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Contents of this issue on page 257

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THE McKELLAR RIVER BRIDGE AT FORT WILLIAM

PARTICULARS OF THE NEW SCHERZER ROLLING LIFT BRIDGE RECENTLY COMPLETED FOR THE CANADIAN PACIFIC RAILWAY COMPANY —PROVIDES ACCESS TO NEW TERMINAL YARDS ON ISLAND NO. 1

IN our issue of October 2nd a description was given of the new electrically operated Strauss trunnion bascule bridge, the largest double-deck, double-track bridge of the bascule type in the world, which was built for the Canadian Pacific Railway Company in connection with the new terminal system at Fort William, Ontario. The yards and loading docks which the company are developing on Island No. 1, can only be conveniently reached by bridges over the Kaministiquia and McKellar Rivers. These, being both navigable rivers, require the bridges to be of the bascule type. The article referred to above relates to that over the Kaministiquia, while the following is a description of that over the McKellar. This is a single-leaf, four-track, Scherzer rolling lift bridge. This span is 120 ft. to the centre of supports, giving a clear channel of 114 ft., while the track for the segmental girder is 32 ft. long. Two of the tracks are for the railway, while the other two are for electric cars. There are three trusses 31 ft. 6 in. c. to c. and 31 ft. 6 in. deep. The segmental girders have a radius of 25 ft., and when the bridge is rolling or opening, they travel approximately 30 ft.

There are two operating motors, not fixed on the stationary part of the bridge, but moving with the bridge as it opens. The motors are connected by gearing to pinions which mesh with racks on the rack girder, which is stationary.

When the bridge opens, it merely rolls backward. In order to ensure this the segmental girders are meshed into the track girders by means of a form of gearing consisting of square projections about one inch high on the track girders, with corresponding recesses in the segmental girders.

The angle through which the bridge leaf moves between the closed and open positions is approximately 74 deg. No equalizing gear is interposed between the operating pinions and the motors to balance up the stress of each of the pinions, but two couplings have been provided on the main shaft which have to be drilled in the field after all the gears have been adjusted.

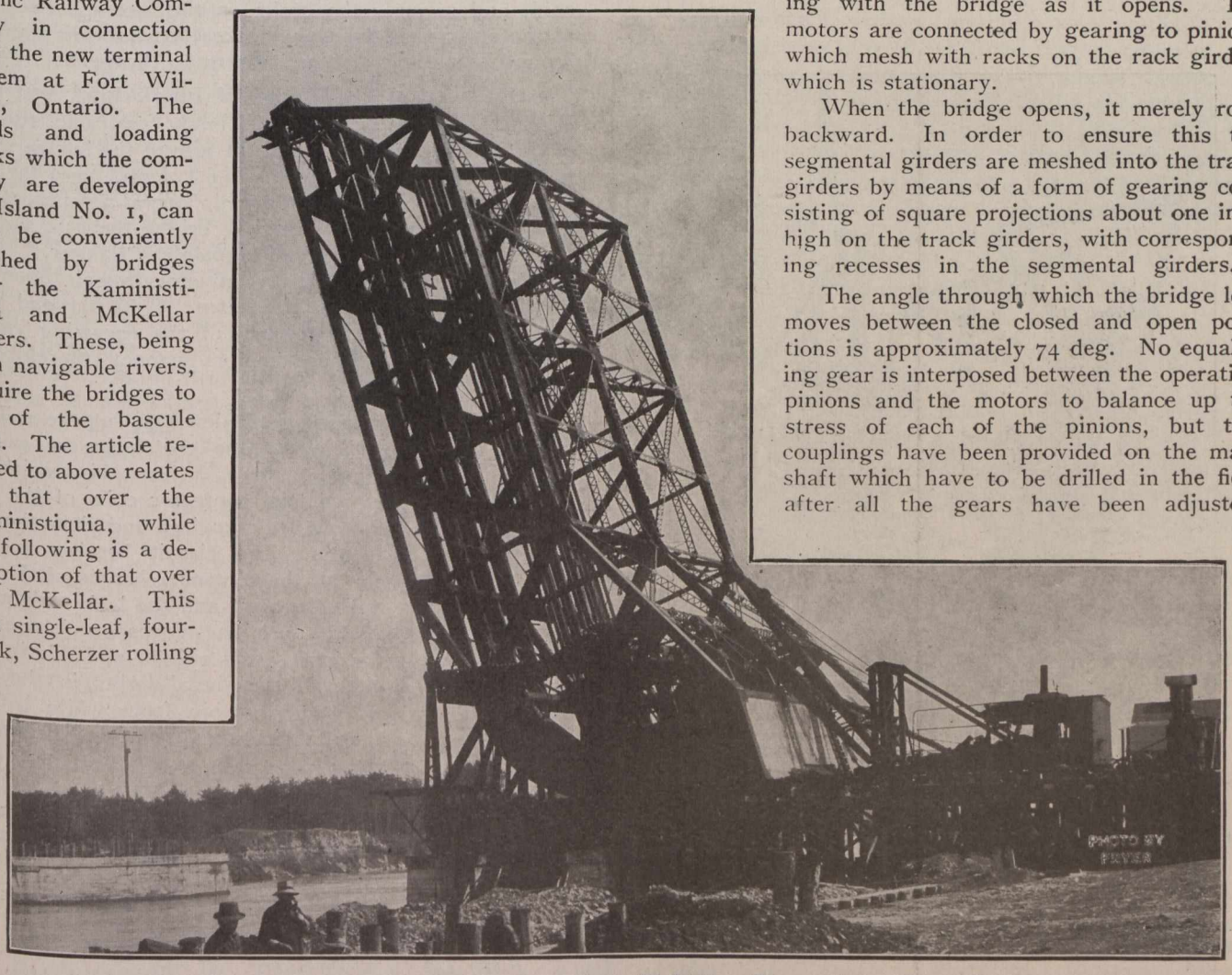

Fig. 1.—Bridge for the C.P.R. Over the McKellar River, Near Fort William, Ont.

Method of Operation.—There are two operating motors, 37-h.p., 680-r.p.m., 550-volt, 60-cycle, fitted with solenoid brakes. As the motors turn through approximately 74 deg. around an axis, parallel to the motor shafts, the bearings have been specially designed. For