

Fig. 6 indicates the type of furnace he usually employed. It consists of two blocks of limestone, A and B, and two carbon rods, C and D, to which the electrical connections are made. A cavity is hollowed out in these blocks, and the material to be heated is placed in a crucible, E, of carbon or magnesia. As even lime melts and volatilizes at the temperature of this furnace, a lining of alternate layers of carbon and magnesia was arranged as shown in the figure, in order to withstand, as far as possible, the heat of the arc.

In some of these experiments Moissan converted two or three hundred electrical horse-power into heat in a furnace of only a few

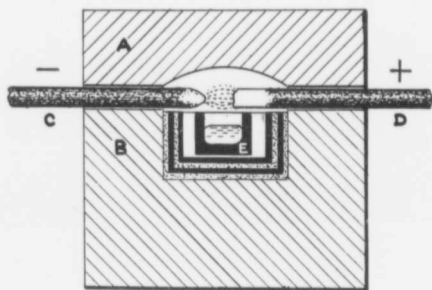


Fig. 6.—Moissan's Furnace.

inches internal dimensions. At the enormously high temperature of his furnace everything melts or turns to vapor. Carbon is the most refractory substance known, and even that turns to graphite and volatilizes; magnesia, another very refractory substance, melts at the highest temperature of the furnace and vaporizes. Lime, quartz, and alumina all melt and boil in the furnace. Gold, copper, iron, and, in fact, all the metals can also be melted and boiled in the electric furnace.

An improved form of the Moissan furnace* has recently been described, in which an electric current of 1,000 amperes at from 50 to 150 volts is employed. In the case of direct current this would mean 70 to 200 horse-power, and, while this is not quite as

*Engineering, March 23, 1906, vol. lxxxi, p. 381.