RECEPTACLE HAVING FOAMED FRICIONAL BOTTOM COATING

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100 parts polyvinyl chloride

130 parts tricresyl phosphate

5 parts stabilizer

30 parts nitrogen foaming agent

Application of composition to rim of receptacle

Heat 30 to 60 seconds at about 180°C. under infra red rays

Cool and set

FIG. 2

Receptacle

FIG. 3

Ringlike Rim

FIG. 4

Ring of Resinous Composition

FIG. 5

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RECEPTACLE HAVING FOAMED FRICTIONAL BOTTOM COATING

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1 Claim. (Cl. 220—69)

The present invention relates to receptacles for pasty substances as polishing wax, boot polish, powder tablets or cosmetic creams which are taken off by passing a brush or clout over the surface of said substances.

One of the objects of my invention is to provide an inexpensive and yet reliable method of applying to the ringlike rim projecting of the bottom of a receptacle a friction surface which avoids gliding of the receptacle during its use.

Another object of my invention is to provide an inexpensive construction of foam rubber anti-skid surface for receptacles or containers for shoe polish and the like.

Other and further objects of my invention involve the production and structure of anti-skid means for receptacles as set forth in the specification hereinafter following, in which:

Fig. 1 is a flow sheet of the process of my invention;

Fig. 2 is a cross sectional view taken through a receptacle embodying the anti-skid means of my invention;

Fig. 3 is a bottom plan view of the receptacle showing the anti-skid means in position;

Fig. 4 is an enlarged fragmentary view showing the anti-skid means in cross section taken substantially on line 4—4 of Fig. 3;

Fig. 5 is a view showing the application of the anti-skid means of my invention to porcelain or glass receptacles; and

Fig. 6 is a schematic view illustrating the method of applying coatings to the receptacles for forming the anti-skid surface thereon in accordance with my invention.

The invention consists in putting receptacles with a ring-like rim projecting from the bottoms thereof with the bottoms extending upwardly on a conveyor band, which moves in a path beneath rotating cylinders which sweep the ring-like rims and apply thereto a resinous composition which evolves as a gas at elevated temperatures, the said coating being thereafter subjected to curing by treatment under infra red rays for a period of about 30 to 60 seconds at a temperature at about 180 degrees centigrade.

One takes for instance 100 parts polyvinyl chloride such as Marvinol VR—10, 130 parts tricresyl phosphate as plasticizer, 5 parts of a stabilizer such as DSI—207 and 30 parts of a nitrogen foaming agent such as Celogen.

After applying this liquid to the ring-like rim of the bottom of the receptacle by means of rotating cylinders which touch the bottom of the reversed receptacles on a conveyor hand, the receptacles are heated at a temperature of about 180° C. by infra red rays for 30 to 60 seconds depending upon the color of the receptacle.

The result is a ring-shaped and quite thick cushion on the outer side of the bottom of the receptacle having in cross section the contour of a half-moon and showing in the middle of the cross section greater bubbles than on the thin edges. There is no sharp or high edge which could facilitate tearing off this friction surface.

For receptacles of about 60 millimeters diameter and with a rim of 5 millimeters largeness projecting its bottom one needs in maximum 0.2 gram of the resinous compositions for each receptacle. I have devised a machine for applying 1600 such receptacles per hour with such a cushion and by using 10 infra red radiators of 250 watts each permit the production of each cushion or receptacle for 1/40 of a cent included wages. That means that the invention offers the great advantage of a receptacle with friction surfaces on the bottom without appreciable additional costs for the user.

The thickness of the cured layer of resinous composition is about 0.7 millimeter in the middle of the cross section.

If the material of the receptacle is not well adapted to firmly hold the foamed plastic such as porcelain for instance the material is first prepared by application thereto of a thin layer of heat resisting compound, preferably black lacquer. The plastic will then adhere to the receptacle regardless of the fact that the material of the original receptacle is not qualified to secure the plastic.

Fig. 1 shows a flow sheet describing in sequence the steps hereinbefore described for applying the anti-skid surface to the receptacles.

In Figs. 2—5 I have shown the anti-skid surface applied to a metallic receptacle 1 having the annular rim 2 on the bottom thereof and over which the plastic anti-skid cushion 3 is formed. It will be noted that the maximum concentration of air-bubbles 4 occurs centrally within the cushion and are substantially eliminated at the opposite limits thereof.

In Fig. 5 I have shown the manner of applying the anti-skid annular surface to porcelain or glass receptacles 5 where a coating of lacquer 6 is first applied to the receptacle 5 and thereafter the cushion 3 applied thereover.

In Fig. 6 I have shown a method of producing the anti-skid surface on the receptacles in accordance with my invention. A conveyor 7 is provided to which the bottoms of the receptacles are delivered in inverted position as indicated at 8, 8', 8", etc. The conveyor 7 extends into an oven 9 containing the infra red heat sources 10, 10', 10", etc. The coating is applied to the upwardly extending ring-like rim on each of the receptacle bottoms 8, 8' and 8" by means of coating cylinder 11, associated with transfer rolls 12 and 14 by which the plastic coating indicated at 15 is delivered to the cylinder 11. The coating is delivered to transfer roll 14 through the supply pipe 16. Drippings are prevented from reaching the inverted bottoms 8, 8', 8", etc., on conveyor 7, by means of the catch-basin 17. The arrangement of coating rolls is as set forth in Letters Patent of the United States 2,293,691, dated August 18, 1942.

The anti-skid member when ultimately cooled and set constitutes a toroid having a flat upper surface 18 which is united with the depending annular bead 2 and with a substantially yieldable outer surface 19 which forms the support for the receptacle with respect to a mounting surface. The plastic material constitutes an adhesive which prevents skidding of the receptacle over the mounting surface.

While I have described my invention and method in certain of its preferred embodiments I realize that modifications may be made and I desire that it be understood that no limitations upon my invention are intended other than may be imposed by the scope of the appended claims.
What I claim is:
A receptacle having a bottom portion with a substantially flat annular rim depending downwardly therefrom, an annular foamed plastic member including a flat adhesive contacting surface and a rounded supporting surface, said flat adhesive contacting surface being united to said annular rim and said rounded supporting surface depending beneath said flat adhesive contacting surface and forming a toroidal foamed plastic cushioned support for the bottom portion of the receptacle with respect to a mounting surface.