Aug. 23, 1938. M. KRUEGER 2,127,776

BOTTLE CLOSURE

Original Filed Nov. 27, 1934

Fig. 1.

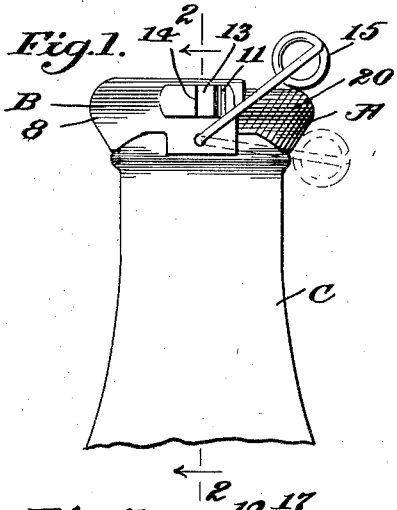


Fig. 2.

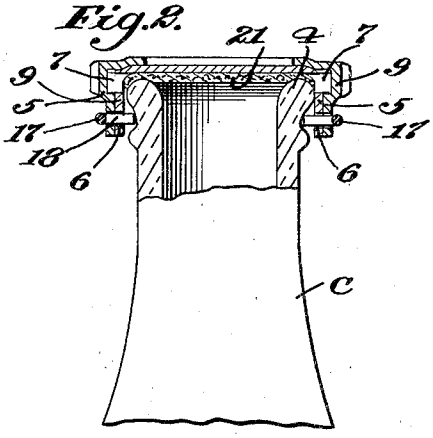


Fig. 3.

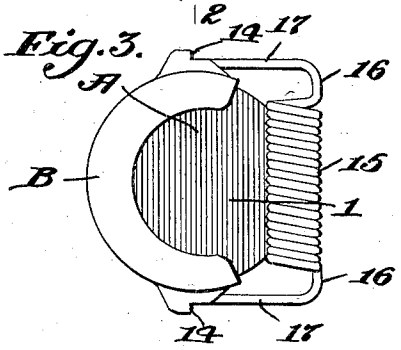


Fig. 4.

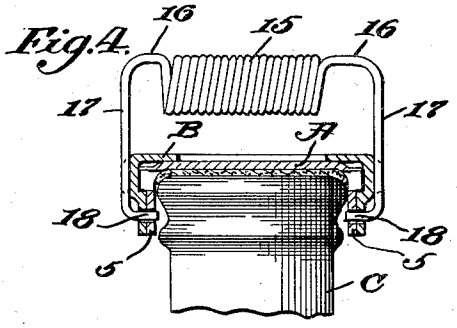


Fig. 5.

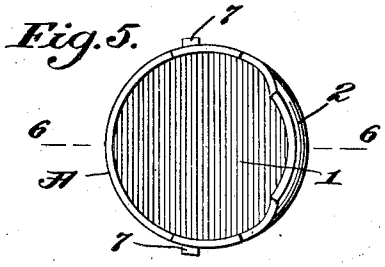


Fig. 7.

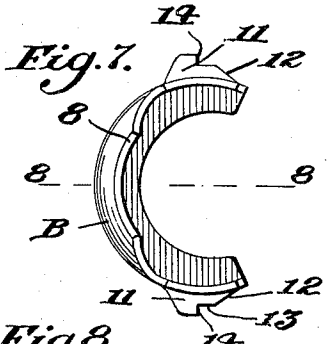


Fig. 6.

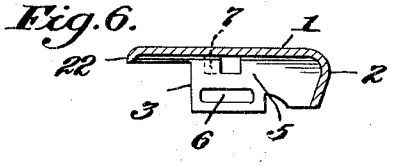
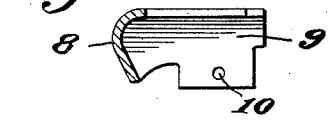


Fig. 8.



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BOTTLE CLOSURE

Max Krueger, Newark, N. J.

Application November 27, 1934, Serial No. 755,037
Renewed April 29, 1937

5 Claims. (Cl. 215—38)

This invention relates to bottle closures, and particularly to closures adapted for use as and to replace the usual crown type cap, in order to maintain the contents of the container in sealed condition.

Among the objects of the present invention is the production of a bottle or similar container closure, which will effectively seal the contents of the bottle or other container, but which may be readily removed as desired.

Other objects of the invention include the production of said container closures of relatively simple construction and economical character.

Still further objects and advantages will appear from the more detailed description given below, it being understood, however, that this more detailed description is given by way of illustration and explanation only, and not by way of limitation, since various changes therein may be made by those skilled in the art without departing from the scope and spirit of the present invention.

In connection with that more detailed description, there is shown in the accompanying drawing, in

Figure 1, a side elevational view of a bottle carrying the closure of the present invention; in

Figure 2, a vertical section on the line 2—2 of Figure 1; in

Figure 3, a top plan view of the closure; in

Figure 4, a vertical section on the line 2—2 of Figure 1, however showing the spring member in releasing position; in

Figure 5, one of the cap portions shown in obverse plan view; in

Figure 6, a section on the line 6—6 of Figure 5; in

Figure 7, an obverse plan view of the other cap member; and in

Figure 8, a vertical section on the line 8—8 of Figure 7.

In accordance with the present invention, a bottle closure is produced of relatively simple construction that may be readily applied to bottles to seal effectively the contents thereof, but which may be readily removed when it is desired to dispense the contents of such bottle or other type container. The closure is of such character that it readily adapts itself to variations in size of bottle mouths of this general type.

Closures produced in accordance with this invention, as particularly illustrated in the drawing, are desirably made of two members, an inner member A and an outer member B, the inner member being adapted to seat within the outer member. The inner member A may desirably take the form of a substantially circular plate 1 having a depending flange or wall 2, extending along the perimetric edge of the plate or disc 1, somewhat past the center line thereof as shown at 3. The portion 2 of this depending flange or wall is desirably given the general contour of the bead 4 of the bottle or container C. The portions 5 of the flange 2 are provided with a slot 6 for purposes hereinafter described, and with an outwardly projecting lug 7 desirably struck out from the body of the wall portion 5 itself, as shown in Figures 5 and 6. The purpose of this projection or lug 7, 7 is hereinafter set forth.

The outer portion B of the cap is generally semi-circular or arcuate in contour, as shown in Figures 7 and 8, and is provided with a depending flange or side wall 8 adapted to lie opposed to the depending flange or wall 2 of the inner portion A when the parts are assembled, the depending flange or wall 8 also desirably being shaped to the contour of the bottle bead 4. The side walls of the flange portion 8 along the center line of the outer portion B are desirably formed as straight side ears or projections 9, 9, similar in general size and shape to the projections 5, 5 of the inner cap portion A. These projections or flanges 9, 9 of the outer portion B of the cap are provided with an opening or perforation 10 in each such side wall or projection, adapted to aline with the slot 6 of the inner portion A of the cap when the parts are assembled together. Above the opening or perforation 10, in the projections 9, 9, lugs 11, 11 are struck out from the side wall portions of the outer cap portion B. These lugs 11, 11 have a contour similar to that shown in Figures 1 and 7, and are provided with cam surfaces 12, 12 leading to the seat portion 13 adjacent the stop 14. These struck out portions 11, 11 are adapted to lie adjacent to the projections 7, 7 on the inner cap portion A when the parts are assembled together, so that the lugs 7, 7 will project into the inner portions of the projections 11, 11 on the outer cap portion B whereby the two cap portions when assembled together form an associated entity. In this way, the inner cap portion A may be moved with respect to the outer cap portion B without actually separating the two cap portions, for the distance corresponding with the movement of the projections or lugs 7, 7 of the inner cap portion A, within the projections 11, 11 of the outer cap portion B.

In order to lock the bottle cap portions more particularly in position, spring pressed means are desirably utilized. For this purpose, a coiled spring 15 is utilized having the ends 16, 16 of the

spring member carried around at right angles to the axis of the coil to form arms 17, 17, the extreme ends of such arms 17, 17 being turned inwardly at right angles thereto, as shown at 18, 18, these ends 18, 18 passing through the openings or perforations 10, 10 of the outer cap portion B and the slots 6, 6 of the inner cap portion A. The ends 18, 18 of the spring member, therefore, form an additional means for holding the cap portions A and B in operative relation and permitting the cap portion A to move within the portion B. The side portions 17, 17 of the spring member are adapted to ride up on the cam surfaces 11, 11 upon the seat 13, adjacent the stop 14, as particularly shown in Figure 4 of the drawing, in order that the two cap portions A and B may be moved readily one within the other, to place the closure upon the bottle or other container mouth, or to remove the same therefrom. The stop 14 serves to prevent the spring member 15 from being moved to the other side of the outer cap portion B. After the closure has been placed in position on the bottle or other container, the spring member 15 is moved from its inoperative position, as shown in Figure 4, down past the intermediate position, as shown in Figure 1, until the coil spring 15 rides over the curved portion or shoulder 20 of the inner cap portion A, as particularly shown in Figure 1 in dotted lines, the spring member 15 then lying in a substantially horizontal position with the spring portion pressed securely against the outer flange or wall 2 of the inner cap portion A. In this position, the parts A and B are locked securely together and the closure is held rigidly in position on the bottle or other container mouth. As noted, when it is desired to remove the closure, the spring member 15 is carried over the shoulder 20 of the inner cap portion A, and up upon the seat 13 to release the cap portions and enable them to be moved one with respect to the other, so that the closure may be removed from the container.

Desirably the ends 18, 18 of the spring member are long enough so that when the latter is in the locking position, the ends 18, 18 contact the bottle just below the bead and hold the closure more firmly in position. When the spring member is moved to unlock the closure, the cam surfaces 11, 11 spread the arms 17, 17 and retract the ends 18, 18 from contact with the bottle.

Desirably a rubber or other disc 21 is provided, carried within the inner cap portion A, the flanged walls 2 and 5 thereof being ordinarily sufficient to hold this rubber disc in position, but if desired, the entire periphery of the inner cap portion A may also be given a slight flange 22 opposite to the depending wall 2 in order to hold the rubber disc in position. The rubber disc lies against the plate portion 1 of the cap member A, and is adapted to seat securely on the bead 4 of the bottle mouth, as particularly shown in Figure 2, so that a sealed joint is readily obtained which is both gas tight and liquid tight.

The assembly and utilization of the device is readily understood from the description given above. The parts are assembled with the inner portion A of the cap riding within the outer portion B, some separation of the two portions being permissible to an extent indicated by the movement of the lugs 7, 7 within the projections 11, 11. After the cap portions A and B have thus been assembled, the spring member 15 is placed in position with the ends 18, 18 thereof passing through the openings 10, 10 and slots 6, 6. The parts are thus held in operative relation. Movement of the spring pressed member into the vertical position, as shown in Figure 4 enables the parts to be separated sufficiently in order to remove the closure from or to place the closure upon a bottle or other similar type container. After the closure is placed in position, movement of the spring pressed member into horizontal position holds the closure securely in position on the bottle or other closure. The movement of the parts A and B is sufficient to enable the closure to adapt itself to variations in the size of container or bottle mouths. The structure is exceedingly simple and economical to manufacture, and there are no parts to break or to get out of order in the use of the device for which it is constructed.

Having thus set forth my invention, I claim:

1. A bottle closure comprising a two-piece cap having an inner portion and an outer portion slidably coacting to cover a bottle mouth, the cap portions having telescoping side walls adapted to engage the side walls of the bottle adjacent the bottle mouth, and cooperating means on said cap portions for holding said cap portions together and permitting reciprocating movement between said cap portions whereby the closure may be removed from and replaced on the bottle.

2. A bottle closure comprising a two-piece cap having an inner portion and an outer portion coacting to cover a bottle mouth, the cap portions having side walls adapted to engage the side walls of the bottle adjacent the bottle mouth, the cap portions having juxtapositioned ears formed on their said side walls, an outwardly directed projection on the ears of the inner cap portion, outwardly extending portions on the ears of the outer cap portion adjacent to and adapted to receive the projections on the ears of the inner cap portion, whereby the cap portions are held together.

3. A bottle closure comprising a two-piece cap having an inner portion and an outer portion coacting to cover a bottle mouth, the cap portions having side walls adapted to engage the side walls of the bottle adjacent the bottle mouth, the cap portions having juxtapositioned ears formed on their said side walls, an outwardly directed projection on the ears of the inner cap portion, outwardly extending portions on the ears of the outer cap portion adjacent to and adapted to receive the projections on the ears of the inner cap portion, the extending portions being of a size to permit the projection on the ears of the inner cap portion to move therein for a distance to permit separation of the cap portions sufficiently to seat said closure on a container mouth.

4. A bottle closure as set forth in claim 3, which includes spring-pressed means for urging said cap portions together.

5. A bottle closure comprising a two-piece cap having an inner portion and an outer portion slidably coacting to cover a bottle mouth, the cap portions having side walls adapted to engage the side walls of the bottle adjacent the bottle mouth, the cap portions having juxtapositioned ears provided with openings through said ears, and a spring member, the ends of the spring member passing through the openings in the ears to hold the parts together, the spring member engaging against a wall of one of the cap portions to hold the portions in operative position on a bottle mouth.

MAX KRUEGER.