

WE trust our readers, when wishing to place orders for machinery or goods, will scan the advertising pages of THE CANADIAN ENGINEER, not forgetting, by the way, to mention the paper when writing. If any reader in search of machinery or goods should not find what he needs advertised in our pages, and will state his wants to the publishers, he will have our advice and assistance in procuring such, or rather in putting him in communication with the dealers or manufacturers.

MR. ALAN MACDOUGALL, of Toronto, read a paper on domestic sanitation at the first meeting of the Canadian Society of Civil Engineers, in which he recommended that all drains should be laid in rear of a building. This practice has been adopted in Britain for nearly half a century, and is advocated by Baldwin Latham and Sir Robert Rawlinson. During the discussion which followed, Mr. Fleming said that the question of filing drain plans was the first step towards sanitary reform, and the sanitary department should enforce it.

THE Russian Government is preparing for a large amount of work on the Trans-Siberian railway next year. It may be remembered that before starting this great enterprise Russia sent out several engineers to Canada to get points from the engineers of the Canadian Pacific Railway. They are now hard at work on this road, which will give Russia access to the Pacific Ocean as our own trans-continental has given to Canada but it will be 1904 before Russia will reach the ocean. The road is to be 4,700 miles long from Chelabinsk, and will cost \$200,000,000.

WE see from a circular issued by the Department of Trade and Commerce with reference to the British Merchandise Marks Act, that goods imported into or through Great Britain not properly marked are liable to confiscation. Now the courts hold that the use of abbreviations such as Ont. for Ontario, Can. for Canada, etc., in giving a firm name, are improper markings, so that goods described as manufactured by Brown, Green & Black, Toronto, Ont., would be liable to confiscation. A little care on the part of exporters will avoid a very unpleasant delay in the delivery of their goods.

"STAFF," which has drawn so much attention to itself owing to its large use in the construction of the World's Fair buildings, is composed of plaster of paris and New Zealand hemp. A thin coating of plaster is thrown over the face of a mould to give it a smooth surface. The mould is made of gelatine, for the sake of elasticity, if the staff is to be ornamented; if, on the other hand, it is to have a flat plain surface, the mould may merely be a wooden box. When the layer of plaster has dried, the fibre is beaten until it is in a feathery condition, dipped in liquid plaster and pressed into the mould. After the composition has had time to dry it will be found to be as hard as wood, and slabs of it can be nailed together like ordinary boards. So far as is at present known, "staff" is not affected by alternations in temperature or changes in the weather in any way.

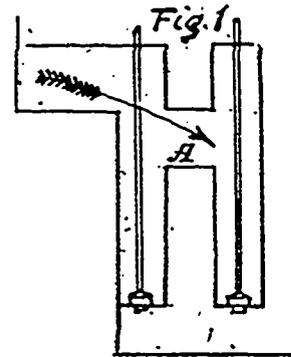
THE career of the Auer Light Company in Canada has certainly been an eventful one. Following not long after a rumpus among the local shareholders in Montreal, and the demand for refund of money paid in, came the charge of undervaluation of goods at the customs, and the consequent forcible displacement of the manager, A. O. Granger. Then came the suit of Mr. Granger for \$10,000 against H. J. Beli, his suc-

cessor, for alleged libel, and after this came a strike of the workmen who put up the lights. The Auer light, which hails from Germany, is certainly a remarkable invention, and the claim appears already to have been substantiated that it reduces the gas bill while greatly increasing the light, and that moreover the poisonous fumes of sulphur, which are such an injury to health in Montreal and other cities, are largely done away with. But how the company are now going to come out since the split with Mr. Granger is a question.

A RECENT number of the *Electrical World* had a cartoon suggesting an ocean telephone as a possibility of the near future, and picturing John Bull at one end of the line and Uncle Sam at the other. The suggestion was founded on the paper on the subject by Sylvanus P. Thompson, read before the Electrical Congress in Chicago. In concluding his paper Mr. Thompson said: "Ocean telephony is possible. The means for attaining it are within our grasp. Compensated cables of the new type are entirely practicable. It may be needful to begin with some shorter line than an Atlantic cable, in order to gain experience. But an Atlantic cable constructed on the new plan will not cost much more, when laid, than one of the old type; and whether or not it is successful in conveying telephonic speech it will certainly transmit telegraphic messages at a greatly accelerated speed of signaling. If one Atlantic cable can be constructed to do the work now requiring eight cables, that cable will be constructed. The advance will not be complete until telephonic speech is transmitted from shore to shore."

THAT PROBLEM.

In answer to Mr. Bell's inquiry in the last number of THE CANADIAN ENGINEER, I may submit the following explanation:



The water flowing in, as shown by the arrow in Fig. 1, when the second wheel is at rest, will continually displace, at the point A, a portion of the water filling the second penstock, thus causing a turmoil which must necessarily affect the flow of the water in the first penstock and reduce the mean velocity. The case is not the same with the second penstock when the first wheel is at rest, because, as may be seen by the arrow in Fig. 1, the flow of water is less distorted in entering the second penstock. When both wheels are in motion the same inconvenience will exist, but not to so great an extent.

