Marine Department

Lock Gate Lifter for the Trent Valley Canal.

The Department of Railways and Canals has had a steel pontoon lock gate lifter built, to lift and place in position the lock gates on the Trent Canal in Ontario. Its capacity of 50 tons and clearance of 37 ft. above the deck will enable it to step any of the mitred gates throughout the entire length of the canal. The general design comprises a structural steel collapsible derrick mounted on a steel pontoon, with separate steam engines for each operation.

The pontoon supporting the derrick is made of steel plating with extra strong steel frame work, there being two longitudinal and three transverse trusses, so as to provide for the severe loads it will have to bear. The hull is constructed with rounded bilges and each end has a rake of 45 degrees. The length is 55 ft., beam 27½ ft., depth 9 ft.

The derrick is built of structural steel in two units. When in working position the derrick is erect as shown in fig. 1. In transporting the lifter from one lock to another the upper part of the derrick is lowered where necessary, as shown in fig. 2, which allows of its passage under overhead bridges along the canal. The operation of raising and lowering the derrick is performed by a 6 by 6 double cylinder engine, mounted on one of the back legs. Two swivel hook padlocks are suspended, one from each overhanging top of front legs of the derrick, each carrying 8 parts of ⅞ inch steel cable. The main engine has 9 by 9 double cylinders, double drums, and is link reverse. The operating levers are brought to one position for the convenience of the enginemen.

The pontoon is kept on an even keel by two movable ballast cars under deck. Each car is moved by a steel screw operated by independent 6 by 6 reversing engine. These engines are controlled by pendulum governors, automatically shifting the ballast to the proper position to put the pontoon on an even keel, whether it is under load or light, with the derrick upright or folded. In addition to the automatic control the ballast car engines can be operated from the engine room above deck. Dial indicators are provided to show the position of the ballast cars at all times.

We are informed that the machine has already stepped the gates for locks 1, 2, 3, 4, 5 and 6 of the Ontario-Rice Lake Division of the canal, and that the total time for stepping each leaf, from picking it up in the water to releasing it in the gate recess, varied from 20 to 40 minutes, according as an upper or lower gate leaf was handled, respectively. At lock 3 the lower gates are 37 ft. high over timbers and represent the heaviest gates the lifter is designed to handle.

Fig. 3 shows the gate lifter in the operation of stepping a gate.

The whole outfit was manufactured by M. Beatty & Sons, Ltd., Welland, Ont.

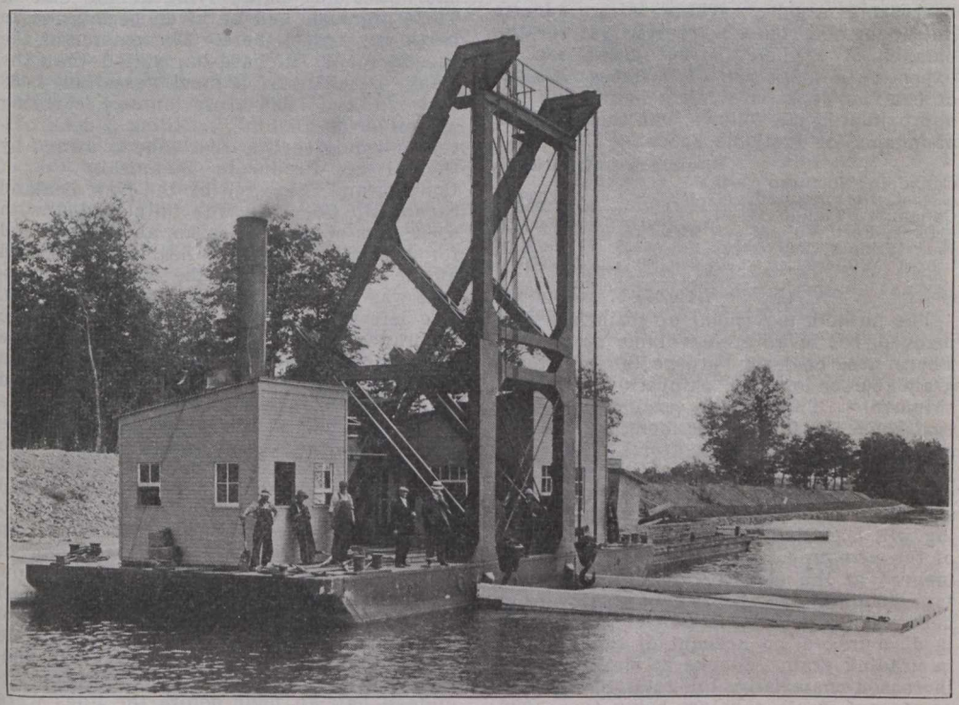

Fig. 3. Steel Pontoon Gate Lifter taking hold of a leaf of the lower gates of lock 4, Trent Canal.

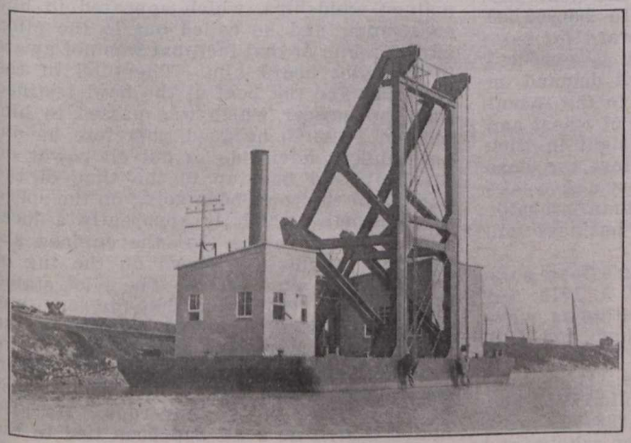

Fig. 1. Gate Lifter, showing top of derrick raised.

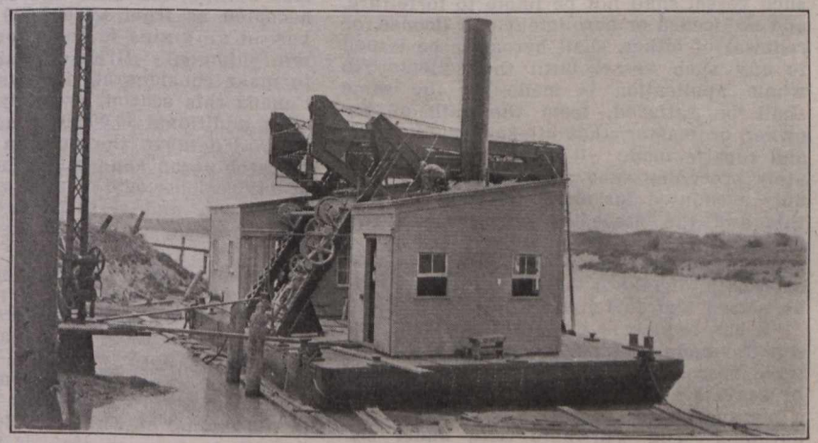

Fig. 2. Gate Lifter, with top of derrick lowered for passing under bridges.

Dominion Government Vessels for Hudson Bay.

In connection with the Government work at Port Nelson in Hudson Bay, the following vessels have been purchased,—s. s. Durley Chine, from the Alum Chine Steamship Co., London, Eng.; s. s. Sharon, from The Ottoman Line, Ltd., Newport, Eng.; s. s. Sheba, formerly owned in Monmouthshire, Eng.; sailing vessel Bargany, from Carl Beck, Twedestand, Norway, and sailing vessel Benmore, from the Fenchurch Trading Syndicate, London, Eng.

The sailing vessels were purchased for the carrying of coal from England direct to Port Nelson, where they will be used as bulkheads in connection with the harbor work. In addition to the purchase of the foregoing steamships, the Government has chartered the Newfoundland whaling steamships Bellaventure and Bonaventure, both of which are well accustomed to the waters and conditions on Hudson Bay.

The Laing Boat Co., Ltd., has been incorporated under the Quebec Companies Act, with capital of $20,000 and office at Lachine, to build, own and operate all kinds of vessels, hydroplanes, airships, etc.