

# THE CANADIAN ENGINEER

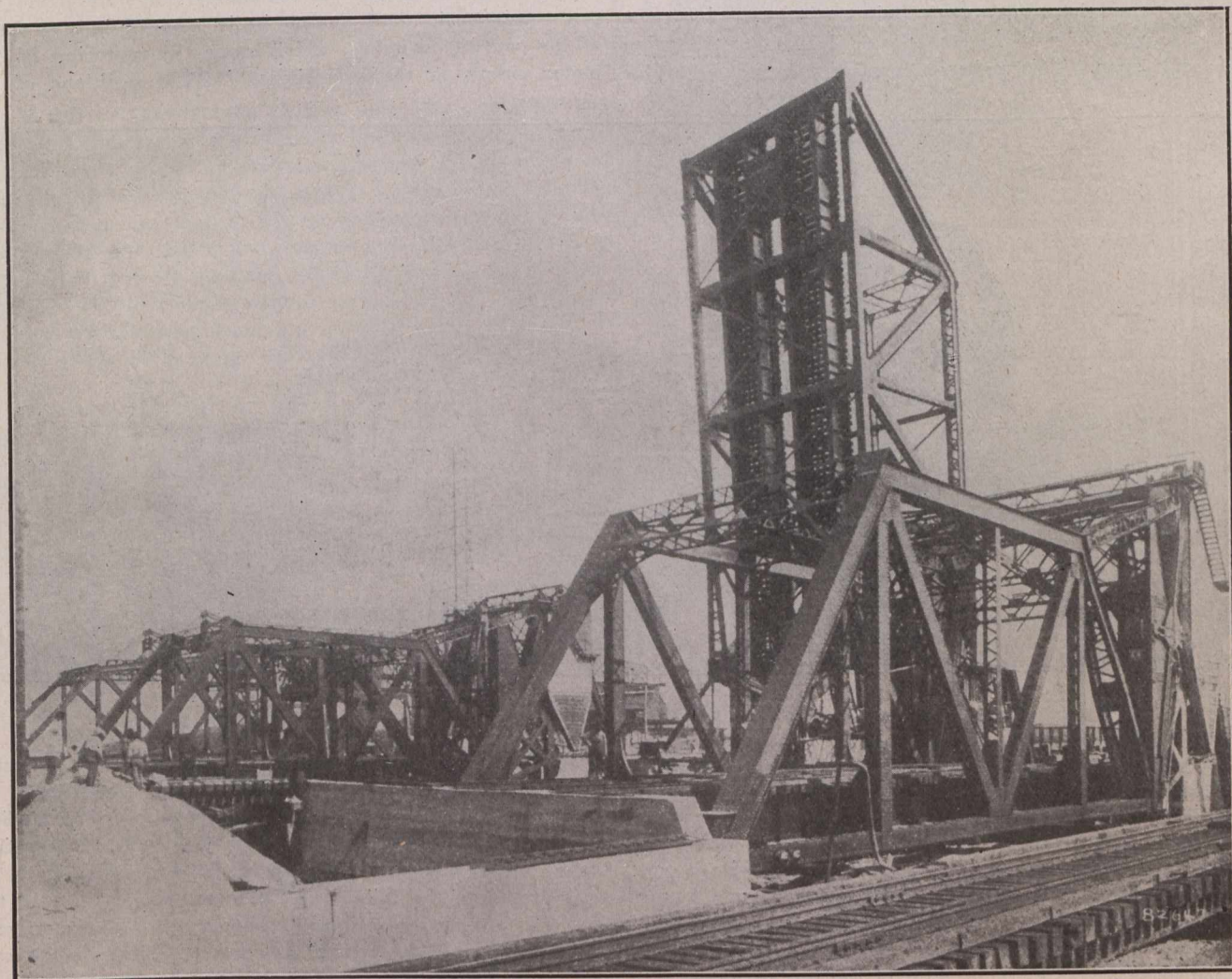
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## ELECTRICAL OPERATION OF DRAWBRIDGES.\*

By S. F. Nichols.†

The first installation of electric motors for drawbridges were on highway bridges, commencing about 1890. In fact, railways were comparatively slow in adopting electric power for this purpose. There are several explanations for this. It is only comparatively recently that steam railways have organized well-equipped electrical departments and em-

ployed these cases, current was obtained from the street car circuits at very favorable rates. The cars had to cross the city's bridges and it was not a difficult matter to arrange for using the car company's power. The steam railway bridges were not so fortunately located with reference to securing electric power for operation, and the only points where this power therefore could be applied to these structures were in the larger cities where the bridges happened to be located. The great majority of the draw spans being at points remote from the larger cities, it was out of the question even to consider



Strobel Bascule Bridge; Indiana Harbor.

ployed staffs of trained electrical engineers. On the other hand, the lake cities, Chicago, Cleveland, Milwaukee, etc., having early faced the problems of generating and distributing electric current for light and power, and having electric car lines operating on their streets, were very naturally easily induced to adopt electric power for operating their new bridges, and, in many cases, the older ones. In most of

these cases, current was obtained from the street car circuits at very favorable rates. The cars had to cross the city's bridges and it was not a difficult matter to arrange for using the car company's power. The steam railway bridges were not so fortunately located with reference to securing electric power for operation, and the only points where this power therefore could be applied to these structures were in the larger cities where the bridges happened to be located. The great majority of the draw spans being at points remote from the larger cities, it was out of the question even to consider

electrical operation without the installation of an independent power plant. The improvement in electric motors and other electrical apparatus was so rapid, and electric power became so much more available at many points, that motors were put on many existing structures and the machinery for new bridges was laid out with reference to this method of operation.

An added incentive to the adoption of electric power for bridge operation was furnished by the development of the bascule type of drawbridge, the first of which was the Van Buren Street bridge in Chicago, followed shortly by the

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