

immediately heated to red heat on being exposed to the electric current.

There was so much nitrous gas liberated by the pile that the operators were seriously incconmoded, and were several times obliged to interrupt their experiment.

The spectators, who stood on the banks of the Neva, were also

forced to retire on account of the suffocating odor of the liberated gas that the wind blew on to the shore.

The barge, which was made with paddle-wheels, and was large enough to hold twelve persons, succeeded, however, in sailing several hours on the river against both wind and tide. *La Nature.*

Fig. 1.

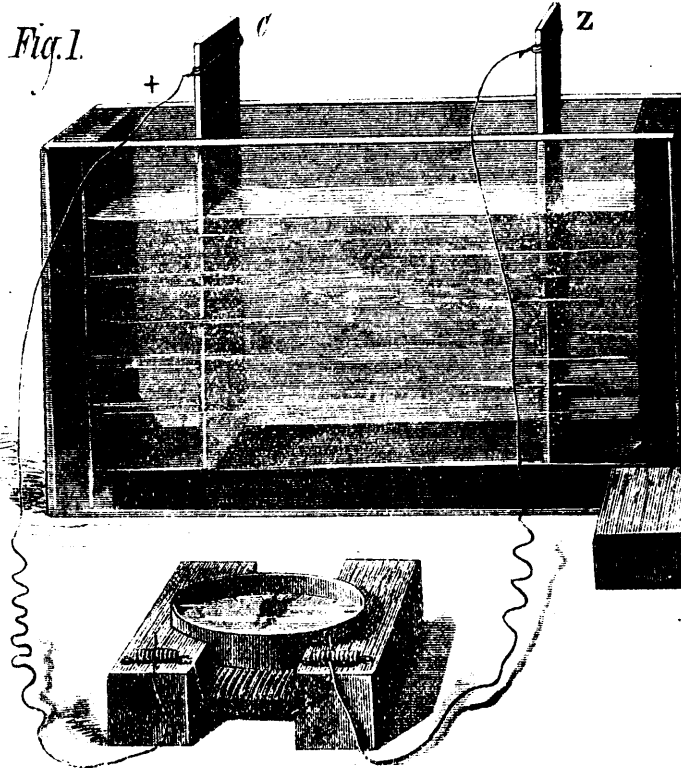
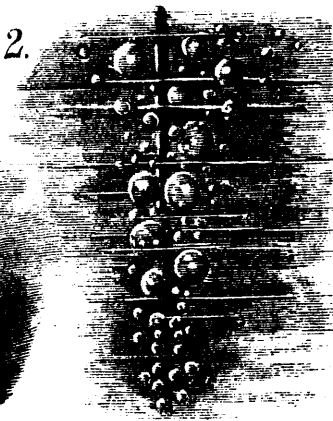


Fig. 2.



EXPERIMENTAL BATTERY AND GALVANOMETER.

DYNAMIC ELECTRICITY

BY GEO. M. HOPKINS.

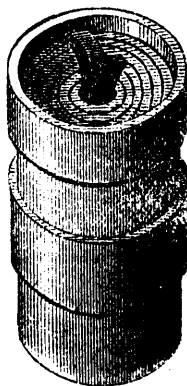
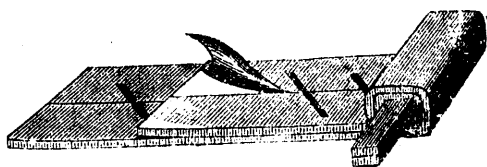
GENERATION OF THE ELECTRIC CURRENT.

When two dissimilar metals, such as pure copper and pure zinc, are placed in contact in acidulated water, evidences of activity immediately appear in the form of a cloud of microscopic bubbles constantly rising to the surface of the water. If the metals are individually capable of resisting the action of the acid solution, it will be noticed that on separating the metals the action ceases, but it will commence again as soon as the metals are brought into contact. The same action is noticed if the two metals are connected by a wire, which may be either wholly within or partly out of the acidulated water.

The bubbles which are noticed in this experiment are hydrogen, which results from the decomposition of the water and escapes from the copper, while the oxygen resulting from the analysis unites with the zinc, forming zinc oxide.

The copper is scarcely attacked while the zinc slowly wastes away. If the wire connecting the zinc and copper be cut and the two ends placed on the tongue, a slight but peculiar biting sensation is experienced, which will not be felt when the wires are disconnected from the metals.

A piece of paper moistened with a solution of iodide of potassium and starch placed between the ends of the wires exhibits a brown spot, showing that between the ends of the wires there is a species of energy capable of effecting chemical decomposition. If a wire joining the copper and zinc is placed parallel with and near a delicately suspended magnetic needle, it will be found that it is endowed with properties capable of affecting the needle in the same manner as a magnet. This form of energy is dynamic or current electricity, generated in this case by chemical action



THE FAURE BATTERY.—(SEE PAGE 238.)