

The Heroult furnace is like a tilting open hearth furnace and has two vertical carbon electrodes as shown in figure 2. The current flows from one of these into the charge of ore or metal to be melted and back on to the other carbon, thus producing two arcs between the carbons and the charge which is also heated to a certain extent by the passage of the current through the molten slag and metal.

The furnace was used at first for the direct reduction of iron ores, but has been found to be more suitable for the production of steel from scrap and pig.

Heroult constructed a 400 H.P. furnace which took a charge of three tons but he gives no details as to the current employed.

The transmission of heat from the arc to the charge will probably be better in this furnace than in the Stassano furnace, but considerable losses of heat must take place through the holes in the roof through which the electrodes enter.

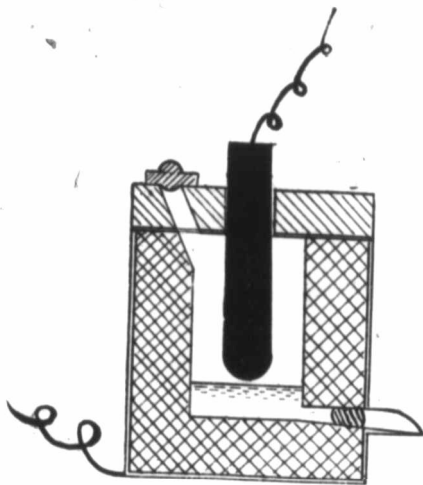


Fig. 3.

THE SIEMENS FURNACE (fig. 3), has been frequently used for the reduction of metallic oxides and for melting metals. It consists of a crucible composed wholly or in part of carbon which is connected to one of the leads, while a carbon electrode which dips into the crucible is connected to the other. An arc is formed between this electrode and the contents of the crucible, and fresh quantities