

FIG. 1.—VERTICAL SECTION OF ORE-CALCINING FURNACE.

presence of carbon, another hypothesis has been brought forward, viz., that as pure copper exhibits the malleability and ductility of the metal in its highest degree of perfection these qualities have deteriorated owing to the presence of minute quantities of foreign matter which cannot be removed in the refining pro-

cess and that their injurious effects are neutralized by the presence of a small quantity of oxygen.

The Welsh process is not adapted for use in all countries owing to the character of their ores, and the large quantity of fuel required. Eighteen tons of fuel are used to produce one ton of copper at Swansea.

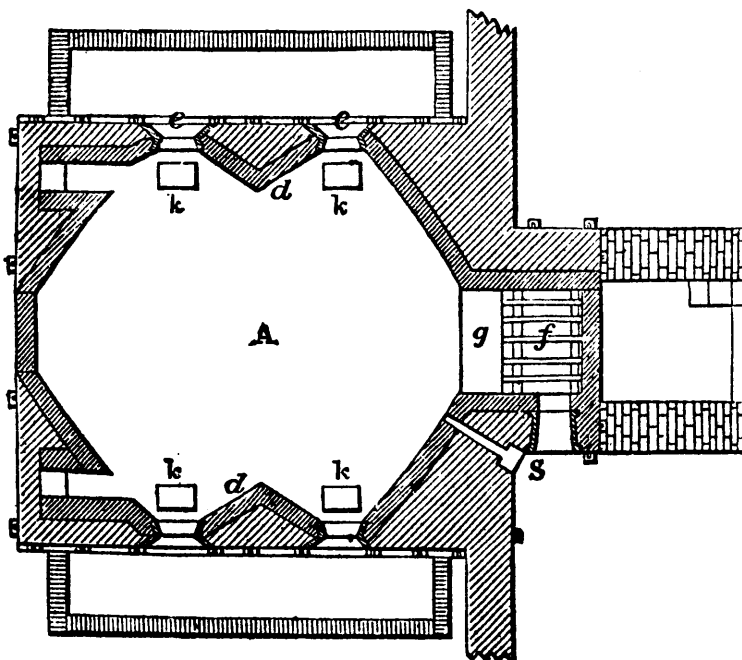


FIG. 2.—PLAN OF THE BED OF ORE-CALCINING FURNACE.