

carried two primary cutouts, to which were attached the cables to line wires. Two coils of No. 0000 insulated cable, each about 200 ft. long, were carried for secondary connections. One connection from the secondary of the transformers was made to the lead pipe inside the building where water was stopped. This connection was made by means of a brass clamp which surrounded the lead pipe without injuring it, and afforded sufficient surface to pass a large current to the lead pipe without burning it. The other secondary lead was taken to the next house or to the nearest hydrant. Care was taken to connect to the lead pipe below the point where the pipe was empty because the empty pipe would heat too much with some currents which were used. The currents varied from about 90 amperes to about 275, and the time occupied before water would flow varied from four minutes to three hours. Usually if there is any chance of success, results will be seen in a very few minutes. In some cases we could not get enough current through to produce any satisfactory results. This was attributed to bad joints in the pipes causing unusual resistance. Three men went with the outfit, one driver and two linemen."

We have just received the following interesting report from Harry A. Lord, superintendent of waterworks, Ogdensburg, N.Y., where 4,000 feet of water and gas pipes were reported to be frozen between the 15th and 20th of Feb. Ogdensburg was one of the places from which enquiries came to the Canadian Engineer: "Upon receipt of your esteemed favor of the 18th inst., written in reply to my telegram, I telephoned to the Superintendent of Waterworks, at Ottawa, Ont., regarding their method of thawing water pipes with electricity. I was informed by the superintendent that the local electric company was engaged in thawing house service pipes with electricity, but that they had been unsuccessful in thawing mains. He stated that they had made several attempts, but up to that time, February 20th, they had not succeeded. We have continued our experiments in Ogdensburg and have been working upon one of our streets, where a stretch of about 1,800 feet of 6-inch cast iron main was frozen solid. The first section we undertook to open up was 700 feet in length, and in about three hours after the current had been turned on, we had water through it, leaving the hydrant open to maintain circulation. The next section was about 500 feet to a point where the main had been cut open in an attempt to thaw it with steam. Through this opening we were enabled to extract the core of ice which came along with the current, and thus obviated the necessity of keeping the electrical current on long enough to warm the water and thaw out the ice. We are now working on the last section, and expect to have the street open in a few hours. I beg to report that experiments have proven highly successful."

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The Madoc Mining Co., Black Creek, Ont., made their first shipment of pyrites to Cleveland, Ohio, recently. They have put in an extra boiler, and intend starting more drills and cross-cuts.

### NOVA SCOTIA ENGINES IN AUSTRALIA.

D. H. Ross, Melbourne, commercial agent for Victoria, South and West Australia and Tasmania, writes to his father at Amherst, N.S., as follows: "At the power house of the Perth Electric Tram Company, I was pleased to observe two 300-h.p. engines, manufactured by the Robb Engineering Co., of Amherst, Nova Scotia. These engines (Nos. 472, 473), have been working almost continuously eighteen and one-half hours daily, for over three years. The engineer in charge intimated the excellence of their work. The general manager and engineer of this railway is H. J. Somerset, formerly of Winnipeg, Man. He is also engineer of the Kalgoorlie Tram Company, and the chief authority on electric traction in Western Australia."

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### PREJUDICE AGAINST COMPANIES.

Editor, Canadian Engineer:—

SIR,—Your late article on "Municipal Plants" struck me as being somewhat unfair to companies. No doubt some corporations have invited that kind of criticism, but a great many companies have suffered severely from the prejudice in the public mind against all private enterprise, which is being fostered so much throughout Ontario by the press and otherwise, to the evident discouragement of capital. It is all very well for municipal undertakings to follow where private enterprise has shown the way, but municipalities never originate anything. If you discourage private initiative you must retard the progress of the country. No one objects to corporations taking all kinds of risks, but they should not make any more profits than a municipality who take no risk.

A. A. DION,

Genl. Supt. Ottawa Electric Co.

Ottawa, Feb. 22nd, 1904.

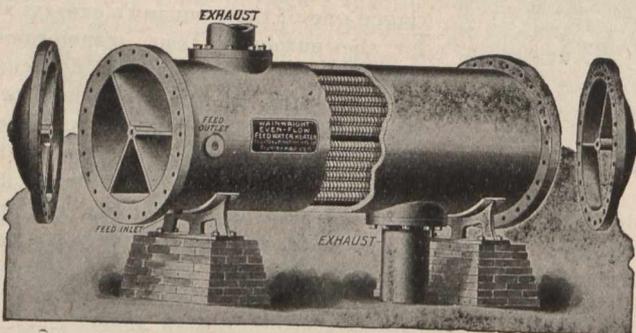
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The Government of Nova Scotia has introduced a bill providing that men employed in coal mines, operating steam plants, man engines, hoisting engines, ventilating fans, must either hold certificates of service, the result of experience, or must pass an examination for competency.

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By an invention of Dr. Fenton B. Turck, Chicago, the human stomach and internal organs may be examined for the presence of disease. The instrument consists of an optical and a carrying tube side by side, fourteen millimetres in width. Beyond the tip of the optical tube is an electric lamp, above which is a prism and reflector adjusted at an angle. The outer end is provided with the usual prism set before the objective. The other tube carries the gyromole cable, which may be curved in any direction desired, enabling the pylorus to be explored by a very soft, flexible cable covered at the end with wool tampon encased by a soft rubber finger cot.

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