Oct. 15, 1940. G. H. HUTAFF, JR 2,218,042

BOTTLE CAP

Filed Dec. 29, 1938

Fig. 1.

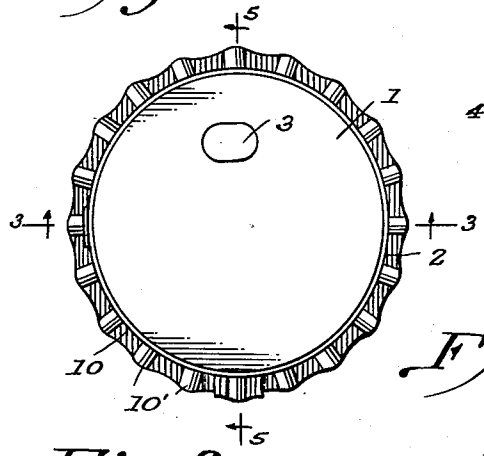


Fig. 3.

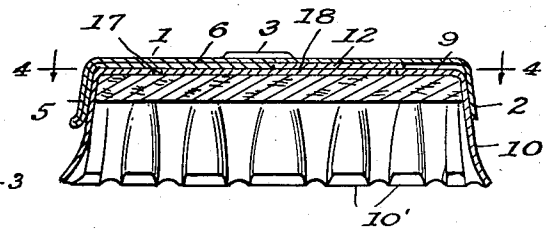


Fig. 4.

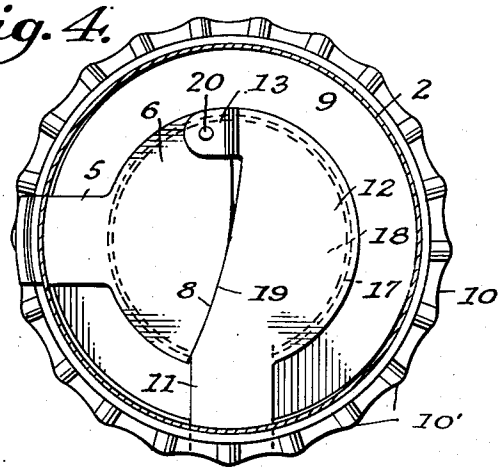


Fig. 2.

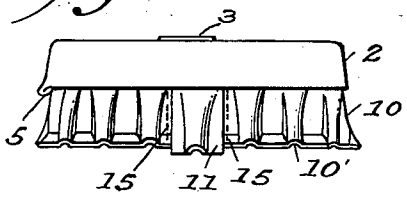


Fig. 7.

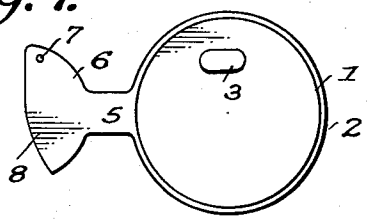
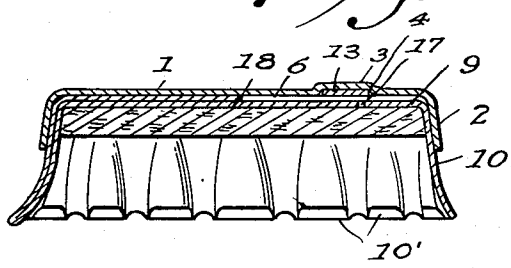


Fig. 5.



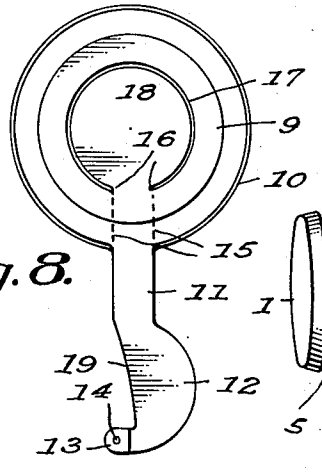
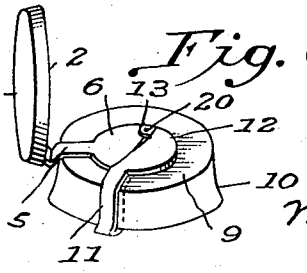


Fig. 8.

Fig. 6.



Inventor
GEORGE H. HUTAFF, JR.

Milans & Milans
Attorneys

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BOTTLE CAP

George H. Hutaff, Jr., Wilmington, N. C.

Application December 29, 1938, Serial No. 248,328

10 Claims. (Cl. 215—46)

My invention relates to new and useful improvements in bottle caps and more particularly to a bottle cap of the so-called crown type adapted to be applied to the mouth of a bottle or other receptacle.

In the past caps of this character have usually been removed by a bottle cap remover or other implement and often inconvenience is caused by misplacing of the cap remover or other implement or the desire to remove the cap at a place where such an implement is not available. It is the principal object of the present invention to provide a cap of the character described which may be readily removed without the use of the well-known form of bottle cap remover or other implement, and with this in mind the improved form of cap is formed of upper and lower portions which are normally nested so that the cap may be applied to the bottle or other receptacle by the well-known forms of capping machines, but in which the upper portion may be readily removed by engagement of the fingers of the operator and when so removed may be used as a lever for tearing a part of the lower portion of the cap so that it may be easily removed from the mouth of the bottle or other receptacle.

Another object of the invention resides in the provision of a cap of the character described in which means are provided for connecting the upper and lower portions of the cap, this connecting means normally being positioned between the cap portions and housed thereby.

With the above and other objects in view, which will appear as the description proceeds, my 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 I have illustrated and described the preferred embodiments of the invention, as they now appear to me, 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.

Fig. 2 is a side elevation.

Fig. 3 is a transverse vertical section on the line 3—3 of Fig. 1.

Fig. 4 is a horizontal section on the line 4—4 of Fig. 3, looking in the direction of the arrows.

Fig. 5 is a transverse vertical section on the line 5—5 of Fig. 1, looking in the direction of the arrows.

Fig. 6 is a diagrammatic view showing the manner of removing the cap.

Fig. 7 is a top plan of the upper cap portion before parts are bent into their final position; and

Fig. 8 is a top plan of the bottom cap portion before parts are bent into their final position and with the flange shown prior to corrugating.

In carrying out the invention the cap, as applied to the mouth of the bottle or other receptacle, is formed of upper and lower portions adapted to be normally nested and applied to the bottle or other receptacle by the usual well-known forms of capping machines and each of the portions includes a depending flange, the depending flange of the upper portion being of less height than the depending flange of the lower portion so that the bottom edge of the upper portion may be engaged for forcing the upper portion from its engagement with the lower portion to permit the same to be used as a lever to remove the cap. In the drawing the upper portion includes the top 1 and depending outwardly flared flange 2. A portion of the top 1 is pressed outwardly to form the upwardly extending projection 3 which in turn forms an inner recess 4, as shown more particularly in Fig. 5 of the drawing and the purpose of which will be presently brought out more in detail. Formed integral with the flange 2 is the relatively narrow strip 5 which terminates in the enlargement or semi-circular plate 6 having the perforation 7 which is more clearly illustrated in Fig. 7. The edge portion 8, of the semi-circular extension 6, is slightly inclined for a purpose which will be later apparent. Normally the relatively narrow strip 5 is bent inwardly into the upper cap portion, as shown more particularly in Fig. 3 of the drawing, so that a portion of the strip 5 as well as the enlarged head portion or plate 6 extends parallel with the inner face of the top 1.

The lower cap portion includes the top 9 having the depending flange 10 which is outwardly flared, as shown, and corrugated or crimped, as shown at 10' in the usual well-known manner. Formed as an integral part of the flange 10 is the relatively narrow strip 11 which terminates in the enlargement or substantially semi-circular plate portion 12 having at its outer end the ear 13 provided with the perforation 14. Extending vertically of the flange 10 and then horizontally for a portion of the top 9, in alignment with the outer edges of the strip 11, are the weakened lines 15 formed of perforations or indentations and these weakened lines extend inwardly over the top 9 to the ends 16 of a substantially circular slit or opening 17 providing the tab 18. Normally the relatively narrow strip 11 will be turned upwardly to extend parallel with the flange 10

and then inwardly to extend parallel with the top 9, the semi-circular enlargement or plate portion 12 extending over a portion of the tab 18 and over a portion of the slit or opening 17. In use the upper cap portion will be applied over the lower cap portion, in nested relation and when thus positioned a portion of the strip 5 of the upper cap portion, as well as the semi-circular enlargement or plate portion 6, will lie on a plane with the enlargement or plate portion 12 of the lower cap portion. The edge 19 of the enlargement or plate portion 12 will be cut, as shown more particularly in Figs. 4 and 8 of the drawing, to receive the edge portion 8 of the enlargement or plate 6. When thus positioned the lug or projection 13, of the plate or enlargement 12, will overlie the upper surface of the enlargement or plate 6 and the two members will be pivotally connected at 20 (Fig. 4) by a pin. When the parts are assembled the enlargement or plate portions 6 and 12 form a substantially circular plate which overlies the tab 18 and the slit or opening 17 to close the slit or opening. With the parts assembled as described the enlargements or plates 6 and 12, and portions of their connected strips 5 and 11, respectively, will be positioned between the cap portions and housed thereby. The recess 4, formed in the upper cap portion, will receive the lug or projection 13, as shown more particularly in Fig. 5 of the drawing.

As has been stated, when the parts are assembled the cap may be applied to the mouth of a bottle or other receptacle by the usual well-known forms of capping machines. When it is desired to remove the cap it is only necessary for the operator to press upwardly on the flange 2, of the upper cap portion, to raise the same into the position shown more particularly in Fig. 6 of the drawing. When thus positioned the plate or enlargement 6 may be swung on the pivot 20 so that the same will extend longitudinally with the plate or enlargement 12 and then by using the upper cap portion as a lever an upward pull is given which raises the enlargement or plate portion 12, of the lower cap portion, and this in turn pulling on the strip 11 will tear a strip from between the weakened lines 15 of the lower cap portion so that the tab 18 may be removed and this leaves a ring-like structure which may be easily removed from the mouth of the bottle or other receptacle.

In a cap constructed of the two nested portions when desired material of somewhat less weight or thickness may be used than is the case in caps formed of only one portion or thickness.

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

1. A cap of the character described including upper and lower portions, a member carried by each portion and normally positioned between the portions, and means for pivotally connecting the members for lateral swinging movement one relative to the other.

2. A cap of the character described including nested upper and lower portions, an inwardly directed member carried by each portion, said members being housed between the portions, and means for pivotally connecting the members for lateral swinging movement one relative to the other.

3. A cap of the character described including upper and lower portions each having a top and a depending flange, a member formed as a part of the flange of the upper portion and normally positioned to lie parallel with the inner face of the top of the upper portion, a member formed as a part of the flange of the lower member and positioned to normally extend parallel with the outer face of the lower portion, and means for connecting the members for lateral swinging movement one relative to the other.

4. A cap of the character described including upper and lower portions each having a top and a depending flange, a member formed as a part of the flange of the upper portion and normally positioned to lie parallel with the inner face of the top of the upper portion, a member formed as a part of the flange of the lower member and positioned to normally extend parallel with the outer face of the lower portion, and means for pivotally connecting the members for lateral swinging movement one relative to the other.

5. A cap of the character described including upper and lower portions each having a top and a depending flange, the lower portion having a cut-out part to form a tab and weakened lines leading therefrom, a member formed as a part of the flange of the upper portion and normally positioned to lie parallel with the inner face of the top of the upper portion, a member formed as a part of the flange of the lower member and having a part positioned to normally extend parallel with the outer face of the lower portion, and means for connecting the members for lateral swinging movement one relative to the other.

6. A cap of the character described including upper and lower portions each having a top and a depending flange, the lower portion having a cut-out part to form a tab and weakened lines leading therefrom, a member formed as a part of the flange of the upper portion and normally positioned to lie parallel with the inner face of the top of the upper portion, a member formed as a part of the flange of the lower member and having a part positioned to normally extend parallel with the outer face of the lower portion, and means for pivotally connecting the members for lateral swinging movement one relative to the other.

7. A cap of the character described including nested upper and lower portions adapted to be applied to the mouth of a receptacle as a unitary structure, each of said portions having a top and a depending flange, a member formed as a part of the flange of the upper portion and normally positioned to lie parallel with the inner face of the top of the upper portion, a member formed as a part of the flange of the lower portion and positioned to normally extend parallel with the outer face of the lower portion, and means for connecting the members whereby the upper portion may be raised and swung relative to the lower portion and used as a lever for removing the lower portion from the mouth of the receptacle.

8. A cap of the character described including nested upper and lower portions adapted to be applied to the mouth of a receptacle as a unitary structure, each of the portions having a top and a depending flange, the lower portion having a part adapted to be readily removed therefrom, a member formed as a part of the flange of the upper portion and normally positioned to lie parallel with the inner face of the top of the upper portion, a member formed as a part of the flange of the lower portion and positioned to normally extend parallel with the outer face of the top of lower portion, and means for pivotally

connecting the members whereby the upper portion may be raised and swung relative to the lower portion for use as a lever for removing the readily removable part from the lower portion and in turn permit removal of the lower portion from the mouth of the receptacle.

9. A cap of the character described adapted to be applied to the mouth of a receptacle including nested upper and lower portions, an inwardly directed member carried by each portion, said members being normally housed between the portions, and means for pivotally connecting the members, said connecting means permitting the upper portion to be raised and swung relative to the lower portion and used as a lever for removing the lower portion from the mouth of the receptacle.

10. A cap of the character described including nested upper and lower portions adapted to be applied to the mouth of a receptacle as a unitary structure, each of the portions having a top and a depending flange, the lower portion having an opening in its top forming a partially severed tab, a member formed as a part of the flange of the upper portion and normally positioned to lie parallel with the inner face of the top of the upper portion, a member formed as a part of the flange of the lower portion and positioned to normally extend parallel with the outer face of the top of the lower portion, said members in their normal positions overlying the partially severed tab and opening forming the same, and means for pivotally connecting the members whereby the upper portion may be raised and swung relative to the lower portion for use as a lever for tearing a part of the lower portion and removing the partially severed tab and in turn permit removal of the lower portion from the mouth of the receptacle.

GEORGE H. HUTAFF, JR.