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BASCULE BRIDGE ACROSS CATARAQUI RIVER

Details of Construction and Method of Operation of 160 Foot Span Bascul Bridge at Kingston, Ont.—Precautionary Means Taken to Ensure Counterweight Would Exactly Balance the Moving Leaf—How Weight Adjustment Was Determined

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AMONG the important public works which have been carried out during the past year is the system of docks, causeway and bridges across the Cataraqui River at Kingston.

There are three bridges at this site, a 164-ft. fixed span at the Kingston end, a 208-ft. fixed span at the far end and a Strauss bascule bridge at a point between the first two.

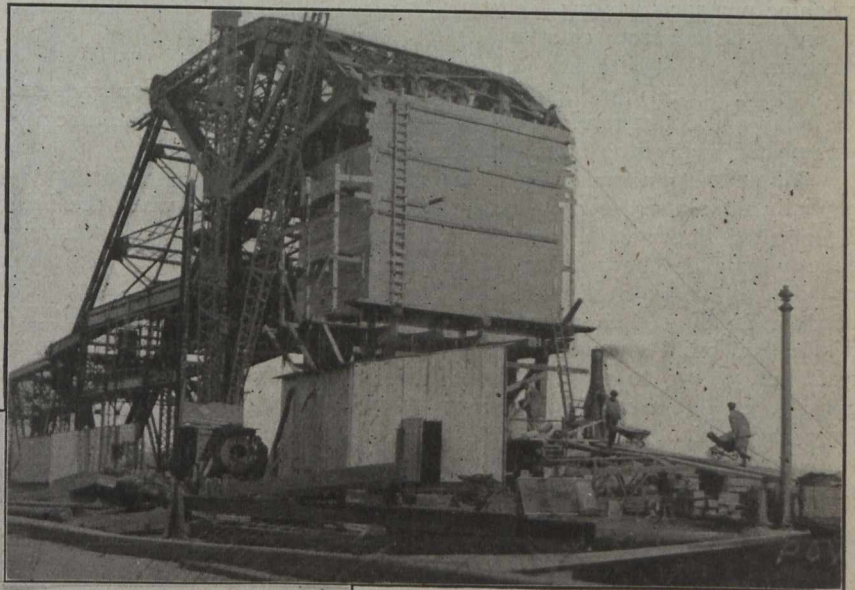
All of these bridges have a 24-ft. clear roadway, with provision for a future street car track, and they each have a 4-ft. clear sidewalk on the outside of one truss.

They are all of the through riveted type, and the fixed spans have inclined top chords. The bascule span is, of course, the most interesting of the three, and will be the only one considered in this article.

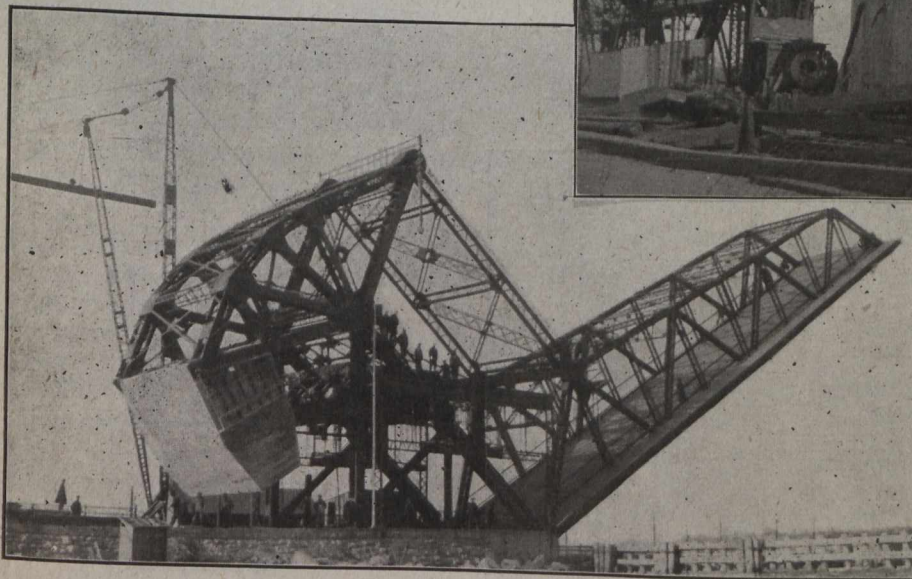
This span is 160 ft. from the centre of the outer support to the centre of the main trunnion, and provides a 140-ft. clear

1908, with such modifications as would adapt them to bascule bridge requirements.

The floor is of wood, with an under layer of 4-in. x 6-in. British Columbia fir, laid diagonally, with 6-in. openings between the timbers, and on top is a wearing floor of 3-in. maple, also laid diagonally, but



Close View of the Filling in of 600-ton Concrete Counterweight.



Bridge was First Opened for Passage of Boats, April 17th, 1917.

waterway between waling timbers. The distance c. to c. of chords at the outer end is 20 ft. and at the trunnion end 26 ft., and the distance c. to c. of trusses is 27 ft.

The bridge was designed according to Dominion Government Specifications for Bridges and Building for

felloe guard. Both felloe guards are bound with 3-in. x 3-in. x $\frac{3}{8}$ -in. angles fastened with countersunk screws.

There is a lattice railing 4 ft. high on each side of the roadway, and on the outside of the sidewalk a pipe

in the opposite direction. While the maple planks were laid as closely together as possible, there is enough space between them to allow water to run through, and if the openings get stopped with dirt the 3-in. crown in the floor will carry the water to the sides of the roadway and off the bridge. The sidewalk is of 2-in. maple, laid at right angles to the walk, and carried through the truss and across the top of the