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WATERWORKS RECONSTRUCTION AT HAMILTON, ONT.

NOTES ON GROWTH OF SYSTEM SINCE 1859 AND ON COMPLETE RENEWAL UNDERTAKEN IN 1912—PAPER READ LAST WEEK AT DAYTON (OHIO) CONVENTION OF AMERICAN SOCIETY OF MUNICIPAL IMPROVEMENTS.

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THE city of Hamilton, Ont., completed its first waterworks system in 1859, which system was developed gradually to meet the growth of the city until 1912, when it was found that the rapid growth of the city necessitated the complete renewal of the entire system. At this time there were in operation four steam pumps having a combined discharge of 13½ million Imperial gallons per 24 hours and three mains to the city, 18-in., 20-in. and 30-in. respectively. Two of these pumps and the 18-in. main were installed in 1859 and

city in the unique position of being about the only city drawing its water supply from the lower Great Lakes without necessity of treatment.

In connection with the original installation, two intakes extended into the lake, one cast iron, 20 inches in diameter, at a distance of 1,000 feet, and the other a wooden box intake 3 feet square, at a distance of 300 feet, each having its inner end in a settling basin from which wooden conduits lead to the wells at the pumping station. It is interesting to note that one of these wooden

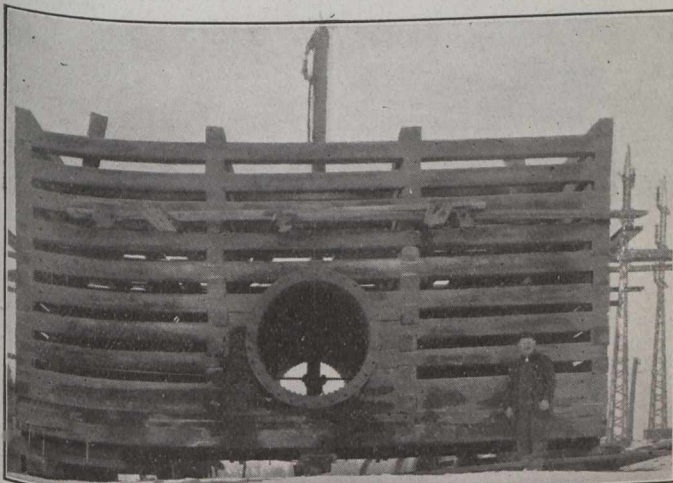


Fig. 1.—Timber Intake Crib Under Construction for Beach Pumping Station, Hamilton.

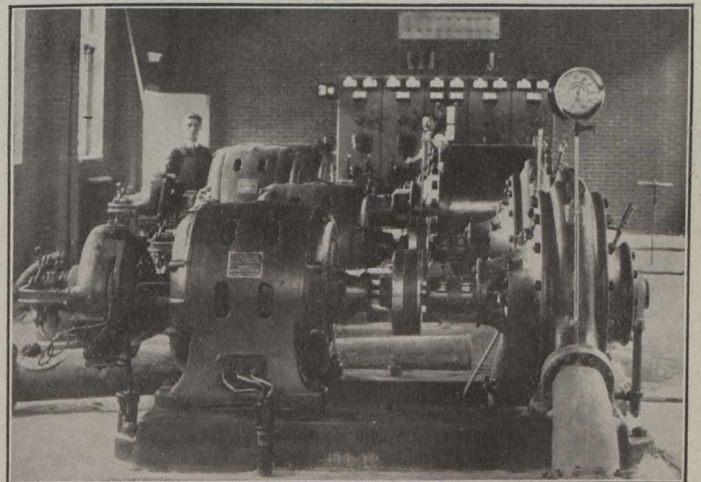


Fig. 2.—Interior View of Booster Installation at the Mountain Pumping Station.

have been in continuous use since. These pumps of the vertical walking beam plunger type are to-day somewhat of a curiosity. The old pumps are still in commission, but used only in the event of interruption to the electrically driven turbine pumps installed during the reconstruction, and when the other two and newer steam pumps cannot meet the demand.

Hamilton lies at the westerly end of Lake Ontario, at its extremity of which a sand ridge cuts off the lake from the Burlington Bay, on the shores of which the city is situated. Owing to its location with respect to this sand ridge, through which a short canal is cut to the lake, combined with the fact that most of the sewage from the city is treated at disposal works before entering the bay, it has never been found necessary to treat the water taken by the intakes from Lake Ontario. This places the

conduits placed in 1859 was found to be in first-class condition after 55 years' service.

It was decided to construct a new intake, 4 feet in diameter and 2,100 feet in length, which would bring it to a depth of 32 feet of water in the lake. This steel intake pipe, including intake piece, sluice valve and expansion joints, cost \$20,520 delivered on the site and riveted in lengths approximately 140 feet, on the ends of which were flanged pieces. The price mentioned includes also the lead gaskets and bolts.

The accepted tender for laying this pipe was \$35,000, which included the building and placing of the intake crib, and a concrete valve chamber and house at the settling basin end. As ice ridges formed out in the lake for a distance of about 1,000 feet and in some places 30 feet high, to protect the pipe it was necessary to lay the