

# UNITED STATES PATENT OFFICE.

ISAAC T. RUE, OF MATAWAN, NEW JERSEY.

## ENAMELED BRICK AND PROCESS OF MAKING THE SAME.

SPECIFICATION forming part of Letters Patent No. 479,021, dated July 19, 1892.

Application filed December 14, 1891. Serial No. 415,026. (No specimens.)

*To all whom it may concern:*

Be it known that I, ISAAC T. RUE, a citizen of the United States, and a resident of Matawan, in the county of Monmouth and State of New Jersey, have invented new and useful Improvements in Enameled Bricks and the Method of Making the Same, of which the following is a specification.

My invention relates to an enameled brick—that is to say, to a brick one or more of the sides of which are provided with enamel or vitrified surfaces, which surfaces are left visible when the bricks are laid, and serve to impart ornamental effects. These bricks have been manufactured in several ways. In the earliest instance the body of the brick was first constructed of ordinary materials—such as clay—the brick then dipped in the enamel mixture, and the whole fired in the customary manner. The objection to this style of brick is that the enamel surface is liable to crack or scale, and that in this event the main body of the brick will become visible in whole or in part, and thus injure the ornamental effect obtained from the enamel surfaces.

A partial improvement on the style of brick just described, but one which only in part serves to obviate the objections noted, is obtained in this manner. The body of the brick is formed in the ordinary way, and then, previous to the application of the enamel coating, is dipped in a liquid or fluid mixture of clay, sand, powdered flint, &c., or similar mixture. After the application of this mixture the brick is then dipped in the enamel and fired in the customary manner. By this means it will be seen that a partial lining is secured between the body of the brick and the enamel surface, and it is the object of this construction to furnish a lining or layer which will afford a firmer closer foundation for the enamel coating and be a background visible through the enamel surface in place of the body of the brick itself, as is the case in the first form mentioned. I have discovered, however, that even in this form there are objections, and the difficulties noted are only partly obviated. From my actual experience with these bricks I have found that the lining or interior layer referred to is itself liable to scale and come away with the enamel and is easily affected by extremes of weather, and,

accordingly, the exposure of the body of the brick is only partially prevented. This liability will be at once obvious from the consideration that the lining or interior layer secured from the dipping is merely a skin-coating and, like the enamel surface itself, not a constituent or integral part of the brick-body. A further objection arises in the fact that the dipped lining, as well as the enamel surface, must necessarily be extremely thin, because of the fluidity of their material, and that any attempt to increase the depth of this lining or of the enamel would result in unequal thickness, due to the fluidity of the mixture and the practical impossibility of maintaining this even depth of liquid material in the manipulations involved in the application of the enamel surface and the final firing. In the brick and the method of making it which form the subject of the present case I have obviated all these objections by the provision of a lining which of itself is a constituent and integral part of the brick-body. Instead of merely dipping the brick-body into a liquid mixture, I form the lining in the “dust” in a dry or semi-dry state at the same time with the main body of the brick. The clay for the body is prepared as usual and placed in the mold, and at the same time the lining of the brick is formed in the dust from the clay, sand, flint, &c., or other mixture desired, which is moistened only sufficiently to permit of convenience in handling and increase the tendency to unite under the press. The whole—body and lining—is then submitted to pressure, and fired as usual. After this the enamel surface is produced in the customary manner; or I contemplate dispensing with the first firing and relying entirely on the final or enamel firing.

The advantages of my improved brick, with its dust lining, over that with the dipped lining are clear. The lining and body being formed at the same time, submitted to pressure, and fired constitute an integral and united whole. There can be absolutely no scaling nor cracking of this lining, nor is it affected by exposure to weather. Further, there being a more solid and finer basis for the enamel, the latter will also remain in better condition, and its liability to cracking will be much diminished. At the same time I am enabled

to retain all the effects of the dipped lining—such as a vitrified surface, &c.—which, of course, would depend upon the character of the materials employed in the formation of the dust lining. It will also be seen, and upon this point I lay great stress, that the dust lining may be of any depth, from that of the mere skin-layer of the dipped lining to any part of the thickness of the brick-body. It is obvious that in case of chipping or scaling of the enamel the lining only of the brick will be exposed to view.

Another point which I regard as a part of my invention is the mixing of various pigments and the like with the materials of the dust lining, so that the lining may be colored to correspond with the color of the enamel surface where that is other than white. This similar coloring of the lining renders far less conspicuous any cracking or breaking of the surface enamel.

Although I have referred to the lining which is interposed between the brick-body and the enamel surface as composed of a mixture of clay, sand, flint, &c., I do not desire to limit the scope of my invention to the employment of this specific mixture. It is obvious that other similar mixtures might be advantageously employed without departing from the spirit of my invention.

As I have previously stated in this specification, I lay no claim to such enameled bricks as are formed with "dipped" linings, as presented, for instance, in the United States Letters Patent to Cliff and Cliff, No. 186,112, dated January 9, 1877, the gist of my improvement residing entirely in the dust lining I employ, which constitutes an essential and integral

part of the brick-body, may be made of any thickness, and is not liable to scaling and cracking, as in the case of the dipped lining, which constitutes a mere skin coating, and is not an integral part of the brick-body.

Having thus fully described my invention, I declare that what I claim, and desire to secure by Letters Patent of the United States, is as follows:

1. An enameled brick comprising the enameled surface, the brick-body, and a dust-lining interposed between the two and constituting an integral part of the brick-body, whereby the liability to cracking and scaling of the lining is obviated, substantially as described.

2. The method of making a lined enameled brick, which consists of forming the brick-body and the dust lining at the same time, pressing them together, and firing, whereby the lining is made an integral part of the brick-body, and subsequently applying the enamel, substantially as described.

3. The method of making a lined enameled brick, which consists of placing in the mold the material for the brick-body proper and also the material for the lining in the dust, submitting the whole to pressure, and firing, whereby the lining is made an integral part of the brick-body, and subsequently applying the enamel, substantially as described.

In testimony whereof I have hereto set my hand, this 12th day of December, 1891, in the presence of the two subscribing witnesses.

ISAAC T. RUE.

Witnesses:

ROBERT FLETCHER ROGERS,  
FRANCIS B. ANTZ.