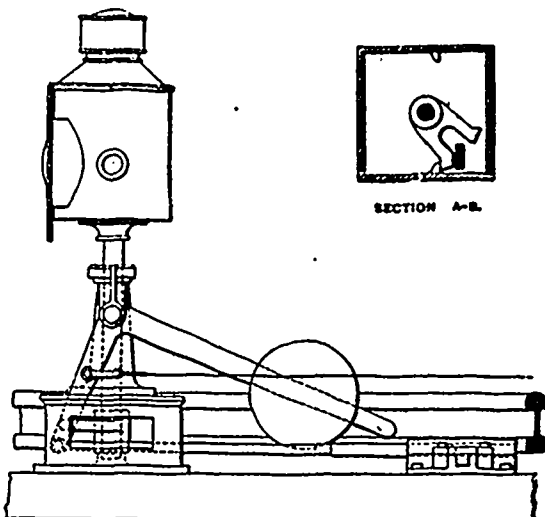
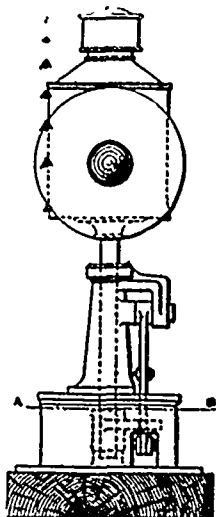


will be dropped out of the ties. These derails are interlocked with the signal, so that it cannot be given unless the derail is closed and the signals on the opposing line are set to danger and the derails open.

The Fig. No. 8 illustrates a new form of locking gear for switch points, which is being tried here for the

offices of Messrs. Saxby & Farmers, signal engineers, of London, England, he took charge of the fixing of their appliances on the various railway lines in the United Kingdom. In May, 1893, he was appointed signal engineer of the Grand Trunk Railway. (For other diagrams and portrait of Mr. Hodgson, see next page).



SECTION A-B.

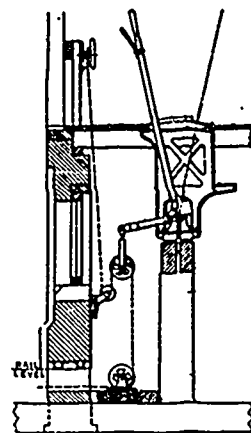


FIG. 6—WIRE COMPENSATOR.

FIG. 3—LOW SIGNAL.

first time in America. Whilst the switch is perfectly locked for a train to pass over it in the facing direction, it can nevertheless be trailed through by a train moving

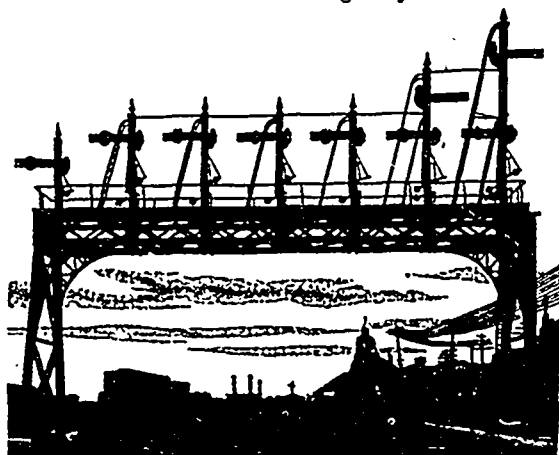


FIG. 4.—MAST SIGNALS.

in the opposite way without damaging the switch; at the same time, however, a pin connecting the switch with the lever is sheared through, and must be replaced before the switch can be again shifted. There is no strain placed on this brass pin while the lever is being moved, as the spring catch clamps the curved arm to the lever; but when the spring catch is released the brass pin is the only connection with the lever.

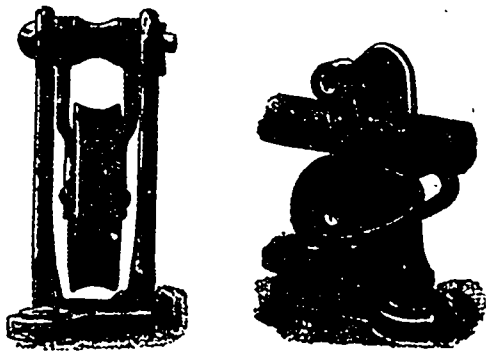


FIG. 5.—CHARRINGTON'S SUSPENDED ROLLER

P. F. Hodgson, the engineer under whose supervision the admirable system above described has been developed, was born in London, England, in 1868. He was educated at Christ's College, Finchley. After serving three years in the shops and two years in the

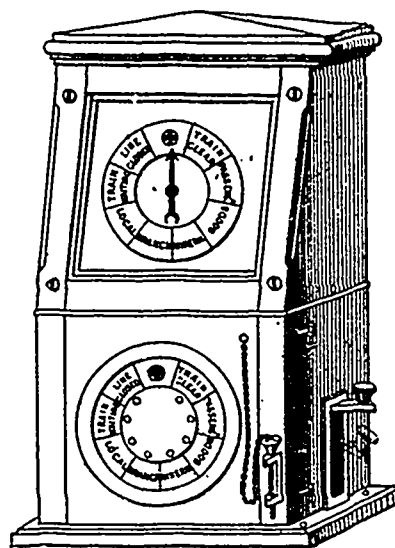


FIG. 7—TRAIN INDICATOR.

EXPERIMENTS ON CONCRETE MADE AT M'GILL UNIVERSITY.

At a meeting of the Canadian Society of Civil Engineers, held on 19th November, a report of some experiments on concrete, made at McGill University by Messrs. Theo. Denis, G. G. Hare and Carl Reinhardt, was presented by Theo. Denis. These experiments were suggested by the specification for the Chicago Drainage Canal, and are interesting as they tend to remove some errors in general opinion on the effect of water on cement. Discussion was sustained by Prof. C. B. Smith and Messrs. Marceau and McPherson and Theo. Denis. The report is as follows:

Of late monolithic works of great importance have been carried out, and every day concrete, as building material, is creeping to a foremost place.

Although cement testing proper has been subjected to elaborate, scientific and practical investigations, very few researches, and especially normally conducted researches, have been made on the strength and behavior of concretes and betons. This probably is due to the fact that for such experiments heavy and costly apparatus is needed. Investigations on small specimens would be useless, and conditions approaching as nearly as possible to practice have to be followed.