

# Hotel Vancouver

Vancouver, B.C.

18 July 1888.

My dear Bernard,

McGILL UNIVERSITY ARCHIVES
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I have thought of an idea that will make your fortune if it can be worked out, but it is possible there is nothing in it! In these dynamos for generating electric light the process is sadly indirect. ~~From~~ The combustion of the fuel, causing evaporation; this turned into expansion + mechanical force, + finally after a certain amount of transmission, into magnetism + an induced current; all this is very elaborate, and implies a coefficient of loss of energy at each step. Now it would appear that in the ordinary battery the real source of electrical energy is the oxidation of a metal, a species of slow combustion in fact producing electricity instead of heat.

Why then could not this be done directly with ordinary fuel, by making it into a "Combustion Battery"? I do not really see any physical principle in the way, as it is evidently the oxidation of the fuel that is the source of the energy. For instance, suppose a plate of charcoal + a plate of metal were connected as in an ordinary battery cell, + were brought to a red heat in an oxidizing flame would an electrical current result? There must surely be some way of arriving at a battery action of this kind, with charcoal or coke as the oxidisable member, + a metal as the other, + temperature as the condition of action. The current might not have a high electrical tension, but wd do for the incandescent light; + there ought to be an immense saving in efficiency.

I merely throw this out as an idea that occurred to me, + it may not be worth your serious thought; but I wd be glad to know whether such a thing has been tried.

Your affectionate brother,

William.