

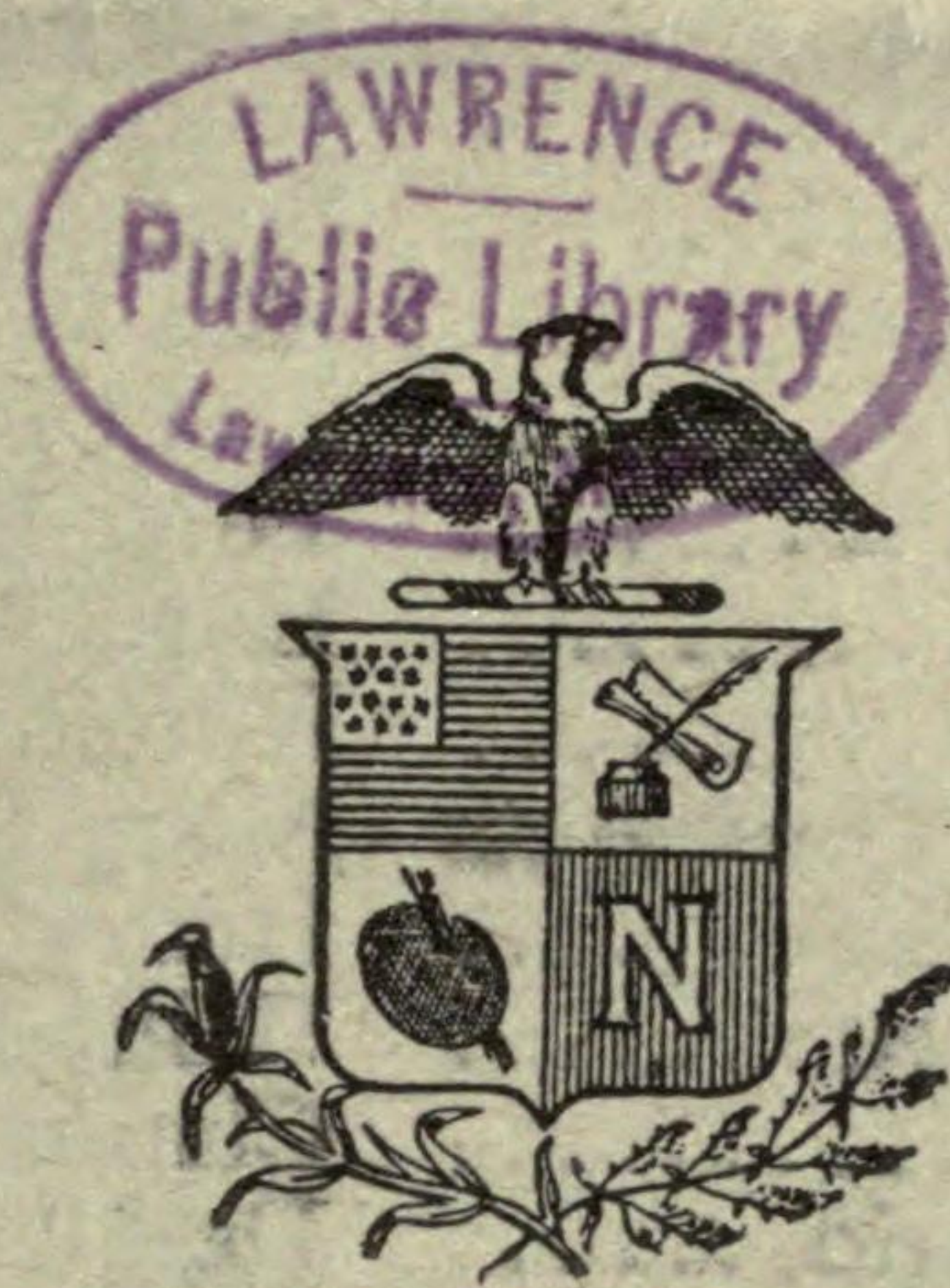


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THE
NATIONAL MAGAZINE

AN

Illustrated American Monthly



Volume XXXVIII: April to September, 1913
(Inclusive)



BOSTON, MASSACHUSETTS
CHAPPLE PUBLISHING COMPANY, LTD.
952 DORCHESTER AVENUE

Olaf Hoff—His Work

by Flynn Wayne

IN a world growing busier every day the transportation problem is paramount. Quicker, safer and more convenient plans for getting from one point to another are ever unfolding in the brains of inventors and builders, whose thought is constantly centered upon the difficult problems of transportation.

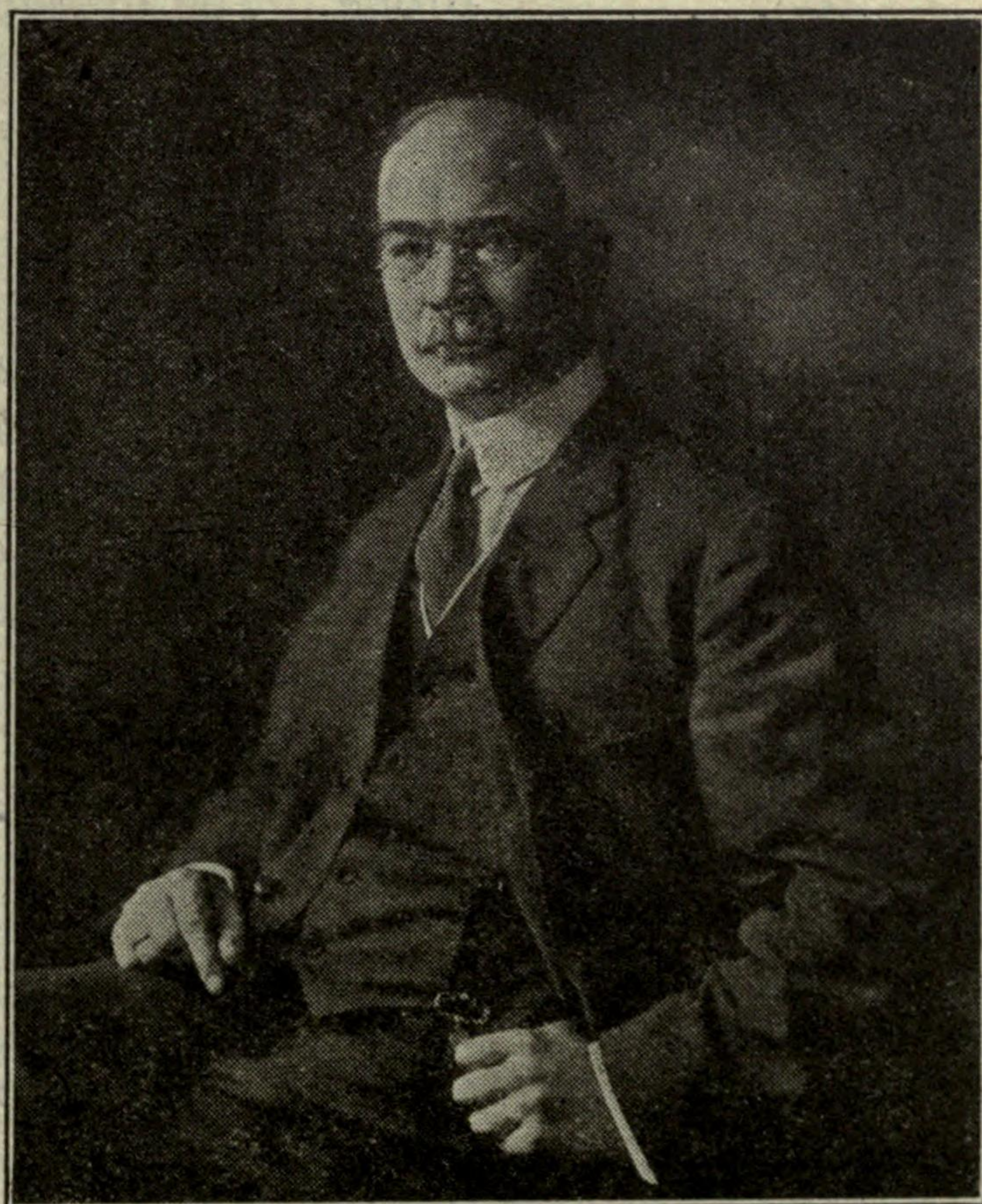
Overhead construction has seen its greatest development in the present day. The age of steel has brought with it wonderful possibilities in structural work. Skyscrapers that have sent the sky-line of New York to dizzy heights; the colossal bridges that span the East River to Brooklyn, are notable instances of the wonderful development of the use of steel for expeditious transportation and the varied needs of a great city.

The builders of subways who delve like burrowing moles underneath the congested streets of the city are largely dependent on the use of steel, which, mined and molded, shaped and riveted again, returns to mother earth to aid man in conquering the congestion of city streets. Under men still bolder great caissons were sunk from each side of the historic Hudson to give "under river" transportation within three minutes instead of slow cumbersome fog-delayed ferries. It took faith to believe these things could be done, to get the money to prosecute the work. It took a heavy toll of human lives through ignorance and experiment. But

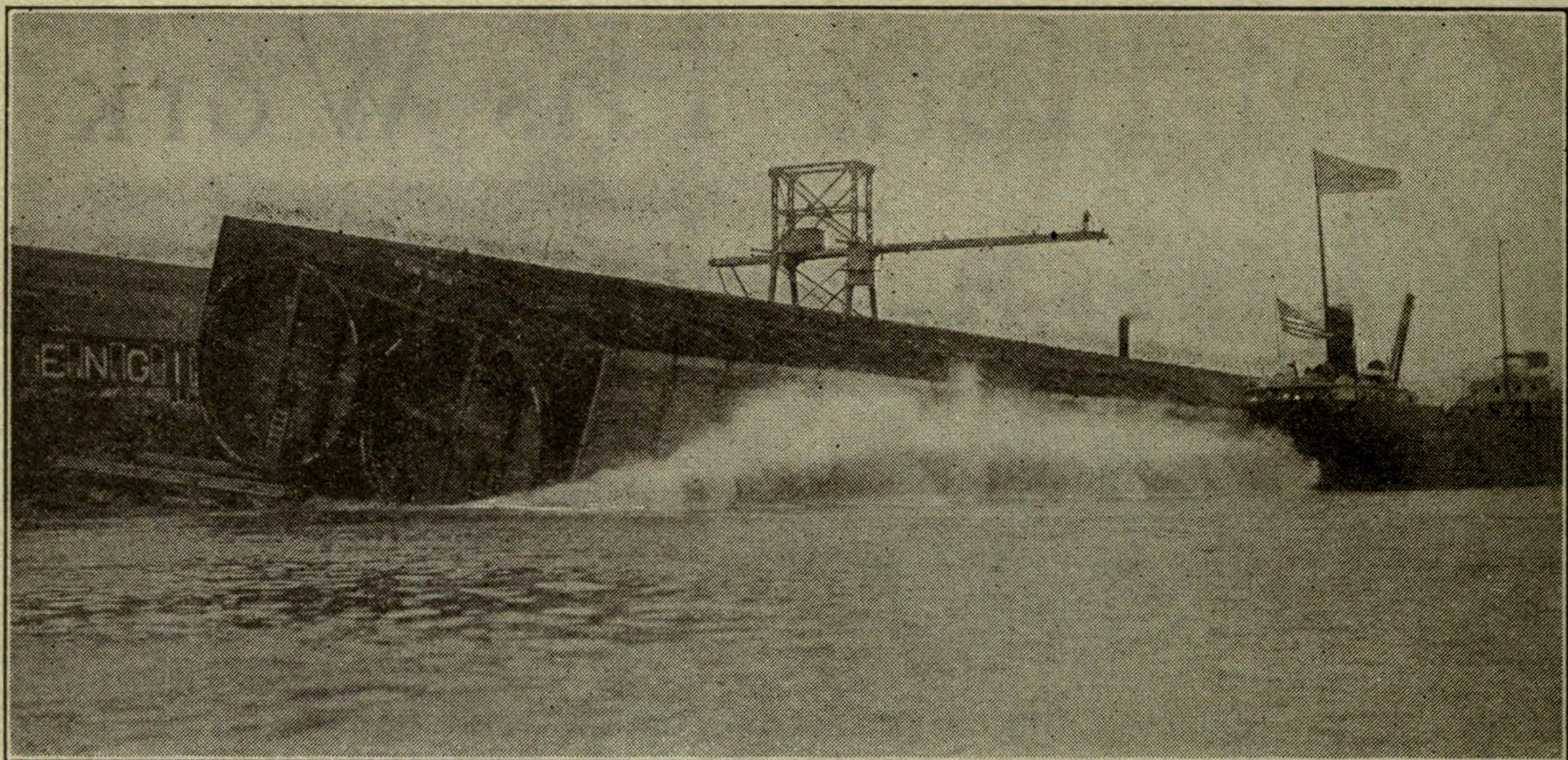
advancement counts neither money nor lives in its measure of results for the general good, and the victims are indeed brave soldiers fallen in the relentless march of progress. Tubes and tunnels were accepted as necessary, and the wonder was, how did the world get along without them? The problem still unsolved was a satisfactory method of building "under water" tubes and tunnels without the necessity of resorting to dangerous air caissons in which to carry on the work. Many problems of similar construction awaited the day when the building of tubes under the rivers should be robbed of its costly feature of accidents and lives, and reduced to a comparatively simple problem of dollars and cents.

Olaf Hoff, a sandy-haired Norwegian-American in New York, was among those who were pondering this problem. A graduate of the Polytechnic School of Christiania, Norway, young Hoff came to America and entered the employ of the Keystone Bridge Company.

Two years later he went to Mexico and later his work—steadily bringing him to the forefront—took him to Minneapolis, where he built the first steel railroad bridge across the Mississippi River at that point. In 1901 he became engineer of bridges and buildings of the New York Central lines. Under his direction most of the rebuilding of the bridges of that great railway system was accomplished with



OLAF HOFF



LAUNCHING OF A SECTION OF THE DETROIT RIVER TUNNEL—ONE OF THE GREATEST FEATS OF MODERN ENGINEERING

little delay to its tremendous traffic. When the opportunity came to Mr. Hoff to go into business for himself he resigned his position, but hardly six months had passed when a problem of the Michigan Central Railway began to interest Olaf Hoff. The river at Detroit had to be kept open for navigation, a bridge was practically impossible, a tunnel built by old methods impracticable by reason of the tremendous expense, and yet the enforced use of ferries to carry the trains across the river greatly interfered with the efficiency of the road. Here was a difficulty that called forth the best ideas of the country's most noted engineers.

The final solution of any problem is striking a balance between necessity and cost, and Olaf Hoff turned all his inventive genius into the work of building railway tunnels under water. His plans were accepted and the successful completion of the Detroit tunnel two years ago marks a hard struggle, gamely fought, and gloriously crowned. Mr. Hoff's idea, stated briefly, was simple in the extreme. He built two great tubes of steel, laid them in huge cradles arranged in compartments for receiving concrete, launched them like barges into the river, towed them to their proper place and sank them to the bottom, which had been dredged to allow a forty foot clearance for the boats above. The sections of the tunnel were laid and joined together like the tubes of a water main.

The concrete was poured into the compartments about the steel tubes and solidified in a few days—even under water. Encased in a shell of solid reinforced concrete the tubes will stand for ages. Not a life was lost in the work and the expense was considerably less.

In the further work of building tunnels under the rivers of New York City the success of Mr. Hoff's method at Detroit attracted wide attention and he and his associates were successful in securing the contract to build the new four track tunnel under the Harlem River, connecting Manhattan with its fastest growing region, the Bronx. The dredging of the ditch across the river bed and the drilling of the rock for the approaches is now well under way. The big steel tubes for the tunnel are being built and some day, at the word of command, the fleet of steel tubes will sail forth to sink—sink gloriously to the bottom, there to become transformed into links of steel and concrete to bind closer than ever the busy life of a great metropolis.

And among its passengers when the tunnel is finally completed may be one, with sandy hair now streaked with gray, whose blue eyes behind rims of gold will calmly scan the morning paper. But who of his fellow-passengers would know, unless they were told, that it was Olaf Hoff, the builder of the tunnel—the man who has saved countless lives of future tunnel builders and toilers.