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PORCELAIN ENAMELWARE AND METHOD OF FORMING THE SAME

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11 Claims.

(1) In the making of porcelain enamel it is usual to apply several coats, firing the initial coat prior to the application of the second coat. Efforts have heretofore been made to give to an enamel finish a pebble appearance. In the effort to accomplish this there has been applied a pebble coat of material other than the enamel material and this has not been entirely satisfactory because of the lack of complete fusion in firing and the resultant unsatisfactory surface. In carrying out my method I apply the initial, or base coat of the enamel and dry this coat without firing it. I then apply the second coat and added coats, if desired. I find that this method produces a tougher enamel than that which is fired after each coat. It has, however, a very definite added utility in that it makes it possible to give to the enamel surface a pebble finish appearance. In carrying out my invention in this respect I apply the second coat to the dry first coat in pebbled, or stippled form. This may be accomplished by setting the ordinary air brush for very coarse delivery of the material, that is to say, so that the material is really delivered in the form of globules and is ordinarily referred to as a stippled setting. Where this manner of applying the second coat is used upon a first coat that has been fired the initial protuberances thus formed immediately flow and level out, or where this second coat is applied to a wet first coat, there is substantially the same result, that is to say, a levelling out of the protuberances, or globules. By applying the second coat in stipple form on the dry base coat the dry coat takes up the moisture from the stippled coat with sufficient rapidity to prevent the flow and levelling out of the material prior to its reaching a state through the giving up of its moisture which will retain it with the pebbled, or stippled finish.

In order to preserve this pebble finish, or appearance, in the final product, I color the slopes of the protuberances facing one general direction. This can be readily accomplished by applying a third coat to the stippled, or pebbled finish with a spray brush at a pronounced inclination to the surface and from one general direction. Here again the dry under coat absorbs moisture from this coloring material with sufficient rapidity to maintain it on the slopes originally applied.

After the application of the color coat, the coats are then fired and as the porcelain melts and fuses under the heat the protuberances formed in the stipple coat level out and flow to a smooth surface, but the shading which is accomplished by applying the coloring material to the slopes facing one general direction remains and gives to the finished article depth or a pebbled appearance, the shading following the contours and outlining each of the original protuberances and the depth of color varying with the inclination of those slopes so that the final appearance follows very definitely the stippled, or pebbled appearance which obtained prior to the firing.

The invention and manner of practicing it is illustrated in the accompanying drawing as follows:

Fig. 1 shows an elevation of the finished plate.
Fig. 2 a section of the plate with the application of the first coat.
Fig. 3 a section of the plate after the application of the second coat.
Fig. 4 a section indicating the manner of application and the material after the application of the third coat.
Fig. 5 a section of the finished plate.
I marks the metal plate forming the base of the enamel ware, 2 the first coat, 3 the second, or stipple coat, 4 the third or color coat, and 5 the fired, or coat in its finished condition. In Fig. 3 I have shown a nozzle of a brush 6 indicating the inclination and manner of applying the color coat.

Preferably the color is applied so that in its normal use it is observed in a direction opposite to that from which the color material is applied. The shading so observed seems to heighten the pebbled, or stippled appearance.

One of the important features of this method is that the several coats are of the same general constituents as ordinay, or standard enamel, as for instance, 100 parts of frit, 5 parts clay, 6 parts coloring oxide, and ½ part of carbonate of magnesium.

What I claim as new is:

1. In the method of producing an article having a vitreous enamel finish, the steps which comprise depositing on an article base a wet coat of vitreous enamel material, drying said coat at least to some extent, forming a rough surface on said dried coat by depositing globules of liquid enamel material, the dried coat absorbing at least part of the liquid component from said globules and thereby drying them, applying to the resulting dried masses at an angle a color stable at the firing temperature, and contrasting with the predetermined color of the masses, and firing the so treated article to produce a fused surface having the visual appearance of depth and roughness.

2. An ornamental article of manufacture hav-

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ing a fused vitreous enamel finish, comprising an article base provided with small raised masses of vitreous material of a predetermined color, said raised masses having one common side thereof coated with a color contrasting with the predetermined color of the raised masses and their opposite common sides uncoated said article while having a fused surface, giving the visual appearance of depth and roughness.

3. An ornamental article of manufacture having a porcelain enamel finish comprising an article base provided with small raised masses of porcelain enamel material of a predetermined color, said raised masses having one side thereof coated with a color contrasting with the predetermined color of the raised masses and the opposite common side uncoated, said article having a fused surface giving the appearance of depth and roughness.

4. In the method of forming a porcelain enamel finish, the step comprising applying a wet coat of porcelain enamel in globular form to a dry unfired coat of porcelain enamel.

5. In the method of forming a porcelain enamel finish, the steps comprising applying a wet coat of porcelain enamel in globular form to a dry unfired coat of porcelain enamel, said dry coat absorbing moisture from the globular material and providing a pebbled finish, and thereafter applying a color coat to the pebbled coat of enamel.

6. In the method of forming a porcelain enamel finish, the steps comprising applying a wet coat of porcelain enamel in globular form to a dry unfired coat of porcelain enamel, said dry coat absorbing moisture from the globular material and providing a pebbled finish, and thereafter applying a color coat to the pebbled coat of enamel and firing the three coats simultaneously.

7. In the method of forming a porcelain enamel finish, the steps comprising applying a wet coat of porcelain enamel in globular form to a dry unfired coat of porcelain enamel, said dry coat absorbing moisture from the globular material, and thereafter applying a color coat of enamel to each respective opposite side of each protuberance uncoated, and firing the so-treated material.

8. In the method of producing an article having a vitreous enamel finish, the steps which comprise depositing on an article base a wet coat of vitreous enamel material, drying said coat to such an extent as to take up moisture from a subsequently applied globular coat with such rapidity as to substantially inhibit the flow and leveling out of the globules of said coat and allow the same to retain its globular or stippled state, forming a rough surface on said dried coat by depositing globules of vitreous material, applying to the resulting dried masses at an angle a color stable at the firing temperature and contrasting with the predetermined color of the masses, and firing the so-treated article to produce a fused surface having the visual appearance of depth and roughness.

9. In the method of producing an article having a porcelain enamel finish, the steps which comprise depositing on an article base a wet coat of porcelain enamel material, drying said coat to such an extent as to take up moisture from a subsequently applied globular coat with such rapidity as to substantially inhibit the flow and leveling out of the globules of said coat and allowing the same to retain its globular or stippled state, forming a rough surface on said dried coat by depositing globules of porcelain enamel material, applying to the resulting dried masses at an angle a color stable at the firing temperature and contrasting with the predetermined color of the masses, and firing the so-treated article to produce a fused surface having the visual appearance of depth and roughness.

10. In the method of producing an article having a vitreous enamel finish, the steps which comprise depositing on an article base a wet coat of vitreous enamel material, drying said coat to such an extent as to take up moisture from a subsequently applied globular coat with such rapidity as to substantially inhibit the flow and leveling out of the globules of said coat and allowing the same to retain its globular or stippled state, forming a rough surface on said dried coat by depositing globules of vitreous material, applying to the resulting dried masses at an angle a color stable at the firing temperature and contrasting with the predetermined color of the masses, and firing the so-treated article to produce a fused surface having the visual appearance of depth and roughness.

11. In the method of producing an article having a porcelain enamel finish, the steps which comprise depositing on an article base a wet coat of porcelain enamel material, drying said coat to such an extent as to take up moisture from a subsequently applied globular coat with such rapidity as to substantially inhibit the flow and leveling out of the globules of said coat and allowing the same to retain its globular or stippled state, forming a rough surface on said dried coat by depositing globules of porcelain enamel material, applying to the resulting dried masses at an angle a color stable at the firing temperature and contrasting with the predetermined color of the masses, and firing the so-treated article to produce a fused surface having the visual appearance of depth and roughness.

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