

UNITED STATES PATENT OFFICE.

FREDERICK W. BRAUNSTEIN, OF COVINGTON, KENTUCKY.

TILE, &c., MADE OF VITRIFIED CLAY.

SPECIFICATION forming part of Letters Patent No. 746,448, dated December 8, 1903.

Application filed July 20, 1903. Serial No. 166,403. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK W. BRAUNSTEIN, a citizen of the United States of America, and a resident of Covington, in the county of Kenton and State of Kentucky, have invented certain new and useful Improvements in Tiles and other Articles Made from Vitrified Clay, of which the following is a specification.

This invention relates to certain improvements in the manufacture of tiles and other articles from vitrified clay; and the object of the invention is to provide articles of this general character of a simple and inexpensive nature and which shall present an improved and highly-finished appearance and shall at the same time be more durable and lasting than other similar articles heretofore in use.

Heretofore, so far as I am aware, tiles and other articles have been produced in two forms, one of which is in the nature of a homogeneous mass of vitrified material having a resisting roughened surface presenting the natural grain of the homogeneous vitrified mass and heretofore used mainly for floors and pavements, and the other of which is in the nature of a mass of material having a smooth and lustrous superficial coat or glaze produced upon it, the superficial glazed coat being of a nature different and distinct from that of the body portion whereon it is produced and being readily cracked and scratched, so that the articles of this description are not well adapted for use in floors or pavements, but are mainly confined to use in walls, ceilings, &c., where they are exposed to little or no wear.

My present invention consists in the production of a tile or other similar article formed from a homogeneous mass of vitrified material, one surface of which is dressed to expose the natural grain of the hard vitrified substance in a smooth, polished, and lustrous form, so that a smooth and polished surface is produced which has the inherent hardness of the vitrified substance, and is consequently not capable of being readily scratched or cracked, so that the tiles or other articles produced according to my invention not only have polished and lustrous surfaces, whereby they are given a much improved and highly-

finished appearance, but are also capable of use in floors, pavements, or any other situations where similar articles are capable of use.

In producing the polished and lustrous surfaces upon tiles or other articles formed from vitrified clay I first smooth or tone down the initial roughened and hard surface of the homogeneous vitrified masses by the employment of hard fine sand or pulverized emery, the vitrified tiles or other articles being rubbed for a suitable length of time over a mass of the polishing substance suitably disposed upon a flat stone or the like. This suffices for the removal of the initial roughness from the surfaces of the tiles or other articles, after which the smoothed surfaces are finished and highly polished by rubbing them with wet pumice-stone either in block or powdered form, the rubbing being continued until the desired luster or polish appears, which requires about the same length of time as is required in the polishing of marble.

The polishing of the tiles or other articles of vitrified material may be accomplished either by hand or power, as desired, or by the employment of polishing-tools such as are employed for the polishing of marble and similar materials, and since the tiles or other articles according to my invention are usually polished upon but one surface it will be evident that the cost of production of the articles according to my invention is but slightly, if any, greater than the cost of tiles produced in the ordinary way.

The homogeneous vitrified articles produced according to my invention are not only inexpensive, but also have lustrous polished surfaces which present a much more finished appearance than do the surfaces of glazed tiles such as have heretofore been manufactured, and said polished surfaces will not craze or crack, and by reason of their inherent hardness are not readily scratched as are the glazed surfaces, so that the tiles made according to my invention are capable of being used not only in walls, ceilings, and other situations in which glazed tiles have commonly been set, but are also capable of being laid in floors and pavements, where they are exposed to great wear.

The polished surfaces of the vitrified tiles or other articles made according to my invention repel water and moisture and do not collect and retain dirt, and consequently are
 5 much better adapted for use in pavements and floors than ordinary rough-surfaced vitrified articles over and above the improvement attained by their more finished appearance. The polished vitrified articles are also
 10 capable of being much more easily cleansed than are the rough-surfaced vitrified articles.

The color of the vitrified articles polished according to my invention is unchanged, but is brought out by the polishing in such a way
 15 as to be not readily obscured and hidden by dirt, so that the polished articles are thus further adapted for use.

It will be understood that not merely vitrified tiles, but also vitrified brick and other
 20 articles may be provided with polished surfaces according to my invention, and for this reason I do not desire to be understood as limiting myself to the application of my improvements to vitrified tiles alone, but wish
 25 to include within the scope of my invention various vitrified articles in which a polished and lustrous surface formed of the hard nat-

ural grain of the vitrified substance affords the new and improved results above set forth.

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

1. As a new article of manufacture, a tile or other article formed from vitrified clay and having a ground and polished surface. 35

2. As a new article of manufacture, a tile or other article formed from vitrified material and having a sand ground and polished surface at which the grain of the vitrified material is exposed. 40

3. As a new article of manufacture, a tile or other article formed from vitrified material in a homogeneous mass and having one surface dressed and provided with a polished, lustrous surface presenting the inherent
 45 grain and hardness of the vitrified material, such surface being produced by grinding and polishing after the article has been vitrified.

Signed at Cincinnati, Ohio, this 9th day of July, 1903.

FREDERICK W. BRAUNSTEIN.

Witnesses:

JOHN ELIAS JONES,

M. E. DENMAN.