

able for their superior density, compactness, freedom from flaws, and their cheapness,—the machine effecting a great saving over hand-labor. The appearance of the crucibles justifies these claims for excellence. The details of the machinery, as shown by working-drawings, were highly interesting, and are suggestive of much that may be accomplished in the art of forming clay ware by the use of hydraulic power.

FIRE-BRICKS AND CLAY—ENGLAND.

An interesting report on the fire-clay goods of the London International Exhibition of 1871, was made by Lieut. Grover, R. E. He states that the trade in English products of this class has marvellously increased in the past thirty years. Over 30,000,000 of fire-bricks are annually made at Stourbridge, instead of 14,000,000 as formerly. Newcastle produces 80,000,000 instead of 7,000,000. The export trade increased sixfold since 1862.

The celebrated Stourbridge clay, obtained about twenty miles south-west of Birmingham, is dug from shafts in the coal measures, generally below three workable seams of coal, and between marl, or rock, and an inferior clay. The seam averages three feet in thickness. The middle portion is selected. After hoisting to the surface, the clay is sorted by women, the best lumps, or kernels, being laid aside for glass-house pots. This selected clay costs fifty-five shillings a ton. Ordinary fire-clay costs, at the same place, only ten shillings a ton. About four tons are required to make a thousand nine-inch fire-bricks. The clay is mined over an area of about nine square miles, and there are about a dozen establishments.

The percentages of the important ingredients of the Stourbridge clays are shown in the following analyses made by Mr. F. A. Abel, F. R. S., chemist to the War Department, England :—