

### UTILIZATION OF NIAGARA FALLS POWER ON THE CANADIAN SIDE.

WE reproduce herewith from a recent issue of the New York Electrical Engineer, a diagram showing the method to be adopted for the utilization of the power of the Niagara Falls on the Canadian side of the river. This plan is said to have been approved by the Ontario Government. The work will be carried on by a company which is in close affiliation with the Niagara Falls Power Co., on the American side.

By reference to the plan, it will be seen that it is proposed to erect two power houses, each having a capacity of 125,000 horse power, and fed by a separate canal. The water discharged by the turbines will be carried through tunnels 300 to 800 feet in length respectively to the outlet.

The construction of the works on the Canadian side of the river will be very much less expensive than those on the American side, where an enormous amount of money has been expended.

### WHY LIGHTNING ARRESTERS SOMETIMES FAIL.

The failure of lightning arresters is too often due to careless installation. It may be instructive, says Alexander J. Wurtz in

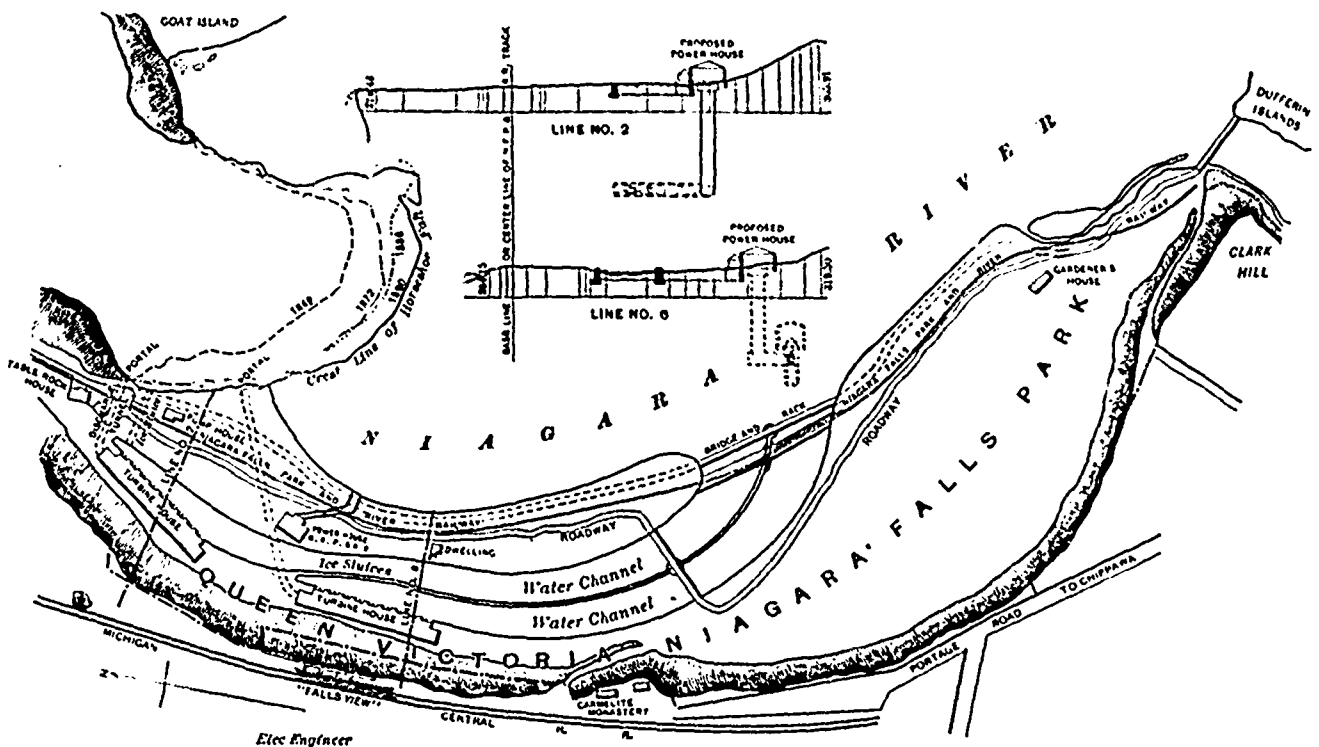
### THE TORONTO RAILWAY COMPANY'S ELECTRICIAN.

Editor ELECTRICAL NEWS.

SIR, - In your last issue you make some remarks on the care of apparatus at the power house of the Toronto Street Railway Co., which in my opinion are somewhat unfair to the men in charge of the machinery. I do not think you would do any man an intentional injustice, and therefore ask you to look more closely into the matter, and if you find that injustice has been done, to make amends in as public a manner as the original reflection was made.

You state by inference that since Mr. Davis was removed, that there has been no expert electrician in charge of the company's business. This may be so, depending of course on your idea of what an "expert electrician" is. I understand that the same man is in charge of the dynamos who has been in charge since the establishment of the railway plant, and if Mr. Davis had been nominally in charge, as he was previously, it would not have prevented some fool "electrician" putting a knife into the dynamo.

As the dynamo in question was still in the hands of the contractors, and it was one of their own men who did the damage, it looks a little as though the contractors wanted to unload the



PLAN ADOPTED FOR TWO POWER HOUSES AND TWO CANALS.

an article in Practical Science, to note several examples:

- (1.) One plant is reported as having, for better protection, connected two arresters in series. This was probably done with the idea that if a little was good more would be better.
- (2.) A large bank of station arresters was grounded to an iron bolt, about two feet long, driven into dry sand.
- (3.) Line arresters were grounded by pushing the ground wires into the earth.
- (4.) Line arresters were grounded on iron poles, which were themselves set in Portland cement.
- (5.) An annual inspection of automatic lightning arresters developed the fact that the arresters were nearly all burned out—in other words that the line was left unprotected.
- (6.) The ground plate of a bank of arresters was thrown into a neighboring stream, which subsequently changed its course, leaving the ground plate high and dry.
- (7.) The ground plate of a bank of station arresters was laid on the rock bottom of a neighboring stream.
- (8.) In a large number of cases a portion of the ground wire is wound into a fancy coil (choke coil).

And so on, the list might be indefinitely extended, each such case forming a source of complaint that the arresters "fail to protect." But, when these curious mistakes are located and properly remedied, the complaints cease.

failure of their machine upon innocent shoulders (a most common occurrence with some manufacturers, I am sorry to say), and take advantage of the removal of the nominal head to find an excuse for their own shortcomings. I do not know that I should interfere in a matter not immediately concerning myself, but the natural instinct of British fair play which, by the way, should pervade the columns of a Canadian journal, moves me to say a word on behalf of Mr. McCullough, the skilful and painstaking electrician of the Toronto Railway Co., to whose ability is due the satisfactory service that has been given to the street railway patrons of this city.

Yours, &c.,

J. J. WRIGHT.

TORONTO, June 12, 1895.

The Street Railway Co. of Brantford, Ont., has been granted permission to lay down 1,200 feet of additional track on Colborne street, provided the company agree to place fenders on all cars.

The Toronto Railway Co. have recently placed an order with the Canadian General Electric Co. for twenty motors of their new C. G. E. 1,200 type. These motors, as their name indicates, have a draw bar pull of 50 in excess of the G. E. 800 motor, and are intended for high speed and heavy service. They are to be in operation in time for the Industrial Exhibition, and will no doubt prove of considerable assistance in handling the large crowd which have to be provided for on that occasion.