

Electricity is the chief agent in the production of metallic aluminum. The reduction company buys this alumina, which has been separated from the clay or ores where it is mined. In a large room there are located a great number of iron vats or crucibles, lined with carbon, about two or two and one-half feet deep, five or six feet long and four feet wide.

Immediately over each vat is constructed a metal framework, through which are inserted a large number of carbon rods about eighteen or twenty inches long and from two to two and one-half inches in diameter. This framework is electrically insulated from the iron crucibles. The framework and the carbons are connected with the positive conductor of the electric current, and the vat or crucible with the negative. These conductors are very large, something like a foot in width and an inch in thickness, and made of some good conductor of electricity. They have to be very large because they carry a current equal to 3050 horse-power. The current is one of great volume, but very low voltage; the electromotive force at each vat or crucible being only about seven volts. As the process is electrolytic, and not simply a heating process, the direct current must be used, and therefore the current coming from the power-house must be transformed twice; first to bring it to a