

# UNITED STATES PATENT OFFICE.

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## MANUFACTURE OF ENAMELED BRICK.

SPECIFICATION forming part of Letters Patent No. 461,980, dated October 27, 1891.

Application filed July 9, 1890. Serial No. 358,173. (No specimens.)

*To all whom it may concern:*

Be it known that I, WENZEL A. MIKSCH, of Philipsburg, in the county of Beaver and State of Pennsylvania, have invented a new and useful Improvement in the Manufacture of Enameled Brick, of which the following is a full, clear, and exact description.

In the manufacture of brick having enameled faces the problem of coloring the enamel for decorative purposes with most of the colors is easy when the brick to be enameled is the ordinary red building-brick, because such brick is burned at such low temperature that the coloring-matter of the enamel (with some exceptions) is not injuriously affected; but when it is attempted to apply colored enamel to fire-brick serious difficulties are encountered. To secure the best results the enamel must be applied to the bricks before the latter are burned, and the very high temperature to which they must be raised in the kiln so affects the coloring-matter that only a few simple colors, such as brown or blue, can be employed. The consequence is that, aside from the use of these few refractory colors, (and even these are deteriorated by the heat,) enameled fire-brick have been made of white color only, and its application to use for decorative purposes has been correspondingly limited. I have discovered a method by which this practical difficulty can be overcome, and by which fire-brick—i. e., brick composed of a refractory clay—may be enameled with a great variety of colors of the most delicate tints and shades without danger of spoiling, and it is in this method that my invention consists.

In the practice of the invention I take a green or unburned fire brick or tile, and having coated it with the usual enameling composition, which may be white, I place it in the kiln and subject it to the usual temperature (about 2,400° Fahrenheit) by which the brick is burned, and the enamel is fused on its surface. This part of the process is carried on in the manner now commonly practiced and does not need detailed description. I then take the enameled fire-brick from the kiln after it has cooled, and on its enameled surface I apply a coating of mineral glazing compound of low fusing-point containing the coloring-matter of the desired color and shade.

The following are suitable recipes for this

compound; but it will be understood that other compounds containing a fusible mineral flux and coloring-matter may be substituted, and my invention is not restricted to the use of any particular compound or color.

For a pink color use five grams chloride of gold, two grams carbonate of silver, eleven ounces red oxide of lead, thirty-three ounces flint, and fifty-five ounces calcined borax.

For a coral-red color use five ounces chromate of lead, four ounces red oxide of iron, one ounce oxide of tin, twelve ounces oxide of lead, three ounces flint, and fifteen ounces crystallized borax.

Having coated the enameled face of the brick with such compound, and having permitted the latter to dry, I again place the brick in a kiln and raise it to a heat sufficient to fuse the compound, but insufficient to fuse the enamel coating first applied. A temperature of 800° Fahrenheit will ordinarily be found to be proper for this purpose, and as the heat is low the glaze will fuse without in any way injuring it or spoiling its color. The product of this process is a tile having an enamel durable and of smooth and highly-finished surface, and as the number of colors and shades producible is almost without limit beautiful decorative effects may be had.

I do not desire to limit my invention strictly to enameling fire-brick, since in some cases in using very delicate colors, such as those noted in the foregoing two recipes, my improved method is of great use in the manufacture of enameled red brick.

I claim—

In the manufacture of enameled brick, the method herein described, which consists in applying to a green brick a coating of enamel, exposing it to temperature sufficient to simultaneously burn the brick and to fuse the enamel, and then, after cooling the brick, coating its surface with a fusible colored glazing compound of low melting-point and reheating the brick to melt the glaze, substantially as and for the purpose described.

In testimony whereof I have hereunto set my hand this 3d day of July, A. D. 1890.

WENZEL A. MIKSCH.

Witnesses:

W. B. CORWIN,  
H. M. CORWIN.