

MUELLER RECORD ¹⁹³⁰



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MARCH

SPRING NUMBER



The Hon. Victor J. Miller,
mayor of St. Louis.

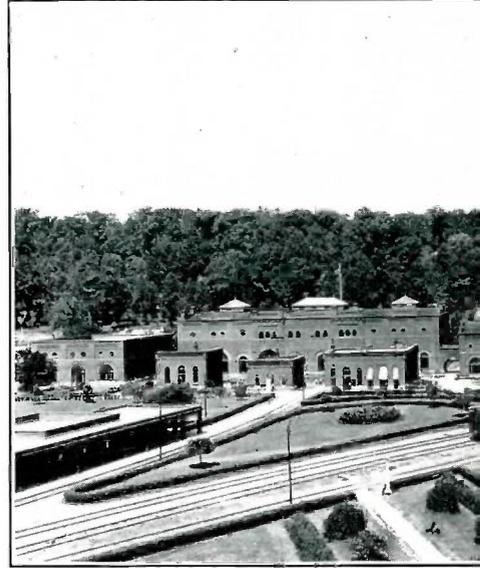
ST. LOUIS WATER WORKS

The annual convention of the American Water Works Association will be held in St. Louis, June 2-6, 1930.

This convention will bring together the men devoted to the water works industry which includes managers, owners, superintendents, hydraulic engineers, college professors, technical and practical men and manufacturers of appliances—the very best there is in brains directing the most vitally important industry in the United States. It is only through the control and distribution of water that industry and the people of the United States occupy their position of pre-eminence among nations. This is not an extravagant statement. Without water works there could be no great centers of population such as St. Louis, Chicago, New York, Los Angeles, or even medium sized cities and towns. Neither could the gigantic industries operate efficiently. Production, as we know it today, would be impossible. Without water works we would slip back to the days of the well and cistern and the pump. Disease and epidemics would ravage the country. We would live—or more likely die like flies—under conditions which would be little better than the dark ages. Familiarity breeds contempt or dulls the sense of appreciation which is the reason why the average person fails to grasp the potential significance of water works.

The Spirit of St. Louis

It is appropriate that this meeting should be held in St. Louis, just entering the second hundred years of water works history. The progress of this staunch old metropolis stands out clearly and distinctly in the history of American cities. It was a small town when the first water works was authorized on September 27, 1829, but it was even then an important city—the gateway through which flowed the endless exodus of migrating pioneers to the unoccupied empire of the west. It was the "big city" of the Mississippi Valley, the seat



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WORKS INTERESTING TO MEMBERS OF AMERICAN W. W. ASSOCIATION



of wealth and culture and a city of great commercial importance as it remains today. "The Spirit of St. Louis" even then was manifested in the hopes and ambitions of its residents. The story of the growth of the water works is marked with trial and tribulation, disappointments and financial difficulty. But the march has always been forward and upward until today the city offers to the visiting members of the American Water Works Association, a system which stands high in the world of achievement.



Leonard A. Day, Water Commissioner of St. Louis.

First Franchise

On September 27, 1829, John C. Wilson and Abraham Fox were given a 25 year franchise for a water works with a bonus of \$3,000. The ground for the engine house was purchased from the government. As the work progressed Mayor Page gave his personal note for \$2,309 for pipe. Wilson and Fox were good mechanics but lacked capital, and during the first few years expenses greatly exceeded the receipts. The first water was turned into the mains in 1831. The interests of Messrs. Fox and Wilson were purchased by the city in

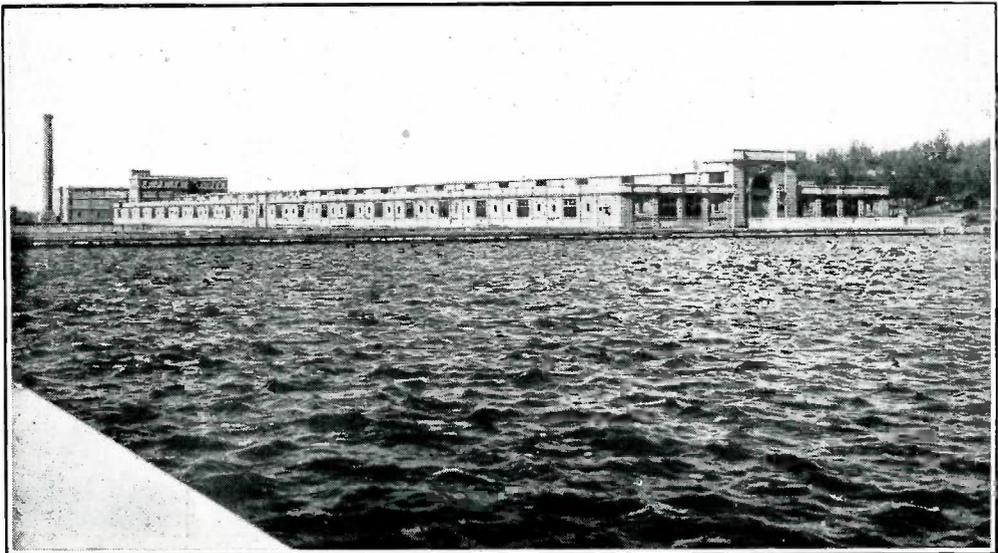
1835 and up to that time the cost had been \$54,294.01 but from this point the development was more rapid and regular, although many readjustments and changes in financial policy were necessary.

A history of the water works has been compiled by Thomas E. Flaherty covering the period from 1829 to 1868. Mr. Flaherty's chief source of information was a manuscript of Thomas J. Whitman who was chief engineer from 1867 to 1876. Reading through this history one finds many things which are amusing in the light of the present highly developed water works practice.

The builders of the pumping engines gave their products such high sounding names as the "Ajax", and "Hercules" and they seemed worthy of the names, the latter having been



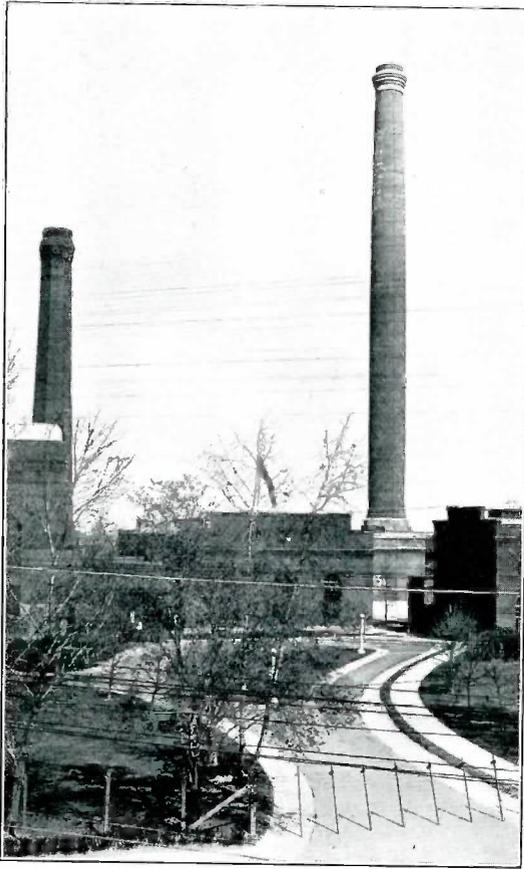
Thomas J. Skinker, Engineer in Charge of Distribution, St. Louis, Mo.



Center—Pump and beautiful Chain of St. Louis.

Left—Interior of Pump at Chain of St. Louis.

Right—Exterior of Pump at Chain of St. Louis.



Pumping Station at Baden

installed in 1852 and not dismantled until 1875.

The storage system, considered good in that day would not be countenanced now.

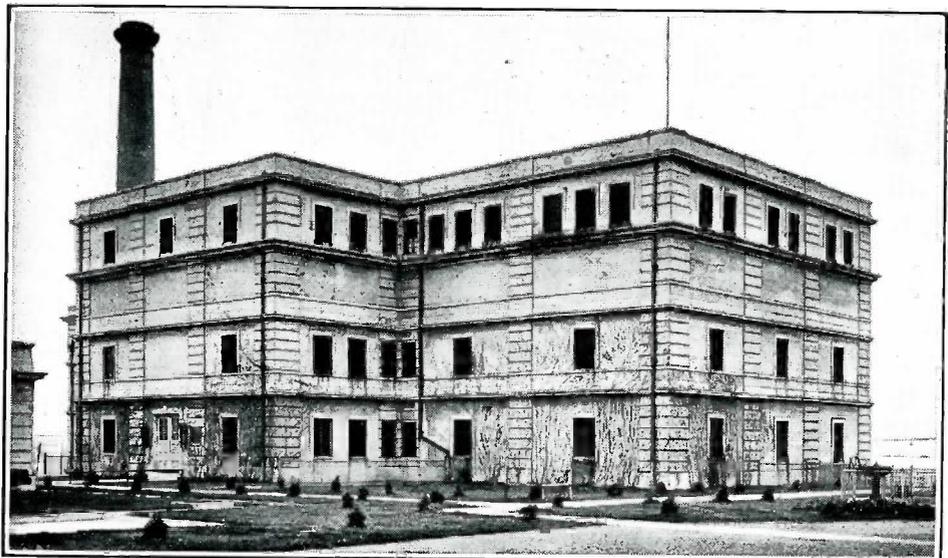
Describing the first reservoir built, we read:

"The pump delivered the water through a six-inch cast iron main into a reservoir situated at the corner of Bates and Collins Streets. This was the first reservoir used in St. Louis for the storage and distribution of water. It was constructed partly in excavation and partly in embankment. The bottom was paved with brick laid on a floor of thick plank, tongued and grooved, driven together, and fastened to sills. The main walls were of stone masonry lined with brick. The dimensions of the reservoir were 62 by 55 feet, the depth of water to be 15 feet, giving a capacity of about 350,000 gallons. The elevation of the high water line was 90 feet above the city directrix."

For many years the work of supplying water, plumbing to private house, street services, etc., was handled by the city. This practice was discontinued in 1847. At one time the city manufactured the lead in making these attachments.

Superintendent Got \$800

The first superintendent of the water works was Abraham Fox, who had originally been given the franchise. He was elected by the city council in 1832 at a salary of \$800 a year.



Head House at Chain of Rocks

The location of the first engine house was at the foot of Smith Street. The water in those days was pumped into the reservoir direct from the river with the result that sediment occasioned a great deal of trouble. In 1867 this sediment had reached a depth of 20 feet. Mr. Whitman recommended the use of a dredge to get rid of this, but the plan was only moderately successful, although thousands of yards of sediment was removed.

It is not surprising but it is interesting to know that the St. Louis Water Works became entangled in the meshes of the Civil War. The summer of 1861 work was commenced by the United States government on the western corner of the reservoir embankment in preparation of mounting artillery there. A remonstrance by city authorities caused the government to suspend this undertaking.

In 1862, General Scofield, commander of the department, removed Daniel H. Donovan as superintendent of the works. No reason is given in the history for this action, but one might draw his own conclusions. Willis R. Pritchard succeeded to the superintendency and remained in charge until 1871.

The Second Stage

The second stage of development of the St. Louis Water Works dates back to 1863 when the Missouri legislature passed a law enabling the city to extend the service. Under this law the council authorized the board of water commissioners. This was in 1863. The commissioners organized in 1865, and named James P. Kirkwood as chief engineer of the new water works.

In that year the chief engineer was instructed to make a survey with a view to

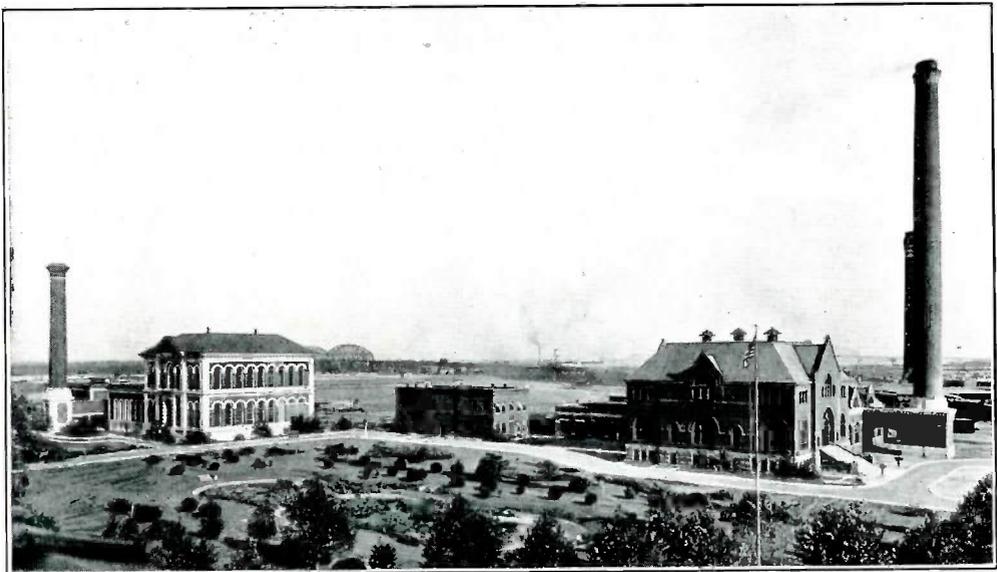
establishing the plant at the Chain of Rocks, five and one-half miles above the north city line. The plan worked out by Mr. Kirkwood was approved by the commissioners, but rejected by the council, which conducted its own survey and ended in recommending the plant be located at Bissell's point. Mr. Kirkwood resigned and Thomas J. Whitman was named his successor. Mr. Whitman had felt that Mr. Kirkwood's selection of the Chain of Rocks was correct, but the imperative need of water left no time for further investigation. The city engineer assured him that if the plant were located at the chain the city would be out of water because of a diversion of the water which had been undertaken at this point. Mr. Whitman says: "To my mind this settled the question. Without money enough to go to the chain we could not go higher than Bissell's Point, so that there was but one thing to do."

After 63 Years

At about this time the proposition of a plant on the Missouri river was discussed also.

In his interesting annotations, Mr. Flaherty speaking of Mr. Kirkwood's espousal of the Chain of Rocks locations says: "His locations were substantially the same as those finally adopted for the works (1924) except that the higher service station is about seven-eighths of a mile further south and the stand pipe three miles further south," and "finally after 63 years the proposal to pump water from the Missouri river at a point near St. Charles will be realized through a bond issue of \$12,000,000 for water works on the Missouri River."

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Pumping Station at Bissell's Point.

New St. Louis Water Works

By Leonard R. Day, Water Commissioner, St. Louis

As far back as 1911 the Water Commissioner of the City of St. Louis called attention to the steadily increasing demand for water and from this time on preliminary surveys, estimates and investigations were made from time to time by the Water Department's engineers with a view of building a new plant. After exhaustively investigating all feasible plans for extension a decision was finally made to locate the new plant on the Missouri River, at a point called Howard Bend, 37 miles above the mouth of the river and 20 miles on an airline from the Court House.

Twelve Million Bond Issue

On February 9, 1923, the citizens of the City of St. Louis, by a large majority, voted for the approval of a request for a \$12,000,000.00 bond issue to cover the cost of building a new water works. This being accomplished the engineering organization of the department immediately set about to prepare detailed plans and specifications and with this came the award of contracts. The first contract was for the improvement of the river, then followed, in rapid succession, contracts for roads, buildings, etc. The plant was started in February, 1929, and after a considerable amount of tuning up, in May, 1929, it was finally put in continuous service, approximately five years after the first contract was let.

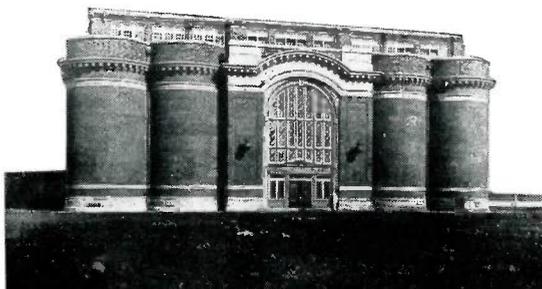
Fifty-five Million Daily

The new plant is capable of producing and delivering to the city mains 55,000,000 gallons per day of safe drinking water. It comprises a shore intake,

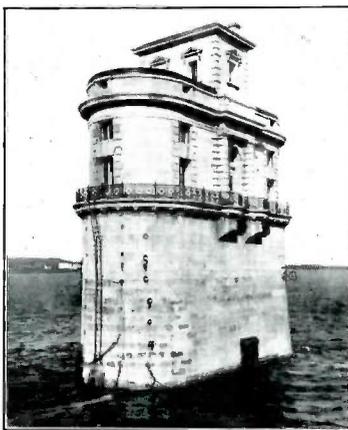
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The West Intake at Chain of Rocks



The Coagulant House at Chain of Rocks



The East Intake at Chain of Rocks.

equipped with traveling screens and built into the channel of the Missouri River, the channel being confined by hurdle dikes and revetments above and below the intake; a low service pump pit and house built integral with the intake; a high service pump pit and station house, the house adjoining the low service house and the pits connected by tunnel; a boiler house connected by an inclined belt conveyor to a coal receiving and crushing station; a 275 foot chimney of 13 foot bore, and housing in its base a carbon dioxide plant; four 150 foot settling basins provided with mechanical means of continuously removing sludge therefrom; two sludge pump houses; a coagulant house for the storage of chemicals and for their preparation for admixture with the water; mixing conduits and reaction chambers; two large coagulation-sedimentation basins; a carbonating chamber; filter plant; head house and chemical laboratory; covered clear water basin; and the 100,000,000 gallon covered storage reservoir at Stacy Park.

Besides these obvious units, are two 36 inch trunk sewers; concrete conduits an dipping connecting various units; the 60 inch steel pipe line from the plant to the city; a steam heating tunnel; a manifold chamber and the railroad switch track with three spurs. The plant site comprises 194.57 acres and the adjoining park between Olive Street Road and the Rock Island tracks, 50 acres. A 150 foot right of way is owned between the plant and the reservoir,

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