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OPENER FOR SCREW TOP CONTAINERS

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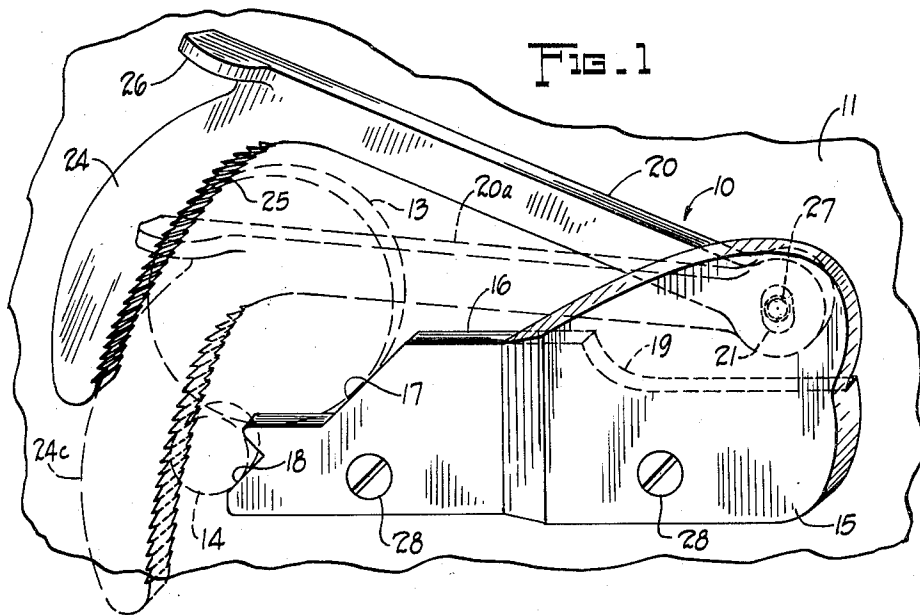


Fig. 1

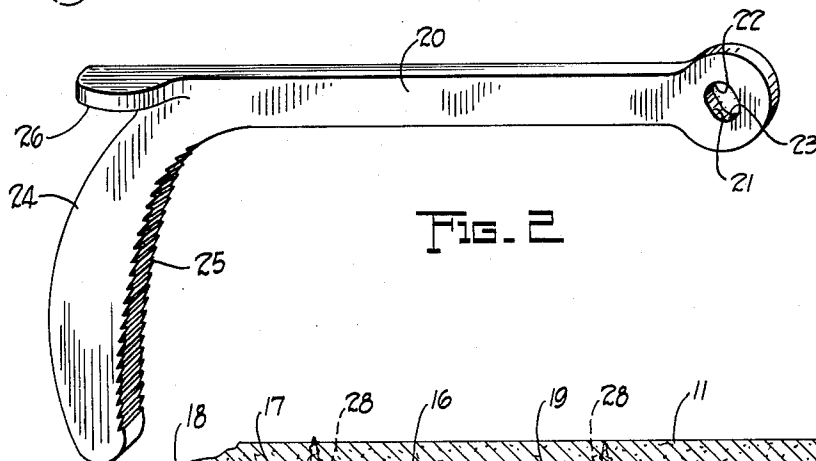


Fig. 2

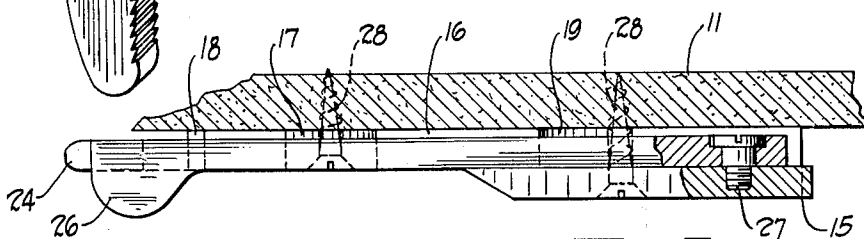


Fig. 3

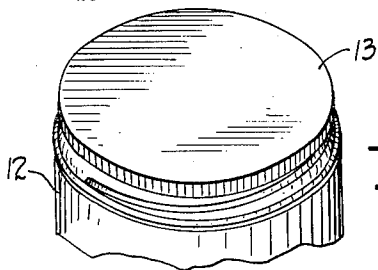


Fig. 4

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**OPENER FOR SCREW TOP CONTAINERS**

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1 Claim. (Cl. 81-3.3)

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This invention relates to gripping devices and more particularly to those for assisting in removing screw closure caps from jars and like containers.

Conducive to a better understanding of the invention it may be well to point out that in the practice of canning it is necessary to the preservation of the contents that the receptacle therefor be tightly sealed in order to exclude air, moisture and dirt. A partial vacuum is sometimes used to enhance the seal of the closure, in addition to the ordinary gasket between the closure and container, and great pressure exerted when applying the closure caps. This often results in great difficulty in removing the closure caps from the containers.

Various mechanical aids have been developed to assist in the loosening and removal of such caps. Most of such devices require the use of two hands, one to hold the container, and the other to hold a cap engaging clamp having cap gripping means for providing increased leverage to aid in breaking the cap seal.

The primary object of this invention, therefore, is to provide an opener for screw cap containers having a stationary cap supporting base and a movable cap engaging jaw that is held solely by gravity against the so supported cap, and requires no manual pressure, other than a rotary one, to loosen the cap.

Another object is to provide a device of the type stated having a gravity operated cap engaging jaw that is automatically tiltable into wedged engagement with the cap upon rotation of the container.

Still another object is to provide such a device that is adapted for mounting in a stationary vertical position so that the container may be turned by hand after the cap engages the gripping jaw, and slipping of the container or false movement of the implement will be avoided.

Other objects are to provide a device that requires only one hand in its operation; that can grip and loosen closure caps of various sizes; that is attractive in appearance, and that is sufficiently inexpensive to manufacture to be available for the average household.

These and other objects of the invention will become apparent from a reading of the following specification and claim together with the accompanying drawing, wherein like parts are referred to and indicated by like reference numerals and wherein:

FIGURE 1 is a front elevation of a vertical wall showing the opener for screw cap containers, that is the subject of this invention, mounted thereon with its gravity activated jaw in alternate positions, engaged with a large and a small diameter cap;

FIGURE 2 is a perspective view of the arm and jaw disengaged from the base;

FIGURE 3 is a top plan view of the device seen in FIGURE 1; and

FIGURE 4 is a perspective view of a container having a screw cap such as this implement is intended to remove.

Referring more particularly to the drawing, there is seen in FIGURE 1 the opener for screw cap containers, that is the subject of this invention, broadly indicated by reference numeral 10, as it appears mounted on a vertical wall surface 11.

The device comprises a base member 15 and an arm 20, including a dependent jaw 24 pivotally mounted thereon.

The base 15 is approximately one inch thick and substantially rectangular in shape. The base is mounted

against the wall 11 by means of screws 28, as is seen most clearly in FIGURE 3.

A wide V notch 17 is cut in the upper edge 16 of the base, and a small V notch 18 is cut immediately ahead of the notch 17, as seen in FIGURE 1.

A pivot bolt, or pin, 27 is mounted at the far end of the base, spaced from the notches 17 and 18, extending cross-wise of the horizontal plane of the said notches, as seen in FIGURE 3.

The surfaces of the V notches 17 and 18 are smooth so as to offer no resistance to the rolling or rotation of a container cap supported thereon.

The arm 20 has a dependent jaw 24 having a toothed surface 25 faced toward the V notches 17 and 18 when the arm 20 is mounted on the pivot pin 27. The pivot pin 27 extends through an elongated slot 21 in the arm, having closed ends 22 and 23. The slot 21 is angularly inclined, or tilted, toward the jaw end of the arm 20, at an approximate angle of 30° to the center line of the arm. Thus, the upper end 22 of the slot 21 is nearer the jaw than the lower end 23, as is seen most clearly in FIGURE 2.

The arm 20 and jaw 24 are preferably formed as one piece, of a suitable metal, such as iron or steel, having the required characteristics of weight and strength. In the drawing, the jaw 24 is shown as being somewhat bulbous in shape to give it bulk and weight, since its operation is dependent upon the pull of gravity. Reference numeral 25 indicates a plurality of hardened teeth cut cross-wise of the jaw 24, with their biting edges faced upwards.

The rear face of the base is recessed at 19 to provide a cavity in which the pivot end of the arm 20 is nested so that the arm 20 is free to pivot on its pin 27 without touching the face of the wall 11, as seen in FIGURE 3.

When mounted on a wall 11 as shown in FIGURE 1, the arm 20 and jaw 24 normally pivot downward toward the V notches 17 and 18 under the pull of gravity until the jaw 24 comes to rest thereagainst with the toothed face 25 in operative association therewith.

In explaining the operation of the device, it will be assumed that a straight-walled glass container 12, such as an olive bottle, having a screw cap 13, as shown in FIGURE 4, is to have its cap loosened.

It is of course to be understood that the same procedure would apply to the opening of any type of screw cap container, whether the cap be large or small.

The arm 20, as indicated in full outline in FIGURE 1, is raised by its handle 26, and the lower edge of the bottle cap 13 is supported on the V notch 17 with the end face of the cap held against the wall 11, which acts as a back stop. The bottle 12 is held so that the center of rotation of the cap 13 is parallel to the supporting faces of the V notch 17. The arm 20 is then released and pivots downward, under the pull of gravity, in an arcuate path, until the jaw teeth 25 rest against the edge of the cap 13. The bottle 12 is then rotated or rolled to the left, or counterclockwise on the V notch 17. Since the jaw's teeth 25 are held firmly against the cap, by gravity, they will bite into the cap edge and hold it from rotating. If the rolling force is continued, the container will unscrew from the anchored cap.

If the cap is tightly fitted to the container, the rolling of the cap will continue beyond the initial engagement of the teeth and cap, and such continued rotation will cause the jaw 25 to be pulled downward which in turn will tilt the arm forward on the pivot pin 27 until the lower end 23 of the slot 21 is in contact with the pivot pin 27. The cap will now be tightly wedged between the jaw and notch since any tendency of the arm to swing upward is counteracted by the fact that such movement will cause the arm to be pulled closer against the cap 13 due to the angular inclination of the slot 21. Once the cap is loosened, the

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arm 20 is raised and the container returned to a vertical position wherein the loose cap can be unscrewed by hand, so that any contained liquid will not spill, although it should be understood that the cap could be entirely unscrewed while held in the device.

Reference numeral 14 indicates a small cap, such as that of a nail-polish container, or the like. In this case the cap 14 is positioned in the small V notch 18 and the arm 20 as indicated in dot and dash outline is brought to bear against the cap 14 under the force of gravity as explained hereinabove with the large cap 13.

While the device has been illustrated as being used to hold container caps, it is of course to be understood that it will grip and hold any tubular or cylindrical structure, such as a length of pipe, in which case it would act as a vise.

It will now be clear that there is provided a device which accomplishes the objectives heretofore set forth. While the invention has been disclosed in its preferred form, it is to be understood that the specific embodiment thereof as described and illustrated herein is not to be considered in a limited sense as there may be other forms or modifications of the invention which should also be construed to come within the scope of the appended claim.

I claim:

An opener for screw cap containers comprising in combination:

(a) An elongated base member including means for securing said base member to a vertical surface,

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(b) an arm having a jaw depending therefrom at one extremity, said jaw having a serrated gripping surface, said arm having the other extremity pivotally connected to one end of said base member for tilting movement toward and away from said base member, (c) said base member having a plurality of V-notches of different sizes disposed in spaced relation there along and in confronting relation with said jaw, the smaller of said V-notches opening forwardly at the other end of said base, and the larger of said V-notches being disposed adjacent said smaller of said V-notches and opening generally upwardly, said arm coacting selectively with said V-notches for clamping a container cap therebetween.

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