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AKIRA ITO

2,883,729

METHOD OF BURNING CERAMIC WARE

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Fig. 1

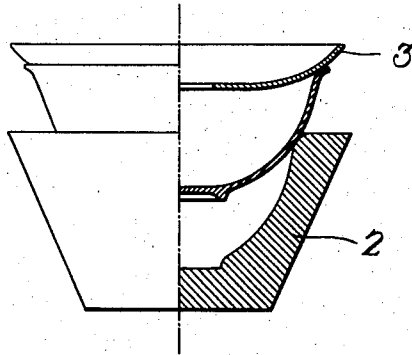


Fig. 2

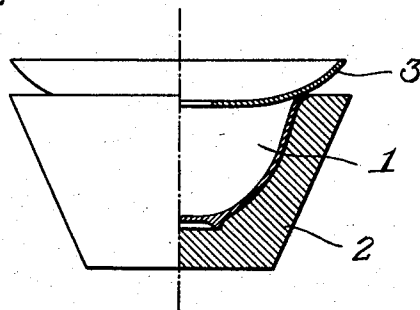
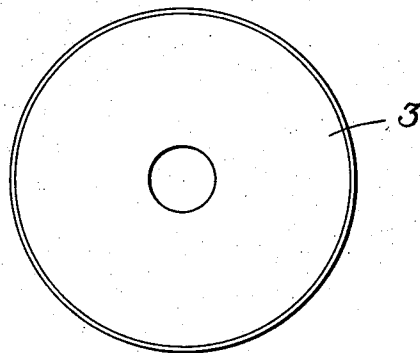


Fig. 3



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1

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METHOD OF BURNING CERAMIC WARE

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3 Claims. (Cl. 25—157)

This invention relates to a method of burning ceramic ware wherein a molded piece of ceramic ware is placed in the unfired condition on a refractory receptacle having an internal form to which the external form of said ceramic ware conforms after biscuit firing, the ceramic ware being wide mouth vessels in which the base diameter and aperture diameter of the mouth are the same or the mouth diameter is larger than the base diameter and in which the body diameter is the same or smaller than the mouth diameter. A refractory dish-shaped instrument fitting the mouth edge is placed thereon, and this is heated uniformly all over to urge the vessel to be burned into the external mold. The object of the invention is to produce without difficulty ceramic ware having a precise shape while using ceramic material that softens and changes shape easily during burning.

In the drawings wherein an embodiment of this invention is shown, Fig. 1 is a side view showing an example of the shape of a ceramic vessel prior to burning, the view being a cross section in the right half thereof, Fig. 2 shows a side view partially in section of the vessel of Fig. 1 after burning; and Fig. 3 is a plan view of Fig. 1.

The ceramic wares treated according to this invention are wide mouth vessels such as dishes, pots, bowls, and the like, in which the base diameter and mouth diameter are the same or the mouth diameter is larger than the base diameter and the middle part between the base and mouth, i.e. the diameter of the body, is the same or smaller than the mouth.

In the past, the burning of these ceramic wares by means of charcoal burning and using a wad produced products of precise shape to a certain extent, and this object can be achieved when the viscosity of the material during heating is comparatively high, such as in the case of high temperature feldspathic porcelain. However, when the viscosity of the material during heating is low, the material is unable to bear its own weight, resulting in deformation and distortion, and it is very difficult to burn articles to a precise shape by the said method. The present invention has been designed to produce articles with a precise shape with ceramic material that changes shape easily.

In carrying out this method, first of all there is produced a refractory receptacle 2 having an internal form shaped to the external form of the biscuit fired finished product 1. The article to be burned is placed as it is in its normal position in the central part of the refractory receptacle (see Fig. 1). When it is heated uniformly all over as it is in a kiln, the molded piece sets into the refractory receptacle while shrinking gradually during the rise in temperature. When it gets near the finishing temperature during burning, it fits into the said re-

2

fractory receptacle completely (see Fig. 2), and so all remains is to burn it to the required temperature and then cool it. Further, in case the shape of the article to be burned is like a bowl in which the difference between the base diameter and mouth diameter is comparatively small, a refractory dish-shaped instrument 3 is placed on the mouth edge thereof, and then burning is carried out in the same manner as above.

The said refractory receptacle and refractory dish-shaped instrument are ordinarily made of a mixture of fire clay chamotte and fire clay, and are burned at or above the required finishing temperature of ceramics, or in some cases they can be used as they are in the raw state. In either case, however, it is essential that the internal form of the refractory receptacle fit the external form of the biscuit fired product at the finishing temperature of the article to be burned. The refractory dish-shaped instrument has a curved surface fit to the mouth edge of the article to be burned, and acts to prevent the mouth edge from bending, providing resistance to a certain extent against shrinkage of the said mouth edge when the article to be burned shrinks during the heating. As for the quality of the refractory receptacle and dish-shaped instrument, any materials having refractoriness to achieve the object of this invention at the required temperature for biscuit firing in ceramics can be used, and this does not necessarily mean refractory materials.

The articles to be burned according to this invention are not necessarily limited to a round shape. This method can be applied to any shape if the shape conforms to the above mentioned conditions. If a handle, grip, or knob is to be produced, this can be done by making the internal form of the refractory receptacle in accordance with the above described conditions.

As described above, this method, by a combination of the refractory receptacle and refractory dish-shaped instrument, can easily produce ceramic wares of precise shape by urging the articles to be burned naturally into external molds during the burning process.

What I claim is:

1. A method of burning ceramic ware having a wide mouth comprising positioning the unfired ceramic ware on a refractory receptacle having an internal form the same as the form of the ceramic ware after firing and applying a pressure to the edge of the mouth of the ceramic ware during firing, whereby the edge of the mouth of the ceramic ware is prevented from becoming distorted and the ceramic ware is urged into the refractory receptacle to conform precisely to the shape thereof.

2. A method as claimed in claim 1 in which the pressure is applied to the edge of the mouth of the ceramic ware in a downward and outward direction.

3. A method as claimed in claim 1 in which the pressure is applied to the edge of the mouth of the ceramic ware by placing a dish-shaped refractory piece having a curvature fitting the edge of the mouth of the ceramic ware on the edge of the mouth of the edge of the ceramic ware with the dish-shaped refractory piece curving down into the mouth of the ceramic ware.

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