

DYNAMOMETER.

Editor CANADIAN ENGINEER.

SIR,—Kindly inform me if there is a car coupler that will test the draft of a locomotive, giving the draft in pounds. Where can it be got?

J. W. VAN NORMAN.

Peterboro, Ont., June 5th, 1897.

The apparatus you refer to is usually known as a Dynamometer and there are a number of them on the market. If you were to enquire of any of the leading makers of testing machines, as the Riehle Bros. Testing Machine Co., Philadelphia, Pa., they would be glad to afford you all the information possible on the subject.

THE KINGSTON, ONT., SCHOOL OF MINING.

Editor CANADIAN ENGINEER.

SIR,—Kindly correct a mistake in your report, in a recent issue of your paper, of the number of students attending the School of Mining, Kingston. The number 502 as given in THE ENGINEER includes the 300 students who attended the ten outside classes. Thus, the total number of students attending classes in the School of Mining is 202. Long before it reaches 502 we shall need larger buildings.

I remain, yours, etc.,

W. L. GOODWIN.

FIRES OF THE MONTH.

June 1st.—W. S. Stewart's planing mill, etc., Lucknow, Ont., also electric light plant. Loss, \$15,000.—June 1st.—Carriage factory belonging to S. Siggins, Woodstock, Ont. Loss, \$5,000.—June 3rd.—Firstbrook's box factory, Toronto; damages amounting to \$200.—June 8th.—Cossit's foundry, Brockville, Ont., fire started in painting department. Fully covered by insurance.—June 12th.—Davidson & Campbell's planing mill, Niagara, Ont. Loss, \$15,000.—June 15th.—Part of the east end abbatoir, Montreal. Loss, \$35,000.—June 16th.—Canning factory at Tiverton, N.S. Loss, \$3,000.—July 4th.—Fenderson & Co.'s saw mills, Sayabec, Que. Loss, \$30,000; insurance, \$8,000.

CANADIAN ASSOCIATION OF STATIONARY ENGINEERS.

Kingston branch No. 10, C.A.S.E., has elected and installed the following officers for the current year. President, Fred. Simmons; vice president, Charles Asselstine; secretary, John L. Orr; treasurer, Charles Selby; conductor, Wm. H. Woodrow; door-keeper, Robert Bajus; trustees, Past President Sandford Donnelly and Jas. Blomley.

At the June meeting of Toronto No. 1, C.A.S.E., held in Engineers' Hall, the following officers were elected. President, Geo. C. Mooring; vice president, Thos. Eversfield, rec. sec., John W. Marr, 28 Grant street, Toronto; financial sec., John G. Bain; treasurer, Samuel Thompson (acc.), conductor, George W. Thompson, door-keeper, T. Cadwell.

Arrangements are progressing for the forthcoming convention of the Canadian Association of Stationary Engineers at Brockville. By the constitution the convention should be held on the 17th and 18th August, but the date may be changed a day or two later, owing to arrangements that are being made for a special illumination of the islands. The exact date will be announced in our next number.

Albert E. Edkins, the popular inspector for the Boiler Inspection and Insurance Co., is slowly recovering from his recent serious illness, though not yet able to resume active duties. His many friends in the C.A.S.E. will be glad to see him among them again.

The Steam Boilers Act, which was a bill before the Dominion Parliament to provide for the examination of stationary engineers and the inspection of steam boilers, promoted by the members of Canadian and Ontario Associations of Stationary Engineers, has been laid over till next session.

The following officers have been elected for Montreal No. 1, C.A.S.E.: President, Wm. Smyth; 1st vice-president, J. M. Boden; and vice-president, P. McNaughton, secretary, Jas. O'Rourke, treasurer, J. E. Jones, conductor, J. Glennan, doorkeeper, J. Wilson, trustees, John J. York and Geo. Hunt.

An association called the Railway Men's Air Brake Club has been formed among the G.T.R. employees at Sarnia, the principal object of which is the study of the air brake. J. B. Wilson is president and Ed. Everett, secretary, and the association now numbers about 75 members, though it has only been in existence about five months. A similar organization called the G.T. Air Brake Mutual Association has been formed in London, Ont., with Thos. McHattie as president and Geo. Black, secretary.

ELECTRIC RAILWAYS—HOW TO MAKE THEM A COMMERCIAL SUCCESS.

BY C. E. A. CARR.

For an electric road in a town or city street, or wherever pavements of a permanent character are used, the girder rail seems to be the only one suitable. The depth of the rail should be not less than 7 in., and should weigh from 70 to 95 pounds to the yard. What the exact weight of the rail should be would depend upon the frequency of the service required, and the weight of the rolling stock to be used. In a macadam or unpaved roadway, a T rail of 65 pounds to the yard is all that is necessary. While it may be better, under certain conditions, to have rails laid in concrete with a permanent pavement, my experience has been that cars rattle and jar a great deal more than when running over a road-bed of less rigidity. In all paved streets, rails should be firmly spiked on oak ties 5 in. x 7 in. x 7 feet, spaced 2 feet apart. The grade should first be properly levelled, and the whole surface covered with good coarse gravel 6 in. in depth. Fish plates or angle bars 3 feet long, with not less than 6 bolts at each rail joint, should be properly fitted and bolted. Soft copper bonds of sufficient size to carry the maximum return current from any distant part of the line to the power house, should be properly attached at each joint.

The trolley should be carried with a straight line hanger thoroughly insulated and attached to a flexible bracket or span wire.

The rolling stock should be the best obtainable, and for city traffic, mounted on single truck with wheel base not more than 7' 6".

The power house should be built near a railroad track, so that coal can be cheaply delivered, and it is very desirable that the site selected should be near a good water supply, so that condensing engines may be used. If these conditions can be had near the centre of distribution, a very great saving can be effected in the cost of copper feeders.

In Canada, where soft coal is used for fuel, the high freight and duty rates make it essential to have boilers of the highest efficiency, without much regard to their first cost. For this same reason, the boiler room should be fitted with fuel saving appliances, such as an economizer, heater, stoker, automatic damper, regulators, etc.

A certain degree of revenue is the reward of all street railways, but it is not enough that we carry our regular customers. These come to us anyway, and it is to these that we look for a guarantee of our operating expense. The profit or success of the railway lies in the margin of how many we can induce to become patrons, and thereby increase the regular revenue. One good way is to issue annually a handsomely illustrated booklet, which contains cuts of all the interesting points touched by the cars, briefly telling how to get there. A specially illuminated car for trolley parties is a profitable source of revenue. Many electric railway companies establish parks at the end of one or more of their lines, and provide amusements in the way of band concerts, etc. This brings considerable increased revenue, at a time of the day when cars would otherwise be running light. Some companies claim to have profited by this departure, while others have an adverse experience.

The selection of employees has more to do with the success of an electric railway than anything else. The idea that anyone can run a street car, has, in many cases, resulted in the employment of incompetent, careless and ignorant men, who, through these qualities, have brought the railway into public disfavor. Conductors, motormen, inspectors and shopmen have the power to earn or lose money: make the railway popular or odious with the public, keep claims for damages at a minimum or make them a burden, and very often their selection does not receive the care that is exercised in the purchase of ordinary supplies.

A new horseless fire engine has been put into commission at Boston. It weighs 17,000 pounds, and will be handled by three men. So far it has not been tried at a fire, but the captain who has charge of it is confident of its successful working.

* Abstract of a paper read before the Canadian Electrical Association.