BOTTLE CAP OPENER WITH CRIMP ENGAGING TEETH

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BOTTLE CAP OPENER WITH CRIMP ENGAGING TEETH

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1 Claim. (C1. 81—3.46)

This invention relates to bottle cap openers, and has particular reference to a novelly designed opener embodying the use of a plurality of teeth that engage the depending edge or flange of the conventional form of cramped-on bottle cap.

The primary object of the invention is to provide a bottle cap opener which may be stamped from a single piece of material, with a minimum of manufacturing expenses, and which is so formed as to engage positively and with full efficiency the cramped or corrugated edge of the cap, whereby the cap may be removed easily, and without necessity of repetition of the opening operation.

A further important object of the invention is to provide a bottle cap opener by means of which the cap may be removed with a minimum exertion of leverage.

Still another object of the invention is to provide a bottle cap opener so formed as to result in its taking a positive grip on the cap edge, the cap being removed by a prying action, with the grip of the opener on the cap becoming stronger during the operation.

Still another object of the invention resides in the provision of a bottle cap opener which may be easily adapted to formation with a handle, or alternatively, with finger grips disposed therearound, permitting removal of the bottle cap with the opener retained in the palm of the user's hand.

Another object of the invention is to provide an opener which is adapted to remove a bottle cap either by lifting of the handle thereof, pressing downwardly on the handle, or twisting or rocking the handle from side to side.

With the foregoing and other objects in view which will appear as the description proceeds, the invention consists of certain novel details of construction and combinations of parts, hereinafter more fully described and pointed out in the claims, it being understood that changes may be made in the construction and arrangement of parts without departing from the spirit of the invention as claimed.

Referring to the drawing:

Figure 1 is a plan view of a bottle cap opener constructed in accordance with the invention.

Figure 2 is a side view of the opener illustrated in Figure 1, the handle thereof being shown in side elevation, and the opener portion being shown in longitudinal vertical section.

Figure 3 is a plan view of a modification.

Figure 4 is a plan view of another modification.

Figure 5 is a side elevational view of a third modification.

Figure 6 is a bottom plan view of the modification shown in Figure 5.

Referring to the drawing in detail, the reference character 5 designates a handle, which may be of any desired configuration and outline, and which is preferably formed from a length of rigid sheet material.

Preferably formed integrally with the handle 5 is the opener portion or head, 6. This is substantially circular in outline, and is provided with a centrally disposed circular opening 1. The edge or wall of the opening 1 is formed with a plurality of radially directed teeth 8, which as clearly shown in Figure 1, are pointed, and extend toward the center of the opening 1. These are disposed completely around the edge of the opening 1.

Surrounding the opening 1 is a curved rim portion 9, which, with the central opening and toothed edge thereof, completes the formation of the head 6 of the opener.

The rim portion 9, as clearly shown in Figure 1, is annular in formation, and referring to Figure 2, is transversely curved from the inwardly extended ends of the teeth 8 to the outer edge or periphery of the rim. As a result, the teeth themselves are formed curvingly, the curve thereof being continued into the rim portion 9, and terminating at the peripheral edge of the rim portion.

In operating a bottle opener such as illustrated in Figure 1 and Figure 2, and described, the opener may be positioned over a bottle cap, with the teeth 8 which are most remote from the handle 5 being positioned under one portion of the depending edge of a cramped bottle cap. In positioning the opener in this manner, the teeth 8 would be positioned so that each one curves upwardly into the recess formed by one of the crimps in the cap.

The opposite edge of the opening 1 rests, when the device has been positioned as described above, on the periphery of the top of the bottle cap. Then, the handle 5 is depressed, the bottle being gripped in the user's other hand. As a result, the teeth 8 projecting into the recesses formed by the crimps in the cap exert a prying or wedging action between the depending flange of the cap and the bottle. An important characteristic of the invention, in this connection, is the fact that each tooth 8 will be positioned in a recess, curving upwardly thereinto, and as a result of this formation, a sure and positive grip of the opener upon the cap is obtained on the first effort. As the handle 5 is depressed, this grip, in fact, becomes stronger, by reason of the respective teeth entering further the recesses.

Alternatively, the cap may be removed by positioning the upcurving teeth 8 which are closest to the handle 5 under a portion of the depending flange of the cap, in the manner described above. The cap may then be removed by raising the handle 5 instead of depressing it as described in the first mode of using. Also, should it be desired,
to exert a side to side motion, the side teeth 8 can be used instead.

It is understood that the teeth 8 would, in manufacture of the device, be spaced apart so as to fit into the recesses formed by the crimps in a bottle cap of conventional size and formation.

Referring to the embodiment of the invention illustrated in Figure 3, the opener portion of the cap has been designated generally by the reference character 6. This opener portion is formed in the same manner as the opener portion 5 above described, that is, it is provided with a central opening having circularly disposed teeth disposed around it, the teeth being curvingly formed, the curve being projected into a surrounding annular rim portion.

However, in this embodiment of the invention, the conventional handle 5 is omitted. Instead, the opener portion 10 of the device is stamped from a square flat piece of metallic material, and this results in the formation of corner finger grips 11. A device constructed in this manner is used by being positioned in the palm of the user's hand. After it has been placed over a bottle cap in the manner described above with respect to the first embodiment of the invention, downward pressure is exerted on one corner finger grip 11, with upward pressure being exerted on a diametrically opposed grip. Other modes of use suggest themselves, as for instance, after the cap has been partially raised after engagement by a portion of the toothed edge of the opening, the device may be shifted so that an adjacent portion of the toothed edge is brought into engagement with the cap. Such a shift, in the embodiment illustrated, would require a minimum of movement.

Referring to the modification illustrated in Figure 4, the device is formed from a preferably square flat piece of metallic material 12, provided centrally with a substantially year shaped opening 13. As in the previous embodiments of the invention, the opening 13 has an edge formed wholly with inwardly directed teeth. Two rows 14 of these teeth diverge from the narrow end 15 of the opening 13, curving outwardly away from each other to the ends of an oppositely curved row of teeth 16. The surrounding rim portion of the opening 13 is transversely curved, the curve continuing into the teeth to the inwardly extended ends thereof, as shown at 17.

In use of this embodiment of the invention, the device is adapted to remove caps of larger than standard size, by positioning the row 16 under the crimped portions of the cap, with the teeth thereof curving upwardly into the recesses. Alternatively, the same device may be used in removing smaller caps, that is caps of standard size, by positioning one of the rows 14 under the edge of the cap, and bringing the other row to bear against a portion of the cap for the purpose of permitting exercise of the necessary leverage to remove the cap.

Referring to Figures 5 and 6, the embodiment there shown is formed with a handle 19 that may be of any desired configuration, or material possessing sufficient rigidity. Adjacent the forward end of this handle, the handle is formed with a high angled bend 20, and the cap engaging from the front end 21 extended perpendicularly therefrom. The front end 21, at its free end, is formed with inwardly extended and upwardly curved teeth 22, arranged in a straight row. Spaced from and parallel to the front end 21, is an opposed depending bottle engaging lip 23, having a row of teeth 24 extending toward the teeth 22 in opposed relation thereto.

In operation of this embodiment of the invention, the teeth 22 may be positioned under the cramped depending flange of the bottle cap, with the row of teeth 24 being positioned against the top of the cap, in order to serve as a fulcrum for the handle 19. The handle 19 is then manually depressed, with the result that a number of the teeth 22 will apply a partial action against a corresponding number of crimps in the cap with which they are in engagement.

Alternatively, the teeth 24 may be placed in engagement with said crimps, with the handle 19 being lifted upwardly.

Referring further to the use of any of the illustrated forms of the device, it may be noted that the individual correspondence of the teeth with the crimps of the bottle cap promote a manner of use of the device that increases its effectiveness considerably. As previously noted herein, the device is used by positioning one portion of the head upon the bottle cap and positioning a different portion under the crimps of the cap. The correspondence of the teeth and the crimps permits the latter portion of the device to be shifted downwardly over the cramped flange of a crown bottle cap with the teeth of said latter portion meshing with the crimps of the cap. When said latter portion of the device has been slipped downwardly past the lower edge of the cap, it is given rotary movement to just such an extent as necessary to move the teeth out of mesh with said crimps, for location of an individual tooth under an individual crimp. Then the lever action is exerted.

What is claimed is:

1. In an opener for bottles of the type having a closure which includes an annular row of peripherally spaced crimps, a relatively flat elongated handle, a head carried by the handle adjacent one end thereof, said head having an opening extending therethrough, an annular row of peripherally spaced pointed teeth carried by the head and extending into the opening for engaging the peripherally extending portions of the crimps, the spaces between the points of the teeth being equal to the distance between adjacent crimps, and said teeth lying along axes which converge as they recede from the wall of the opening and at their point of convergence lie to one side of the handle whereby the points of the teeth will enter the spaces between the crimps of a bottle closure and engage under said crimps upon slight rotary movement of the opener.

COHEN H. BAKER.

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