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B. M. HARVEY ET AL

2,337,241

BOTTLE CAP

Filed May 27, 1941

Fig. 1.

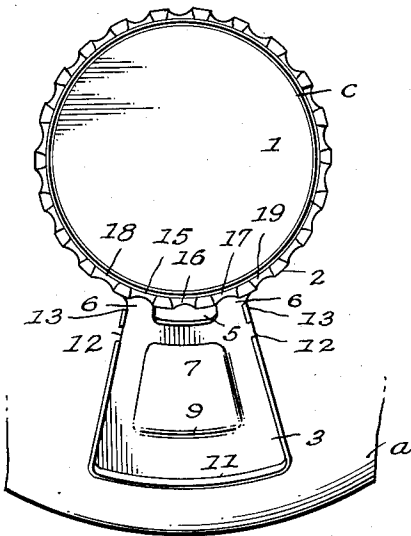


Fig. 3.

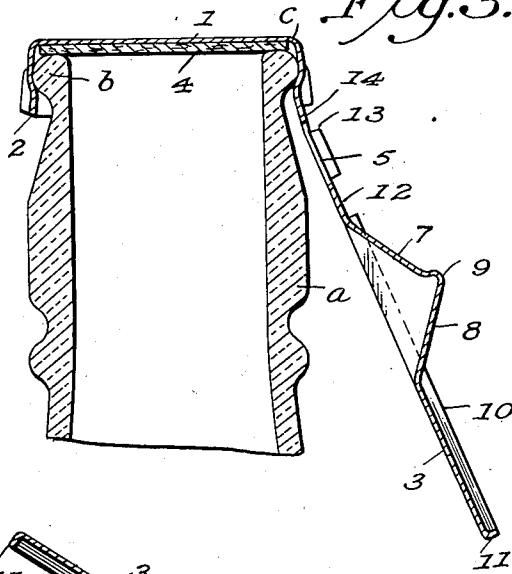


Fig. 2.

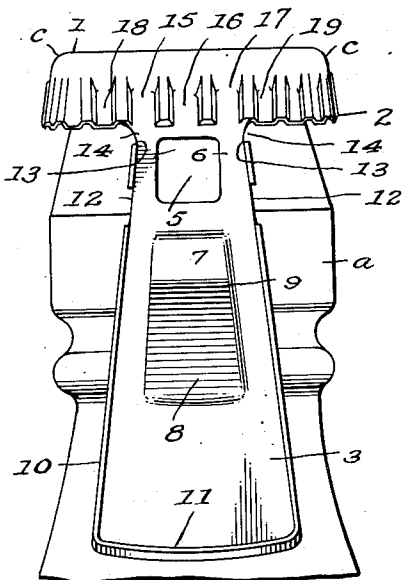


Fig. 4.

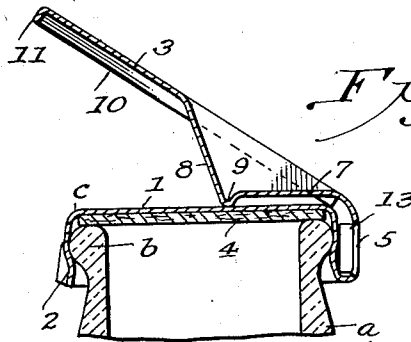
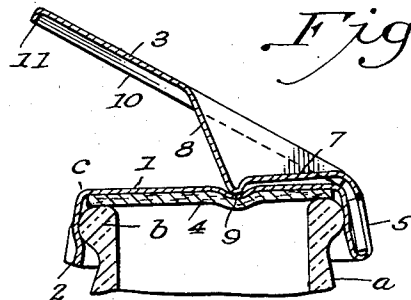


Fig. 5.



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BOTTLE CAP

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2 Claims. (Cl. 215-46)

Our invention relates to new and useful improvements in bottle caps of the crown type and has for its principal object the provision of a cap of the character described which may be readily removed from the bottle mouth without the use of the usual form of cap remover or other implement.

A further object of the invention resides in the provision of a cap of the character described provided with an integral finger-engaging portion depending from the bottom edge of the cap flange and when the cap is in position on the bottle mouth adapted to be engaged by the fingers and bent to be used as a lever for deforming the top and flange of the cap whereby the cap may be readily removed from the bottle mouth.

Another object of the invention consists in the provision of a cap of the character described having a finger-engaging portion normally depending from the bottom edge of the cap flange and parallel with the neck of the bottle, a projection being formed thereon and adapted when the finger-engaging portion is bent upwardly to overlie and engage the top of the cap and act as a fulcrum on manipulation of the finger-engaging portion to deform the cap top and flange to permit the ready removal of the cap from the bottle mouth.

Still a further object of the invention consists in the provision of a cap of the character described having an integral finger-engaging portion normally depending from the bottom edge of the cap flange, the finger-engaging portion being adapted to be used as a lever for removing the cap from the bottle mouth and having a reinforcing edge flange and weakened portions, the edge flange giving strength to the finger-engaging portion while the weakened portions permit bending into the desired positions on manipulation for removing the cap.

With the above and other objects in view, which will appear as the description proceeds, our invention consists in the novel details of construction, and arrangement of parts, described in the following specification and illustrated in the accompanying drawing, and while we have illustrated and described the preferred embodiments of the invention, as they now appear to us, it will be understood that such changes may be made as will fall within the scope of the appended claims.

In the drawing:

Fig. 1 is a top plan of the cap applied to the mouth of a bottle.

Fig. 2 is a side elevation showing the cap applied to a bottle mouth.

Fig. 3 is a fragmentary transverse vertical section through the cap and a portion of the bottle mouth with the finger-engaging portion positioned to be engaged by the fingers.

Fig. 4 is a view similar to Fig. 3 showing the finger-engaging portion bent into raised position for use as a lever in removing the cap; and

Fig. 5 is a view similar to Fig. 4 after initial pressure has been applied and the top and flange of the cap distorted.

In using the well-known forms of bottle caps it is the usual custom to use a cap remover or other implement for removing the cap from the bottle mouth. Often these cap removers become misplaced or are not available for other reasons thereby causing considerable inconvenience. As stated above it is an object of our invention to provide a cap which may be removed from the bottle mouth without the use of the well-known form or forms of cap remover. The cap is provided with an integral finger-engaging portion which may be manipulated for use as a lever to deform the cap top and flange and permit the easy removal of the cap from the bottle mouth.

In the drawing *a* indicates a portion of a bottle neck, *b* the beaded mouth portion thereof, and *c* indicates generally the bottle cap adapted to be placed on the beaded mouth portion of the bottle as is quite clearly illustrated in the drawing. The bottle cap is formed of usual material, relatively thin metal, and includes the top portion 1, depending corrugated flange 2 and finger-engaging portion 3. A cork disc 4 is inserted within the cap, beneath the top portion 1 and within the confines of the flange 2, in the usual manner, for sealing purposes. The finger-engaging portion 3 is provided with an opening 5, the upper edge of which is substantially on a line with the bottom edge of the flange 2, as is illustrated more particularly in Fig. 2 of the drawing, and this opening is positioned between the longitudinal edges of the finger-engaging portion to provide the relatively narrow strips 6 for a purpose which will be later brought out. A projection is pressed outwardly from the finger-engaging member 3 to provide the oppositely inclined surfaces 7 and 8 and transversely extending bead or shoulder 9 which will engage the top of the cap as shown more particularly in Figs. 4 and 5 of the drawing, when the finger-engaging portion is bent upwardly to be used as a lever in removing the cap. Edges of the finger-engag-

ing member 3 are bent upwardly to provide reinforcing flanges 10 along longitudinal edges thereof and the reinforcing flange 11 along the bottom edge. Notches 12 are formed in the flanges 10 to permit easy bending at these points as will be later brought out. The upper ends 13, of the flanges 10, terminate short of the bottom edge of the flange 2 to permit ready bending of the member 3 at the points 14.

As shown more particularly in Fig. 2 of the drawing the finger-engaging portion or member 3 where it is formed with the flange 2 is of a width corresponding substantially to the width of three corrugations of the flange shown at 15, 16 and 17.

From the above detailed description it is thought that the construction of our improved form of cap will be clearly understood. The finger-engaging portion or member 3, when the cap is applied to the bottle mouth, preferably is positioned to contact with the neck of the bottle or slightly spaced therefrom. In Fig. 3 of the drawing we have illustrated the finger-engaging portion or member 3 bent slightly from the bottle neck and when it is desired to remove the cap the portion or member will be bent upwardly into the position shown more particularly in Fig. 4 of the drawing with the bead or shoulder 9 contacting with the top of the cap and the inclined surface 7 positioned parallel with the top of the cap. The finger-engaging portion will extend at the angle shown and on pressing downwardly on the same the top of the cap and flange will be distorted as shown in Fig. 5 and a further pressure will remove the cap from the bottle mouth. The flange of the cap will be distorted a distance of substantially five of the corrugations, including the corrugations 18 and 19 beyond the corrugations 15 and 17 respectively. This is a sufficient distance to deform the flange to release the same from the beaded mouth and permit easy removal of the cap. When the member or portion 3 is swung outwardly and upwardly it will bend at the points indicated at 14 and as there are relatively narrow strips between the opening 5 and the longitudinal edges of the member this bending takes place without undue resistance. At the same time the notches 12 in the turned-up flanges 10 permit ready bending at these points. The up-turned edges forming the flanges 10 and 11 naturally reinforce the member 3 and give sufficient strength thereto for manipulation, as has been brought out. The

bead or shoulder 9 engages the top of the cap inwardly about two-fifths of its diameter and within the circumference of the bottle mouth. When the finger-engaging portion or lever is bent into the position shown in Figs. 4 and 5 the portions of the flange 10, adjacent the edge of the cap are received in the corrugations of the cap flange and bear against the flange to aid in bending the same from the bottle mouth as will be apparent.

Having fully described our invention what we claim as new and desire to secure by Letters Patent is:

1. A bottle cap having a depending securing flange to embrace a bottle mouth and a sheet metal lever having one end portion integral with said flange and an elongated continuation thereof, said continuation having opposite side edge portions connected by an intermediate web, adapted to be projected over said cap to present an operating member to be engaged by the hand to press the same towards the cap, in the removal operation, a part of the web of said elongated continuation intermediate the side edge portions of the same being bellied to project towards the cap and constitute a fulcrum to contact the cap in said removal operation, said bellied portion possessing opposite side walls adjoining the said side edge portions and rendering said fulcrum stable in directions laterally of the lever.

2. A bottle cap having a depending securing flange to embrace a bottle mouth and a sheet metal lever having one end portion integral with said flange and an elongated continuation thereof, said continuation having opposite side edge portions connected by an intermediate web, adapted to be projected over said cap to present an operating member to be engaged by the hand to press the same towards the cap, in the removal operation, a part of the web of said elongated continuation intermediate the side edge portions of the same being bellied to project towards the cap and constitute a fulcrum to contact the cap in said removal operation, said bellied portion possessing opposite side walls adjoining the said side edge portions and rendering said fulcrum stable in directions laterally of the lever, the bellied portion also possessing an inclined brace running from the fulcrum to the normal portion of the web of the elongated portion adjoining the bellied portion thereof.

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