UNDERGROUND CONDUIT FOR ELECTRIC WIRES.

THE City Council of Ottawa, through its Fire and Light Committee, a few weeks ago instructed the city engineer, Mr. John Galt, to report upon the feasability of placing the electric light, telegraph and telephone wires underground. Mr. Galt's report, together with a preliminary sketch showing the proposed method of subway construction, will be found below :

To Chairman and Members of Fire and Light Committee:

GENTLEMEN,—Acting upon your instructions to investigate and report upon the feasability of having all electric wiring underground, so as to obviate the nuisance of the overhead system constructed and carried upon unsightly poles along the streets of the city, I beg to report as follows :

Underground wiring is quite practicable from a civil, mechanical and electrical standpoint, notwithstanding the objections, difficulties and obstacles to be encountered.

The most important feature to be considered from the standard of municipal requirements is the system of underground work. The ideal method, unquestionably, would be separate open subways on each side underneath the sidewalks or along the street roadway, close to the gutter or curbing, large enough in size for the accommodation of water, gas, electric wiring, etc., including facilities for examining, making repairs and house connections.

This seems to be the only suitable plan of subway construction, and will give separate underground space on each side of the street for pipes and wire service to the street line. Of course this, you see, would require duplicate water and gas mains, but there could be no objection outside of the extra cost, because in the central portion of the city this is both desirable and highly advantageous, subway or no subway.

My conclusions are as follows :

(1) In cities overhead wiring is highly objectionable from every standpoint.

(2) Underground systems are practicable for all kinds of service, notwithstanding the serious objection urged, including interference on account of electrical induction.

(3) A single subway in the middle of the street, although practicable, is entirely unsuitable, because connections to house property would require constant cutting up and repairing of streets.

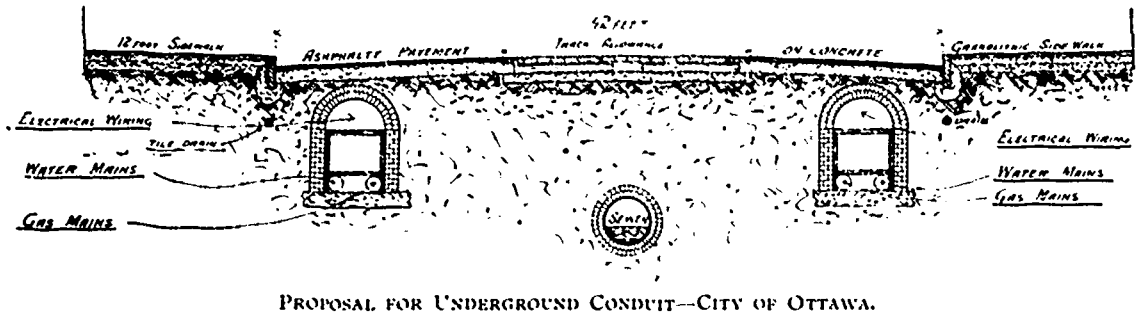
(4) It is more than apparent, without further explanation or illustration, that under municipal ownership the extent and interference in the tearing up of streets will be reduced to a minimum.

(5) In the end the results will be highly satisfactory and economical to all concerned, while at the same time the dangerous, annoying and objectionable overhead system would be abolished.

In conclusion, I submit a preliminary sketch showing a brick lined underground subway 4 ft. wide by 4¼ ft. high, located inside the roadway, close to the curbing.

The total cost for the actual construction of this double subway on the ordinary macadam roadways would be $12 per lineal foot, and on permanently paved roadways $16 per lineal foot, to which, of course, would have to be added all the other large incidental expenses connected with the conversion of the present system into the new. If the subways were placed directly underneath the concrete walks, the cost of construction would be increased 25 per cent., and would still have to cross over roadways at all street intersections and in addition be a serious hindrance to pedestrian traffic during period of construction.

Your most obedient servant,
JOHN GALT, City Engineer.



PROPOSAL FOR UNDERGROUND CONDUIT—CITY OF OTTAWA.

VISIT TO THE CHAMBLY WORKS.

AT the special invitation of Mr. Rudolph Forget, president of the Royal Electric Company, a party, composed of the directors of the Royal Electric Company and their friends, paid a special visit to the Chambly Rapids power house on Saturday, Sept. 9th. A special train carried the party to Chambly Canton, where the power house is situated. Mr. W. H. Browne, the general manager, and Mr. P. G. Gossler, the engineer, showed the visitors through the power house and explained the machinery used in the generating of power. At present there are four huge generators in operation, having a capacity of 3,000 h.p. each, making a total in operation of 12,000 h.p. The ultimate capacity of the power house is calculated at 25,000 h.p. Mr. Browne explained to the visitors that the generators were the largest machines of the kind that had ever been built, even larger than the Niagara Falls machines, and he was especially proud of the fact that they had been made at the Royal Electric Company's works in Montreal. The many interesting features of the plant were explained to the visitors, and the extraordinary precaution which is taken against lightning storms was shown. The visitors were greatly impressed by the machinery and the perfection of all the arrangements.

Among the visitors was Mr. W. R. Eckart, of San Francisco, the representative of the Blue Lakes & San Francisco Electrical Company, which is putting in a plant to supply power from the Blue Lakes, in the State of Nevada, to San Francisco, California, a distance of 150 miles, at a pressure of 60,000 volts, the highest voltage ever attempted and the longest distance transmission in the world. The machinery for this has been ordered from the Stanley Electrical Manufacturing Company, of Pittsfield, Mass., the associate company of the Royal Electric Company, Montreal, and a special object of Mr. Eckart's visit to Chambly was to inspect the machinery. He expressed himself as much impressed with the perfection and completeness of the machinery and arrangements.

The longest distance transmission in Canada is that of the Cataract Power Company, of Hamilton, being 37 miles from the generator to the motor, and the above mentioned plant from the Blue Lakes to San Francisco is the longest and highest voltage in commercial operation in the world. These facts are a strong testimonial to the efficiency of Stanley apparatus for the transmission of power over long distances.

SPARKS.

Early in October the British Columbia Electric Railway Company will commence the construction of a tramway line from Victoria to the Gorge, about two miles distant.

The Ottawa Electric Street Railway Co. have just let the contract to Messrs. Henney & Smith for the construction of a branch line to Britannia, a distance of about five miles. The contract price is $40,000, the company furnishing the rails, poles and ties. The road will be double tracked for the entire length.

Mr. N. Pinze, of Montreal, has invented a new street car fender, which is to be tested by the Montreal Street Railway Company. The new fender is made of slats of iron or wood fitted on to a frame, which is attached to the front of the car. The slats are concave in shape, but the edge above the track is oblique instead of straight. By an ingenious contrivance the motorman can, when he sees any one on the track in front of him, drop the fender edge upon the track so that its oblique edge will only be a fraction of an inch from the ground. The outside end of the fender is supplied with small wheels or rollers which rest upon the rails and prevent the fender from forming an obstruction to the forward motion of the car by coming in contact with the ground. In addition, the new fender is supplied with springs which relieve the shock of the blow inflicted by a body coming in contact with the fender when the car is in motion.