Sept. 24, 1968 P. E. CAMPBELL 3,402,843

BOTTLES WITH PROTECTIVE CAPE OR COVER

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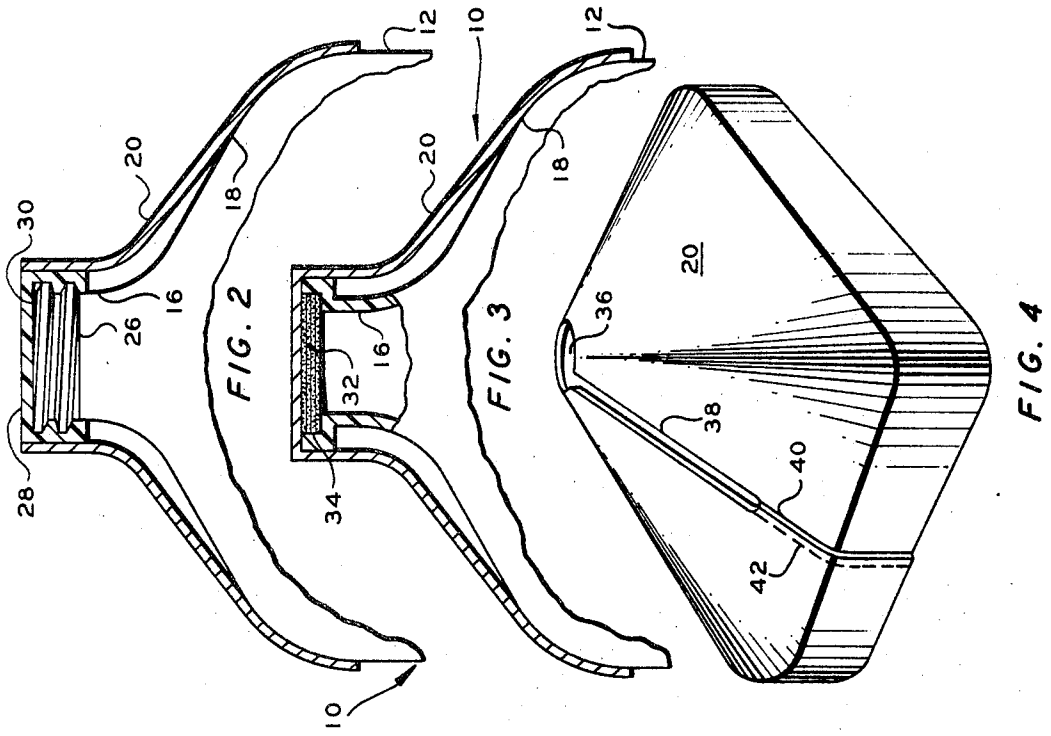


FIG. 2

FIG. 3

FIG. 4

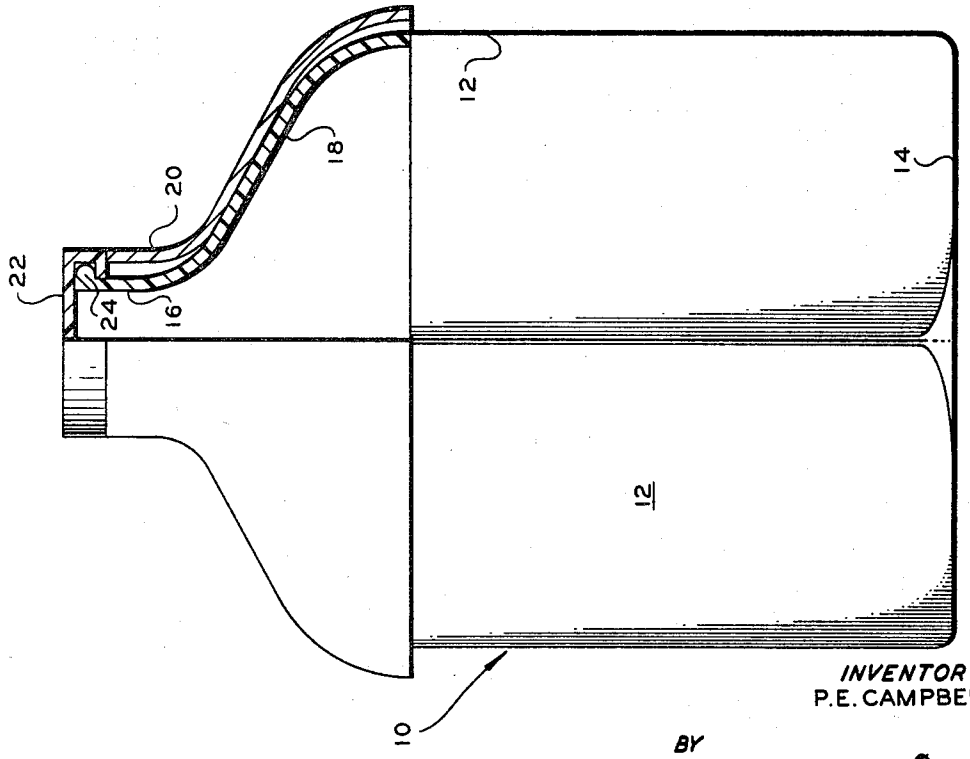


FIG. 1

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BOTTLES WITH PROTECTIVE CAPE OR COVER

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ABSTRACT OF THE DISCLOSURE

A cape or cover formed of a material which excludes ultraviolet light is applied on a bottle or similar container having a neck of restricted cross section joined to the upright wall of the bottle by an outwardly flared shoulder section, said bottle being formed of material which transmits ultraviolet light.

This invention relates to bottles, jugs, containers cartons, etc., having restricted necks or pouring spouts for storing and handling liquids affected by ultraviolet light.

It is conventional practice to store milk in various types of so-called bottles, which term includes jugs, cartons, and containers which have necks or pouring spouts of restricted cross section forming an outwardly flared shoulder which joins the neck or spout to the upright wall of the bottle. It has been found that bottles of this nature which are formed of clear glass or unpigmented polyolefins, such as polyethylene and polypropylene, allow transmission of ultraviolet light from the overhead fluorescent lighting while in display cases in markets and that milk, especially fortified milk, is deleteriously affected by ultraviolet light. It has been found that ultraviolet light imparts an off-taste to milk when exposed for substantial periods of time to such light. Coloring of the bottles to avoid this problem is feasible but it is undesirable to the dairy industry for aesthetic and practical reasons.

This invention provides a solution to the problem of deterioration of milk in bottles or containers which transmit ultraviolet or other harmful light or radiation light.

Accordingly, it is an object of the invention to provide a bottle for storage of liquids deleteriously affected by ultraviolet light which prevents the transmission of harmful light rays without affecting the aesthetic and practical values of the bottle or container. Another object is to provide a bottle of clear or translucent material which prevents the transmission of ultraviolet and other light from an overhead light source into the interior of the bottle. Other objects of the invention will become apparent to one skilled in the art upon consideration of the accompanying disclosure.

A broad aspect of the invention comprises a bottle, or similar container for liquid, which has a neck or pouring spout of restricted cross section joined to the upright wall of the bottle by an outwardly flared shoulder section having a cape or cover substantially completely covering or overlying the shoulder section. The cape or cover may loosely cover the shoulder section or it may be fitted tightly thereto. One embodiment of the invention comprises a bottle of the character described having a top closure of the plug, snap, or screw type to which is attached a depending skirt shaped and sized to cover the shoulder to its juncture with the sidewall of the bottle. In bottles or jugs provided with a handle extending across the shoulder thereof, the cape or cover is generally slotted so that the handle extends or protrudes thru the cover for facility in handling.

The cape or cover is preferably formed of aluminum foil (or other soft metal foil), paper, cellulose acetate, saran, polyvinylchloride, or other plastic compounds having the ability to protect the bottle contents from ultraviolet light. Laminates of paper, metal foil, and the other cover materials may also be utilized to form the cape or cover. Metal foil is particularly well suited for cover material because of its appearance, its capacity for being shaped to the shoulder of the bottle, and its light and heat reflecting capacity. A liquid coating material which dries or cures to a non-sticky coating is also within the scope of the invention.

Bottle materials to which the invention is applicable include clear or translucent glass and polyolefins, particularly those comprising essentially polyethylene and polypropylene. However, the invention is applicable to any bottle material which transmits ultraviolet light.

A more complete understanding of the invention may be had by reference to the accompanying schematic drawing of which FIGURE 1 is an elevational view in partial section of a bottle illustrating one embodiment of the invention; FIGURE 2 is a fragmentary view in elevation of another bottle illustrating the invention; FIGURE 3 is a fragmentary view of a similar bottle to that of FIGURE 2; and FIGURE 4 is a pictorial view of a cape or cover for a bottle.

Referring to FIGURE 1, bottle **10** comprises upright wall(s) **12** having a generally flat base **14** as a bottom closure and a neck section or pouring spout **16** which is joined to wall **12** by an outwardly diverging shoulder section **18**. A cape or cover **20** extends from the upper end of neck **16** to an area adjacent or on the juncture of shoulder section **18** with wall **12**. Cover **20** is a skirt, cape, or coating which protects the neck and shoulder section of the bottle to exclude penetration of ultraviolet light. This cover may be made to closely fit the shoulder and neck sections of the bottle or it may loosely cover the required portion of the bottle.

Bottle **10** is provided with a snap closure **22** which snaps over a bead, rim, or lip **24**. It is also feasible to form cape or cover **20** integral with snap cap **22**, depending therefrom over the neck and shoulder section of the bottle after the cover is snapped into place. The wall **12** of the bottle may be circular (cylindrical) or in any form having the cross section of a regular polygon or a rectangle.

Referring to FIGURE 2, the neck of bottle **10** terminates in a threaded head section **26** which is closed or capped by a threaded cap **28** to form a seal between the underside of cap **28** and the top of the bottle along line **30**. Cape **20** depends from the outer cylindrical periphery of closure **28** and loosely covers the upper end of the bottle down to the upright sidewall **12**. Cape **20** may be formed of readily deformable material, such as metal foil, which deforms to the contour of the bottle neck and shoulder section at the time of sealing the bottle with cap **28** or in handling or transport from the dairy to the market display case or thereafter. It is also feasible to form cape or cover **20** to extend over and cover cap **28**, this embodiment of the cape being shown in the following figure.

Referring to FIGURE 3, the upper end of neck **16** terminates in a head arranged for a plug or disc cap **32** made of waxed cardboard or other material which forms a seal with the upright wall **34** of the opening in the top of the bottle. Cape **20** extends over plug **32** and covers the upper end of the bottle down to the upright wall **12**. This cape may loosely or tightly fit the upper end of the bottle.

Referring to FIGURE 4, cape or cover **20** is provided with an axial opening **36** for passing over the neck or head of the bottle and may be provided with a slot **38** to accommodate the protruding handle of a bottle provided with the same. Cape **20** may be formed of a continuous sheet

or in evolution form with a seam **40** providing an overlap **42** to facilitate applying the cover or cape to the bottle, particularly when opening **36** is smaller than the head of the neck and it is desired to fit opening **36** snugly to the neck of the bottle just below the head thereof. Obviously cape **20** can be made to conform loosely or tightly to the contour of the shoulder and neck of the bottle.

Certain modifications of the invention will become apparent to those skilled in the art and the illustrative details disclosed are not to be construed as imposing unnecessary limitations on the invention.

I claim:

1. A cape for a bottle having a neck of restricted cross section joined to the upright sidewall of the bottle by a shoulder section, said cape having an axial opening for passing over the neck of the bottle, an outwardly flared section for covering said shoulder section, and a flange section depending from the outer periphery of said outwardly flared section for covering the upper portion of said upright sidewall, said cape being formed of material which excludes ultraviolet light.

2. The cape of claim **1** including a radially extending opening for a handle in said outwardly flared section intermediate said axial opening and said flange section.

3. The cape of claim **2** in evolution form having an overlapping seam along the radial line of the handle opening.

4. The cape of claim **1** formed of metal foil in combination with a bottle formed of plastic which transmits ultraviolet light.

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