UNITED STATES PATENT OFFICE.

J. PARK ALEXANDER, OF AKRON, OHIO.

IMPROVEMENT IN PROCESSES IN THE MANUFACTURE OF FIRE-BRICK.

Specification forming part of Letters Patent No. **165,049**, dated June 29, 1875; application filed April 30, 1875.

To all whom it may concern:

Be it known that I, J. PARK ALEXANDER, of Akron, in the county of Summit and State of Ohio, have invented certain new and useful Improvements in Process for the Manufacture of Fire-Brick; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to a new and improved process for the manufacture of fire-brick, and consists as follows:

White pebbles, found in conglomerate rock, are first thoroughly and completely separated from sand, and other foreign substances mixed therewith, without breaking or pulverizing the pebble. They are then ground or pulverized, and the powder thus obtained thoroughly mixed or kneaded with from five to forty per cent. of fire-clay, molded, and subjected to very heavy pressure in steel molds, thoroughly dried, and finally burned in fire-brick kilns in an intense degree of heat. The pebbles, sand, &c., mixed together in conglomerate rock, gravel or sandy beds, and other places, but principally in conglomerate rock—as I do not think the pebble is found in as pure a state elsewhere—are first placed in suitable machinery constructed for the purpose, where they are subjected to thorough sifting, beating, agitation, &c., without breaking or injuring them, until all sand and foreign substances are removed, leaving the pure white pebbles. These are then gone over again, if necessary, and then placed in suitable grinding or pulverizing machines, where they are granulated or reduced to a fine or impalpable powder. From five to forty per cent. of fire-clay, according to the quality of the brick required, is next thoroughly mixed or kneaded with the pulverized pebble. The material thus obtained is then molded and subjected to very heavy pressure in steel molds, then thoroughly dried, and finally burnt in fire-brick kilns in the highest degree of heat obtainable.

I have found that fire-brick constructed or made from this material and process are far superior, less liable to be affected or crack by changes of heat and cold, are better and more durable than brick made from fire-clay, sand, &c., in the usual way, and a brick far surpassing in texture, aptitude for receiving perfectness of face, and indestructible durability, anything in the way of stone or brick that is now known to the public; and by this process and material I obtain a brick wholly free from shrinkage under the most intense degree of heat.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The process of the manufacture of fire-brick, consisting in thoroughly separating white pebble from sand and other substances in conglomerate rock, pulverizing the same, thoroughly mixing or kneading with from five to forty per cent. of fire-clay, molded, and subjected to heavy pressure in steel molds, then drying and burning in kilns in a very high degree of heat, as and for the purposes set forth.

2. The compound herein described for the manufacture of fire-brick, consisting of pure pulverized white pebble and fire-clay, prepared and compounded in the proportions substantially as and for the purpose described.

In testimony that I claim the foregoing, I have hereunto set my hand this 28th day of April, 1875.

J. PARK ALEXANDER.

Witnesses:

RICHARD P. MARVIN, Jr.,

J. H. PENDLETON.