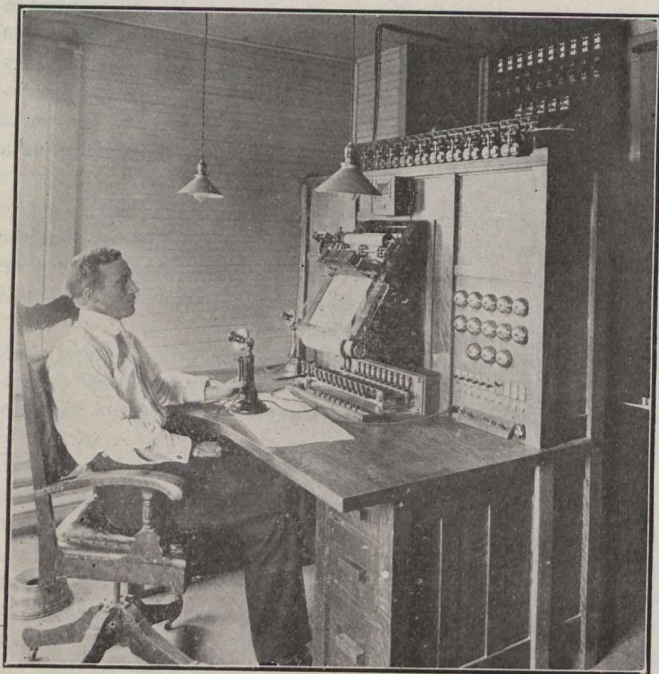


## THE SIMMEN SYSTEM OF RAILWAY SIGNALING AND DISPATCHING.

By Mr. Paul J. Simmen.

The executives of both steam and interurban electric railroads in Canada and the United States are earnestly seeking greater safety, greater facility in operation, greater



Dispatcher Reading Movements of Cars from Sheets.

track capacity and better discipline for handling their traffic at a cost bearing some reasonable relation to their earning capacity.

The present systems of train control divide themselves broadly into two divisions, namely, dispatching and signalling.

The dispatching section requires elaborate rules, timetable rights and dispatchers. These dispatchers must, through some form of telegraph or telephone system, including operators at numerous stations along the line, convey orders to the conductor and engineer; reports of the actual train movements being wired to the dispatchers by the operators or train crews.

The efforts of the signalling section have been to prevent collisions between trains endeavoring to follow the running orders based on the time table rights, train rules and dispatchers' order. This second section involves all sorts of devices from target boards to elaborate automatic or controlled manual semaphores, often with electric locking devices, and, in some instances, automatic stops.

Practically no improvements have been brought about in the dispatching section for a generation, and the various associations of railroad officials, Government and State Boards, have repeatedly condemned these methods as being totally inadequate to meet the requirements of present day traffic. The large number of accidents annually recorded on

[In the issue of *The Canadian Engineer* of June 11, 1909, there appeared a description of the Simmen Automatic Railway Signal Device, which had, at that time, just been installed on the Mimico division of the Toronto and York Radial Railway. We herewith present a more complete description of the system, prepared by the inventor.—Ed.]

roads throughout the country forms conclusive evidence of this fact.

In the signal division fine results have been obtained, but these results have been accompanied not only with a large first cost, but more important still, with a large yearly maintenance expense. Automatic or manually controlled block signals are essentially only auxiliary to the dispatching section, and where used, the combined operating expense of both the dispatching and signal section is materially larger.

The Simmen system is especially designed to meet a long-felt want. It is absolutely safe; it reduces delays in train movements; it increases the track capacity and it affords a simple and ready means of increasing the efficiency of train crews, at a cost much below that of any other known system.

The Simmen system is radically different, both in intention and mechanism, from anything else now offered to railways. It breaks new ground by combining into one all the essentials of the dispatching and signalling sections. It is not an effort at detail improvement, but an entirely new and effective system for the management of railway traffic, which is safe, accurate and inexpensive. The claims made for the system and its many desirable features have been fully justified by the results obtained from actual installations and tests of the system under service conditions.

The actions of the persons upon whom the safety of the traffic depends, namely, the dispatchers, train crews and telegraph operators, are all protected against error. The responsibility first of all rests upon the individual himself, but any error which he would unwittingly make is throughout the system prevented or corrected by electrical or mechanical means. The dispatcher is protected against error by an interlocked switchboard. The engineer or motorman is given a more effective signal than heretofore, appealing both to the sense of vision and hearing, but should he fail to obey the signal to stop, the air brakes are automatically applied. The telegraph operator, whom statistics prove to be the weakest link in the present chain of

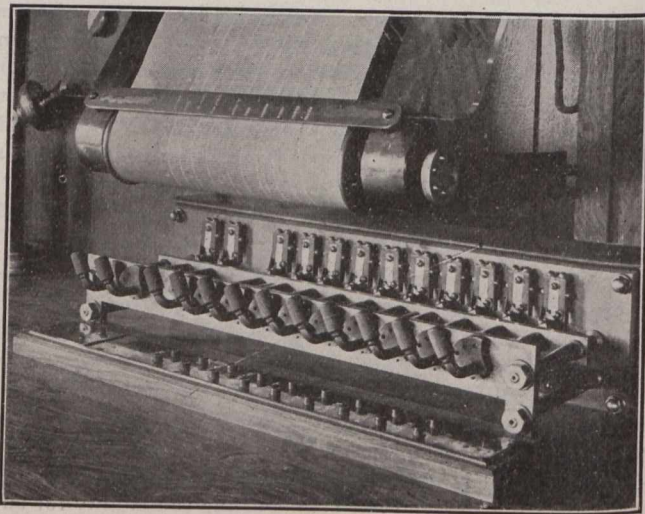


Fig. 1.—Dispatcher's Switchboard. (Switches all Set for Westbound Movement.)

train operation, is dispensed with altogether by the Simmen system, thus removing a frequent cause of error, and making a large saving in operating expense possible.

The system is not an experiment. It has been in use for nearly three years on the Toronto and York Radial Railway with marked success. A test installation of 18 miles was made on the Indianapolis & Cincinnati Traction