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VENTED PLASTISOL COATED CONTAINER

Filed Sept. 12, 1960

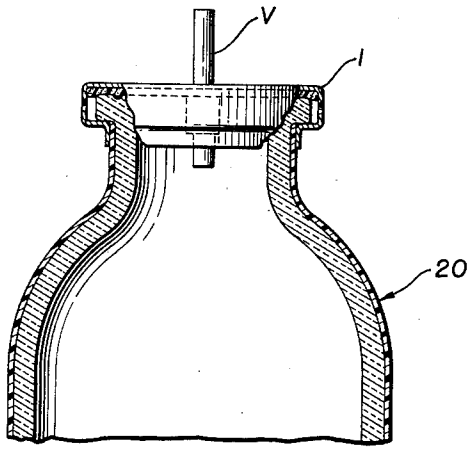


FIG. 1

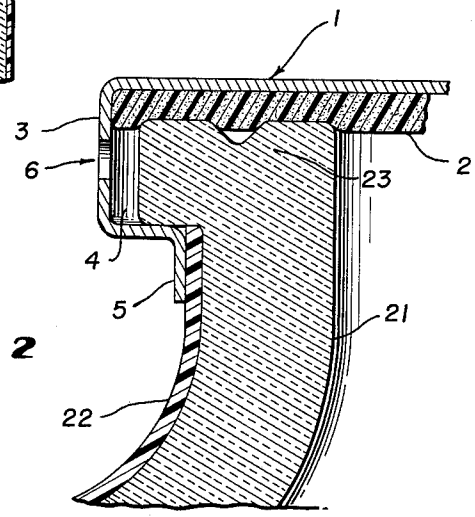


FIG. 2

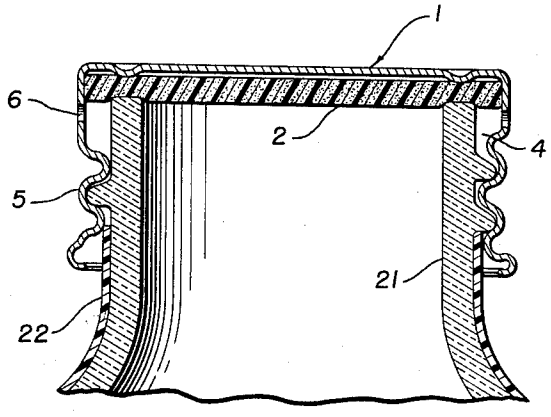


FIG. 3

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VENTED PLASTISOL COATED CONTAINER

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The present invention relates to the art of sealing and, more particularly, to a vented cap for use with plastisol coated containers.

In recent years there has come into widespread use the so-called aerosol container consisting of a top or cap and a glass bottle which has been primed and dipped in a plastisol and containing a product, such as an insecticide, plus a gaseous propellant for expelling the product from the container upon opening a suitable valve means located in said top. The cushioning effect of the plastic coating greatly minimizes the instance of breakage of the glass inner container when dropped. However, under very great shock the inner glass container can sometimes break. The plastic coating on such containers, however, even in the event of breakage due to extreme or abnormally heavy physical or thermal shock, is firmly adhered to the glass so that glass particles are held together by the plastic and dangerous scattering of glass particles is prevented. The plastic coating is strong and somewhat elastic and is usually not broken when the bottle is broken and, therefore, can swell under pressure in the bottle. It is a desirable feature that this pressure be vented quickly in an automatic way without tearing or rupturing the plastic coating.

Accordingly, it is an object of this invention to provide a container cap which will automatically vent a plastisol coated container or bottle in the event the inner bottle is broken.

It is a further object of this invention to provide a vented cap and plastic-coated bottle combination whereby the pressure is automatically vented if the bottle is broken and the plastic coating remains intact.

These and other objects are attained by the novel vented plastisol container of this invention which comprises a bottle coated with a plastisol except for the uppermost neck portion thereof. The container is then sealed with a cap having the usual gasket and a series of small vent holes positioned just below the lower edge of the gasket and opposite the uncoated neck portion. In the event the inner bottle breaks, fractures will occur in the glass extending up to the uncoated or plastisol-free neck portion. These fractures or fissures in the glass will provide channels for the pressurized gas in the container to pass through and ultimately reach the opening in the cap and vent to the atmosphere.

The precise manner in which the present invention operates will become apparent to those skilled in the art from the following description when taken in conjunction with the following drawings wherein:

FIGURE 1 is a cross-sectional view of one embodiment of the vented plastisol container of the present invention.

FIGURE 2 is a fragmentary cross-sectional view of the container of FIGURE 1, and

FIGURE 3 is similar to FIGURE 2 except a threaded cap is used.

Referring to the drawings, FIGURE 1 illustrates the novel vented cap **1** of the present invention in combination with a plastisol-coated bottle **20** having a conventional valve V for effecting the release of the pressured contents therein.

The manner in which the novel construction of this invention operates is shown in greater detail in FIGURE 2, in which cap **1**, coated with gasket **2**, has a skirt **3** having a lower edge or engaging area **5** which firmly

contacts the glass bottle **21** coated with plastisol **22**. In the event the bottle **21** is broken, fissures or cracks will extend up the glass into the lip area **23** such that the pressured gas within bottle **21** will pass through area **23** into the annular space **4** and out through bent hole **6** into the atmosphere, thereby reducing the pressure on the plastisol, thereby venting the plastic coating or outer container so that it will not rupture as a result of expansion of the gaseous propellant.

From the foregoing description, it will be apparent that the applicant has devised a simple and yet effective means for venting a plastisol-coated bottle in the event the latter becomes broken. The above description is presented merely by way of illustration, and it is apparent to one skilled in the art that numerous modifications can be made without departing from the spirit of the present invention. For example, the inner bottle **21** has been described as being made of glass but it is evident that the invention is applicable to any fragile material such as a thin or brittle metal or a plastic other than glass, whether thermoplastic or thermosetting, which is subject to being broken when dropped or handled roughly.

One type of cap has been illustrated, but it will be evident that other types may be employed providing the relation of vent holes and engaging area is maintained. For example, the engaging area **5** of cap **1** can be threaded or beaded in nature, which are structures well-known in the art. Moreover, the gasket **2**, which is shown as covering the entire under-side of cap **1**, can consist of merely a ring member which engages only the upper surface of the bottle lip area **23**. In addition, the gasket can be thicker in cross-section provided the vent holes **6** are placed immediately below the gasket so as to provide a continuous passage for the pressurized gas to flow from the interior of the bottle through the cracked bottle lip area **23** and into annular passage **4**. Although the coating **22** for bottle **21** has been referred to as a plastisol, it is obvious that various well-known thermoplastic or thermosetting plastics can be employed for this purpose, such as rubber, polyvinyl chloride, polyvinyl acetate, polyvinylidene chloride and mixtures thereof plus suitable nonvolatile plasticizers and fillers.

Obviously, further modifications and variations of the invention as hereinbefore set forth can be made without departing from the spirit and scope thereof, and accordingly the patent shall cover all patentable novelty herein set forth, including equivalents thereof with reference being had to the following claims to indicate the scope of this invention.

I claim:

A vented cap for enclosing the lip and opening of a container, said container consisting of an inner fragile layer and an outer coating of plastic, comprising a rigid top having a depending skirt comprising an upper portion and a peripheral edge, said upper portion of said skirt being in lateral spaced relation to said lip and said edge firmly engaging in sealing relation said outer coating, a sealing gasket in contact with said top and lip, and said upper portion of said skirt having at least one opening therein.

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