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[54] COATED BOTTLES

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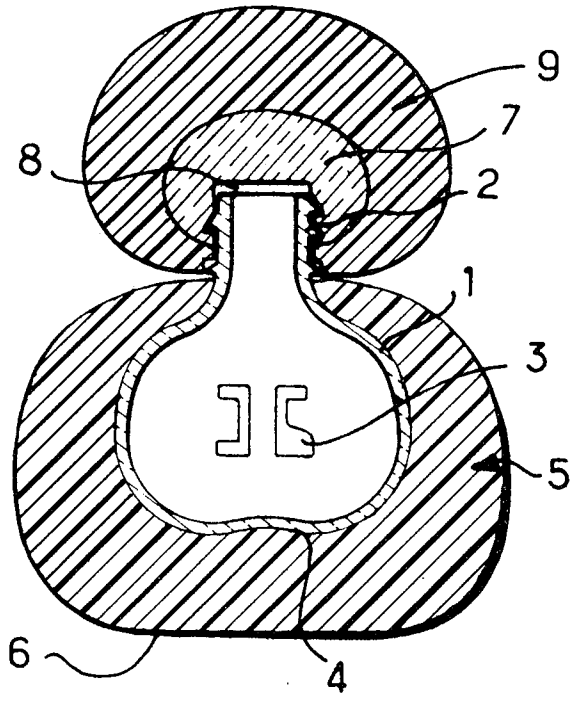
[57] **ABSTRACT**

Glass bottle having neck and engraved or relief design on its outer surface is coated with coating of transparent plastic which increases in thickness from the neck to the opposite end of the bottle. The bottle may be closed by a cap made in the same way.

10 Claims, 2 Drawing Figures



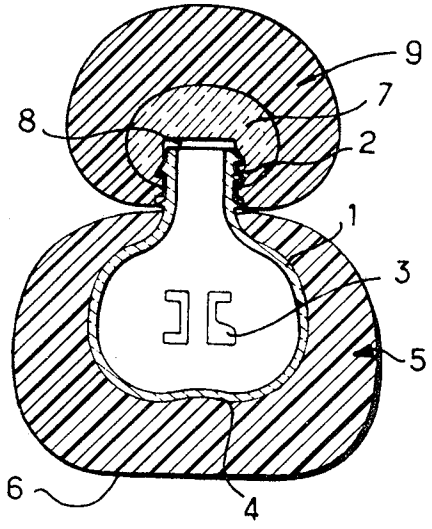


FIG. 1

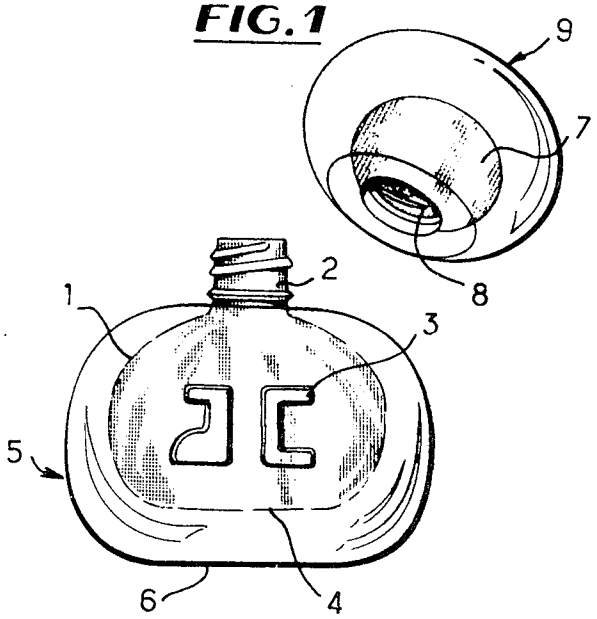


FIG. 2

COATED BOTTLES

SUMMARY OF THE INVENTION

This invention relates to a new type of bottle which is particularly useful for holding certain cosmetic products.

Glass bottles are of course already well known and particularly colored glass bottles covered by a mass of transparent glass. Such bottles are generally made by highly skilled workmen, because the production thereof is rather difficult. In particular, it is very difficult to form a glass coating about a bottle having a neck adapted to receive a cap closing the bottle. Moreover, the technique of making these glass coated bottles does not permit the formation of indicia in relief or engraved on the inner bottle. Finally the cost of such glass coating is high and the fact that they are hand made makes it impossible to insure perfect consistency in the coating properties and the final appearance of the bottle.

The present invention makes it possible to reduce the said disadvantages by providing on the outside of a bottle of a conventional type having indicia on its lateral walls and a neck adapted to receive a stopper, a coating of a transparent synthetic plastic material, which coating has certain properties which improve the resistance of the complete bottle to shock and insure a product having an attractive appearance.

It is the object of the present invention to provide a new article of manufacture which consists of a coated bottle, essentially characterized by the fact that it comprises, on the one hand, an inner container having a neck, which container is generally ovoid in shape and may carry indicia on its lateral walls which are in relief or engraved, and on the other hand a coating around the ovoid container made of a transparent synthetic resin, the outer surface of said coating being an ovoid surface which encircles the first ovoid surface and is pierced by the neck of the said container. The thickness of the coating is at a minimum at the neck and progressively increases to a maximum, moving away from the neck.

In a preferred embodiment of the invention, the minimum thickness of the coating in the zone of the neck of the container is about 3–6 mm., the maximum thickness of the coating falls within a range from about 8 mm. to about 25 mm., the lower part of the coated bottle has the thickest coating, the inner container has no sharp corners except for the indicia which may be applied thereto, the outer surface of the coating is smooth and rounded, and the coating increases progressively in thickness from the zone of minimum thickness to that of maximum thickness.

The inner container may advantageously consist of a glass bottle several mm thick. Good results have been obtained with a colored glass bottle having the shape of a solid of revolution, the axis of revolution being the axis of the neck of the container. In this case, the coating has preferably an external surface of revolution about the axis of the neck of the inner container. It is clear that the inner container may consist of a colorless glass and that the transparent coating resin may be colored. A polyester type resin may advantageously be selected as a coating material.

It has been found that a particularly attractive appearance is obtained when the ratio between the maximum thickness of the coating and the average diameter of the inner container is between 0.3 and 0.7.

It should be noted that the neck of the container may cooperate with a conventional cap or with a cap made of a coated material, which stopper may then have the same characteristics as the main container. In particular the cap may be made of a colored material, the coating being transparent and increasing progressively in thickness from the zone at which the cap contacts the neck of the bottle to the zone most remote therefrom. In this case, the dimensions of the coating with respect to those of the cap should lie within the range of ratios previously indicated. It is also preferable to avoid any sharp corners on the cap which may take the form of an ovoid inner part within a coating having a correspondingly ovoid external surface.

It is consequently also the object of the present invention to provide, as a new article of manufacture, a coated bottle as hereinbefore defined in combination with a cap which fits onto the neck of the inner container and is essentially characterized by the fact that this cap comprises an inner part defining a opening which cooperates with the neck of the aforesaid bottle, which inner part has a generally ovoid shape and which may carry indicia in relief or engraved on its lateral surface and, on the other hand, a coating positioned around said ovoid part and made of a transparent synthetic resin, the outer surface of said coating being an ovoid surface which encircles the inner ovoid part, and the coating being thinnest at the area of contact between the stopper and the bottle neck.

In a preferred embodiment of the invention, the minimum thickness of the coating of the cap, in the area in which it fits onto the bottle with which it is associated, falls within a range of from 2–4 mm. The maximum thickness of said coating lies within a range of 10–15 mm. The zone of maximum thickness of the coating of the stopper is farthest from the zone at which the stopper contacts the bottle with which it is associated. The inner part of the stopper has no sharp corners except for the indicia which it carries. The outer surface of the coating of the cap is smooth and rounded. Any of the molding methods in conventional use may be used for manufacturing the product according to the invention, or the inner container may be included by molding within a block of the coating material and this block machined to bring its outer surface to the dimensions desired. In order that the object of the invention may be better understood, one embodiment thereof will now be described, purely by way of illustration and example, with reference to the accompanying drawings in which:

FIG. 1 is a sectional view through a bottle according to the invention, equipped with a coated cap; and

FIG. 2 is an elevational view showing the outer appearance of the bottle of FIG. 1, the coated stopper being separated from the bottle, and shown in perspective.

Referring now to the drawings it will be seen that reference numeral 1 indicates the inner container of the bottle according to the invention. The container 1 is a solid of revolution about the axis of its neck 2. The neck 2 is threaded to cooperate with a matingly threaded stopper. The container 1 is made of colored glass having a thickness of 2–3 mm. It carries in the central part of its lateral wall indicia 3 in relief. The zone 4 of the container 1 which is opposite the neck 2 is nearly flat.

Around the container 1 is a transparent polyester coating 5. The outer surface of the coating 5 is a surface of revolution having the same axis of rotation as the container 1. At the neck 2, the thickness of the coating is about 3 mm. In zone 4 the thickness of the coating is about 15 mm. The thickness of the coating 5 increases progressively from the area of the neck to said area of maximum thickness. In the area of maximum thickness the coating 5 forms a base 6 perpendicular to the axis of the external surface of the bottle.

The cap associated with the bottle which has just been described comprises an inner part 7 made of a colored glass. This part 7 has a central threaded recess 8. The threading of the recess 8 mates with the threads carried by the neck 2.

The inner part 7 has a thickness which ranges from 2 to 5 mm at various points. The part 7 and the recess 8 are solids of revolution about an axis which coincides with the axis of the neck 2 when the cap is mounted on the container. The part 7 is encircled by a transparent polyester coating 9. The outer surface of the coating 9 is a surface of revolution having the same axis of that of the bottle 7. In the zone of the cap which comes into contact with the coating 5 of the bottle stopper, the coating 9 has a thickness of about 3 mm. In the zone opposite the zone of contact between the cap and the bottle, the coating 9 has a thickness of about 12 mm. The thickness of the coating 9 increases progressively from the zone of contact with the bottle stopper toward the zone of maximum thickness.

It has been found that the bottle which has just been described has an attractive appearance to the user. The use of a coating of synthetic resin makes it possible to provide the indicia **3**, which is impossible with a glass coating. Moreover, the bottle and its cap have a substantial thickness of synthetic resin on the outside which greatly improves the resistance of the bottle to shocks.

It will of course be appreciated that the embodiment which has just been described has been given purely by way of illustration and example, and may be modified as to detail without thereby departing from the basic principles of the invention.

What is claimed is:

1. Coated bottle comprising an inner container having a neck and designs on its outer surface extending to a level spaced from that of said outer surface, and a coating of transparent synthetic resin encircling said inner container, with the thickness of said coating increasing progressively from the neck of said container to its bottom.

2. Bottle as claimed in claim **1** in which the thickness of said coating ranges from a minimum of 3–6 mm. to a maximum of 8–25 mm.

3. Coated bottle as claimed in claim **1**, in combination with a cap comprising an inner part defining a recess which fits onto said neck and a coating encircling said inner part and made of a transparent synthetic resin, the outer surfaces of

both the inner part and the coating of said cap being surfaces of revolution about the axis of said recess, and the thickness of said coating increasing progressively from the area encircling the mouth of said recess to the top of said cap.

4. Bottle as claimed in claim **3** in which the coating on said container is thickest at its bottom and the coating on said cap is thickest at its top.

5. Bottle as claimed in claim **3** in which the surfaces of both said inner container and the inner part of said cap are free from sharp edges other than those of said designs.

6. Bottle as claimed in claim **3** in which the outer surface of said coatings is smooth and rounded.

7. Bottle as claimed in claim **3** in which the outer surface of said inner container and that of the inner part of said cap are surfaces of revolution about the axis of said neck.

8. Bottle as claimed in claim **3** in which the outer surfaces of the coatings on said bottle and cap are surfaces of revolution about the axis of said neck.

9. Bottle as claimed in claim **8** in which the maximum thickness of the coating on said inner container is from 0.3 to 0.7 times the diameter of said container.

10. Bottle as claimed in claim **1** in which said coating is a polyester resin.

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