

Wherever possible, advantage was taken of the work done for the water supply to place the sewer system. Vitrified clay pipes were placed alongside the water mains as per determined gradient from 20 per cent. to 2 per cent. and converging by gravity towards the outlets, two of which were in the River St. Maurice, and one in the St. Lawrence.

Manholes and Catch Basins

Forty-two manholes were placed. The bottoms of these manholes were 30 inches square and the upper part of elliptical form with radii 18 x 24 inches. They were built of concrete and cost about \$45 each to construct. The catch basins, of which there were 15, consisted of 20-inch vitrified clay pipe placed vertically.

MANITOBA STEEL AND IRON CO., LIMITED

The organization meeting of the Manitoba Steel and Iron Company, Limited, was held in the city of Winnipeg last week and the following directors were elected: T. R. Deacon, H. B. Lyall, Sir Augustus Nanton, Geo. F. Galt, G. W. Allan, K.C., M.P., Sir Douglas Cameron, Chas. Pope, Capt. Wm. Robinson and W. H. Cross.

At a subsequent meeting of the directors, T. R. Deacon was elected as president; H. B. Lyall, vice-president; and Walter Stuart, secretary.

The company has been incorporated with a Dominion charter, with an authorized capital of \$500,000, to take over the merchant end of the business of the Manitoba Bridge and Iron Works, which has grown to considerable dimensions.

The new company will carry on a general merchant business in heavy steel goods such as structural steel, plates and sheets, bar iron and steel, boiler-tubes, rivets, bolts, railway supplies, mining equipment, heavy forging billets and stock for shipbuilding. A block of land with suitable warehouse has been secured on Logan Avenue, Winnipeg, with railway siding facilities. Business will be commenced on March 1st.

The Manitoba Bridge and Iron Works intend to confine their business to purely manufacturing, for which this change will afford them more needed room on their present site. The latter company is also applying for a Dominion charter with an authorized capital of \$1,000,000.

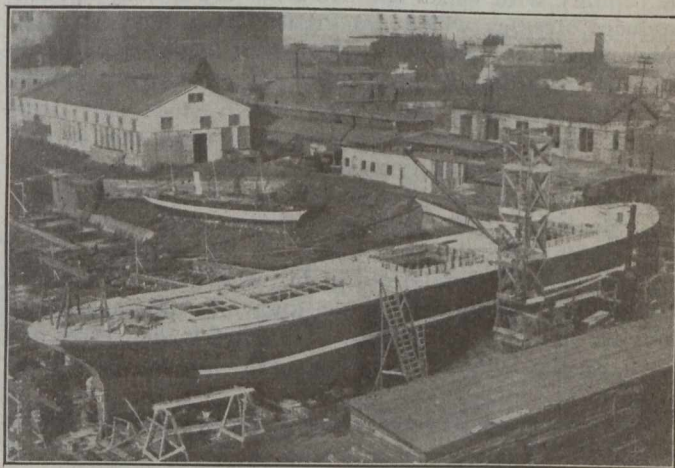
QUEBEC BRIDGE LECTURES

Two lectures on the Quebec Bridge were delivered recently in Toronto. A few weeks ago, Geo. H. Duggan, chief engineer of the St. Lawrence Bridge Co., addressed the Canadian Institute in the University School, Bloor Street, and last week Lieut.-Col. Chas. N. Monsarrat, chairman and chief engineer of the Board of Engineers, Quebec Bridge, addressed the Toronto Branch of the Canadian Society of Civil Engineers in the Chemistry and Mining Building of the University of Toronto. Both lectures were well illustrated with lantern slides. Col. Monsarrat said that error of only 1/64 inch in 50 feet was allowed in the fabrication, and that for such heavy work the accuracy obtained by the contractors was most remarkable. The greatest error found in the joints in the field was 25/1,000ths of an inch, and, when riveted complete, 4/1,000ths of an inch. The alignment of the bridge was found to be perfect.

CONCRETE BOAT AT MONTREAL

WORK on the equipment of the concrete boat at Montreal is progressing rapidly and it will be ready for a trial run early in the spring. The accompanying illustration gives an excellent idea of the size and outlines of the boat. It is being built by interests associated with the Atlas Construction Co., Limited.

The completion of the vessel was delayed by an accident last fall. When being launched, the ways collapsed at one end, leaving the boat half in water and half on land. A firm of experienced Montreal shipbuilders had contracted for the launching, but apparently there was some hidden weakness in one of the timbers forming the ways. The ground was excavated between the boat and the water,



Concrete Boat at Montreal, Before Launching

and jacks were used to force the vessel into the water. This jacking put the concrete under greater strain than any for which it was designed, and was an unusual test of the strength of the hull. No permanent damage resulted from the accident, as the builders state that there is not a crack. The boat is now afloat.

The concrete shell varies in thickness from 3 to 5 inches between the ribs, which are structural steel, spaced 27 inches apart. The keel is structural steel. The boat is 125 feet long, 22 feet beam and 13 feet deep. It is intended for service on the Great Lakes and was undertaken, it is said, chiefly as an experiment to determine the rapidity with which concrete hulls can be built and the cost of such construction.

The Chilean Government has placed an order for twenty engines with the Montreal Locomotive Works, a subsidiary of the American Locomotive Works. The Canadian company is now completing an order of twenty engines for the Union of South Africa.

The suit brought by Brennan & Hollingsworth, engineers and contractors, Hamilton, against the city of Hamilton, for extras entailed in the construction of sewers for the Kenilworth Avenue subway drainage, has been settled by the city's paying \$2,500 to the contractors and assuming all legal costs.

There are, at the present time, 32 Heroult electric furnaces in Canada and 22 of other types—in all 54 furnaces using the electric process. These furnaces have a capacity of 173,000 tons of iron and steel, 50,000 tons of ferro-silicon, and 8,000 tons of other ferro-alloys per annum. The British Forgings plant at Toronto has ten electric furnaces of the Heroult type and a total capacity of 60 tons per heat, or about 72,000 tons per annum, making it the largest electric-process steel plant in the world.—Official Bulletin of Commission of Conservation, Ottawa.