

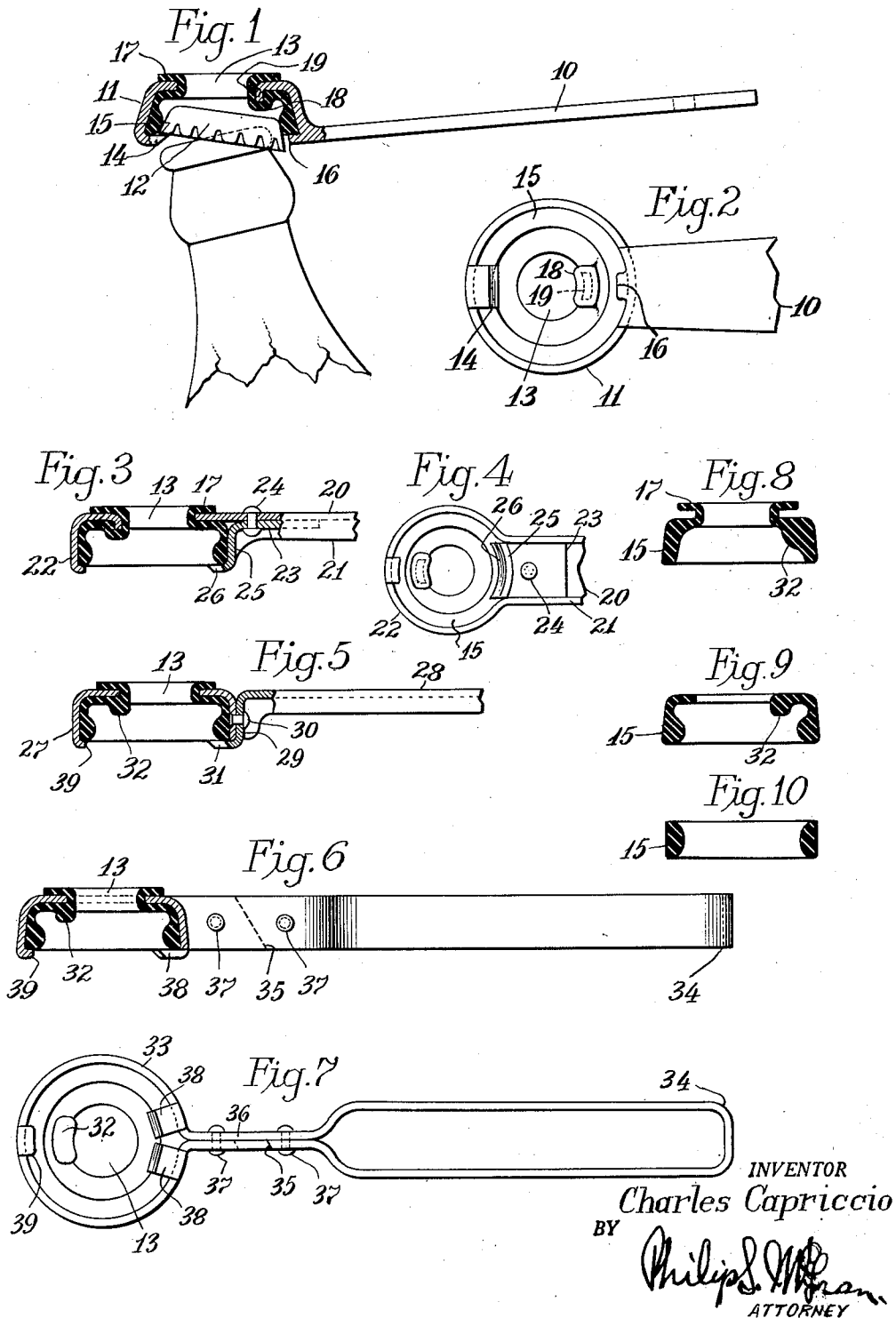
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BOTTLE CAP REMOVER WITH RESILIENT LINER

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BOTTLE CAP REMOVER WITH RESILIENT LINER

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6 Claims. (Cl. 81—3.46)

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The invention here disclosed relates to bottle cap removers and the principal objects of the invention are to provide a device of this sort which will effect the removal of a bottle cap and leave it in condition where it may be forced back over the bottle neck to again effectively seal the contents.

Other objects of the invention are to provide a cap remover of the character indicated which will be of simple, durable, inexpensive construction.

Further objects of the invention are to provide a device such as indicated which will be useful as an implement for re-applying the same caps which it has removed.

Other desirable objects and the novel features through which the purposes of the invention are attained are set forth or will appear in the course of the following specification.

The drawing accompanying and forming part of the specification illustrates certain present embodiments of the invention. Structure, however, may be further modified and changed, all within the true intent and broad scope of the invention as hereinafter defined and claimed.

Fig. 1 in the drawing is a broken sectional view showing one of the lifters in the act of removing a bottle cap;

Fig. 2 is a broken view looking into the cap receiving socket portion of the device;

Figs. 3 and 4 are views similar to Figs. 1 and 2, illustrating another embodiment of the invention;

Fig. 5 is a broken longitudinal sectional view and Fig. 6 is a longitudinal sectional view of other embodiments;

Fig. 7 is a bottom plan view of the form of lifter shown in Fig. 6;

Figs. 8 and 9 are cross sectional views of different forms of liners for the cap receiving socket portion of the tool; and

Fig. 10 is a cross sectional view of another form of the liner.

In the first form of the lifter illustrated, Figs. 1 and 2, the device is made all in one piece, as by a punch press or casting operation, and comprises a lever handle 10 having at one end an integral, upwardly convergent, truncated, conical socket 11.

This socket is larger in diameter and deeper than a commercial bottle cap 12, it is open at the top at 13 to admit a thumb or finger for pushing a removed cap out of the socket and it is provided, at the lower edge, with an inwardly projecting claw 14 for engagement under the skirt or flange of the bottle cap.

This bottle cap engaging claw may be either at the near or handle end of the socket or, as shown in Figs. 1 and 2, at the far edge of the socket, at a point furthest removed from the handle.

To control the expansion of the cap and hold

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it in substantially circular conformation while being sprung over the lip of the bottle, the cap receiving socket is lined with a rubber or other resilient lining 15, of smaller diameter than the cap so as to compressibly confine the cap all the way around, in the act of removal.

The cap confining lining may be held in place in various ways, as by the claw 14 at one side and an inwardly projecting lug 16 at the opposite side of the socket. It may be cemented in place or be held by a confining flange about the lower edge of the socket.

In a preferred embodiment the lining is held in place by having a circular and flanged extension 17 of the same extended up through the opening 13 and partially over the top of the socket head.

The upwardly and outwardly extended flange portion 17 of the liner provides, in effect, a resilient cover over the top of the socket head, enabling the latter to be used as a rubber hammer or pusher for forcing a removed bottle cap back over the mouth of a bottle.

To aid in applying the necessary force required to spring a cap over the holding lip of a bottle, a fulcrum piece is desirable in the head of the socket diametrically opposite the cap lifting claw.

In Figs. 1 and 2, this fulcrum piece or "heel" is provided by an integrally formed, hollow lump 18 molded in the upper portion of the lining and supported in distended form by a lug 19 extended downward from the top of the socket at the edge of the opening therethrough.

The engagement of the hollow spring fulcrum portion 18 over the rigid lug 19, locates the lining properly in the socket, with the fulcrum opposite the cap lifting claw.

The second form of the invention shown in Figs. 3 and 4 is made in two pieces, which can be punch press formed, the first comprising the sheet metal handle 20 downwardly flanged at opposite edges at 21 to give it stiffness, and these flanges continued at the end of the handle in circular form to constitute the cap receiving socket 22.

The second piece is shown as a stamping 23, secured to the under side of the handle between the side flanges by rivet or other fastening 24 and having an arcuate flange portion 25 closing the gap between the side flanges of the handle and terminating in a cap lifting claw 26.

Fig. 5 shows how the socket may be made up as a continuous ring 27 formed from sheet metal and the handle 28 be made with a flange 29 at the end of the same to fit about the ring and secured thereto as by rivet or other fastening means 30.

The downwardly extended portion 29 of the handle, as shown in Fig. 5, may be further extended to provide the cap lifting claw 31.

Fig. 5 also shows how the fulcrum or heel 32 may be simply a solid, integral lug or projection

on the top portion of the lining, diametrically opposite the claw.

Figs. 6 and 7 show how the device may be made up from a single piece of strip metal doubled on itself and shaped to form the cap receiving socket 33 at one extremity and the lever handle 34 at the other extremity, with the two ends of the strip brought together at 35 and secured over the flat neck portion 36 of the tool by rivets or like fastenings 37.

In this case the portions of the strip which are looped around to form the cap receiving socket are shown as equipped with integral, inwardly extended lugs 38, providing companion cap lifting claws diametrically opposite the internal spring fulcrum 32.

In the several sheet or strip metal forms of the invention, the edge of the metal may be inwardly extended as a lug or flange 39 to securely hold the rubber lining in place.

The molded rubber lining shown in Fig. 8 is generally like that shown in Fig. 5, with integral fulcrum projection 32 but with the rest of the wall of the lining substantially the same thickness, instead of being thicker at the bottom, as shown in Figs. 3, 5 and 6.

Fig. 9 illustrates a form of lining designed to fit entirely within the cap receiving socket, with no extension through the cap ejecting opening.

The constructions described can be produced at low cost and provide an effective tool for removing bottle caps without injuring the same and for leaving the caps in such condition that they may be re-applied by hand.

Fig. 10 shows how the elastic liner may be simply a ring of arcuate or semi-circular cross section, the thickened wall at the center of the ring serving to compressibly hold the skirt of the cap during the cap lifting operation.

While the yielding socket confines the cap sufficiently to normally prevent any appreciable distortion while springing the cap over the flange of the bottle mouth, it may be desirable at times to use the socket as a tool for replacing the cap or to provide a special socket for the purpose, possibly mounted on the other end of the handle. In such use the removed cap would be located in the yielding socket and then be forced down into gripping engagement over the bottle neck by applying pressure on the top of the tool, the yielding socket then serving to evenly confine the skirt of the cap as it is being sprung back down over the lip or head of the bottle mouth.

What is claimed is:

1. A cap preserving bottle cap remover comprising a lever handle having a bottle cap receiving socket of larger diameter than a commercial bottle cap and provided with an elastic lining of smaller diameter than such a bottle cap and conformable into resilient confining engagement with the flange of the cap in the act of removal and a claw carried by said lever handle at the edge of said cap receiving socket and projecting inward beneath the edge of said elastic lining holding said elastic lining in place in the socket and extending far enough inward for engagement beneath the edge of the flange of the cap.

2. A cap preserving bottle cap remover comprising a lever handle having a bottle cap receiving socket of larger diameter than a commercial bottle cap and provided with an elastic lining of smaller diameter than such a bottle cap and conformable into resilient confining engagement with the flange of the cap in the act

of removal, a claw carried by said lever handle at the edge of said cap receiving socket and projecting inward beneath the edge of said elastic lining for engagement beneath the edge of the flange of the cap and a fulcrum heel within the top portion of the socket substantially diametrically opposite said claw.

3. A cap preserving bottle cap remover comprising a lever handle having a bottle cap receiving socket of larger diameter than a commercial bottle cap and provided with an elastic lining of smaller diameter than such a bottle cap and conformable into resilient confining engagement with the flange of the cap in the act of removal and a claw carried by said lever handle at the edge of said cap receiving socket and projecting inward beneath the edge of said elastic lining for engagement beneath the edge of the flange of the cap, said lining projecting up through the top of the socket to serve as a cushion for hammering or forcing a cap back over the mouth of a bottle.

4. A cap preserving bottle cap remover comprising a lever handle having a bottle cap receiving socket of larger diameter than a commercial bottle cap and provided with an elastic lining of smaller diameter than such a bottle cap and conformable into resilient confining engagement with the flange of the cap in the act of removal and a claw carried by said lever handle at the edge of said cap receiving socket and projecting inward beneath the edge of said elastic lining for engagement beneath the edge of the flange of the cap, said socket having a cap ejecting opening up through the center of the same and said elastic lining having an extension projecting up through said opening and flanged over the top of the socket.

5. A cap preserving bottle cap remover comprising a lever handle of flat stock material having a circular opening at one end and down-turned edge flanges continued around said end of the handle in the form of a part circular socket, a bracket secured to the under side of the handle between said edge flanges and continuing the part circular flanges at the end of the handle into a substantially completely circular socket, a cap lifting claw at the lower edge of said socket and a resilient cap confining liner within said socket.

6. A cap preserving bottle cap remover comprising a lever handle of flat stock material having a circular opening at one end and down-turned edge flanges continued around said end of the handle in the form of a part circular socket, a bracket secured to the under side of the handle between said edge flanges and continuing the part circular flanges at the end of the handle into a substantially completely circular socket, a cap lifting claw at the lower edge of said socket and a resilient cap confining liner within said socket, said claw being carried by said bracket.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
941,365	Forsyth et al.	Nov. 30, 1909
1,628,715	Enkler et al.	May 17, 1927
1,954,422	McIntyre	Apr. 10, 1934
2,330,893	Hutoff	Oct. 5, 1943