Aug. 14, 1951 T. W. LEPKOWSKI 2,564,536

CAP REMOVER AND RETAINER

Filed May 21, 1948 2 Sheets-Sheet 1

Fig. 1.

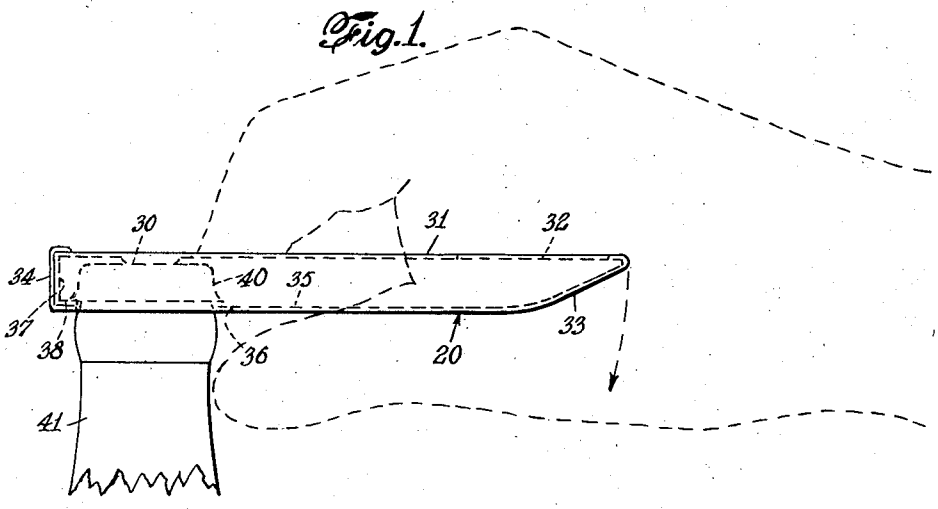



Fig. 2.

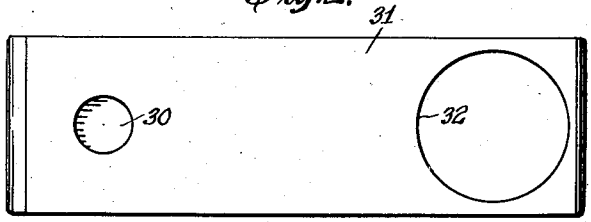



Fig. 3.

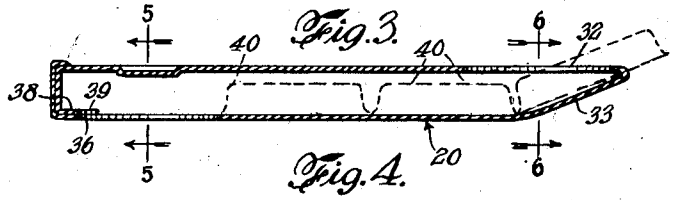



Fig. 4.

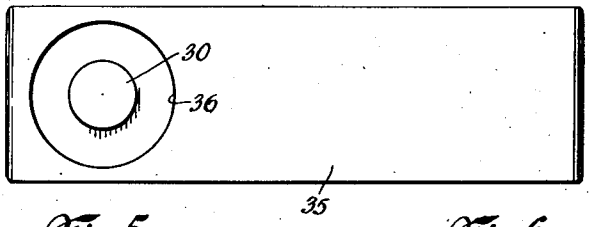



Fig. 5.

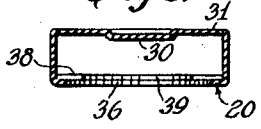
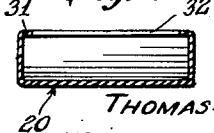



Fig. 6.




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Aug. 14, 1951 T. W. LEPKOWSKI 2,564,536

CAP REMOVER AND RETAINER

Filed May 21, 1948 2 Sheets-Sheet 2

Fig. 7.

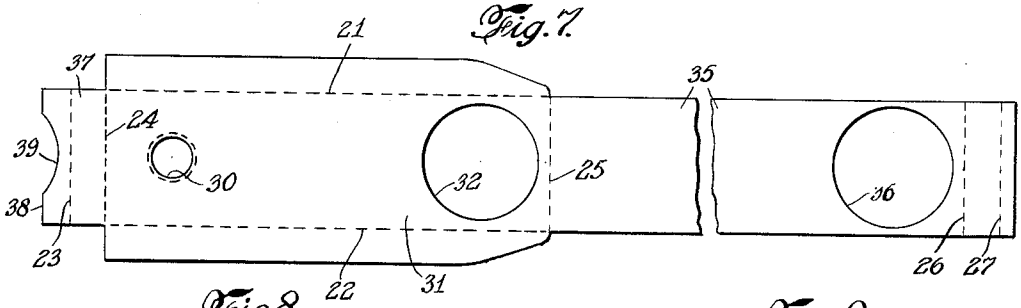



Fig. 8.

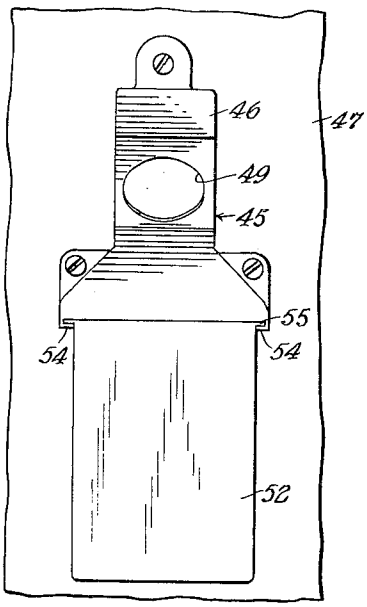
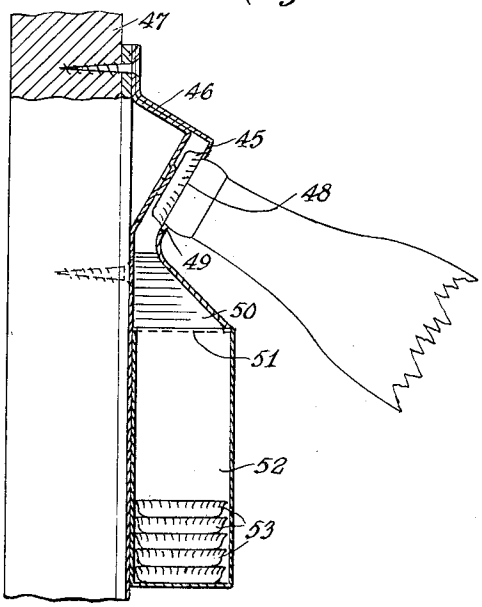



Fig. 9.



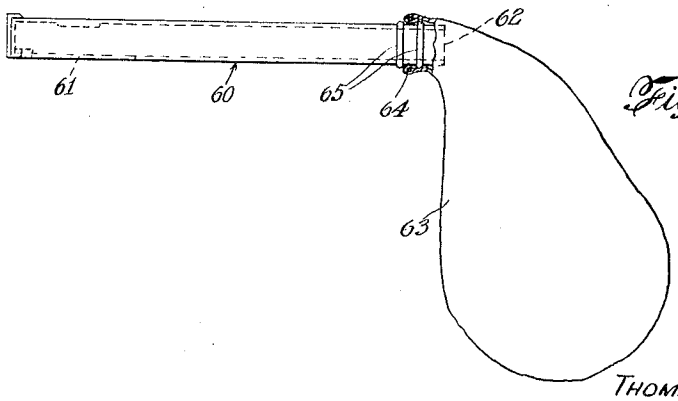




Fig. 10.

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## CAP REMOVER AND RETAINER

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Application May 21, 1948, Serial No. 28,492

3 Claims. (Cl. 81—3.1)

1

The invention relates to a separating device for use in removing metal caps crimped over the top of bottles, and more especially to a cap removing device of this nature which may be operated by a downward movement toward the bottle rather than the conventional method of removing caps by movement upwardly or away from the bottle.

The invention has for an object to provide an opener device in the nature of a guide casing for removed caps whereby either a plurality thereof may be accommodated and retained temporarily within the said casing or the same may be discharged therefrom as removed from a bottle into an associated storage receptacle of substantial capacity for eventual disposition of the caps when the receptacle becomes filled.

A further object of the invention is to provide a cap remover of this nature wherein the cap, upon removal, immediately becomes locked in the casing save for the discharge opening provided therein.

A still further object of the invention is to provide a device whereby it is possible to remove successively a plurality of caps while retaining the opener within one's hand, the palm of which then serves to close temporarily the discharge opening.

Another object of the invention is to provide a cap remover wherein caps as removed flow naturally toward the discharge opening which is of greater diameter than the bottle top receiving opening, and are guided by the casing toward said discharge opening.

Still another object of the invention is to provide an operating fulcrum in the device which will serve also as a means of exerting pressure substantially at the center of a cap, tending thereby to spread the same so that its diameter will exceed that of the entrance opening to avoid discharge of the cap therethrough, as well as to reduce the force required to remove a cap.

A still further object of the invention is to provide a bottle cap remover having an engaging means which distributes the pressure over a substantial portion of the cap and does not contact directly the usual glass top of a bottle, which frequently causes chipping thereof; also, a remover device which will not objectionably distort the cap when removed thereby.

The invention has for an object, also, to greatly simplify the operation of cap removal in that the same may be performed, when a bottle is suitably retained against lateral movement, with a single-hand operation since the pressure exerted thereon is downward rather than in the conventional upward direction.

2

The nature of the invention, however, will best be understood when described in connection with the accompanying drawings, in which:

Fig. 1 is a front elevation of the novel cap remover as applied to the top of a bottle, and indicates in broken lines the manner of operating the same manually.

Fig. 2 is a plan view of the cap remover.

Fig. 3 is a longitudinal section thereof, showing in broken lines also a number of removed caps retained in the cap remover.

Fig. 4 is an underneath view of the cap remover.

Figs. 5 and 6 are transverse sections taken respectively on the lines 5—5 and 6—6, Fig. 3 of the drawings, and looking in the direction of the arrows.

Fig. 7 is a view of a blank from which the novel cap remover may be formed.

Figs. 8 and 9 are respectively a front elevation and a vertical section illustrating a modified form of the cap remover, the latter figure illustrating the top of a bottle in position for removal of its cap.

Fig. 10 is an elevation, partly in longitudinal section, and illustrates a still further modification in the cap remover.

Referring to the drawings, more particularly Figs. 1–7, inclusive, which illustrate a portable embodiment of the invention, 20 designates an elongated, more or less flattened casing which can be formed up from a sheet metal stamping (Fig. 7). This stamping is designed to be bent at the portions indicated by the longitudinal broken lines 21, 22 and the transverse broken lines 23, 24, 25, 26 and 27 to provide the casing 20. In forming the stamping, a depression 30 is provided in the portion constituting the eventual top wall 31 of the casing, also a generally circular and discharge perforation 32. In the tongue extension from which the opposite ends 33 and 34 of the casing are provided, as well as the bottom 35, a further and similar perforation 36 is provided which is of somewhat smaller diameter than the perforation 32. To form the sides of the casing 20, the blank is bent along the lines 21, 22 at right angles to top wall portion 31. The one end is then formed in part by bending at right angles along line 24 an end projecting portion 37, this being further bent inwardly along line 23 at right angles to the projecting portion to afford a reinforcing lip 38 contiguous to the bottom 35 within the casing and having an arcuate edge 39 designed to register with a portion of the edge of perforation 36 (see Figs. 3 and 5). The depression 30 is so positioned that it will lie substan-

tially coaxially with the perforation **36** and arcuate edge portion **39** and is displaced inwardly sufficiently to more or less contact centrally the outer face of a sheet metal or crown type cap **40** with flange crimped over the beaded top or mouth of a bottle **41** when inserted into the casing **20**, said cap sealing normally the contents of the bottle as is well understood.

The casing is completed by bending over the tongue extension of the blank about line **25** to provide the other end **33**, preferably inclined upwardly toward perforation **32**, and the bottom **35**. It is then continued about the end portion **37** by bending the tongue at line **26** and again by bending at line **27**, continuing the tongue over the top wall **31**, thus to lock more or less the various portions in position. A suitable finish may be provided thereover, if desired.

The novel opener or decapper would then have the general appearance, Figs. 2 and 4. By inclining or curving the one end portion **33** to taper the interior of the casing toward the top wall **31**, removed caps **40**, Fig. 3, accumulating within the casing are guided toward the discharge perforation **32**, for example, into the palm of a hand of an operator of the opener (Fig. 1) as the hand (indicated by broken lines) depresses the discharge end of the casing in the direction indicated by the arrow, and after the casing has been placed over the cap **40** and mouth of the bottle **41**. Pressing downwardly, as indicated, sets the depressed portion **30** to afford an abutment or fulcrum in contacting the top of the bottle cap, while the arcuate reinforced lip will engage under the flange of the bottle cap to strip the same from the bottle. The abutment at the same time will cause the cap to spread more or less radially to an extent sufficient to prevent its dropping through perforation **36** when the bottle **41** is separated from the casing, a cap then being guided to slide along the bottom of the casing toward the discharge perforation **32**—a number of such caps accumulating in the casing before it becomes necessary to clear the latter thereof. Thus, a number of bottles may be decapped without removing the opener from one's hand and the caps falling conveniently into the palm of the operator's hand in discharging the same. Ample leverage is afforded also by the substantial displacement of the fulcrum from the discharge end of the cap remover.

The novel features of this invention render it possible to associate also a collector receptacle of substantial proportions as well as to provide the same as a stationary type of opener. Thus, reference being had to Figs. 8 and 9 of the drawings, the opener casing **45** is formed with a bracket portion **46** for attachment to a wall or other rigid support **47**, the casing being inclined to the wall at a suitable angle to enable a bottle top **48** to be inserted through the entrance opening **49** of the casing. The channel portion of the casing **45** is made to flare outwardly to provide a mouth **50** designed to register with the opening **51** in the top of a removable receptacle **52** for storage of caps **53** removed from bottles in the manner hereinbefore described. The flared portion of the casing is provided along its side with inwardly directed flanges **54** serving as a guide and supporting ledges for the top of receptacle **52** through outwardly directed side flanges **55** designed to rest thereon.

A portable form of cap remover with increased storage space for removed caps is indicated in Fig. 10 wherein the casing **60** is similar to the casing illustrated in Figs. 1–6, except that the end of the casing opposite the entrance opening **61** remains open to afford the discharge opening **62** for removed caps. These are designed to be collected in a suitable bag-like receptacle **63** fitting over the discharge end of the casing; and the container to this end is contracted at its mouth and is provided thereat with a resilient means such as an elastic band **64** tending to hold the container to the casing which bears peripheral beadings **65** to receive between them the said resilient mouth portion of the container.

By these expedients, it will be necessary to empty a container only at relatively long intervals, the same being adapted more especially for commercial use, whereas the first-described embodiment of the invention is intended more or less for personal use in decapping a small number of bottles.

I claim:

1. A bottle cap remover comprising a hollow elongated flat casing affording an operating element for removal of a cap, said casing being provided with a generally circular opening at one end of a diameter to admit a bottle top with cap to the casing and less than that of a spread removed cap, the said opening affording an edge engageable with the cap, and the said casing constituting a channel to receive a removed cap and having an opening at the opposite end of the casing suitable for discharge of a removed and spread cap.

2. A bottle cap remover according to claim 1, wherein the second-named opening is provided in the face of the channel opposite that having the bottle top opening whereby upon downward inclination of the bottle cap remover the cap will pass out of the latter opening.

3. A bottle cap remover according to claim 1, wherein one of the walls of the casing is curved at its end opposite the top-admitting opening to direct a removed cap to the discharge opening.

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