unpaid bills—90 per cent. ....	4,077.63	2,492.51	1,585.12
<b>BUREAU OF MAPS AND PLATS.</b>			
Office salaries—75 per cent. ....	14,418.50	14,153.65	264.85
Office expenses, drawing material, rebinding atlases, etc.—75 per cent. ....	1,597.50	540.86	1,056.64
New drafting tables and fixtures—75 per cent .....	875.00	231.54	143.46
<b>PAYMASTER'S BUREAU.</b>			
Office salaries—80 per cent. ....	8,990.00	8,701.16	288.84
Office expenses, stationery, furniture, supplies, etc—80 per cent. ....	860.00	846.23	13.77
Fitting up vaults, filing cases, etc.—80 per cent .....	600.00	11.86	588.14
Maintaining pay-wagon—80 per cent. ....	87.50	25.88	11.67
Telephone service—80 per cent. ....	87.50	87.50	
<b>DEPARTMENT OF SUPPLIES.</b>			
Office salaries—40 per cent. ....	4,872.00	4,872.00	
Office expenses, including stationery, printing, telephone service, etc.—40 per cent. ....	1,329.96	1,398.95	31.01
<b>BUREAU OF WATER.</b>			
Collection division, salaries .....	53,726.00	52,262.84	1,463.66
Assessor's division, salaries .....	19,910.00	19,884.96	75.04
Permit division, salaries .....	50,481.75	47,263.23	3,168.47
Inspection division, salaries .....	37,600.00	35,296.81	2,303.19
Carried forward .....	\$ 208,618.84	\$ 197,423.11	\$ 11,190.28

## WATER FUND — CONTINUED.

	Appropriation, 1903.	Expenditures, 1903.	Unexpended Balance December 31, 1903.
Brought forward.....	\$ 208,618.84	\$ 197,428.11	\$ 11,190.28
Meter Mechanical division, salaries.....	14,148.75	18,324.66	819.09
Meter Rate division, salaries.....	31,686.00	31,075.29	610.71
Shut-off division, salaries.....	30,843.75	30,052.50	791.25
Postage.....	8,000.00	8,000.00	
Office expenses, printing, stationery, horse board, etc.....	12,500.00	9,478.95	3,021.05
Street car and railroad tickets.....	4,000.00	3,998.07	1.93
Rent of office space occupied by the Bureau of Water in the City Hall for the year 1903.	11,845.00	11,845.00	
Salary of attorney.....	2,000.00	1,779.17	220.83
Meter merchandise, appropriation..\$25,000.00 Less transfer to water tax refunds, Council order, November 16, 1903 2,500.00	22,500.00	7,824.12	14,675.88
Permit merchandise.....	5,500.00		
Expenses vouchered.....\$ 4,741.57 15 per cent reserve on contract... 190.12		4,931.69	568.81
Refunds on erroneous water assess- ments, appropriation.....\$10,000.00 By transfer from appropriation for meter merchandise, Council order, November 16, 1903..... 2,500.00	12,500.00	12,338.79	266.21
Reimbursing Bureau of Engineering for work done.....	2,500.00		2,500.00
Reimbursing Bureau of Streets for repair of streets.....	2,500.00		2,500.00
Sundry bills.....	175.01	175.01	
BUREAU OF ENGINEERING.			
City Architect's office, salaries—90 per cent...	2,565.00	2,161.77	403.28
City Engineer's office, salaries—90 per cent...	16,272.00	11,495.49	4,776.51
Office expenses, stationery, drawing, material, supplies, etc.—90 per cent.....	2,350.00	1,209.71	1,040.29
City Engineer's miscellaneous pay roll.....	5,425.00	2,875.65	2,549.35
Street car and railroad transportation.....	3,150.00	2,242.02	907.98
Sundry bills.....	238.24	9.80	228.44
Water Works shops.....	90,000.00		
Expenditures:			
Material and supplies.....\$ 9,386.96			
Salaries..... 62,822.95			
		72,209.91	17,790.09
Cribs—operation:			
Salaries, including meals.....	81,740.00		
Expenditures:			
Two-mile crib.....\$13,471.90			
Four-mile crib..... 3,860.87			
Lake View crib..... 4,154.71			
Hyde Park crib..... 3,766.94			
Carter H. Harrison crib..... 4,235.79			
		29,480.21	2,259.79
Carried forward.....	\$ 520,947.09	\$ 458,825.92	\$ 67,121.17



## WATER FUND — CONTINUED.

	Appropriation, 1908.	Expenditures, 1908.	Unexpended Balance December 31, 1908.
Brought forward.....	\$ 520,947.09	\$ 453,335.92	\$ 67,121.17
Fuel and supplies, etc.....	5,000.00		
Expenditures:			
Two-mile crib.....\$ 931.80			
Four-mile crib.....570.97			
Lake View crib.....294.59			
Hyde Park crib.....259.00			
Carter H. Harrison crib.....609.06			
		2,664.92	2,335.03
Cribs—repairs and renewals.....	12,000.00		
Expenditures:			
Two-mile crib, vouch- ered.....\$1,123.80			
15 per cent reserve on contract.....27.80			
	\$1,151.10		
Four-mile crib, vouch- ered.....\$1,166.40			
15 per cent reserve on contract.....2.08			
	1,168.43		
Lake View crib, vouch- ered.....\$ 821.89			
15 per cent reserve on contract.....2.83			
	824.22		
Hyde Park crib, vouch- ered.....\$ 779.39			
15 per cent reserve on contract.....17.47			
	796.86		
Carter H. Harrison crib, vouchered.....\$2,680.41			
15 per cent reserve on contract.....0.67			
	2,681.08		
		6,121.69	5,878.31
Tug service:			
Summer service, nine months.....	6,800.00	5,924.13	875.87
Winter service, three months.....	14,000.00	6,667.61	7,332.39
Extra tug and scow hire.....	500.00	155.37	344.63
Maintenance of tunnel plants.....	3,000.00		
Expenses vouchered.....\$2,643.10			
15 per cent withheld on contract..	1.55		
		2,644.65	355.35
Pumping stations:			
Appropriation for repairs and re- newals and operation.....\$802,288.00			
Appropriation for Springfield Avenue Pumping Station, re- pairs to roof, etc.....3,000.00			
	\$805,288.00		
Carried forward.....\$805,288.00	\$ 561,747.09	\$ 473,004.39	\$ 83,742.80

## WATER FUND — CONTINUED.

	Appropriation, 1903.	Expenditures, 1903.	Unexpended Balance December 31, 1903.
Brought forward.....\$805,288.00	\$ 561,747.09	\$ 478,004.29	\$ 88,742.80
Less transfer to account special assessments for improve- ments..... 2,814.60	802,978.40		
Expenditures as per detailed statements:			
Operation:			
Vouchered.....\$615,552.11			
15 per cent re- serves withheld on contracts.... 35,565.47			
Repairs and renewals:			
Vouchered..... \$99,754.02			
15 per cent re- serves withheld on contracts.... 240.23			
		751,111.83	51,861.57
WATER PIPE EXTENSION.			
Repairs and maintenance of pipes and hydrants:			
Office salaries.....	8,668.00	8,487.32	180.68
Labor.....	246,898.90	220,881.47	26,062.43
Horse board.....	4,104.00	4,103.54	.46
City pipe yards, superintendence and labor.	24,864.60	23,984.46	880.14
Miscellaneous material, supplies, etc.....	20,000.00	19,823.44	676.56
Special castings.....	1,000.00	7.80	992.20
Lumber (including transfer \$1,000.00 from appropriation for special castings, con- struction).....	5,250.00		
Expenditures vouchered..... \$4,619.04			
15 per cent reserve withheld on contracts..... 466.50			
		5,085.54	164.46
Hydrant rings and covers, appro- priation..... \$3,500.00			
Less transfer to appropriation for valve basin covers, ordered by the City Council, October 19, 1903..... 2,000.00			
	1,500.00		
Expenditures vouchered..... \$1,127.60			
15 per cent reserve withheld on contract..... 197.48			
		1,325.08	174.92
Teaming, appropriation.....\$34,000.00			
By transfer from appropriation for labor (construction), Council order, October 19, 1903..... 10,000.00			
	44,000.00	41,956.53	2,043.47
Cast iron pipe.....	4,000.00	4,000.00	
Carried forward.....	\$1,724,500.99	\$1,557,721.30	\$ 166,779.69

## WATER FUND—CONTINUED.

	Appropriation, 1908.	Expenditures, 1908.	Unexpended Balance December 31, 1908.
Brought forward.....	\$1,724,500.99	\$1,557,721.80	\$ 166,779.69
Valve basin covers, appropriation... \$8,000.00			
By transfer from appropriation for hydrant rings and covers, Coun- cil order, October 19, 1908..... 3,000.00			
	11,000.00		
Expenditures vouchered..... \$9,050.18			
15 per cent reserve withheld on contract..... 1,595.67			
		10,645.80	854.90
Reimbursing Bureau of Streets for work done	10,000.00	5,426.83	4,573.17
Restoration of streets and alleys.....	8,000.00	2,461.42	5,538.58
[NOTE.—For balance of appropriation for the Water Pipe Extension see Extraordinary Expenses.]			
MISCELLANEOUS.			
Legal expenses, etc., on account of Water Works.....	4,000.00	3,749.82	250.18
Labor, supplies, etc., for operating baths at Fourteenth and Twenty-second street pump- ing stations.....	3,000.00		
Expenditures:			
Supplies, etc., for bath at Four- teenth street..... \$392.55			
Supplies, etc., for bath at Twenty-second street..... 199 52			
Labor at Fourteenth street sta- tion..... 720.00			
Labor at Twenty-second street station..... 658.91			
		1,970.98	1,029.02
Hydrant rentals, Rogers Park Water Works..	10,000.00	9,780.60	219.40
Hydrant rentals, Chicago Suburban Water and Light Company.....	6,500.00	6,160.00	340.00
Chicago Harbor, harbor police and dredging inspectors, salaries.....	10,800.00	9,000.50	1,799.50
Meter and private work and laying water pipe by deposits.....	50,000.00	19,584.72	30,415.28
Repairing water main under West Fork at Kedzie avenue.....	5,179.42	5,179.42	
BUREAU OF SEWERS.			
Fullerton Avenue Pumping Station:			
Salaries.....	10,808.00	10,384.68	223.32
Fuel.....	8,560.00		
Expenses vouchered..... \$5,440.64			
15 per cent withheld on contract 880.96			
		6,321.60	2,238.40
Repairs and supplies..... \$3,000.00			
Unpaid bill..... 18.68			
	3,018.68		
Carried forward.....	\$1,865,162.09	\$1,648,387.67	\$ 218,760.74

## WATER FUND — CONTINUED.

	Appropriation, 1903.	Expenditures, 1903.	Unexpended Balance December 31, 1903.
Brought forward.....	\$1,865,162.09	\$1,648,887.67	\$ 218,760.74
Expenses, repairs and renewals, operation, supplies, etc.....		2,885.95	127.78
DEPARTMENT OF FINANCE.			
Interest on Water certificates, Nos. 501-1500..	85,000.00	85,000.00	
Interest on Water Loan bonds.....	144,807.50	144,807.50	
Interest due January 1, 1904, on Water certi- ficates (\$250,000.00), issued July 1, 1903, ac- crued interest.....	6,250.00	6,250.00	
Total ordinary expenses.....	\$2,051,219.59	\$1,887,831.12	\$ 218,888.47
EXTRAORDINARY EXPENSES.			
PUMPING STATIONS.			
Existing contracts, new pumping stations, pumping engines and appurtenances:			
Unexpended balance, 1902.....			\$109,688.75
Appropriation, 1903.....	165,000.00		
	274,688.75		
Expenditures vouchered:			
Central Park Avenue Pumping Station.....	\$ 45,000.00		
Springfield Avenue Pumping Station.....	45,711.00		
	\$ 90,711.00		
Reserve on contracts and for contract work, 1904.....	110,954.26		
Chicago Avenue Pumping Station, new boiler plant.....	17,000.00	201,665.26	73,018.49
Expenses vouchered .....	\$ 82.98		
Reserve on contracts.....	13,228.50		
		12,261.48	4,788.57
Chicago Avenue Pumping Station, new pump- ing engines, foundations and necessary re- modeling of tunnels.....	125,000.00		
Expenses vouchered .....	\$118,828.81		
Reserve on contracts.....	11,058.84		
		124,877.65	122.85
Springfield Avenue Pumping Station, wet well floor, etc.....	8,000.00	2,995.84	4.16
Pumping Stations—new work:			
Central Park Avenue and Springfield Ave- nue Pumping Stations, engines and foundations.....	25,000.00		25,000.00
Sixty-eighth Street Pumping Station, en- gines and foundations.....	20,000.00		20,000.00
Chicago Avenue Pumping Station, remodel- ing boiler room.....	5,000.00		5,000.00
Carried forward.....	\$ 469,688.75	\$ 841,800.18	\$ 127,888.57

## WATER FUND — CONTINUED.

	Appropriation, 1903.	Expenditure, 1903.	Unexpended Balance December 31, 1903.
Brought forward.....	\$ 469,683.75	\$ 341,800.18	\$ 127,883.57
Fourteenth Street Pumping Station, new boiler plant.....	30,000.00		
Expenses vouchered.....\$ 78.21			
Contracted work, 1904.....	29,926.79	30,000.00	
Central Park Avenue Pumping Station, wet well floor, etc.....	3,000.00		3,000.00
New pumping stations, miscellaneous ma- chinery.....	2,000.00		
Expenses, Springfield Avenue Pumping Station		191.74	1,808.26
Special assessments for local improvements..	2,814.60	2,814.60	
Smoke prevention devices for boilers.....	30,000.00		30,000.00
WATER PIPE EXTENSION.			
Construction:			
Miscellaneous material, supplies, etc.....	25,000.00	17,457.60	7,542.40
Office salaries.....	8,668.00	8,487.82	180.68
Labor.....	40,000.00		40,000.00
Labor required for construction (including supervision), appro- priation.....	\$65,000.00		
Less transfer to appropriation for teaming (repairs and re- newals), Council order, Octo- ber 19, 1903.....	10,000.00		
	55,000.00	30,391.86	24,608.14
City pipe yards, superintendence and labor.	12,000.00	7,605.90	4,394.10
Special castings.....	\$1,000.00		
Less transfer to appropriation for lumber (repairs and re- newals), Council order, Octo- ber 26, 1903.....	1,000.00		
	3,000.00	2,890.95	109.05
Brass castings.....	7,500.00		
Expenses vouchered.....	\$5,020.91		
15 per cent reserve withheld on contract.....	886.04	5,906.95	1,593.05
Hydrant and stop valve castings.....	11,250.00		
Expenses vouchered.....	\$8,908.04		
15 per cent reserve withheld on contract.....	1,107.82		
		10,010.86	1,289.14
Hydrant rings and covers, appro- priation.....	\$3,500.00		
Less transfer to appropriation for valve basin covers (repairs), Council order, October 19, 1903	1,000.00		
	2,500.00		
Expenses vouchered.....	\$1,772.40		
15 per cent reserve withheld on contract.....	197.47	1,969.87	580.18
Carried forward.....	\$ 701,916.35	\$ 459,027.83	\$ 242,888.52

## WATER FUND — CONTINUED.

	Appropriation, 1903.	Expenditures, 1903.	Unexpended Balance December 31, 1903.
Brought forward.....	\$ 701,916.35	\$ 459,027.83	\$ 242,888.52
Teaming .....	6,000.00	3,384.87	2,715.63
Cast iron pipe .....	75,000.00	69,352.88	5,647.67
<b>MISCELLANEOUS.</b>			
Legal expenses on account of Water Works..	9,000.00	3,642.88	5,357.62
Water mains, to be used by fire boats:			
Michigan street.....	45,000.00		45,000.00
Canal street.....	99,500.00		99,500.00
Beach street.....	25,000.00		25,000.00
To complete down-town system.....	150,000.00		150,000.00
Extension of two-mile tunnels to Carter H.			
Harrison crib.....	100,000.00		100,000.00
Division street water pipe tunnel.....	25,000.00	23,621.90	1,378.10
New Southwest land and lake tunnels.....	100,000.00		100,000.00
Water pipe in Oglesby avenue from Sixty-			
eighth street Pumping Station to Seventy-			
ninth street.....	80,000.00		
Expenses vouchered.....	\$57,809.90		
15 per cent reserve withheld on			
contract.....	3,936.00		
		61,745.30	18,254.70
Lake View crib: new superstructure, includ-			
ing engineering and inspection.....	75,000.00	56.86	74,943.14
Board of Local Improvements: public benefits			
payable from water fund (special assess-			
ments for water supply pipe).....	9,980.07	6,616.50	3,363.57
Redemption of water pipe advance certificates	100,000.00		100,000.00
Water certificates due June 1, 1903.....	500,000.00	500,000.00	
High pressure water system.....	1,000.00	1,000.00	
<b>INTERCEPTING SEWERS.</b>			
Section "C," Thirty-ninth street			
conduit, appropriation.....	\$ 83,460.00		
Balance carried forward, Decem-			
ber 31, 1902.....	99,012.98		
By transfer from appropriation			
for Section "L," Council order,			
October 12, 1903.....	4,500.00		
Expenses vouchered.....	\$165,015.89	186,972.93	
Reserve withheld and contracted			
work, 1904 .....	21,957.04		
		186,972.93	
Restoration of Thirty-ninth street,			
appropriation.....	\$ 7,581.82		
Balance carried forward, Decem-			
ber 31, 1902.....	7,581.82		
	15,163.64	8,182.15	6,981.49
Cleaning construction work.....	47,100.00		
Expenses vouchered.....	\$ 44,410.09		
Reserve withheld and contracted			
work, 1904.....	2,689.91		
		47,100.00	
Carried forward.....	\$2,351,682.99	\$1,370,602.55	\$ 981,080.44

## WATER FUND — CONTINUED.

	Appropriation, 1903.	Expenditures, 1903.	Unexpended Balance December 31, 1903.
Brought forward.....	\$ 2,351,832.99	\$1,870,602.55	\$ 981,030.44
Pumping at Halsted street slip, appropriation.....	\$13,455.00		
Balance carried forward, Decem- ber 31, 1902.....	2,958.75		
	16,413.75		
Expenses vouchered.....	\$18,515.00		
Reserve withheld and contracted work, 1904.....	2,898.75		
		16,413.75	
Section "D," Lawrence avenue conduit.....	500,000.00	1,814.85	498,185.35
Contract (Farley & Green) reserve.....	30,000.00		30,000.00
Restoration of Lawrence avenue.....	2,000.00		2,000.00
Pumping at Lake Michigan, appro- priation.....	\$ 8,809.00		
Balance carried forward, Decem- ber 31, 1902.....	350.44		
	9,159.44		
Expenses vouchered.....	\$ 8,014.59		
Reserve withheld and contracted work, 1904.....	1,144.85		
		9,159.44	
Section "G," Thirty-ninth street to Fifty-sixth street, appropriation..	\$30,000.00		
Balance carried forward, Decem- ber 31, 1902.....	5,915.61		
By transfer from appropriation for Section "H," Council order, De- cember 21, 1903.....	27,000.00		
	62,915.61		
Expenses vouchered, Section "G".....	\$38,700.65		
Expenses vouchered, Section "G3".....	1,562.94		
Contracted work, 1904.....	2,652.02		
		62,915.61	
Section "H," Fifty-sixth street to Seventieth street, appropriation..	\$314,586.00		
and Seventieth street to Seventy- third street.....	70,660.00		
	\$385,246.00		
Balance carried forward, Decem- ber 31, 1902.....	170,943.88		
	\$556,189.88		
Less transfer to appropriation for Section "G," Council order, December 21, 1903.....	27,000.00		
	529,189.88		
Expenses, Section "H".....	\$243,121.72		
Expenses, Section "H2".....	125,471.37		
		368,593.09	160,596.29
Section "I," Thirty-fifth street to Thirty-ninth street.....	37,100.00		37,100.00
Carried forward.....	\$3,538,411.17	\$1,829,499.09	\$1,708,912.08

## WATER FUND — CONTINUED.

	Appropriation, 1903.	Expenditures, 1903.	Unexpended Balance December 31, 1903.
Brought forward.....	\$8,538,411.17	\$1,829,499.09	\$1,708,912.08
Section "L," main conduit, Thirty-ninth street produced, appropriation.....	\$ 9,282.00		
Balance carried forward, December 31, 1902.....	15,858.25		
	\$25,140.25		
Less transfer to appropriation for Section "C," Council order, October 12, 1903.....	4,500.00		
	20,640.25	20,448.98	196.32
Section "M," intake and protection pier, Thirty-ninth street produced, appropriation.....	\$26,415.00		
Balance carried forward, December 31, 1903.....	34,822.93		
	60,787.93		
Expenses vouchered.....	\$17,890.04		
Reserve and contracted work, 1904	20,000.00		
		37,890.04	22,847.89
Section "N," intake and protection pier, Lawrence avenue.....	111,800.00		111,800.00
Section "O," pumping station, Thirty-ninth street.....	365,700.00		
Expenses vouchered.....	\$ 82,700.89		
Reserve and contracted work, 1904	137,080.00		
		219,780.89	145,919.11
Section "P," pumping station, Lawrence avenue.....	63,600.00		63,600.00
Section "Q," extension Lawrence avenue conduit.....	62,731.00		62,731.00
Section "S," pumping machinery, Thirty-ninth street.....	233,200.00		
Expenses vouchered.....	\$ 38,225.44		
Reserve and contracted work, 1904	100,000.00		
		138,225.44	99,974.56
Section "T," pumping machinery, Lawrence avenue.....	95,400.00		95,400.00
Temporary pumping station at Thirty-ninth street.....	50,000.00		
Expenses vouchered.....	\$ 1,746.66		
Reserve and contracted work, 1904	23,320.00		
		25,066.66	24,933.84
To reverse sewers, south shore.....	121,900.00		121,900.00
Auxiliary intake, north shore.....	26,500.00		26,500.00
Maintenance.....	10,000.00		10,000.00
Section 2, connection of laterals, retained on Nash & Dowdle contract.....	250.00		250.00
Section 3, connections of laterals, retained on Cogan & Pound contract.....	250.00		250.00
Office expenses.....	12,000.00	10,751.72	1,248.28
Total extraordinary expenses.....	\$4,772,620.35	\$2,276,657.77	\$2,495,962.53



## WATER FUND — CONTINUED.

	Appropriation, 1903, and Balances, 1902.	Expenditures Vouchered.	Balances Carried Forward (Reserve on Contracts and Contracted Work, 1904).	Unexpended Balance, December 31, 1903.
<b>RECAPITULATION.</b>				
<b>ORDINARY EXPENSES.</b>				
Office of Commissioner of Public Works .....	\$ 19,332.63	\$ 17,546.14		\$ 1,786.49
Bureau of Maps and Plats.....	16,386.00	14,926.05		1,459.95
Paymaster's Bureau.....	5,025.00	4,122.58		902.42
Department of Supplies .....	6,201.96	6,170.95		31.01
Bureau of Water.....	322,861.26	289,185.52	\$ 190.12	32,985.62
Bureau of Engineering.....	29,900.24	19,994.44		9,905.80
Water Works shops.....	90,000.00	72,209.91		17,790.09
Cribs and tug service .....	69,540.00	50,964.13	49.80	18,526.07
Maintenance of tunnel plants....	3,000.00	2,643.10	1.55	355.35
Pumping stations.....	802,973.40	715,306.13	35,805.70	51,861.57
Water pipe extension.....	388,780.50	344,879.58	2,259.65	41,641.27
Miscellaneous .....	89,479.42	55,426.04		34,053.38
Bureau of Sewers.....	22,181.68	18,711.27	880.96	2,589.45
Department of Finance, interest.	186,057.50	186,057.50		
	\$2,051,219.59	\$1,798,143.34	\$ 39,187.78	\$ 213,888.47
<b>EXTRAORDINARY EXPENSES.</b>				
Pumping stations.....	\$ 535,998.35	\$ 210,143.12	\$164,163.40	\$ 162,691.83
Water pipe extension.....	245,918.00	155,166.68	2,191.33	88,559.99
Miscellaneous .....	819,480.07	92,746.94	3,936.00	722,797.13
Redemption of water certificates.	500,000.00	500,000.00		
Intercepting sewers.....	2,670,223.93	836,567.73	311,742.57	1,521,913.63
	\$4,772,620.35	\$1,794,624.47	\$482,033.30	\$2,495,962.58
Ordinary expenses, total .....	\$2,051,219.59	\$1,798,143.34	\$ 39,187.78	\$ 213,888.47
Extraordinary expenses, total.	4,772,620.35	1,794,624.47	482,033.30	2,495,962.58
Total.....	\$6,823,839.94	\$3,592,767.81	\$521,221.08	\$2,709,851.05
			\$4,113,988.89	

## PUMPING STATIONS—OPERATION.—EXPENDITURES JANUARY 1 TO DECEMBER 31, 1908.

	Salaries.	Fuel.	Fuel, 15 per cent Retained on Contract.	Oil, Grease and Waste Account.	Miscellaneous Supplies.	Total.
Chicago avenue pumping station.....	\$ 46,521.05	\$ 49,921.81	\$ 6,402.26	\$ 1,588.26	\$ 6,040.85	\$110,473.78
Fourteenth street pumping station.....	41,142.64	51,029.89	6,288.76	1,732.42	5,559.25	105,762.96
Harrison street pumping station.....	24,555.88	23,232.17	2,519.90	1,053.33	3,124.13	53,474.91
Lake View pumping station.....	28,363.62	23,501.92	2,387.40	1,603.88	1,971.12	58,277.94
Twenty-second street pumping station.....	35,314.32	41,232.33	5,305.22	1,022.45	3,915.80	86,490.12
Sixty-eighth street pumping station.....	44,655.10	41,690.63	5,189.76	1,799.47	4,566.37	97,901.33
Central Park avenue pumping station.....	31,310.62	30,685.34	3,325.88	1,794.20	3,271.56	70,887.60
Springfield avenue pumping station.....	26,050.38	23,269.65	2,870.60	1,647.81	1,864.21	55,202.65
Norwood Park pumping station.....	8,467.78	597.97	72.48	.....	82.60	4,170.78
Washington Heights pumping station.....	5,209.77	2,726.53	263.21	120.26	175.80	8,485.56
<b>Total.....</b>	<b>\$286,590.61</b>	<b>\$286,878.23</b>	<b>\$35,565.47</b>	<b>\$12,362.08</b>	<b>\$29,721.19</b>	<b>\$651,117.58</b>

## PUMPING STATIONS—REPAIRS AND RENEWALS.—EXPENDITURES JANUARY 1 TO DECEMBER 31, 1908.

	Engines and Pumps.	Boilers.	Buildings.	15 per cent Re- tained on Lum- ber Contracts.	Total.
Chicago avenue pumping station.....	\$ 4,122.62	\$ 5,010.97	\$ 2,863.97	\$ 14.10	\$ 12,011.66
Fourteenth street pumping station.....	8,492.44	11,589.69	4,505.71	25.65	19,603.49
Harrison street pumping station.....	936.81	2,848.76	2,640.08	8.05	5,918.70
Lake View pumping station.....	2,637.35	2,814.09	1,566.55	65.23	7,083.22
Twenty-second street pumping station.....	8,052.99	7,644.81	3,963.94	40.34	14,702.08
Sixty eighth street pumping station.....	4,787.49	6,824.60	2,556.97	26.01	14,145.07
Central Park avenue pumping station.....	2,114.98	5,397.60	3,889.64	17.57	11,389.79
Springfield avenue pumping station.....	1,441.14	4,152.77	8,555.18	48.28	14,192.37
Norwood Park pumping station.....	9.06	141.03	50.09	.....	200.18
Washington Heights pumping station.....	401.25	127.31	219.23	.....	747.69
<b>Total.....</b>	<b>\$2,926.13</b>	<b>\$45,016.53</b>	<b>\$30,811.36</b>	<b>\$240.23</b>	<b>\$99,984.25</b>

## WATER WORKS.

DECEMBER 31, 1903.

Cost up to May 1, 1861, when the works were transferred  
from the Board of Commissioners to the Board of  
Public Works.....\$ 1,020,160.21

## EXPENDITURES SINCE 1861.

Cost of water pipe, including labor.....	\$17,079,643.81
Mains for fire protection.....	79,537.41
Cost of works, annexed territory.....	1,160,164.24
Cost of North pumping works.....	1,223,916.68
Cost of South pumping works (Fourteenth street).....	703,870.79
Cost of Fourteenth street bath.....	4,495.34
Cost of Central pumping works.....	421,196.15
Cost of West pumping works.....	944,893.77
Cost of Twenty-second street bath.....	1,432.04
Cost of Sixty-eighth street pumping works.....	395,239.66
Cost of Lake View pumping works.....	194,708.48
Cost of Washington Heights pumping works.....	27,720.95
Cost of Norwood Park pumping works.....	9,681.72
Cost of canal pumps for 1899.....	247.00
Cost of Springfield avenue pumping works.....	480,672.01
Cost of Central Park avenue pumping works.....	426,072.57
Reserves on contracts for Springfield avenue and Central Park avenue pumping works.....	110,954.26
Cost of real estate for sites for pumping stations, etc.....	864,099.51
Cost of new lake tunnel.....	1,104,744.12
Cost of Lake View tunnel.....	701,792.45
Cost of Sixty-eighth street tunnel extension.....	771,556.07
Cost of Chicago avenue tunnel extension.....	42,436.45
Cost of Ashland avenue tunnel.....	17,453.36
Cost of Kedzie avenue tunnel extension.....	85,561.75
Cost of first lake tunnel.....	464,866.05
Cost of second lake tunnel.....	415,709.36
Cost of land tunnel to West pumping works.....	542,912.63
Cost of new land tunnel.....	284,380.04
Cost of new land tunnel, 1895.....	2,121,525.02
Cost of Western avenue tunnel.....	29,614.58
Cost of Northeast lake tunnel, 1895.....	677,577.55
Cost of Jefferson street tunnel.....	15,968.17
Cost of new Southwest land and lake tunnel, new South- west pumping station, etc.....	57,530.95
Cost of new lake shore inlet.....	133,345.34
Cost of new lake shore inlet extension.....	167,552.13
Cost of two-mile tunnel extension.....	37.50
Cost of North breakwater.....	41,780.11
Cost of two-mile crib.....	102,984.48
Cost of four-mile crib.....	469,574.83
Cost of Lake View crib.....	92,980.94
Cost of removal of Lake View inner crib.....	4,950.00
Cost of Sixty-eighth street crib.....	47,420.47
Cost of removal of intermediate crib.....	8,931.45
Cost of Carter H. Harrison crib.....	53,327.86
Cost of lake crib protection.....	149,431.63
Cost of intercepting sewers.....	3,963,934.02
Cost of Water Works shop.....	27,240.58
Cost of Water Works stock.....	29,318.00

Carried forward.....\$37,223,084.84

Brought forward.....	\$37,223.084.84	
Cost of water reservoir fence.....	1,702.87	
Cost of addition to stables.....	1,019.48	
Cost of new repair shops.....	42,749.11	
Division street water pipe tunnel.....	23,621.90	
Water pipe in Oglesby avenue.....	61,745.80	
High pressure water system.....	1,000.00	
Total.....		<u>\$37,854,928.50</u>

## BONDED DEBT OF WATER WORKS.

City of Chicago Water Loan bonds outstanding December 31, 1903, bearing 4 per cent interest and maturing as follows:

July 1, 1908 .....	\$ 150,000.00	
July 1, 1910 .....	159,500.00	
July 1, 1912 .....	821,000.00	
July 1, 1914 .....	576,000.00	
July 1, 1915 .....	1,485,000.00	
		<u>\$ 3,191,500.00</u>

Bearing  $3\frac{1}{8}$  per cent interest, maturing:

July 1, 1909 .....	\$ 225,000.00	
July 1, 1910 .....	108,500.00	
		<u>328,500.00</u>

## ANNEXED DISTRICTS.

Hyde Park:

5 per cent bonds, due January 1, 1904.....	50,000.00
--	-----------

Lake View:

5 per cent bonds, due July 1, 1904.....	\$ 23,000.00	
4 per cent bonds, due July 1, 1907.....	50,000.00	
		<u>73,000.00</u>

Total bonded debt of Water Works.....	<u>\$ 3,643,000.00</u>
---------------------------------------	------------------------

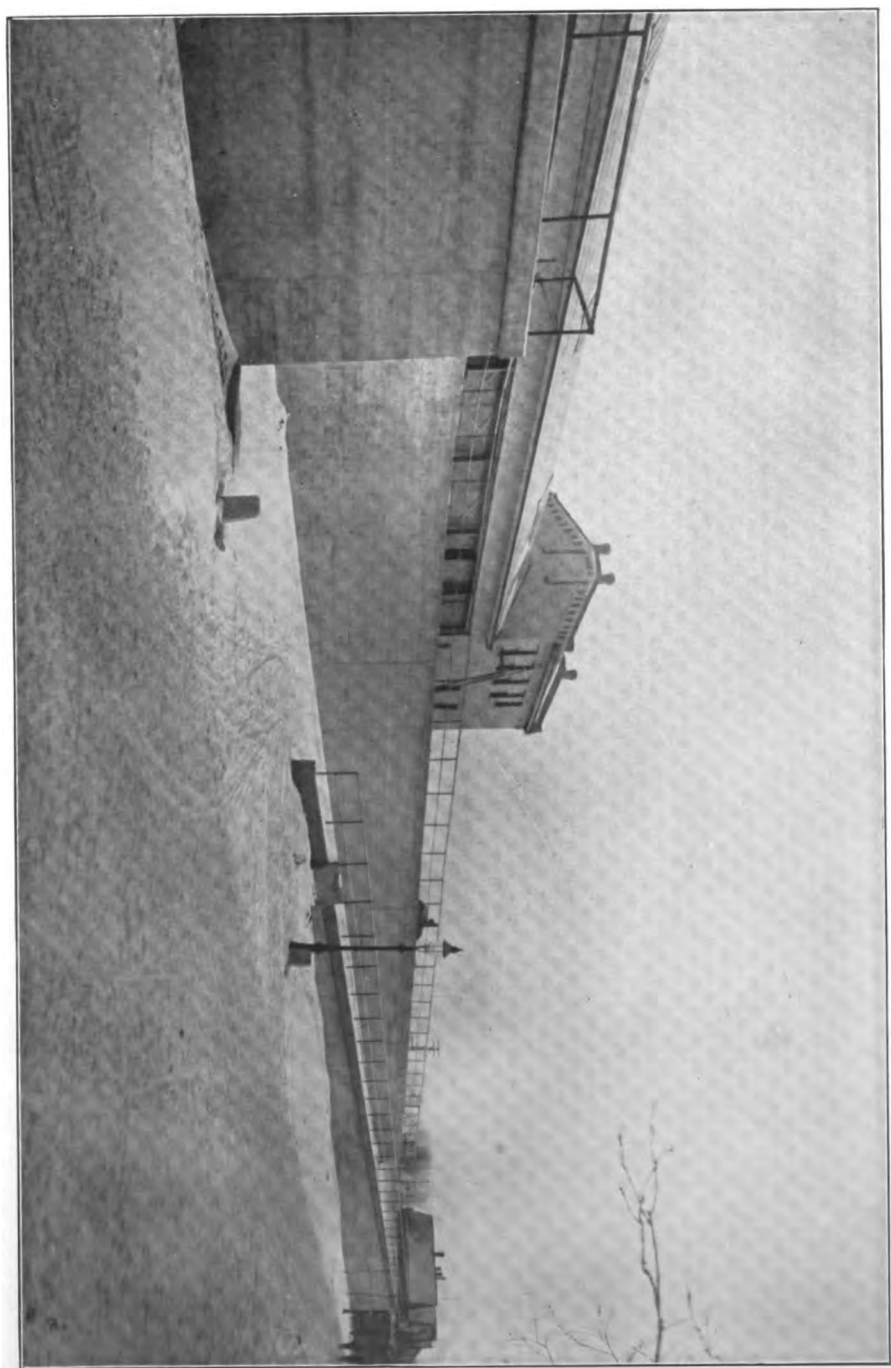
Total interest paid on Water Loan to December 31, 1903.	<u>\$ 9,461,555.00</u>
---	------------------------

Respectfully submitted,

HUGO RASPER,

*Bookkeeper.*





C. & W. I. R. R. TRACK ELEVATION.—APPROACH TO SOUTH END OF ENGLEWOOD YARD.



# INDEX.

FRONTISPIECE.....Portrait of F. W. BLOCKI.....Commissioner of Public Works

## MAYOR'S MESSAGE.

	PAGE.
Settlement of Traction Problem.....	5- 14
Recent Bond Decision.....	14, 15
Lowering of Tunnels.....	15
Bonds Issued by City of Chicago since May 1, 1897.....	15
Present Status of City Bonds.....	15, 16
Permanent Improvements Ordered in 1904.....	16- 18
Reduction of Garbage.....	18, 19
Sanitary District's Water Power.....	19
Mueller Law.....	19, 20
Public Ownership of Gas and Electric Utilities.....	20
Dram Shop Ordinance.....	20, 21
Race-Horse Gambling.....	21
Investigation of Public Officials.....	21- 23
Board of Education.....	23
New Charter for Chicago.....	23, 24
Corporation Counsel's Office.....	24- 26
Comptroller's Office.....	27, 28
Water Supply.....	28, 29
Bridges and Viaducts.....	29
Harbors.....	29
Bureau of Water.....	30
Assessor's Division.....	30
Meter Division.....	30
Collection Division.....	30
Removal of Garbage.....	30
Street and Alley Cleaning.....	31
Repairing Improved Streets and Alleys.....	31
Unimproved Street and Alley Cleaning.....	31
Sidewalk Repairs.....	31
Small Parks.....	31, 32
Bureau of Sewers.....	32
Intercepting Sewers.....	32- 34
Bureau of Maps.....	34
Department of Health.....	34- 38
Board of Local Improvements.....	38, 39
Police Department.....	39, 40



<b>Mayor's Message—Continued.</b>		<b>PAGE.</b>
House of Correction, etc.	40,	41
Fire Department	41,	42
Civil Service Commission	42,	43
Department of Supplies	43,	44
Track Elevation	44,	45
Building Department		45
City Collector's Office	45,	46
Boiler Inspection		47
Department of Electricity	48,	49
Municipal Library		49
Board of Examining Engineers	49,	50
Oil Inspection		50
City Treasurer		50
Prosecuting Attorney		51
City Sealer		51
Small Parks and Playgrounds.	51-	53
City Executive Officers		54
City Council		54

---

## DEPARTMENT OF PUBLIC WORKS.

Executive Officers	55
Heads of Bureaus	55
Past Commissioners of Public Works	56

## COMMISSIONER'S REPORT.

Water Supply	59,	60
Water Pipe Extension	60,	61
Bridges and Viaducts		61
Rivers and Harbors		61
Division of Architecture		62
Bureau of Water		62
Bureau of Sewers	62,	63
Intercepting Sewers		63
Garbage Removal		63
Street and Alley Cleaning	63,	64
Cost of Repairs to Streets and Alleys		64
Cost of Sidewalk Repairs		64
Disposition of Garbage		64
Permits to Open Improved Streets, etc		65
Subways in Connection with Lowering Tunnels.	65,	66
House-Moving Permits		66
Small Parks		66
Bureau of Maps		66
Track Elevation	66,	67

## CITY ENGINEER'S REPORT.

	PAGE.
Architecture—Division of .....	155-157
Bridges and Viaducts .....	73, 74, 108-116
Work of Division .....	108, 109
Construction—Ninety-fifth Street, East Division Street, West Division Street, and North Western Avenue .....	109, 110
Repairs and Maintenance .....	110-116
Operation of Bridges .....	144
Cribs .....	93, 94
Two-Mile Crib .....	93
Four-Mile Crib .....	93
Carter H. Harrison Crib .....	94
Sixty-eighth Street Crib .....	94
Lake View Crib .....	94
Harbors .....	74, 117-154
Dock Work .....	117, 118
Dredging .....	118
City Dock Ordinances .....	119-127
Calumet River and Harbor .....	127
Chicago River and Harbor .....	128-130
Movement of Vessels .....	130, 131
Lake Front Survey .....	131
Lake Michigan .....	131, 132
Tables showing Elevation of Surface of Lake Michigan, Precipitation, etc., Maximum, etc., of Water .....	132-134
Submerged Lands .....	135-138
Commerce by Lake .....	138
Movement of Vessels in Chicago River .....	139
Vessels Built in District of Chicago .....	139
Tonnage of the District of Chicago .....	140
Summary of Commerce by Lake, 1908 .....	140
Lake Commerce of Chicago—Receipts .....	141
Lake Commerce of Chicago—Shipments .....	141
Movements of Vessels in Chicago River .....	142
Detail of Vessel Movements Passing Bridges .....	143
Operation of Bridges .....	144
Commerce by Lake and Canal .....	145
Damage Done by Vessels .....	146, 147
Damages Claimed on Account of Current in Chicago River .....	147
Monthly Mean Barometric Pressure, etc. ....	148
Precipitation at Chicago in Inches, etc. ....	149
Temperature by Months, etc. ....	150
Daily Precipitation .....	151
Mean Daily Temperature .....	152
Maximum Daily Temperature .....	153
Minimum Daily Temperature .....	154
Remarks .....	154
Pumping Stations—Water Supply .....	71, 72, 74- 87
Fourteenth Street Pumping Station .....	74- 76
Sixty-eighth Street Pumping Station .....	76- 78

City Engineer's Report—*Continued.*

	PAGE.
Twenty-second Street Pumping Station .....	78, 79
Chicago Avenue Pumping Station .....	79- 83
Lake View Pumping Station .....	83, 84
Harrison Street Pumping Station .....	84, 85
Central Park Avenue Pumping Station .....	85
Springfield Avenue Pumping Station .....	85- 87
Washington Heights Pumping Station .....	87
Norwood Park Pumping Station .....	87
Monthly Pumpage in Gallons .....	90
Operations of Pumping Stations, Cost, etc. ....	91, 92
Pipe—Amount in the City of Chicago at the close of 1903 .....	107
Tunnels—Mileage in Use .....	89
Water Pipe Extension .....	73, 95-107
Improvements .....	95, 96
Hydrants Placed .....	96
Hydrants Taken Out and Replaced .....	97
Total Number of Fire Hydrants .....	97
Stop Valves Placed during Year .....	98
Total Number of Valves in Use .....	99
Pipe Laid in North Division .....	100
Pipe Laid in South Division .....	100
Pipe Laid in West Division .....	101
Pipe Laid in Hyde Park .....	102
Pipe Laid in Lake View .....	103
Pipe Laid in Town of Lake .....	104
Pipe Laid in Jefferson .....	105, 106
Pipe Laid in Calumet District .....	106
Recapitulation of Pipe Laid during 1903 .....	107
Water Works Shops .....	88, 89

## BUREAU OF WATER.

## TABLE.

I. Amounts Uncollected, 1898, 1899, 1900, 1901, 1902 and 19 3 .....	161
II. Buildings Examined .....	162
III. Comparison of Meter Rates in Various Cities .....	163
IV. Water Service Pipes Laid by Contract .....	164, 165
V. Screw Ferrules Inserted in 1903 .....	165
VI. Re-Taps inserted in 1903 .....	166
VII. Permits Issued in 1903 .....	166
VIII. Ferrules Inserted during past Twenty-five years .....	167
IX. Income Account, Division of Permits .....	168
X. Assessor's Increase and Decrease .....	169
XI. General Assessment—Details May, 1903, to May, 1904 .....	170
XII. Assessor's Miscellaneous Receipts .....	171
XIII. Meter Mechanical Division .....	172
XIV. Water Meters in Use .....	173
XV. Water Meters—How Distributed .....	174
XVI. Meter Mechanical Division—Income Account .....	175
XVII. Analysis of Ledger—Assessed Rates Account .....	176

**Bureau of Water—Continued.**

TABLE.	PAGE
xviii. Net Collections, all Sources .....	177
xviiiB. Cash Collected by Cashier .....	177
xix. Statement of Collections .....	178
xx. Pay Rolls, 1903 .....	179
xxi. Miscellaneous Expenses .....	180
xxii. Work by Shut-off Division .....	181
xxiii. Accounting Division—Income Account .....	182, 183
xxiv. Balance Sheet .....	184
xxv. Showing Amount of Water Tax of Eight-Room, Two-Story Dwelling ...	185
xxvi. Comparison of General Assessment, 1897, 1898, 1899, 1900, 1901, 1902 and 1903 .....	186.
xxvii. Net Receipts and Expenses, 1891 to 1903 .....	187
Collections by Express Companies .....	187
Inspection Division .....	188
Meter Division .....	188
Assessor's Division .....	188
Collection Division .....	189
Shut-off Division .....	189
Remarks .....	189, 190

**BUREAU OF SEWERS.**

	PAGE.
Amounts Expended for Repairs of Sewers, etc .....	196
Amounts Expended per Mile for Cleaning Sewers and Catch Basins .....	197
Bench Monuments, Bench Marks and Street Grades—Division of .....	216, 217
Bench Monuments .....	216
Bench Marks .....	216, 217
Bench Grades .....	217
Cost of Construction of Sewers and Catch Basins, and Maintaining Same .....	207
Drains Constructed by Special Assessment .....	214, 215
Expenditures .....	193, 194
House Drain Division—Receipts .....	208
Intercepting Sewers—Division of .....	218-220
New Sewers and Catch Basins Built, and the Cost of Same .....	206
Pumping Stations—Sewage .....	198-202
Seventieth Street Station .....	198
Seventy-third Street Station .....	198, 199
Pullman Station .....	199
Kensington Station .....	199
Sixty-ninth Street Station .....	200
Woodlawn Station .....	200, 201
Fullerton Avenue Station .....	201, 202
Sewers Constructed by Private Contract .....	204, 205
Sewers Constructed by Special Assessment .....	208-213
Sewers and Catch Basins Cleaned .....	195

## BUREAU OF STREETS.

	PAGE.
Appropriations—Special .....	228, 281
Financial Statement .....	228, 224
Garbage.....	225
House Moving—Division of .....	233
Permits Issued to Improved and Unimproved Streets .....	231
Pavements—Repairs by Various Companies .....	232
Repairing Improved Streets and Alleys .....	227
Repairing Unimproved Streets and Alleys .....	227, 228
Remarks .....	234
Street and Alley Cleaning .....	225, 227
Sidewalk Repairs.....	228
Small Parks .....	281

## BUREAU OF MAPS AND PLATS.

Remarks and Work of Bureau.....	237-240
---------------------------------	---------

## DEPARTMENT OF TRACK ELEVATION.

Review of Work Done .....	243-247
---------------------------	---------

## SPECIAL PARK COMMISSION.

Attendance at Municipal Playgrounds.....	262
Expenditures—Statement of .....	263, 264
Parks—South Division .....	251-254
North Division .....	254-256
West Division.....	256, 257
Playgrounds.....	258-263
Proposed Metropolitan Park System .....	257, 258
Remarks .....	265

## BOOKKEEPER'S STATEMENT.

## CORPORATE FUND.

Revenue .....	269
Expenditures.....	269-280
Office of Commissioner of Public Works.....	269
Bureau of Maps and Plats .....	269
Bureau of Engineering.....	269, 270, 277, 278
Bureau of Streets .....	270-275, 278
Bureau of Sewers.....	275-277
City Hall.....	279
Recapitulation.....	280
Amount Expended for Removal of Garbage, Street Cleaning, etc., 1903.....	281

## WATER FUND.

	PAGE.
Revenue .....	282
Expenditures .....	282-292
Office of Commissioner of Public Works .....	282
Bureau of Maps and Plats .....	282
Paymaster's Bureau .....	282
Department of Supplies .....	282
Bureau of Water .....	282, 283
Bureau of Engineering .....	283-286
Bureau of Sewers .....	286, 287
Department of Finance .....	287
Extraordinary Expenses .....	287-292
Pumping Stations .....	287, 288
Water Pipe Extension .....	288, 289
Miscellaneous .....	289
Intercepting Sewers .....	289-291
Recapitulation .....	292
Pumping Stations—Operation—Expenditures .....	293
Pumping Stations—Repairs and Renewals—Expenditures .....	293
Water Works .....	294-295
Cost up to May 1, 1861 .....	294
Expenditures since 1861 .....	294-295
Bonded Debt .....	295

## PHOTOGRAPHIC VIEWS.

	PAGE.
FRONTISPIECE .....	F. W. BLOCKI, Commissioner of Public Works.
BATHHOUSES:	
Kosciuszko Public Bathhouse, 703-705 Holt Street .....	155
BRIDGES:	
Old Swing Bridge at West Division Street, April 30, 1902 .....	108
West Division Street Bridge, June 26, 1903—West Piers and Tail Pits .....	117
West Division Street Bridge, June 26, 1903 .....	127
New Bridge at West Division Street, December 31, 1903 .....	133
North Western Avenue Bridge, December 31, 1903 .....	139
CRIBS:	
Two-Mile Crib—Winter of 1903-4 .....	68
Tug Going to Crib—January, 1904 .....	74
Two-Mile Crib—January, 1904 .....	80
Ice at Two-Mile Crib—January, 1904 .....	88
FIRE ENGINE HOUSES:	
Chicago Avenue, east of Lincoln Park Drive—Exterior View .....	55
Chicago Avenue, east of Lincoln Park Drive—Interior View .....	57
No. 3043 Forty-first Court .....	98
Fortleth and Wilcox Avenues .....	148
INTERCEPTING SEWERS:	
No. 1—Coffer Dam, Thirty-ninth Street Pumping Station—Not Pumped Out. 191	

Photographic Views—*Continued.*

	PAGE.
No. 2—Coffer Dam, Thirty-ninth Street Pumping Station—Pumped Out.....	198
No. 3—Excavating in Coffer Dam, Thirty-ninth Street Pumping Station— Below Dredged Lines.....	203
No. 4—Concrete Floor and Wall in Coffer Dam, Thirty-ninth Street Pumping Station, and Forms for Continuation.....	216
No. 5—Form of Bottom and Wall, One of Main Channels, Thirty-ninth Street Pumping Station.....	218

## TRACK ELEVATION:

Eighteenth Street ("Joint Track") Elevation—Looking West on Twenty- second Street.....	158
Eighteenth Street ("Joint Track") Elevation—Looking South on Canal Street at Twenty-second Street.....	166
Eighteenth Street ("Joint Track") Elevation—Looking North on Canal Street.....	171
Eighteenth Street ("Joint Track") Elevation—Looking North on Ashland Avenue.....	176
Eighteenth Street ("Joint Track") Elevation—Looking West Through Thirty-first Street Subway under C. & A. R'y.....	182
C. & W. I. R. R.—Looking South from Fifty-fifth Street.....	188
C. & W. I. R. R.—Looking South at Fifty-eighth Street.....	221
C. & W. I. R. R.—Looking South at Sixty-first Street.....	223
C. & W. I. R. R.—Looking Northeast at Sixty-third Street.....	225
C. & W. I. R. R.—Looking Northeast from Sixty-third and Wallace Streets..	226
C. & W. I. R. R.—Looking Southeast from Sixty-fourth Street and Lowe Ave.	228
C. & W. I. R. R.—Looking Northeast from Sixty-fifth Street and Lowe Ave.	231
C. & W. I. R. R.—Sixty-fifth Street Subway Bridge, Looking East.....	233
C. & W. I. R. R.—Looking Northwest at Sixty-sixth Street.....	235
C. & W. I. R. R.—Looking South at Sixty-sixth Street.....	238
C. & W. I. R. R.—Looking West on Sixty-seventh Street.....	241
C. & W. I. R. R.—Bridge Detail at Sixty-seventh Street.....	244
C. & W. I. R. R.—Looking South at Sixty-seventh Street.....	246
C. & W. I. R. R.—Looking West on Sixty-eighth Street.....	248
C. & W. I. R. R.—Looking West on Sixty-ninth Street.....	250
C. & W. I. R. P.—Bridge Floor Detail at Sixty-ninth Street.....	254
C. & W. I. R. R.—Looking West on Sixty-ninth Street, November, 1903.....	257
C. & W. I. R. R.—Looking Southwest at Ford Street Crossing.....	260
C. & W. I. R. R.—Looking South at Chestnut Street.....	262
C. & W. I. R. R.—Looking Southeast at Englewood Station.....	264
C. & W. I. R. R.—Approach to North End of Englewood Yard.....	266
C. & W. I. R. R.—Approach to South End of Englewood Yard.....	266

## LIST OF MAPS AND DIAGRAMS:

Diagram Showing Actual Tunnel Capacity.....	90
Diagram Showing Pumpage for 1903.....	95
Diagram Showing Maximum, etc., of Water, Temperature, etc., for Lake Michigan, etc.....	146
Map Showing Project for the Purpose of Improving the North Branch of Chicago River.....	129
Map Showing Remodeling Tunnel System Chicago Avenue Pumping Station.	83

of 1,015 miles from Cape Town. It has a population exceeding 125,000, half of whom are inter- free acids and free alcohols

at detection of

and were treated to require to expect the substance of ammonia in





This book should be returned to  
the Library on or before the last date  
stamped below.

A fine of five cents a day is incurred  
by retaining it beyond the specified  
time.

Please return promptly.

