

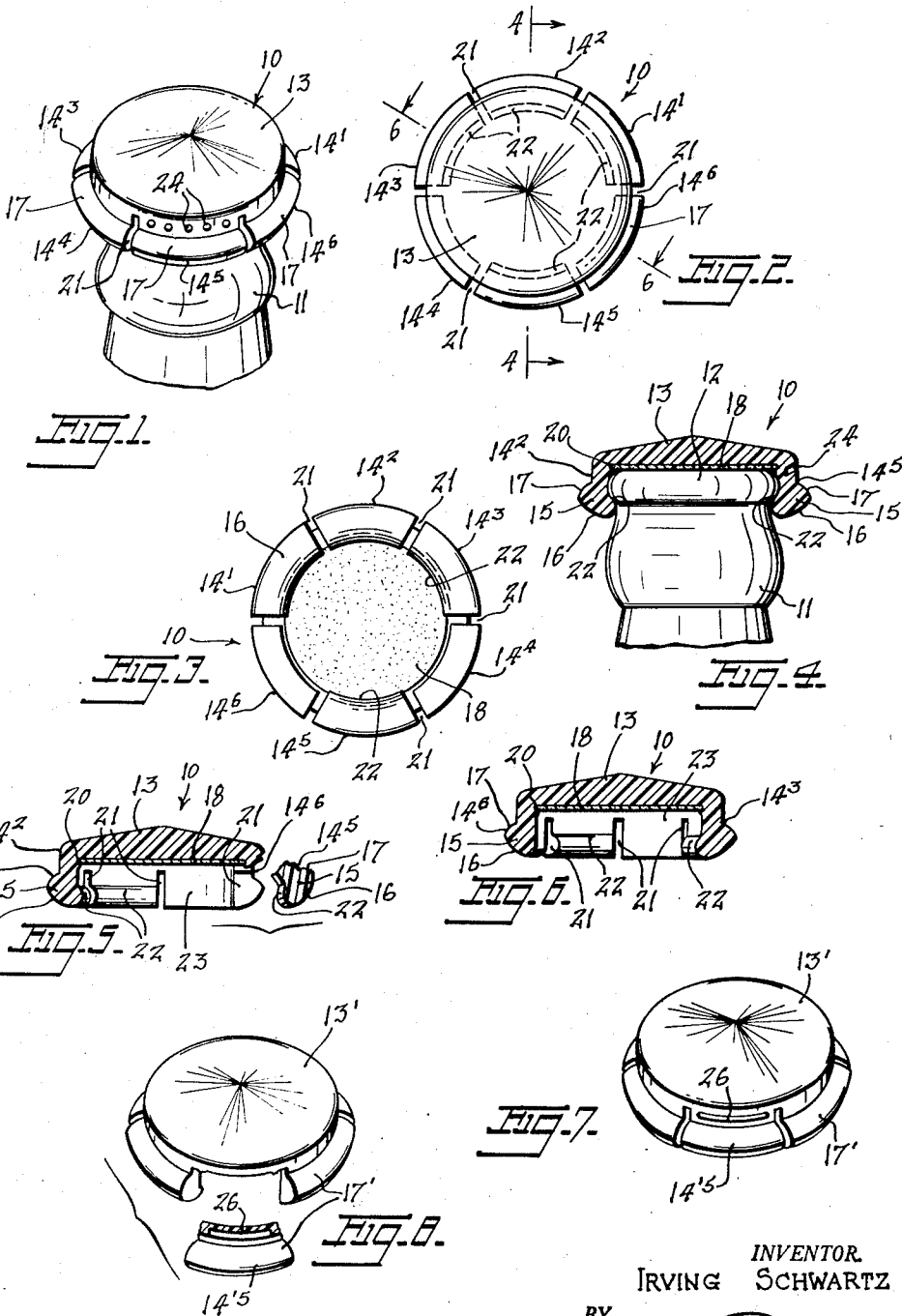
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DISPOSABLE BOTTLE CAP

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DISPOSABLE BOTTLE CAP

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This invention relates to container closures and more particularly to a bottle cap of the crown type.

The principal object of the invention is the provision of a disposable bottle cap of the crown type which does not require forceful deformation thereof to seal a bottle but rather is self sealing.

Another object of the invention is to construct and arrange the bottle cap in such manner that the same is readily removable from a bottle initially and thereafter is capable of being snapped on to and off a bottle to seal and open the bottle with a simple twist of the fingers.

Still another object of the invention is to construct the bottle cap of the invention in such manner that the same effectively seals a bottle when replaced thereon after having been removed initially.

A further object of the invention is to construct the bottle cap in such manner that the same is capable of being manufactured at a cost which is sufficiently low to permit of the same being disposed of along with the bottle with which it is associated.

For further comprehension of the invention and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

On the accompanying drawings forming a material part of this disclosure:

Fig. 1 is a perspective view of the bottle cap of the invention in place on a bottle which is shown only fragmentarily.

Fig. 2 is a plan view of the bottle cap.

Fig. 3 is a view of the bottle cap from the underside thereof.

Fig. 4 is a sectional view of the bottle cap on line 4—4 of Fig. 2.

Fig. 5 is a sectional view similar to Fig. 4 but illustrating a purposely weakened portion of the cap in broken away condition.

Fig. 6 is a sectional view of the cap on line 6—6 of Fig. 2.

Fig. 7 is a perspective view similar to Fig. 1 but illustrates a modified construction.

Fig. 8 is a perspective view similar to Fig. 7 but illustrates a purposely weakened portion of the modified cap in broken away condition.

Referring first to Figs. 1 to 6 the bottle cap of the invention, generally designated 10, is shown as applied to a bottle 11 having at the apex of its neck a peripheral bead 12. The bottle cap 10 comprises a circular sheet 13 of plastic material having a skirt 14 which extends downward around the bead 12 of bottle 11. As shown, skirt 14 is provided with an outwardly thickened lower portion 15 and under edge 16 thereof is bevelled upwardly and outwardly to provide a surface against which a person's thumb or other finger can push as will hereinafter be described. The upper edge of thickened portion is bevelled downwardly and outwardly to form a leverage surface 17.

Located beneath sheet 13 is a cork or other gasket 18 whose peripheral edge is engaged in an annular groove 20 provided in the inner face of skirt 14.

By means of slits or slots 21 provided therein, skirt 14 is divided into six equisized segments which, for convenience of description are lettered in clockwise succession, 14, 14¹, 14², 14³, 14⁴, 14⁵ and 14⁶. The segments 14¹, 14², and 14³ which extend over one half of the peripheral extent of the skirt are provided each with an inturned, bevelled flange or lip 22 which as shown in Fig. 4 is

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adapted to engage the underside of the bead 12 of bottle 11. Skirt segments 14⁴ and 14⁶ which it will be noted in Figs. 2 and 3, are located adjacent the flanged segments 14¹, and 14² are not provided with internal flanges like the latter, but rather have a smooth inner face 23 which snugly abuts the bead 12 of the bottle. Skirt segment 14⁵ which is located directly opposite flanged segment 14² and between the unflanged segments 14⁴ and 14⁶, is provided with a flange or lip 22 like the former.

The construction thus far described is such that to seal bottle 11 with cap 10 all that is required is to place the same atop the bottle and to apply sufficient force thereto to flex the skirt segments 14¹, 14², 14³, and 14⁵ outwardly enough for the flanges 22 of the same to bypass bead 12 and become engaged therebeneath. Obviously when said flanges or lips are engaged beneath said bead the gasket 18 is held tightly against the mouth of the bottle and seals the latter.

In order to facilitate the removal and subsequent reapplication of cap 10 without affecting the bottle sealing qualities thereof, the flanged segment 14⁵ is weakened so that it can be bent upward and broken away from the remainder of the cap manually. To this end, a series of holes 24 are provided therein adjacent the sheet 13, said holes however not extending completely through the material of the segment, however, but only sufficiently to permit manual breaking of the segment along the line of the holes as shown in Fig. 5.

It is to be noted, that when the skirt segment 14⁵ is broken away, the three remaining lips or flanges 22, those extending from skirt segments 14¹, 14² and 14³ are located all to one side of a center line theoretically extended through cap 10 and that on the other side of said line nothing engages beneath the bead 12 of the bottle. However, the smooth inner faces 23 of skirt segments 14⁴ and 14⁶ abut the bead 12 and prevent the disengagement of the three flanges 22 from beneath the bead. Therefore, the removal of skirt segment 14⁵ does not impair the sealing qualities of the cap.

The removal of skirt section 14⁵ facilitates the manual removal of cap 10 from bottle 11 in that the pressure of a thumb or other finger placed against the bevelled under-edge 16 of skirt segment 14⁴, for example, does not have to be sufficient to snap one or more flanges 22 from beneath bead 12 but only sufficient to slide the smooth inner faces 23 of segments 14⁴ and 14⁶ upward on said bead. Similarly, when it is desired to reengage cap 10 on the bottle only a slight amount of force is required to slide the faces 23 downward in contact with bead 12.

It is to be noted that the engagement of the peripheral edge of gasket 18 in annular groove 20 maintains the former concealed when the skirt segment is broken away.

Referring now to Figs. 7 and 8 wherein like parts are given the same reference numerals as hereinabove but with a prime added, there is illustrated a slightly modified form of the invention. As shown the holes 24 described above are replaced by a groove 26 which serves the same purpose in substantially the same manner.

This form of the invention is included to illustrate that any means for weakening the removable skirt segment may be provided.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

Having thus described my invention, what I claim as new and desire to secure by United States Letters Patent is:

1. A cap for bottles having a peripheral bead surrounding the neck opening thereof, comprising a plastic sheet for covering the neck opening and having a skirt surrounding said bead and divided peripherally into six segments, a lip for extension beneath the bead on each of three successive skirt segments and another on the skirt segment diametrically opposed to the center one of said three segments, the segments on each side of the diametrically opposed segments having smooth cylindrical inner surfaces, and means weakening the said diametrically opposed skirt segment whereby the same may be broken off.

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2. A cap for bottles having a peripheral bead surrounding the neck opening thereof comprising a plastic sheet for covering the neck opening and having a skirt surrounding said bead and divided peripherally into six segments, a lip for extension beneath the bead on each of three successive skirt segments, a lip on the skirt segment diametrically opposed to the center one of said three segments, the segments on each side of the diametrically opposed segments having smooth cylindrical inner surfaces, means for weakening the said diametrically opposed skirt segment whereby the same may be broken off, a peripheral groove in the inner face of said skirt above the divisions thereof, and a gasket having its edges engaged in said groove.

3. A cap for bottles having a peripheral bead surrounding the neck opening thereof comprising a plastic sheet for covering the neck opening and having a skirt surrounding said bead and divided peripherally into six segments, a lip for extension beneath the bead on each of three successive skirt segments, a lip on the skirt segment diametrically opposed to the center one of said three segments, the segments on each side of the diametrically opposed segments having smooth cylindrical inner surfaces, means for weakening the said diametrically opposed skirt segment whereby the same may be broken off, a peripheral groove in the inner face of said skirt above the divisions thereof, a gasket having its edges engaged

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in said groove, and a thickened portion at the lower end of each skirt segment having bevelled upper and lower edges to provide finger grips.

4. The combination according to claim 2 wherein said weakening means comprises a line of holes extending across the skirt segment, said holes not extending completely through the material of the segment.

5. The combination according to claim 3 wherein said weakening means comprises a line of holes extending across the skirt segment, said holes not extending completely through the material of the segment.

6. The combination according to claim 2, wherein said weakening means comprises a groove extending substantially across said segment.

7. The combination according to claim 3 wherein said weakening means comprises a groove extending substantially across said segment.

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