United States Patent

Moran

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[54] BOTTLE CAP AND COVER

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[52] **U.S. Cl.**.....**222/484,** 222/546, 222/562

[51] **Int. Cl.**.....**B67d 3/00**

[58] **Field of Search**.....222/542, 545, 546, 562, 563, 222/498, 502, 447, 498, 543, 541, 484, 572, 575, 564; 141/300; 215/73, 41; 220/38.5, 30.5

[56] **References Cited**

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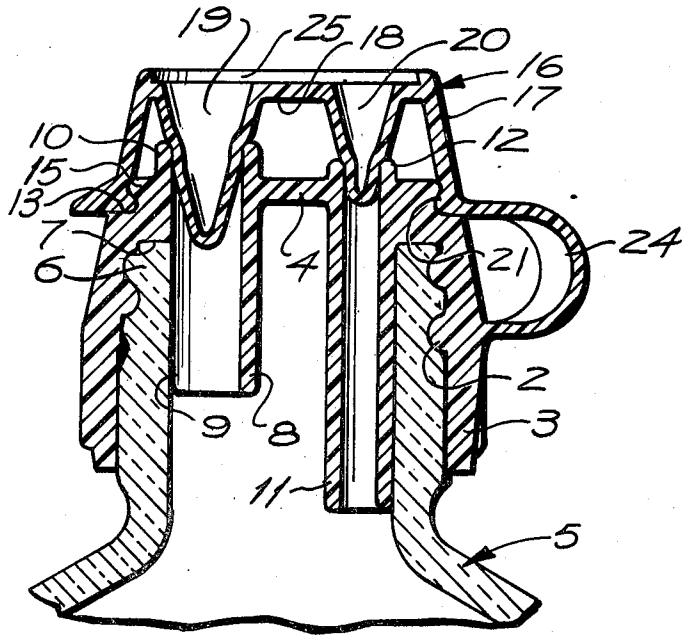
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[57] **ABSTRACT**

A bottle cap and cover for bottles, the cap being internally formed for attachment to a bottle and having a pouring tube and an air inlet tube, both protruding slightly above the end of the cap; the end of the cap having an interrupted rim; the cover being attached to the cap by a flexible web to permit the cover to be folded over the cap to occupy a predetermined position thereof; the cover having an interrupted internal flange for engaging the interrupted rim of the cap and portions manually engageable to aid in separating the cap from the bottle; the cap also having a pair of stopper cones adapted to be received in the pouring tube and air inlet tube.

4 Claims, 6 Drawing Figures



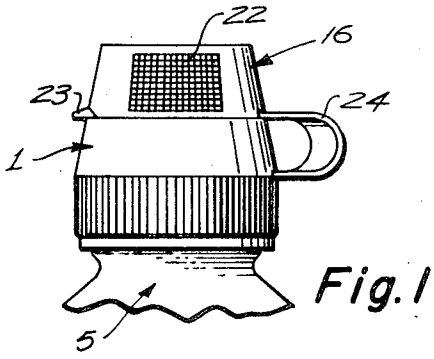


Fig. 1

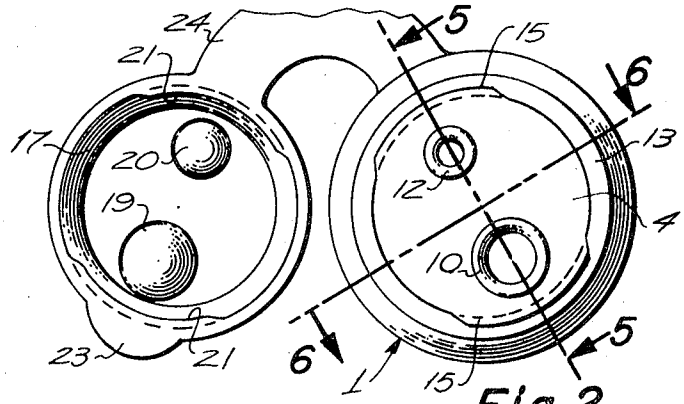


Fig. 2

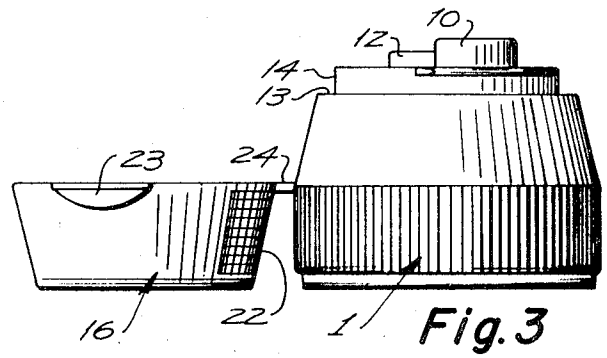


Fig. 3

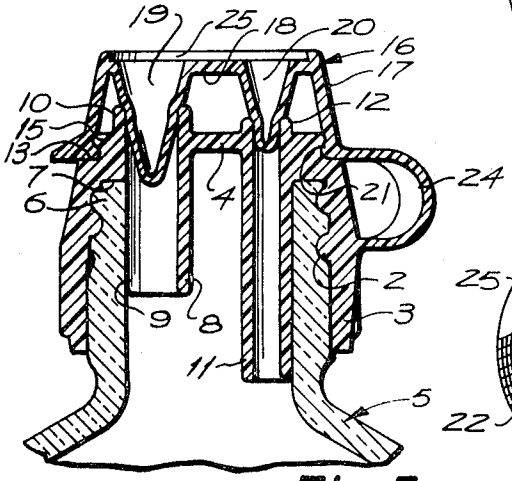


Fig. 5

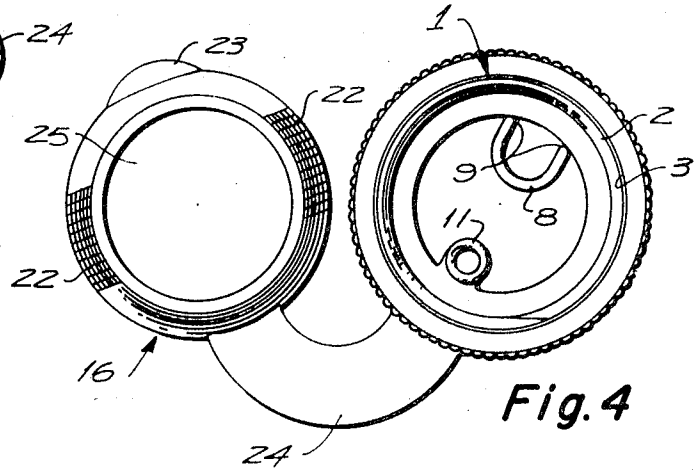


Fig. 4

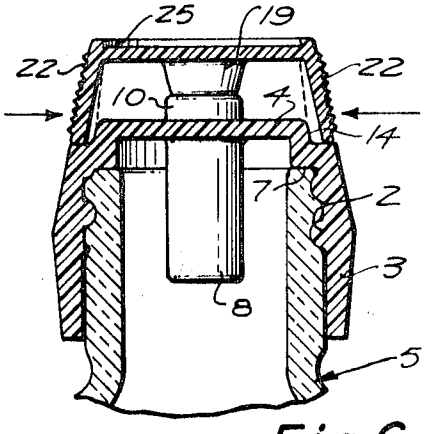


Fig. 6

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BOTTLE CAP AND COVER

SUMMARY OF THE INVENTION

The invention is summarized in the following objects:

First, to provide a bottle cap and cover which are permanently attached to each other and may be molded in a single piece.

Second, to provide a bottle cap and cover wherein the cap is provided with a pour tube and an air inlet located adjacent the walls of a bottle mouth on which the cap is mounted to facilitate pouring the contents of the bottle without gurgling.

Third, to provide a bottle cap and cover, as indicated in the preceding object, wherein the cover is provided with a pair of stopper cones for the cap outlet tubes, and is attached to the cap by a web which serves to orient the cover with respect to the cap in order to align the stopper cones with respect to the outlet tubes.

Fourth, to provide a bottle cap and cover which incorporates a novel means of securing the cover in its closed position over the cap; the securing means being manually distortable to facilitate removal of the cover.

DESCRIPTION OF THE DRAWINGS

FIG. 1 is a side view of the bottle cap and cover, shown in its closed position upon a bottle, the bottle being shown fragmentarily.

FIG. 2 is an enlarged plan view of the bottle cap and cover, the cover being shown in its fully opened position.

FIG. 3 is a side view thereof.

FIG. 4 is a bottom view thereof.

FIG. 5 is a sectional view of the bottle cap and cover, shown in closed position, and secured to the mouth of a bottle, the section being taken in the plane 5—5 of FIG. 2.

FIG. 6 is a fragmentary sectional view, taken through 6—6 of FIG. 2, with the cover in its closed position.

The bottle cap and cover includes a cap member 1, molded of plastic material, having a limited degree of elasticity. The cap member includes an internally screw-threaded socket 2, which includes an annular skirt 3, extending below the screw threads. The upper end of the cap member is closed by a membrane or wall 4.

The cap member is intended to be mounted on a bottle 5, having an externally screw-threaded mouth portion 6. The upper extremity of the mouth portion 6 sealingly engages an annular seat 7.

The membrane 4 is pierced by an integral pouring tube 8, which extends into the socket 2. The portion of the tube within the socket is provided with a side opening 9; that is, this portion of the tube is essentially U-shaped in cross section so that the side margins of the opening 9 may sealingly engage the interior wall of the mouth portion 6. The pouring tube 8 projects a slight distance above the membrane 4 and forms an annular lip 10, which also serves as a closure seat.

Also piercing the closure membrane 4 is an air inlet tube 11, which projects into the socket 2 a greater distance than the pouring tube 8. The air inlet tube 11 is smaller in diameter than the pouring tube 8. The air inlet tube projects above the membrane 4 a slight distance and forms an annular lip 12, similar to the lip 10, and like the lip 10 also forms a closure seat.

The closure membrane 4 is bordered by an annular upwardly directed shoulder 13, and extends above the shoulder to form a rim 14 at the upper extremity of which is an interrupted external flange 15; that is, the flange 15 is divided into two diametrically disposed portions.

The bottle cap and cover also includes a cover member 16, made of the same material as the cap member 1, and if desired, may be joined integrally therewith as will be described hereinafter. The cover member 16 includes an annular side wall 17, which is preferably tapered, the upper margins of the side walls are joined by an end membrane 18.

Formed in the membrane 18 is a pair of hollow depending cones, one dimensioned to provide a pouring tube sealing cone 19, the other dimensioned to provide an air inlet tube sealing cone 20. The cones are adapted to enter the respective tubes and sealingly engage the annular lips 10 and 12, respectively.

The lower margin of the side walls 17 is provided with an interrupted internal flange 21, divided into two diametrically disposed portions, positioned so as to cooperate with the external flange portions 15 so that the cover member 16 may be snapped onto the cap member 1. In the regions free of the flanges 15 and 21, the cover member is provided with external knurled areas 22 so that these portions may be pressed radially inward toward each other, causing the internal flange portions 21 to move radially outward and clearing or partially clearing the internal flange portions 15 so as to facilitate removal of the cover member.

In addition, or alternatively, the cover member 16 may have at its lower margin a radially outwardly extending lifting lip 23.

The cap member and cover member are joined integrally by a connecting web 24, which if desired, may form a 90° arc. If desired, however, the web may be straight. In either case, the web places the cover member in predetermined orientation with respect to the cap member so that when the cover member is folded over the cap member, the sealing cones 19 and 20 register with the annular lips 10 and 12.

The cap and cover therefor are utilized as follows:

The cap member is screwed onto a bottle until the seat 7 is engaged. The connecting web 24 is folded to bring the cones 19 and 20 into registry with the lips 10 and 12, respectively, and are pressed there against, causing the internal flange portions 21 to snap over the internal flange portions 15. The sealing cones may be sufficiently yieldable that when the flanges interengage, the cones undergo some distortion.

When it is desired to remove the cover member, the knurled areas 22 are pressed inward, reducing or eliminating the force required to separate the flanges.

If desired, the upper surface of the cover member 16 may be recessed slightly so as to receive a cover disk 25.

It will be noted, that by reason of the U-shaped construction of the inner portion of the pouring tube, all of the contents may be drained from the bottle; that is, fluid flowing on the confronting portion of the bottle mouth will discharge through the tube.

An advantage gained by providing an arcuate web 24 is that when the cover is removed, it occupies a position at one side of the cap so as not to obstruct the view of the user when pouring from the cap. Also, the outer end of the air inlet tube is conveniently located so that one can readily stop flow by placing his finger over the air inlet tube.

The present embodiments of this invention are to be considered in all respects as illustrative and not restrictive.

I claim:

1. A bottle cap and cover therefor, comprising:

a. a cap member including a screw-threaded socket to fit the mouth portion of a mating bottle, a membrane closing the socket and sealingly engageable with the outer extremity of the bottle mouth, and a pouring tube and air inlet tube piercing the membrane, to provide open outer ends, a portion of the pouring tube extending into the bottle mouth;

b. the portion of the pouring tube extending into the bottle mouth being of U-shape cross section and sealingly engageable with the confronting surface of the bottle mouth whereby fluid flowing on the confronting surface of the bottle mouth is guided into the pouring tube;

c. the outer end of the pouring tube projecting beyond the membrane to form a pouring lip;

d. and a cover member including a socket fitting over the outer end of the cap member, a pair of cone elements in the socket for sealing engagement with the pouring tube and air inlet tube;

e. said cap member having an external flange and said cover member having an internal flange, the flanges interengaging to retain the cover member on the cap member.

2. A bottle cap and cover therefor, as defined in claim 1, wherein:

a. a foldable web integrally joins the cover member to the cap member and causes the cover member to occupy a predetermined orientation with respect to the cap member when joined thereto, whereby the sealing cone elements are disposed in alignment with their respective tubes.

3. A bottle cap and cover therefor, as defined in claim 1, wherein:

a. at least the interengaging rib of the cap member is diametrically interrupted to form rib sections;

b. and the cover member is provided with diametrically disposed manually engageable portions for distorting the cover member;

c. and a foldable web integrally joins the cover member to the cap member to cause the manually engageable portions to occupy the regions between the rib sections.

4. A bottle cap and cover therefor, as defined in claim 2, wherein:

a. the foldable web is curved to place its ends at approximately 90° whereby when the web is unfolded, the cover member is disposed laterally of the cap member and minimizes interference with the cap member when pouring therefrom.

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