Aug. 19, 1947. G. H. HUTAFF, JR 2,426,102

CAP FOR GLASS BOTTLES

Filed Feb. 7, 1946

FIG. 1.

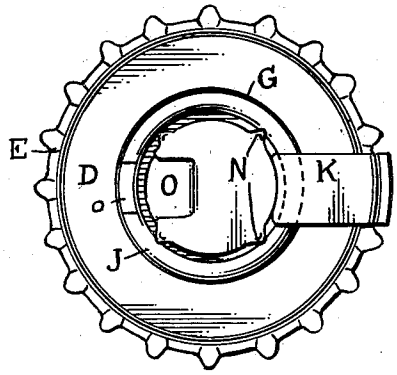


FIG. 3.

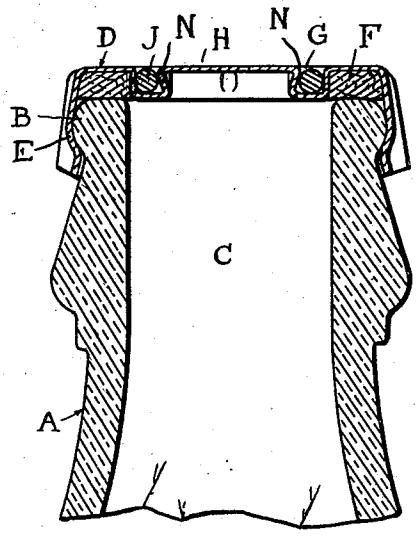


FIG. 2.

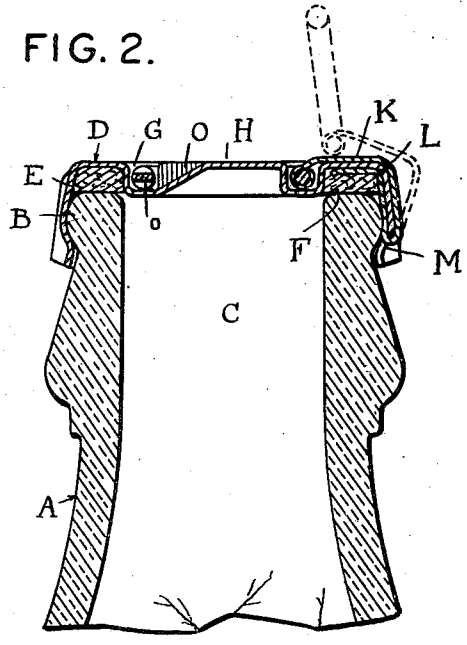
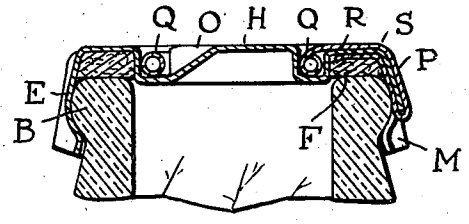


FIG. 4.



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Patented Aug. 19, 1947 2,426,102

UNITED STATES PATENT OFFICE

2,426,102

CAP FOR GLASS BOTTLES

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Application February 7, 1946, Serial No. 646,127

9 Claims. (Cl. 215—46)

1

This invention relates to improvements in caps, commonly styled crown caps, for bottles and has for its object the provision of a cap of that character provided with pull means for readily removing the cap by hand, eliminating the necessity for using a special—and at times not readily accessible—device for releasing the cap from the bottle.

Difficulties facing the adoption and use of a cap formed with detaching means as a part carried thereby, are first that the cost of additional metal required is prohibitive, having in mind the trifling cost of the usual cap without a pull attachment, second the suggested improvements have added projections or extensions substantially changing the shape or dimensions of the cap and rendering the same non-conformable to the usual cap-feeding and applying mechanisms; and the pull member (as a steel wire or relatively hard metal ring) has not been disposed relative to the glass mouth or neck of the bottle to avoid cracking or shattering of the glass under the blows of the capping machine in applying the cap to the bottle transmitted through said ring or the like to said glass.

The object of the present invention is to furnish a cap with a pull remover substantially contained within the area of the normal cap to obviate projections that might interfere with the normal feeding and application of the cap to the bottle, the pull device and normal cap being formed with correlated and interfitting projections to confine and hold the pull (ring or equivalent) closely nested in the cap, centrally thereof, a line with the space within the bottle neck and away from alignment with the top of said neck so that any blow on the ring or pull will not be directly transmitted to the glass mouth of the bottle.

Preferred embodiments of the invention, possessing the desirable characteristics stated, comprise the interfitting of the pull ring, or equivalent, with a grooved portion of the cap, adapted to align with the opening in the neck of the bottle, and the ring or pull having a formation adapted to interlock with the grooved portion of the cap to prevent accidental elevation or displacement of the ring relative to the upper surface of the cap but enabling the ring to be raised from the cap to be manually removed, the grooved portion of the cap, or seat for the ring, having a formation enabling the ring to be readily disengaged from its interlocking or holding engagement, as by the finger nail of the user or equivalent device, and elevated from its seat.

The said preferred embodiments of the invention are illustrated in the accompanying drawings

2

forming part hereof and the details of structure, intended operation and function thereof will be readily understood and appreciated from an inspection of said drawings when viewed in the light of the following specific description thereof.

In the drawings:

Figure 1 is a top plan view of the improved cap.

Figure 2 is a longitudinal sectional view of an ordinary glass bottle neck in universal use for soft drinks or beverages, with the improved cap applied thereon.

Figure 3 is a view similar to Figure 2, the section being taken on a line at right angles to the showing of Figure 2.

Figure 4 is a sectional view illustrating a somewhat different embodiment of the invention involving an integral formation of the pull ring and its anchoring portion, flush with or below the plane of, the top surface of the cap.

Referring more specifically to the drawings, wherein like reference numerals designate the same parts in the several views, A represents the glass neck of the bottle having the customary lip or bead B at its mouth portion and C the throat or space within the neck.

The cap represented at D is generally of the type commonly employed in the art, in that it possesses a depending flange E, designed to be crimped around the bead B to hold the cap securely placed in binding relation to a packing and sealing cork or the like F, in the form of a flat ring disposed over the corresponding end surface of the bottle. Ordinarily, the packing F is in the nature of a disc extending entirely across the under surface of the normal cap, but in this instance I have formed the same with a cut-out central portion to accommodate a pull ring J, located below the upper surface of the cap D. This seat is in the nature of a circular groove G formed by correspondingly bending the metal of the cap downwardly and then upwardly as at H to approximately the plane of the cap D. The normal cap portion D is formed of thin, relatively soft metal as tin, and the ring J being made separately therefrom may be formed of more rigid and stronger metal, as steel wire, to give the correspondingly added strength to the pull.

The ring J is connected to one end of a similarly strong strip of metal K, extending out from the ring and around one edge L of the cap D, then downwardly flat against the underlying flange E, which latter at this point is smooth or not fluted or crimped (permitted by a slight cutting away of the bottom portion of the flange as at M) through which an inturned terminal por-

tion of the strip K passes to the inside of the flange and up under the cork packing ring F to overlie said packing and bind or anchor the end of the strip between the cap D and said packing. This will constitute a strong hold between the cap and the pull ring, the latter when released and elevated from its seat being, of course, adapted to be engaged by the finger of the user, or other implement, passed therethrough in pulling the cap from the bottle.

The ring is normally flush with the cap to present no elevations above the normal cap, and to confine the ring against accidental displacement or springing upwardly from the cap, the same is introduced into its seat or grooved portion G under sufficient pressure to lock the ring beneath or against small projections N projecting from the inner wall of the grooved portion and adapted to overhang the adjacent edge portions of the pull ring when the latter is sprung into its seat to have the projections engage over the ring as clearly depicted in Figure 3. These little projections for locking the pull ring in its seat are preferably formed in the inner wall of the seat because of greater facility in releasing the ring when it is desired to elevate the same from the top of the cap, the central or raised portion H of the cap having an inclined indentation or depression O leading radially thereof into the seat G so that a finger or equivalent implement may be introduced thereinto and engage the ring in lifting the same from its seat G and forcing the ring beyond the frictional-holding or locking projections N, the ring being flattened at this point, as indicated at *o*, to facilitate engagement by the finger nail or equivalent.

It will be appreciated that irrespective of the relatively rigid metal character of the pull ring J, the same is entirely located away from the glass bottle formation on which the ring is mounted so as not to interfere with the customary give or cushioning action of the normal tin cap D under the blow or force of cap-applying machinery, and furthermore, preventing any influence of the steel or hard metal ring on any part of the glass body of the bottle to crack or shatter the same inasmuch as the blows or pressure on the ring will be dissipated or compensated for by the mere depression of the central portion of the cap in which the ring is seated into the space or throat C in the bottle neck.

In Figure 4, it will be seen that instead of having the anchoring portion of the pull hinged to or looped around the ring—which latter may be locally reduced in diameter for that purpose—the anchoring portion P and ring Q are of integral formation, or secured together so as to occupy the same horizontal plane, which will insure all parts of the pull being located with all portions substantially flush or below the plane of the upper surface of the cap, the latter being slightly depressed as at R to receive the connecting strip S between the ring and end of the anchoring portion.

I claim:

1. A bottle cap for a glass bottle having a neck portion with a fill and discharge passage and a beaded mouth portion, said cap having a flange adapted to be crimped around the beaded mouth of a glass bottle, the cap having a circular groove in its central portion adapted to align with the passage in the neck of the bottle away from alignment with the glass neck of the bottle, in combination with a rigid metal pull ring anchored to the cap adapted to normally seat in said groove of the cap out of line with the glass of the bottle neck and to be projected therefrom when engaged to remove the cap from a bottle.

2. A bottle cap of the type having a flange adapted to be crimped around the beaded mouth of a bottle, the cap having a depressed circular groove therein providing opposite confining walls located inwardly of the outer edge of the cap adapted to constitute a seat for a pull ring, in combination with said pull ring anchored to the cap and adapted to normally seat in said groove of the cap below the plane of the upper surface of the cap with both the inner and outer edges of the ring confined by the opposite walls of the groove portion and to be projected therefrom and engaged to remove the cap from the bottle.

3. A bottle cap of the type having a flange adapted to be crimped around the beaded mouth of a bottle, the cap having a depressed circular groove therein adapted to constitute a seat for a pull ring, in combination with said pull ring anchored to the cap and adapted to normally seat in said groove of the cap below the plane of the upper surface of the cap and to be projected therefrom and engaged to remove the cap from the bottle, the cap having a supplemental depressed portion opening to the ring-receiving groove constituting an entrance for engagement of the ring in withdrawing the same from its seat.

4. A bottle cap of the type having a flange adapted to be crimped around the beaded mouth of a bottle, the cap having a depressed circular groove formed therein adapted to constitute a seat for a pull ring, in combination with said pull ring anchored to the cap and adapted to normally seat in said groove of the cap below the plane of the upper surface of the cap and to be projected therefrom and engaged to remove the cap from the bottle, the cap having a supplemental depressed portion opening to the ring-receiving groove constituting an entrance for engagement of the ring in withdrawing the same from its seat, the ring being flat opposite the end of said depressed portion to facilitate engagement of the ring in withdrawing the same from its seat.

5. A bottle cap for a glass bottle having a neck portion with a fill and discharge passage and a beaded mouth portion, said cap having a flange adapted to be crimped around the beaded mouth of a glass bottle, the cap having a circular groove in its central portion adapted to align with the passage in the neck of the bottle away from alignment with the glass neck of the bottle, in combination with a rigid metal pull ring anchored to the cap adapted to normally seat in said groove of the cap out of line with the glass of the bottle neck and to be projected therefrom when engaged to remove the cap from a bottle, the ring and a wall of its seating groove being formed and correlated to interlock and normally retain the ring to its seat.

6. A bottle cap of the type having a flange adapted to be crimped around the beaded mouth of a bottle, the cap having a depressed circular groove formed therein providing opposite confining walls located inwardly of the outer edge of the cap adapted to constitute a seat for a pull ring, in combination with said pull ring anchored to the cap and adapted to normally seat in said groove of the cap below the plane of the upper surface of the cap with both the inner and outer edges of the ring confined by the opposite walls of the groove portion and to be projected therefrom and engaged to remove the cap from the

bottle, the ring and a wall of its seating groove being formed and correlated to interlock and normally retain the ring to its seat.

7. A bottle cap of the type having a flange adapted to be crimped around the beaded mouth of a bottle, the cap having a depressed circular groove formed therein adapted to constitute a seat for a pull ring, in combination with said pull ring anchored to the cap and adapted to normally seat in said groove of the cap below the plane of the upper surface of the cap and to be projected therefrom and engaged to remove the cap from the bottle, the cap having a supplemental depressed portion opening to the ring-receiving groove constituting an entrance for engagement of the ring in withdrawing the same from its seat, the ring and wall of its seat groove being formed and correlated to interlock and normally retain the ring to its seat.

8. A bottle cap of the type having a flange adapted to be crimped around the beaded mouth of a bottle, the cap having a depressed circular groove formed therein adapted to constitute a seat for a pull ring, in combination with said pull ring anchored to the cap and adapted to normally seat in said groove of the cap below the plane of the upper surface of the cap and to be projected therefrom and engaged to remove the cap from the bottle, the cap having a supplement depressed portion opening to the ring-receiving groove constituting an entrance for engagement

of the ring in withdrawing the same from its seat, the ring being flat opposite the end of said depressed portion to facilitate engagement of the ring in withdrawing the same from its seat, the ring and a wall of its seating groove being formed and correlated to interlock and normally retain the ring to its seat.

9. A bottle cap of the type having a flange adapted to be crimped around the beaded mouth of a bottle, the cap having a circular depressed groove therein adapted to constitute a seat for a pull ring, in combination with said pull ring anchored to the cap and adapted to normally seat in said groove of the cap below the plane of the upper surface of the cap and to be projected therefrom and engaged to remove the cap from the bottle, the anchoring portion of the pull ring comprising a strip projected from one edge of the ring in the plane of the upper surface of the ring whereby to avoid projections above the normal plane of the top of the cap.

GEORGE H. HUTAFF, JR.

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