June 6, 1950 S. BLOOMFIELD ET AL 2,510,459

BOTTLE CAP LIFTING AND RETAINING TOOL

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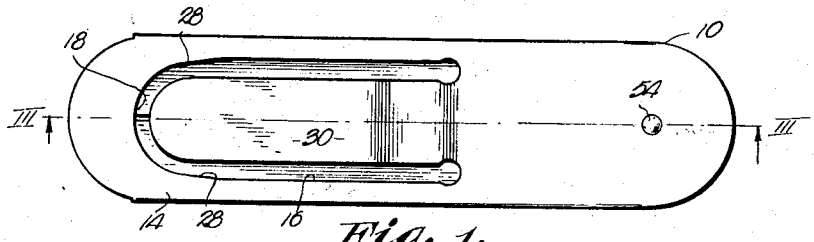


Fig. 1.

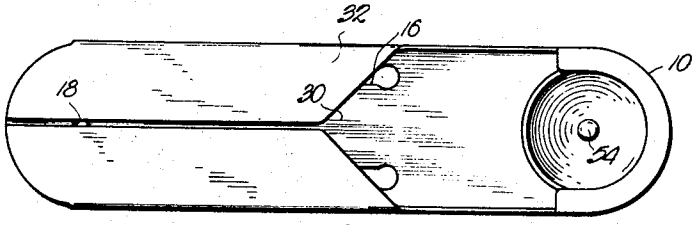


Fig. 2.

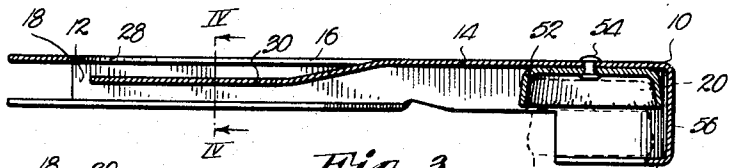


Fig. 3.

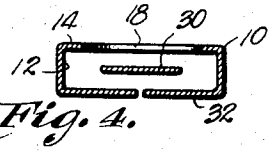


Fig. 4.

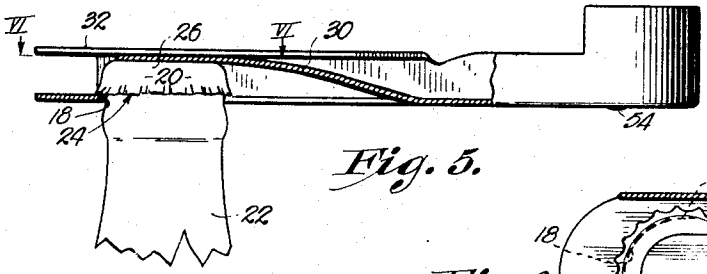


Fig. 5.

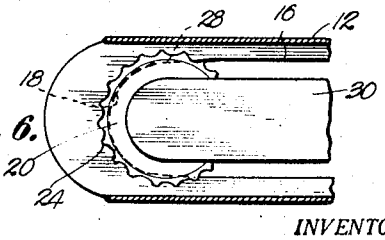


Fig. 6.

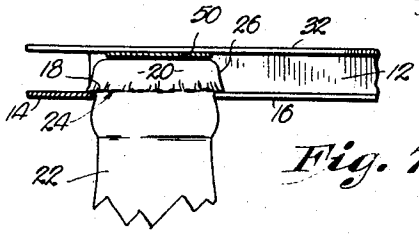


Fig. 7.

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BOTTLE CAP LIFTING AND RETAINING TOOL

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2 Claims. (Cl. 81—3.46)

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This invention relates to hand tools of the character usually employed in removing caps from receptacles and the primary aim is to provide a crown cap manipulating instrument, the character whereof is such as to retain the removed cap until such time as the user desires to replace the cap on the receptacle from which it was taken.

One of the most important aims of this invention is the provision of a receptacle cap removing tool, the character whereof insures that the removed cap will be retained in place within a protected portion of the tool until the cap is dislodged therefrom for disposal or reuse.

Heretofore it has been customary for crown cap users to replace the cap after a bottle or the like has been opened to the end that the contents will not lose its life or the charge which it contains. The cap, when removed from the bottle, usually drops to the floor or supporting surface where germs of contamination collect thereon and the replacement of the cap on the bottle is undesirable because of the filth and foreign matter that might be carried thereinto.

It is one of the salient features of this invention therefore, to provide a cap removing tool having the characteristics of releasably retaining the crown cap within a comparatively protected portion of the body until such time as it is purposely removed for re-application to the bottle.

This invention has for further aims the provision of a sturdy tool; one that is inexpensive to produce and embodies a unitary structure, the creation whereof may be performed through the employment of conventional dies acting upon sheet material the inherent resiliency whereof is sufficient to perform the broad objects of the invention.

Other aims of the invention will appear during the course of the following specification alluding to the accompanying drawing, wherein:

Fig. 1 is an inverted plan view of a cap removing tool made pursuant to the present invention.

Fig. 2 is a top plan view thereof.

Fig. 3 is a longitudinal sectional view taken on line III—III of Fig. 1, looking in the direction of the arrows.

Fig. 4 is a transverse cross sectional view taken on line IV—IV of Fig. 3.

Fig. 5 is a longitudinal central sectional view through a portion of the tool illustrating the same in operative relation with a crown cap immediately prior to exerting the removing force.

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Fig. 6 is a fragmentary sectional view taken on line VI—VI of Fig. 5, and

Fig. 7 is a fragmentary longitudinal sectional view through a portion of the body illustrating a modified form of the invention.

In the form of the removing tool chosen for illustration and referring now particularly to Figs. 1 to 6 inclusive, the body of the tool is formed of a single piece of sheet material folded to present an elongated hollow body generally designated by the numeral 10 and having a cavity or hollow 12 therein. The body 10 is polygonal in transverse cross sectional contour and one wall 14 thereof is provided with an elongated mouth 16, the width whereof gradually diminishes as one end of the mouth is approached. This said one end of mouth 16 is arcuate as at 18 and the arcuate edge of wall 14 forming the narrower portion of mouth 16 is concentric with the crown cap 20 of a conventional bottle 22. The radius of arcuate edge 18 is slightly less than the outside radius of cap 20 and when the cap is in place, a portion of wall 14 will underlie the free edge 24 of the skirt 26 of cap 20. That portion of the mouth 16 extending from arcuate end 18 is of a width great enough to receive cap 20 for the outside diameter of skirt 26 is slightly less than the width of mouth 16 along the portion thereof remote from edge 18. The tapered edges 28 of the mouth interconnect the arcuate edge 18 and that part which is of a width greater than the outside diameter of cap 20.

A tongue 30 anchored at one end of mouth 16, as clearly illustrated in Figs. 1, 3 and 5, is struck from the material from which body 10 is formed and bent inwardly to present a contour such as that illustrated in Fig. 3, when there is no cap 20 in the hollow of body 10. This tongue 30 has the inherent resiliency sufficient to yieldably hold cap 20 in the position illustrated in Fig. 5 after bottle 22 has been removed from its association with the cap. In other words, the width of the material from which tongue 30 is produced and the height of cap 20 is in combination substantially the same as the distance between the inside surface of lower wall 14 of body 10 and upper wall 32 thereof. The length of tongue 30 is sufficiently great to allow the user to move cap 20 longitudinally toward the wider end of mouth 16 when it is desired to dislodge the cap 20 from its clamped position. When cap 20 is in the position illustrated in Figs. 5 and 6, it is releasably maintained in place and will not drop to the floor to become contaminated. Tongue 30 is the in-

strumentality by means of which the cap is so retained.

In Fig. 7 the means for releasably maintaining the cap in its position within the hollow of body 10 is in the form of a flat magnet 50 secured to the under side of upper wall 32 forming a part of body 10. As a matter of fact, the form of the tool illustrated in Fig. 7 is precisely the same as that shown in Figs. 1 to 6 inclusive with the single exception of element 50 which is capable of holding cap 20 in place until the operator removes the same with sufficient force to overcome the magnetism or attractive force of element 50.

As a matter of conveniently repositioning cap 20 upon bottle 22, the socket 52 is secured to wall 14 through the medium of rivet 54. The upper wall 32 is cut away as illustrated in Fig. 2, to receive the upper portion of the neck of bottle 22 when the cap is to be replaced. A depending arcuate wall 56 at the end of body 10 has an inturned arcuate flange 58 to engage beneath the conventional shoulder on bottle 22 to present a purchase for flange 58 when the cap is to be forced to place upon the bottle.

The broad objects of the invention have been fulfilled through the employment of a cap removing tool made as illustrated and described but since the scope of the invention is such as to embrace features and specific constructions different from those shown and described, it is desired to be limited only by the scope of the appended claims.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. In a crown cap removing tool, a tubular body having a tapered, elongated, longitudinal opening formed through the side wall thereof; a resilient tongue anchored at one end to the body at the wider end of the opening and having a free end within the body at the narrow end of the opening to engage the top of the cap when the latter is in the body with the free edge of its skirt resting upon the inner surface of the tubular body at the edge of the opening at one end thereof, the width of said wider end of the opening being greater than the diameter of said cap.

2. In a crown cap removing tool, a tubular body having a tapered, elongated, longitudinal opening formed through the side wall thereof; a resilient tongue anchored at one end to the body at the wider end of the opening and having a free end within the body at the narrow end of the opening to engage the top of the cap when the latter is in the body with the free edge of its skirt resting upon the inner surface of the tubular body at the edge of the opening at one end thereof, said one end of the opening being arcuate, smaller in radius than the cap, and substantially concentric with the crown cap when the latter is at the narrow end thereof, the width of said wider end of the opening being greater than the diameter of said cap.

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ROBERT S. WALLACH.

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