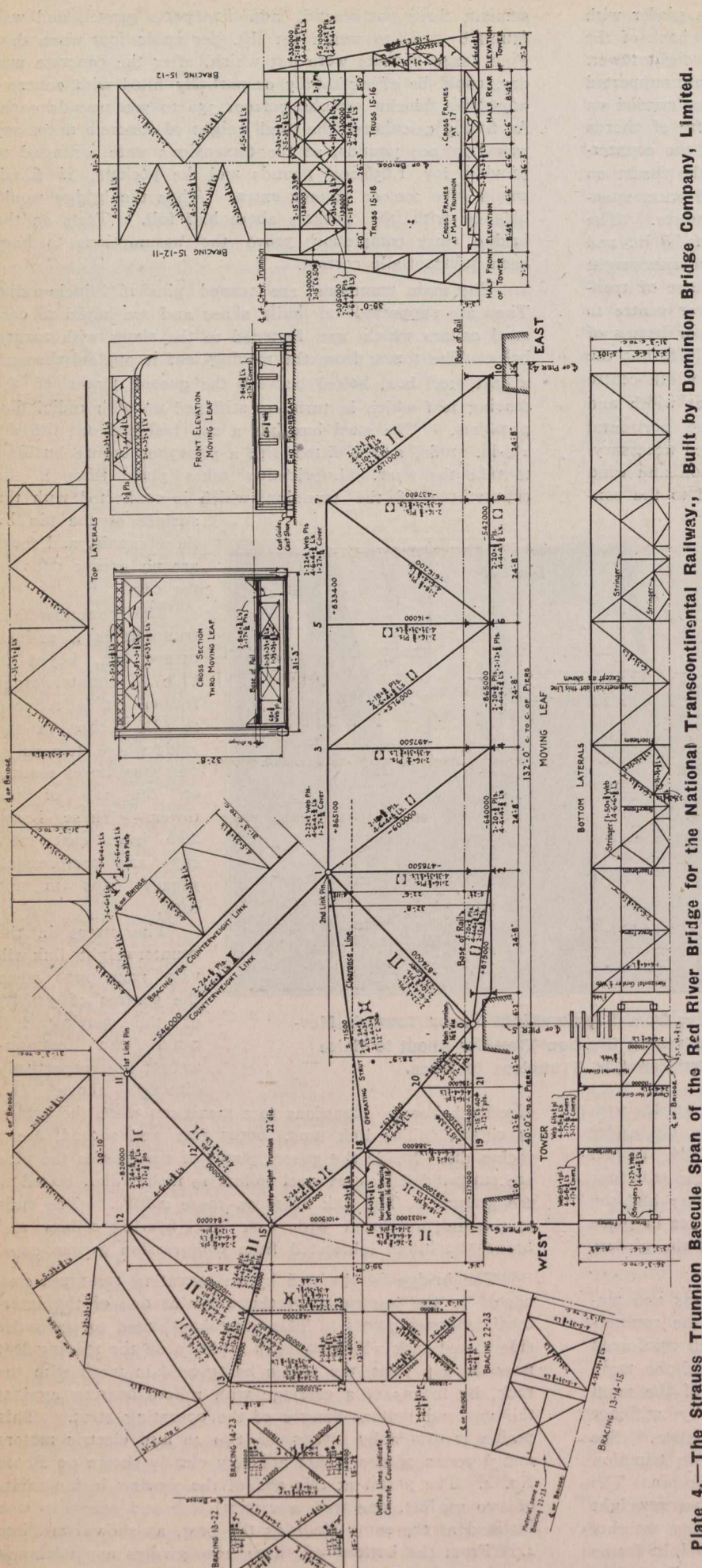

Plate 4.—The Strauss Trunnion Bascule Span of the Red River Bridge for the National Transcontinental Railway., Built by Dominion Bridge Company, Limited.

machinery is carried on this platform and the portal. The lubrication of this machinery was arranged so as to be effective at any position of the bridge. The bridge can also be operated by hand from the lower deck by a chain.

The operator's cabin is situated on the south side of the bridge and rests on brackets that cantilever from the outside of the tower truss almost directly over the main trunnion. It is indicated on Plate No. 3, but has two stories instead of only one, as shown on the plate. The upper story was added to accommodate the storage batteries to operate the electric interlocking signals controlling the approaches to the bridge. It contains the switchboards from which are operated the main driving motors of the bridge, the motor for the latches on the toe of the moving leaf, the brakes, etc. An automatic cut out is arranged to prevent the bridge from opening a greater angle than 80 degrees 30 minutes or the fully open position. Automatic signals indicate for the railway and for navigation, when the bridge is open and when shut.

Since the first four heel trunnion bascules were designed, namely, the Red River bridge, the Cape Cod Canal bascule for the New York, New Haven and Hartford Railway, the Illinois River bridge for the Peoria and Pekin Union Railway, and the Ashtabula Harbor bascule for the Lake Shore and Michigan Southern Railway, a change has been made by the Strauss Co. in the design, putting the tower trusses in line with those of the moving leaf and counterweight frame, thus obviating the necessity of long trunnion pins spanning between two shoes and simplifying the details generally. It might be stated here that the Baltimore and Ohio bridge over the Calumet River, which is a 235-foot double track bascule, and the Canadian Pacific bridge over the Sault Ste. Marie Canal, which is a 336-foot single track span, are respectively the longest double track and single track bascules in the world.

Erection was begun from the east end of the four 150-ft. truss spans and continued westward till the bascule, the viaduct, and the spans over Notre Dame Street and Water Street, were completed, the spans at the east over the Canadian Northern and Tachè Avenue being put in last. The erection scheme will be better understood by referring to Plate No. 1 in the issue of *The Canadian Engineer* of April 18. The material was delivered by rail on the Canadian Northern tracks close to the east shore of the Red River. From the cars it was raised to the level of the Transcontinental tracks as required. The fixed truss spans and the bascule were erected on wooden falsework resting on the river bottom. The special erection traveller that was used is shown in Photo No. 5.