

UNITED STATES PATENT OFFICE.

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PROCESS OF MAKING SPECKLED-ENAMELED WARE AND THE PRODUCT THEREOF.

No. 806,153.

Specification of Letters Patent.

Patented Dec. 5, 1905.

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To all whom it may concern:

Be it known that I, WALTER J. KOHLER, residing in Sheboygan, in the county of Sheboygan and State of Wisconsin, have invented a new and useful Process of Making Speckled-Enameled Ware and the Product Thereof, of which the following is a specification.

My invention relates to a new and useful method of manufacturing a variegated porcelain enamel to be applied on metallic surfaces by the dry process.

In order to properly explain my invention, I will first describe in detail the two at present popular and separate and distinct methods of enameling metallic surfaces known, respectively, as the "wet" process and the "dry" process. The wet process, to which my invention does not appertain, consists, generally speaking, of an enamel of a suitable raw-material composition which has been properly mixed and melted and to which has been added water and a small percentage of clay or other material having same effect, and grinding or pulverizing this mixture to a more or less degree of fineness, so that it has approximately the consistency of cream, although this is not absolutely necessary. The enamel can also be pulverized dry and then have added thereto the water and clay and mixing same thoroughly by hand. This so-prepared enamel is then applied in liquid or paste form on the metallic article by pouring the enamel over the article or by dipping the article into the enamel and shaking off surplus enamel, (which operation is commonly known as "lining," "dipping," or "slushing,") the said article having been previously cleaned by any method, such as pickling and scouring, sand-blasting, or otherwise. After the article is so coated it is placed in drying-room or on dry-oven until the moisture in the enamel is evaporated, and the article is then subjected to a high temperature in a muffle or other furnace, the heat causing the coat of enamel to fuse onto the metal, when the article is withdrawn and allowed to cool, leaving a hard glassy surface. This operation of coating and firing can be repeated several times, if desired, though it is not always necessary. The dry process, to which my invention does appertain, consists of a porcelain enamel of a suitable raw-material composition

which has been properly mixed, melted, and dried and while in a dry state is ground or pulverized. This porcelain enamel is then sifted, in dry powdered form, on a heated metallic article which has previously been properly cleaned by any method and having received a first or foundation coat. The temperature of this heated metallic article is sufficiently high to cause this sifted powder enamel to partly fuse and adhere to the metal, but not high enough to perfectly fuse the porcelain enamel. Therefore the article is returned to the furnace and fusing operation completed. If one coat of sifted powdered porcelain enamel does not bring about the desired result of opacity, uniformity, &c., the operation of sifting the powder porcelain enamel and fusing same can be repeated several times.

I will now explain my invention for the producing of a variegated speckled-porcelain enamel by the dry process and which I claim as new and original.

I take as a base a one-color porcelain enamel, (white or any other color,) of suitable raw-material composition which has been properly mixed, melted, and pulverized in dry form and which is ready and complete in itself for applying to the heated metallic surfaces and add thereto and mix thoroughly with same a certain quantity of granulated or pulverized material, not enamel, of a contrasting color, which will not fuse at the same temperature as the body of the enamel, and I then apply this combined enamel mixture by sifting same dry upon a highly-heated metallic article which has been previously cleaned by any method and coated with a foundation or ground coat, if desired, and fusing same thereon, producing a beautifully variegated speckled effect.

This method of producing a variegated porcelain enamel by the dry process is particularly adapted to the manufacture of cast-iron plumbers' ware and can be more economically manufactured than the white dry-process enamel, as less enamel is required to bring about the desired opacity, density, &c.

The contrasting material is not enamel and can consist, for black specks, of granulated or pulverized crude carborundum or its equivalent.

What I claim as new, and desire to secure by Letters Patent, is—

1. In the process herein described of producing speckled-enamel ware, the process
5 consisting of mixing a comparatively small amount of comminuted carborundum with dry pulverized enameling material of one color, the carborundum being of a different
10 color from the enameling material and non-fusible at such low temperature as fuses the enameling material, putting the mixture on the article to be coated with the enamel, and then subjecting the article to such heat as fuses the enameling material but less than sufficient
15 to fuse the carborundum.

2. A new article of manufacture of metal enameled ware, the enamel coating of which has been made by the dry process and is composed of fused enameling material of one color and comminuted non-fused carborundum
20 of a different color mixed in the enameling material while in pulverized condition and before the enamel was fused on the metal.

In testimony whereof I affix my signature in presence of two witnesses.

WALTER J. KOHLER.

Witnesses:

A. G. KROOS,

O. A. KROOS.