an auxiliary to same.

4. The despatcher can telephone direct to the engineer in his engine.

5. The electric switches, by which the despatcher controls signals are interlocked in such a manner as to prevent the wrong movement of a switch.

6. By the use of the track circuit a train in the block ahead, a broken rail or an open switch will automatically bring the danger signal into action without the despatcher's assistance.

7. An automatic stop absolutely compels the engineer to observe all stop signals and speed regulations. A danger signal is given on a locomotive travelling at full speed at a point about half a mile before entering a new block or approaching a passing siding, where another train is to be met. If an engineer obeys the danger signal and gradually reduces speed and comes to a stop at the proper point nothing further happens. If, however, the speed of the train at any point within the half mile is greater than that specified for gradual stop the brakes are automatically applied. The apparatus may be so adjusted as to compel a reduction to a speed of, say, five miles an hour, and will permit the forward movement of a train even past a danger signal, provided that the speed is reduced to five miles an hour, or any safe speed, and that speed maintained until a clear signal is passed.

8. If an engineer speeds around any curve faster than that provided by the regulations, the automatic stop apparatus will slow up the train to the proper speed, such proper speed depending upon the sharpness of the curve.

9. A recording device on the locomotive records the speed made in every block, the exact time and place at which a cab signal was given, the kind of signal, whether the engineer slowed down, and how soon, or whether the train was automatically stopped.

The one very important feature in this system is that a complete record is made of important facts, both in the despatcher's office and on the locomotive, which will enable the responsible officer of a road to maintain a much higher discipline among the train crews than has been possible heretofore.

Mr. Simmen then explained from lantern slides the general working features of the system. The principle feature about the system is the record sheet in the despatcher's office. This is a rectangular sheet, divided into time longitudinally, and into sections representing blocks transversely. This sheet is placed on to a table and continuously moved by clock work, so that the correct hour and minute as marked upon the sheet is at all times under a set of perforating needles. Each block has a separate recording needle, recording in a separate column. By the use of the track circuit as a train enters any one block the corresponding needle makes a perforation upon the sheet, thus making a record of train movements in graphical form.

ENGINEERING SOCIETIES.

ARCHITECTURAL INSTITUTE OF CANADA. President, A. F. Dunlop, R.C.A., Montreal, Que.; Secretary, Alcide Chaussé, P.O. Box 259, Montreal, Que.

CANADIAN RAILWAY CLUB .- President, L. R. Johnson; Secretary, James Powell, P.O. Box 7, St. Lambert, near Montreal, P.Q.

CANADIAN STREET RAILWAY ASSOCIATION .-President, J. E. Hutcheson, Ottawa; Secretary, Acton Burrows, 157 Bay Street, Toronto.

CANADIAN INDEPENDENT TELEPHONE ASSO-CIATION.-President, J. F. Demers, M.D., Levis, Que.; Secretary, F. Page Wilson, Toronto.

CANADIAN SOCIETY OF CIVIL ENGINEERS.-413 Dorchester Street West, Montreal. President, J. Galbraith; Secretary, Prof. C. H. McLeod. Meetings will be

which may dispense with semaphore signals, or be used as held at Society Rooms each Thursday until May 1st, 1908. Annual meeting at Toronto Jan. 28, 29 and 30, 1909.

QUEBEC BRANCH OF THE CANADIAN SOCIETY OF CIVIL ENGINEERS .- Chairman, E. A. Hoare; Secretary, P. E. Parent, P.O. Box 115, Quebec. Meetings held twice a month at Room 40, City Hall.

TORONTO BRANCH OF THE CANADIAN SOCIETY OF CIVIL ENGINEERS .- 96 King Street West, Toronto. Chairman, C. H. Mitchell; Secretary, T. C. Irving, Jr., Traders Bank Building.

MANITOBA BRANCH OF THE CANADIAN SOCIETY OF CIVIL ENGINEERS .- Chairman, H. N. Ruttan; Secretary, E. Brydone Jack. Meets first and third Friday of each month, October to April, in University of Manitoba.

ENGINEERS' CLUB OF TORONTO .-- 96 King Street West. President, J. G. Sing; Secretary, R. B. Wolsey. Meeting every Thursday evening during the fall and winter months.

CANADIAN ELECTRICAL ASSOCIATION .- President, N. W. Ryerson, Niagara Falls; Secretary, T. S. Young, Canadian Electrical News, Toronto.

CANADIAN MINING INSTITUTE.-413 Dorchester Street West, Montreal. President, W. G. Miller, Toronto; Secretary, H. Mortimer-Lamb, Montreal.

CANADIAN CEMENT AND CONCRETE ASSOCIA-TION .- President, Peter Gillespie, Toronto, Ont.; Vice-President, C. T. Pulfer, London, Ont.; Secretary-Treasurer, Alfred E. Uren, 62 Church Street, Toronto.

NOVA SCOTIA SOCIETY OF ENGINEERS, HALI-FAX.-President, J. H. Winfield; Secretary, S. Fenn, Bedford Row, Halifax, N.S.

AMERICAN INSTITUTE OF ELECTRICAL EN-GINEERS (TORONTO BRANCH) .- W. H. Eisenbeis, Secretary, 1207 Traders Bank Building.

AMERICAN SOCIETY OF MECHANICAL EN-GINEERS .- 29 West 39th Street, New York. President, H. L. Holman; Secretary, Calvin W. Rice.

SOCIETY NOTES.

Science Undergraduate Society McCill University.

The regular November meeting of the society was held on Wednesday, 11th inst. This meeting was one of considerable interest, and had been looked forward to with a degree of expectancy, inasmuch as J. B. McRae, of Ottawa, known throughout Canada as one of our greatest hydraulic engine.rs, had been secured by the executive to give an address on the design and construction of the Orillia Dam. The decided favor with which the paper was received was enhanced by the fact that Mr. McRae is a graduate of our Faculty, and expressed pleasure in being able to be of service to his Alma Mater.

His address was one of more than usual interest, being intensely practical and peculiarly fitted for an address before an Undergraduate Society. Mr. McRae outlined the events which lead to his connection with this work as inspector of the Battle Dam, a timber structure built to replace the or iginal concrete dam which had been swept away in 1904 The failure arising from lack of sand in the concrete. Alter native designs for a new dam were prepared by Mr. McRae, drawings of which were exhibited by lantern slides as also the design chosen by the council and built by the contractors.

Incidentally Mr. McRae gave some valuable suggestions to students relative to preparation of drawings for inspection by men who are not engineers by profession, pointing out the value of a picture rather than a working drawing as conveying more information to the ordinary citizen.

The discussion, led by Professor McKay and Brown, on the laying of concrete brought out many points of importance, the students getting much information from these practical and theoretical men.

Steam Engineers.

The stationery engineers of Montreal held a well-attended meeting in the rooms of the Association of United Steam Engineers at the Monument National last night for the purpose