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THE SUCCESSFUL AMERICAN.

(ILLUSTRATED.)

A MAGAZINE

DEVOTED TO THE ACHIEVEMENTS OF, AND CONTAINING BIOGRAPHICAL AND
CHARACTER SKETCHES, TOGETHER WITH PORTRAITS
OF REPRESENTATIVE

“SUCCESSFUL AMERICANS.”



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WILLIAM SCHERZER, C. E.

INVENTOR AND PATENTEE OF THE SCHERZER ROLLING LIFT BRIDGES.

WILLIAM SCHERZER, C.E., the inventor and patentee of the Scherzer Rolling Lift Bridges, was born at Peru, La Salle County, Illinois, on January 27, 1858. His parents were William and Wilhelmina Scherzer. Both of the parents of William Scherzer emigrated to the United States from the German Empire during the year 1847, at which time the German Empire was agitated by revolutionary movements, which resulted in the enactment of repressive and seemingly burdensome laws in restraint of personal freedom, from which the more liberal Constitution and laws of the United States of America offered a welcome retreat, permitting the widest latitude for individual effort consistent with the rights of others. Before coming to the United States, William Scherzer, senior, had completed his technical education, had traveled extensively in Europe, and had cultivated to a high degree his inherited talent for music and art. The city of Chicago, which he visited while in search of a permanent home in the United States, seemed so unpromising that he established his home at Peru, Illinois, which was the terminus of the Illinois & Michigan Canal, then nearing completion, and the head of navigation of the Illinois River, in direct steamboat communication with the entire Mississippi River system and the Gulf of Mexico. He engaged in various commercial enterprises, all of which were successful, but taxed his energies so severely that he died at the early age of forty-one years, leaving a widow with three sons and one daughter.

The subject of this sketch, William Scherzer, was the second oldest son. His early education was acquired in the public schools of Peru, Ill., his native city. He exhibited unusual talent in art and mathematics, and was also remarkable for his skill in athletics. At the age of fifteen he was placed in charge of a private tutor, with a view of preparing him for entrance at some European university. At the age of eighteen his mother determined to send him to the Polytechnicum, at Zurich, Switzerland, to take the four years' course in civil engineering. While at the University he distinguished himself in athletics, being captain of the boat crew and winning many

prizes in Europe in general athletics. He was graduated with honors in the year 1880.

Upon his return to the United States, William Scherzer was engaged as Engineer with the Mathiessen & Hegeler Zinc Company, remaining with that company for three years. He was with the Pittsburg, Fort Wayne & Chicago Railway Company from 1883 to 1885, and with the Keystone Bridge Company and the Carnegie Steel Company for the following eight years, when he established an office for the practice of his profession as Consulting Engineer.

Owing to an extensive acquaintance and an influential friend, who recognized his great ability, William Scherzer was intrusted with many important engineering works. One of the problems upon which he was consulted was the question of a movable bridge to carry the four tracks of the Metropolitan West Side Elevated Railroad across the Chicago River, to the business center of Chicago, between the Jackson Street and Van Buren Street swing bridges. A swing bridge was impossible because it would interfere with the movements of both of the existing swing bridges. These bridges were so close together that it was impossible to build a third swing bridge between them. A number of bridge engineers were consulted as to the best type of bridge to meet the difficulty, and a number of new movable bridge schemes were submitted, none of them, however, fulfilling the requirements. One of the ablest American bridge engineers submitted to the management a pivot bascule bridge design, similar to the Tower bascule bridge at London, England, which was then under construction, and it seemed to be the only feasible solution of the difficulties, and detail plans were prepared for the construction of the bridge. In working out the detail plans objectionable features became more apparent, and William Scherzer was consulted by the management of the railroad company in reference to overcoming some of these objectionable features and the execution of the design. After devoting a great deal of time and study to this problem, he became convinced that it was impossible to eliminate the objectionable features of the pivot or trunnion type of bascule bridge. As

the elevated railroad was then rapidly nearing completion, the bridge problem became very critical and induced William Scherzer to endeavor to solve the problem on entirely new lines, and, after very extensive studies, ultimately lead to his invention of the type of bridge known as the Scherzer Rolling Lift Bridge. A design for a four-track rolling lift bridge was prepared by him and submitted, and, after a careful investigation of its merits as compared with those of other types of bridges, it was decided by the management of the Metropolitan West Side Elevated Railroad Company to adopt his design, and William Scherzer was entrusted with the preparation of the detail plans. The Metropolitan West Side Elevated Railroad Company then proposed to the city of Chicago that this new type of bridge be also used at Van Buren Street, in place of the old swing bridge, which was obstructive and inadequate. This proposition was accepted by the city of Chicago and approved by the Secretary of War. The plans for both of these bridges were completed in that year, shortly before the death of William Scherzer, which occurred on July 20, 1893, from typhoid fever, at the early age of thirty-five.

The four-track Metropolitan Elevated Railroad Scherzer Rolling Lift Bridge and the Van Buren Street highway Scherzer Rolling Lift Bridge were completed early in the year 1895, and have since that time been in successful operation, carrying the heaviest railroad and highway traffic. In fact, no other movable bridge in the world carries as many railroad trains daily as this Metropolitan Elevated Railroad Bridge. After three years of continuous use, Mr. W. E. Baker, General Manager of the Metropolitan West Side Elevated Railroad Company, in a letter referred to this bridge as follows:

"It was completed some time before May 6, 1895, at which date the road was opened and the bridge placed in active service, since which time it has operated continuously and has of itself caused no delays to trains, of which there are and have been since shortly after the date of opening the road about 1,200 trains daily crossing the bridge.

"The bridge may be said not to have required any repairs, except the interlocking machinery, and only then in the early days of operation, when it was not well understood.

"We do not make any charge for motive power for operating the bridge; it is too small to be considered. The bridge is operated, as you

know, by the motors using the current with which we operate the trains.

"The bridge has proved rigid; it is rapid to open and shut; has never shown any signs of failure. It requires little power to move it, shows no evidences of depreciation, and we are satisfied with it."

After more than six years of continuous use, these statements are confirmed in writing by the chief engineer of the railroad company and approved by Mr. D. Macalister, President of the company, as follows:

"Answering your request for information regarding the Scherzer Rolling Lift Bridge used by this company in crossing the Chicago River, I have to say that this bridge consists of two double-track bridges, independent of each other, but arranged so that they can be operated together. This bridge was opened in May, 1895, and has at no time since then caused any delay to trains by reason of its construction or fault in operating machinery.

"The bridge is operated directly by electric motors, the cost of which operation as to current consumed is so small that it has never been taken into account. The repairs to the bridge during the six years of operation have been of no consequence, no definite account having been kept of them.

"This bridge was one of the first of its kind built, and has proven very satisfactory to us as to all of its requirements. It is operated in connection with the maintenance and operation of track interlocking at this point; it is, therefore, difficult to give any accurate estimate as to actual cost of operation.

"There is no evidence of depreciation in connection with this bridge, the only wear being at the contact surfaces of locking mechanism; otherwise, this structure is in as good condition today as when first opened."

This is an unparalleled record in movable bridge design and construction, and it is principally owing to the success of the two above-mentioned bridges that the subsequent success of the Scherzer Rolling Lift Bridge and the universal recognition of its many advantages are due. A distinguished authority has stated:

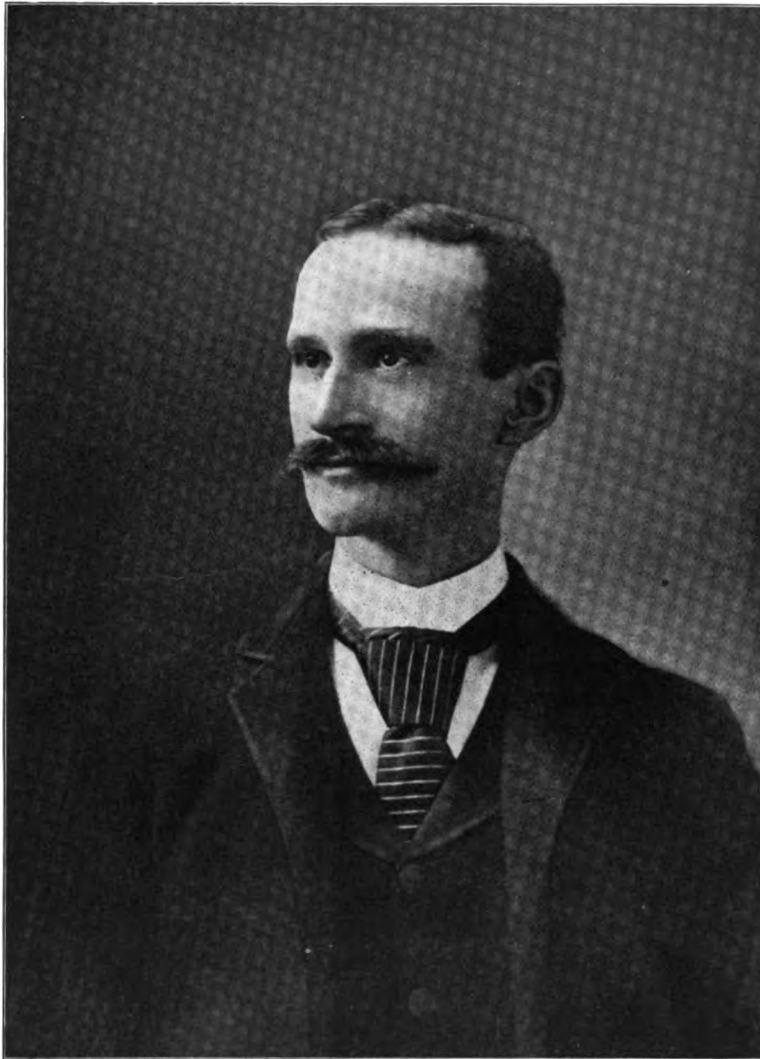
"The Scherzer type is the bridge of perfection; it is recognized by the engineering profession as the most perfect bascule bridge in existence; it is a monument to the inventor."

A favorite occupation of William Scherzer was

the study of astronomy, and it was his earnest desire to assist in the development and improvement of astronomical instruments and devices. His early decease enabled him to accomplish comparatively limited results in this direction.

ado. He had completed plans for some extremely large domes, but his decease prevented their execution.

William Scherzer was unmarried. He was a member of the American Society of Civil Engi-



WILLIAM SCHERZER,
Inventor of the Scherzer Rolling Lift Bridges, Chicago, Ill.

In association with Professor George W. Hough, he invented and patented improvements in astronomical domes, of which he constructed one for the observatory at Evanston, Illinois, one at Cincinnati, Ohio, and another at Denver, Color-

neers, the Society of Engineers for Western Pennsylvania, the Western Society of Engineers, The American Society for the Advancement of Science, and the University Club of Chicago, besides a number of social clubs.

ALBERT H. SCHERZER.

PRESIDENT AND CHIEF ENGINEER OF THE SCHERZER ROLLING LIFT BRIDGE COMPANY, CHICAGO, ILL.

ALBERT H. SCHERZER, the youngest child of William and Wilhelmina Scherzer, and brother of William Scherzer, the inventor of the Scherzer Rolling Lift Bridge, was born at Peru, La Salle County, Illinois, on July 22, 1865. The responsibility of his education devolved upon his mother, owing to the early death of his father, which occurred when Albert Scherzer was only two years of age. He attended the High School of his native city, until his mother determined to visit Europe to be with her son, William Scherzer, while he was pursuing his studies at the Polytechnicum, at Zurich, Switzerland. The mother, accompanied by her two sons and daughter, traveled extensively throughout Europe before Albert Scherzer started his studies at the Technical High School, Zurich.

After completing the course of study in the Technical High School, and further travel in Europe, Albert Scherzer returned to the United States, and, in 1882, became identified with the Illinois Zinc Company, of Peru, one of the largest firms in the world engaged in the smelting and rolling of sheet zinc. He remained with that company in various capacities for the following eight years. During this period of time he devoted much of his leisure to the study of literature and law.

In the year 1890 Mr. Scherzer came to Chicago and entered the Union College of Law, pursuing the regular course leading to the degree of LL.B., and graduating therefrom with the class of 1892. He obtained practical experience in the law offices of several able attorneys, and leaving the Law Department of the Lake Shore & Michigan Southern Railway Company, established an office and entered upon the practice of his profession at Chicago.

Upon the death of his brother William, Albert H. Scherzer gave his attention to the development of the Scherzer Rolling Lift Bridges and the extension of the business founded by William Scherzer. In order to prepare himself for the work he had undertaken, Mr. Scherzer made extensive studies in bridge construction, more especially of movable bridges; also of harbors, docks, rivers and canals, and in pursuit of his

studies along these lines traveled extensively in both this country and Europe, visiting all the principal structures and works of this class.

Mr. Scherzer became President and Chief Engineer of the Scherzer Rolling Lift Bridge Company, and under his management and direction the scope of the business has been widely extended. As a Director of the company, Mr. Scherzer's mother, Wilhelmina Scherzer, now nearly eighty years of age, has always taken a deep interest in the artistic development of the Scherzer Rolling Lift Bridges and the extension of the business of the company, and has invariably supported her views with financial assistance.

The main offices of the company are at Chicago, U. S. A., but permanent offices have also been established at St. Petersburg, Russia, and other large cities throughout the world, the business of the company being protected by numerous foreign patents.

Mr. Scherzer is the author of several books recognized as authoritative upon the subjects treated and widely circulated at home and abroad. He has also contributed a number of articles on bridge engineering and the improvement of rivers, harbors, docks and canals, to various American and foreign scientific and technical publications. Some of these articles, which have received the most widespread notice, were written with a view of calling attention to the undeveloped condition of the great rivers and natural harbors of the United States and the necessity of a ship canal within the United States connecting the Great Lakes with the Atlantic Ocean, by way of the Hudson River, and another ship canal connecting the Great Lakes with the Gulf of Mexico by way of the Mississippi River system. These improvements have now become an indispensable economic necessity to the United States. They present neither engineering nor financial difficulties that cannot easily be overcome, in view of the fact that the Dominion of Canada, with less than one-sixteenth of the population of the United States, has already improved the St. Lawrence River and constructed ship canals which complete their system of waterways connecting the Great Lakes and the Atlantic Ocean through Canada. Russia,

Germany, France and other world powers have already entered upon great systems of ship-canal construction, with a view of carrying ocean steamships and war vessels into the interior of their commercial, manufacturing and industrial

Mr. Scherzer is a member of the Union League, Athletic, Germania and Marquette Clubs, of Chicago.

THE SCHERZER ROLLING LIFT BRIDGE COMPANY.

The Scherzer Rolling Lift Bridge fulfills



ALBERT H. SCHERZER,
President of the Scherzer Rolling Lift Bridge Company, Chicago, Ill.

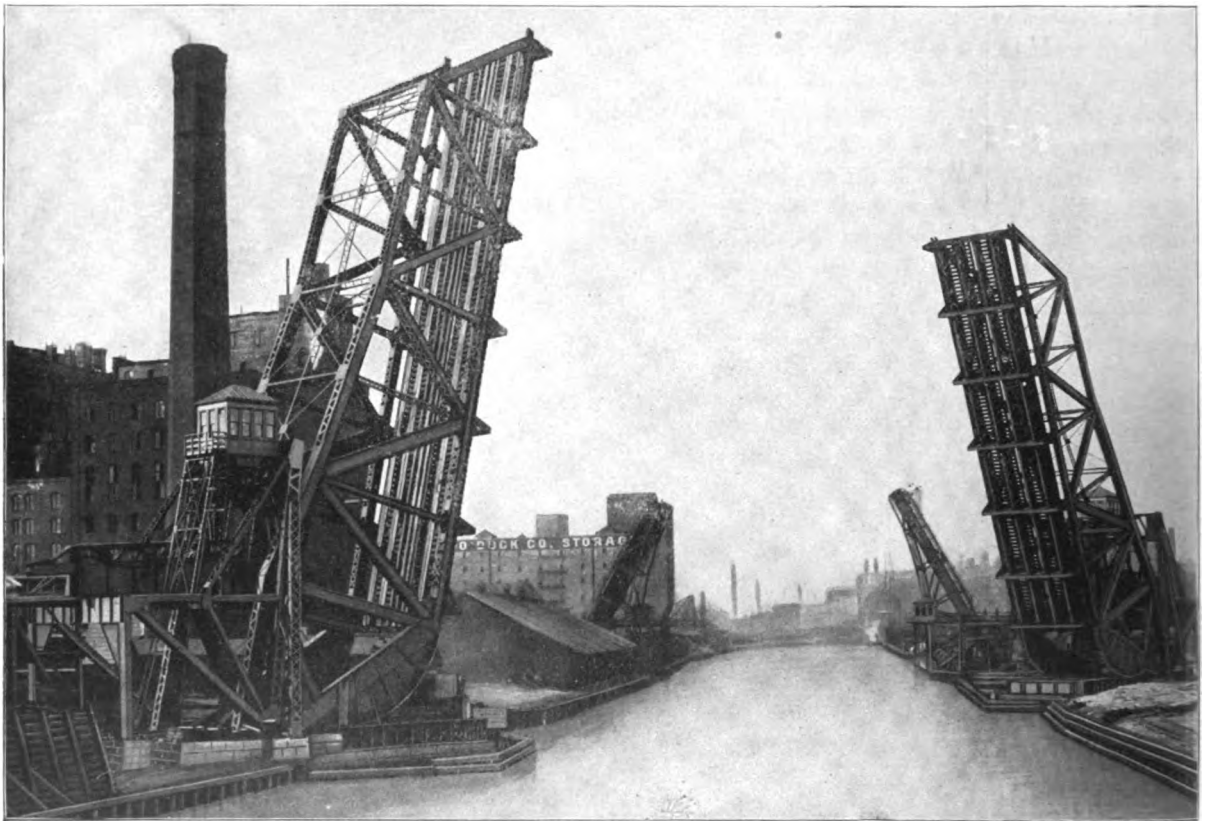
centers. These ship canals are intended to supplement the existing railroads and will be indispensable in reaching, without re-handling, the great foreign markets of the world.

every requirement essential to a movable bridge. Its introduction marked a new era in the progress of bridge design and construction. It eliminates the objectionable features of the pivot,

trunnion or bascule bridge, the swing bridge, the direct-lifting bridge, and is more economical than the high level bridge. It spans navigable waterways in the most simple, efficient and least expensive manner.

The efficiency of the Scherzer Rolling Lift Bridge in accommodating both the largest land

neers of the largest and most progressive railroads in the United States for the largest and most difficult movable railroad bridges ever built, and in many cases has superseded the swing bridge after only a few years of service. The Scherzer Rolling Lift Bridge has been adopted and the Scherzer Company has completed plans



View Showing Obstructive Swing Bridge Removed and Replaced by Scherzer Bridge, 275-foot Span ; also Shows Adjacent Scherzer Highway Bridge at Taylor Street. Both Bridges in Open Position.

and water traffic and its superiority over former types of movable bridges and high-level bridges has been demonstrated beyond question by the many large bridges of the Scherzer type now in successful operation in many parts of the world; and the further fact that it has been approved, adopted and used by the management and engi-

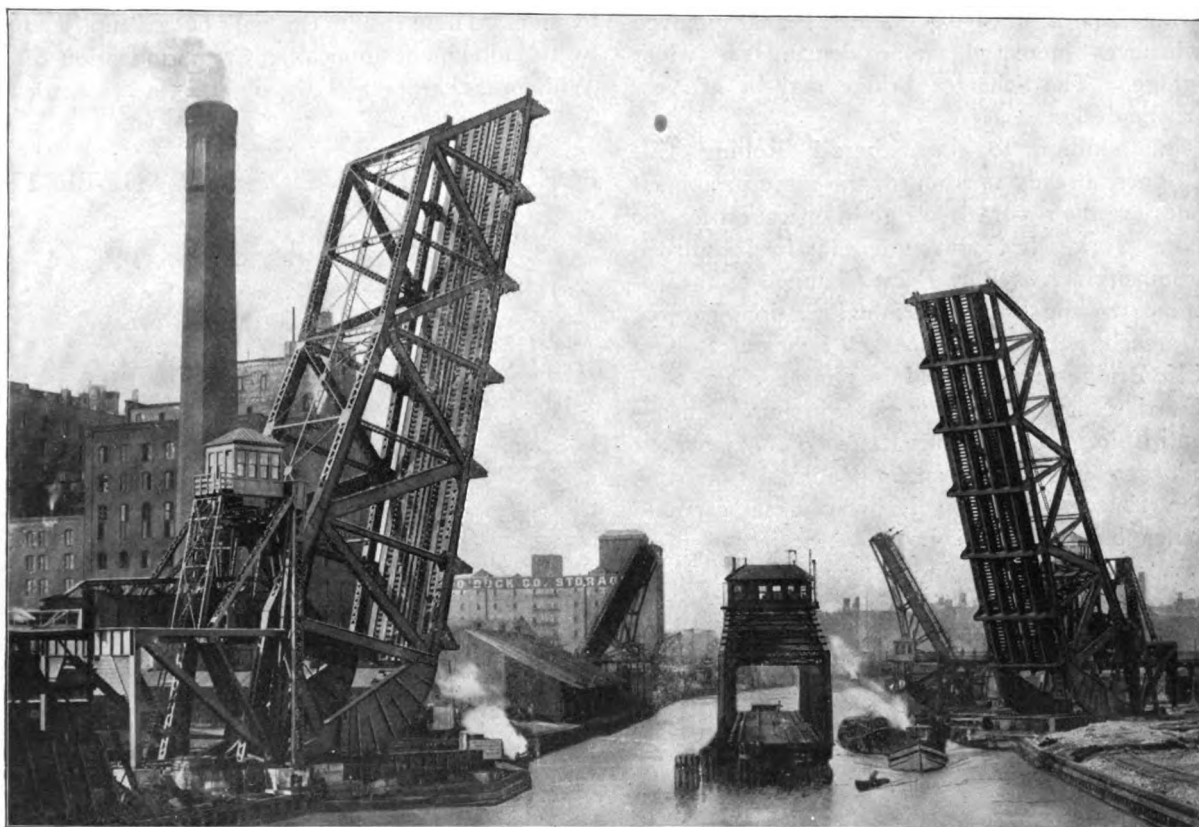
neers for a large number of railroad, street railway and highway bridges in course of construction in various parts of the world.

The swing bridge has long been recognized by engineers as a primitive form of movable bridge, as it obstructs the middle and best part of the dredged, improved or navigable channel of a

river, harbor or canal. It compels the spanning of two inadequate channels where only one adequate channel is required. The slow movement of vessels through the narrow side openings provided by swing bridges obstructs and delays railroad, street railway, highway and vessel traffic. In opening or closing the swing

resulted in disastrous accidents and the loss of many lives. This defect in the swing bridge is becoming of greater importance each year because of the increased traffic and increased speed of railroad, street railway and highway traffic.

With the Scherzer Rolling Lift Bridge the supporting piers may be on shore in a narrow



View Showing Scherzer Bridge, 275-foot Span, in Open Position ; also Swing Bridge, in Open Position, Obstructing Channel.

bridge moves in a horizontal plane and makes useless valuable dock and other property. The swing bridge must always be made narrow so as not to occupy too much of the navigable waterway when the bridge is opened for the passage of vessels. The swing bridge, when open, opens a chasm in the roadway which has frequently

channel, or on the sides of the dredged and navigable channel in a wide river. No center pier or protection pier obstructions are necessary. The navigable channel in a wide or narrow river may always be clear and unobstructed. When opened for the passage of vessels the Scherzer Rolling Lift Bridge acts as a barrier, closing

the roadway and thus absolutely prevents the many disastrous accidents common to the swing bridge when opened. Without additional cost the bridge itself forms the most perfect, substantial and successful bridge gate and signal ever invented. The bridge moves in a vertical plane within the lines of the roadway, no dock space being wasted and no extra land or water space being required for moving the bridge. Increased traffic requiring additional railroad tracks may be accommodated by adding additional single or double-track Scherzer Rolling Lift Bridges to the existing Scherzer Rolling Lift Bridge. This is impossible with the swing bridge, as it must be discarded and removed whenever increased traffic demands a wider bridge. The Scherzer Bridge may be of very artistic design.

In addition to the Scherzer Rolling Lift Bridges, already mentioned, the more prominent ones are the six-track bridge in operation for the New York, New Haven & Hartford Railroad Company across Fort Point Channel, at the entrance to the South Terminal Station, Boston, Massachusetts; the eight-track Scherzer Rolling Lift Bridge across the Main Drainage and Ship Canal, Chicago, used by the Pittsburg, Cincinnati Chicago & St. Louis Railway Company, the Chicago Terminal Transfer Railroad Company, the Chicago Junction Railway Company and other lines, making it not only the largest movable railroad bridge in the world, but also accommodating the heaviest and the most frequent railroad traffic. The recently completed Scherzer Rolling Lift Bridge at the entrance to the Grand Central Station, Chicago, is the longest span bascule bridge ever constructed, the clear span being fifty feet longer than that of the Tower Bridge, London, England, and the capacity per lineal foot twice as great. We reproduce an illustration of the site of this bridge. It also shows the obstructive swing bridge which had to be removed and discarded while comparatively new, and be replaced by the Scherzer Rolling Lift Bridge. The view graphically illustrates the obstructive character of all swing bridges, as they occupy the middle or best part of the waterway. The second illustration shows the obstructive swing bridge removed, with the 275-foot span Scherzer Rolling Lift Bridge in the open position in the foreground, and also shows the adjacent Taylor Street highway Scherzer Rolling Lift Bridge in the open position. Both

of these bridges provide a clear and unobstructed waterway for the passage of vessels.

The other highway, street railway and railroad bridges constructed and under construction according to the plans and under the consulting engineering charge of the Scherzer Rolling Lift Bridge Company are too numerous to mention.

The company, by gradual development and experience, is now prepared to furnish at any part of the world a movable bridge of any length or width required. The bridge may even be one hundred tracks wide and 1,000 feet clear span, or sufficient, when opened, for the passage of ten vessels of the size of the steamship *Oceanic* side by side. These results can only be accomplished by the intelligent application of the invention of William Scherzer and the improvements made by his successors.

POETIC CONTRIBUTIONS BY THE BEST AUTHORS.

DEATHLESS.

There lies in the centre of each man's heart

A longing and love for the good and pure,
And if but an atom, or larger part.

I tell you this shall endure, endure
After the body had gone to decay—
Yea, after the world has passed away.

The longer I live and the more I see

Of the struggle of souls toward heights above.
The stronger this truth comes home to me,

That the universe rests on the shoulders of Love—
Love so limitless, deep and broad.
That men have renamed it and called it God.

And nothing that ever was born or evolved,

Nothing created by light or force.

But deep in its system there lies dissolved

A shining drop from the great Love Source—
A shining drop that shall live for aye
Tho' kingdoms may perish and stars may die.

—Ella Wheeler Wilcox.

THE GREATEST GRIEF.

My love for thee is like ——— my love for thee ———
Soul of my universe, it stands alone!

On all by poets dreamed, or prophets shown,
It levies tribute, yet lacks simile.

'Tis of the elements, God's earth, the sea

And sun. 'Tis all the human heart hath known

For lover, parent, friend and child in one ———

Spirit made flesh, as flesh shall spirit be.

'Tis suffering supreme, whose passioned tide

Ceaseless beats back and forth from joy to pain,

But God-like most of all when most belied

By giving life a crown of thorns to gain.

Yet, though its Heaven is snatched from Hell's abyss,

The greatest grief would be its Heaven to miss.

—Marguerite Merington, in Scribner's.