anchor spans, and in the case of the channel spans the traveller will run over heavy box girders suspended from the main pins of the permanent structure. This traveller is built of steel. It is 215 feet high, and is 100 feet wide at the bottom, with an over reach of 66 feet. It is fitted with four electric hoists, and will be able to handle easily weights up to 105 tons.

The railway approach to the bridge site was completed last July, and the traveller erected immediately afterwards, the first portion, the permanent metal, being put in place on July 22nd. On September 1st the main anchorage bent on the south side of the bridge, and all the lower chords and bracings of the south anchor arm, the main pedestal shoes over the main pier were in position, and the erection of the web members of the main truss was started early in the present month. Work will, however, have shortly to be suspended for the winter, as it is generally impossible at Quebec to carry on operations of this character between November 15th and April 15th. The work on the approaches and on the construction of the main piers was executed by Mr. M. P. Davis, of Ottawa, whilst the steel work is being supplied by the Phœnix Bridge Company, of Phœnixville, Pa.

[We are indebted to "Engineering," England, and "Engineering News," New York, for the data and illustrations embodied in the foregoing descriptive account.]

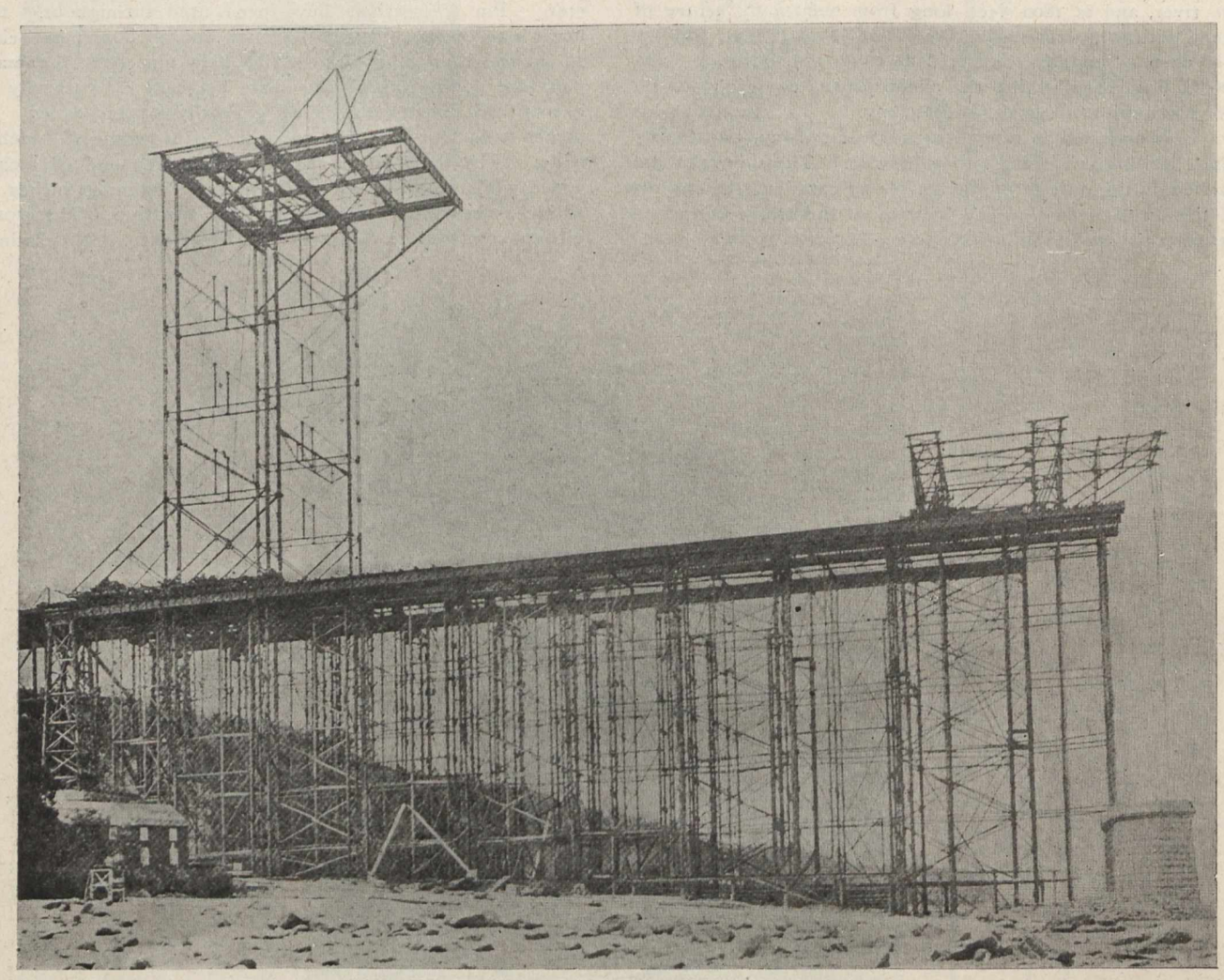

Fig. 4.—False Work over South Anchor Arm.

# SYSTEM IN INDUSTRIAL ESTABLISHMENTS

BY A. J. LAVOIE.



## THE ORDER.

Before an estimate or "tender" is accepted, there is very often a considerable amount of correspondence between the customer and the Sales Agent. This is the most dangerous stage between the first enquiry, and final delivery of the goods. Oft-times the Sales Agent, eager to secure an order, will agree to changes in the figures of the estimate, or make inconsiderate promises as to delivery, which those responsible in the works find it almost impossible to carry out; causing no end of worry and trouble; and not unfrequently leading to costly litigation. When a physician gives you a prescription, you do not change it to suit the nurse or the druggist before consulting the physician; like precaution should prevail in industrial establishments. Before any alterations are made in the terms or conditions specified in a carefully prepared estimate or tender, the responsible Engineer should be consulted; for in making his estimate, he has incorporated practical advice gathered in the shops, supplemented by the wise experience of the Chief Engineer, Superintendent, and Managing Director; hence there is double safety in following his advice; based as it necessarily is, on actual practice, as well as experienced co-ordination of all the facts and conditions involved in the production of the work to be done.

When an estimate has been carefully prepared by the Estimating Engineer, it should be as unchangeable as the laws of the Medes and Persians, except with his consent, and right here, let me say something worth remembering. It is not the number of orders secured, which make for the prosperity of an establishment—pay dividends to the share holders, but it is orders secured at a price based upon carefully collected workshop data. In these days of keen competition, rule of thumb and guesswork practice in making prices and contracts should be avoided with as much caution as you would a live wire, or dangerous explosive.

When an order is secured, a form of contract is straightway prepared in triplicate by the Sales Division; the original being sent to the customer; the duplicate reserved for the Estimating Engineer, and the triplicate kept in the files of the Sales Office. This initial procedure is followed by the issue of a shop order in quadruple form; consisting of original form No. 22; duplicate form No. 23; triplicate form