

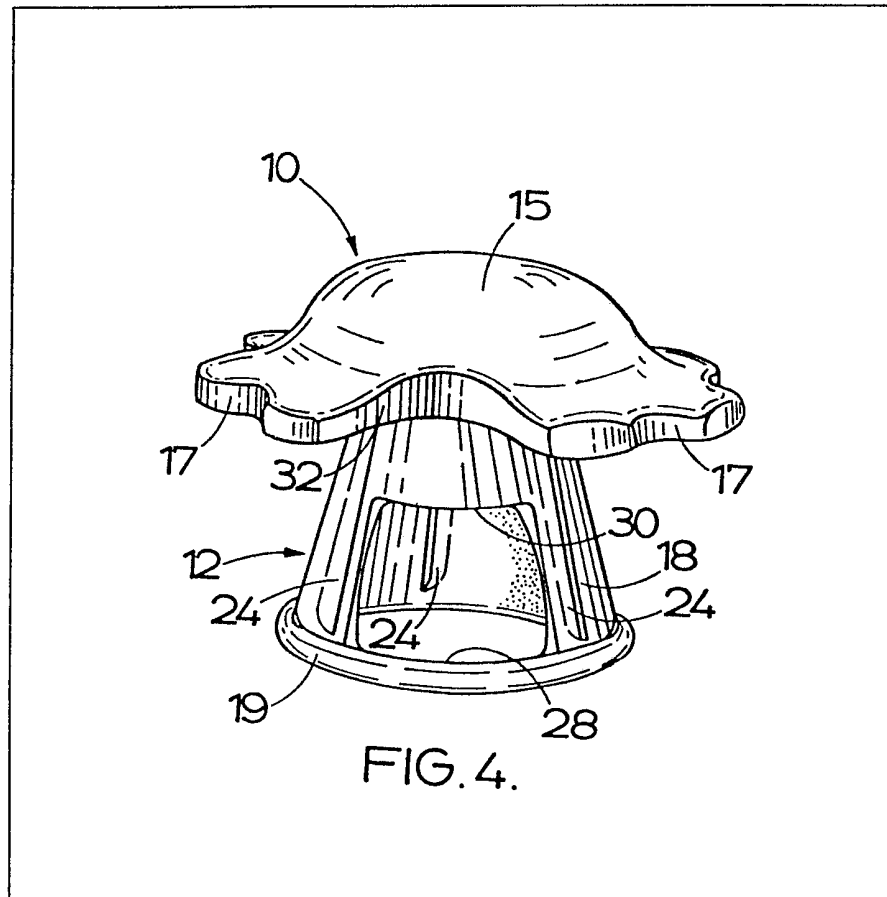
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(54) Opener for screw-tops

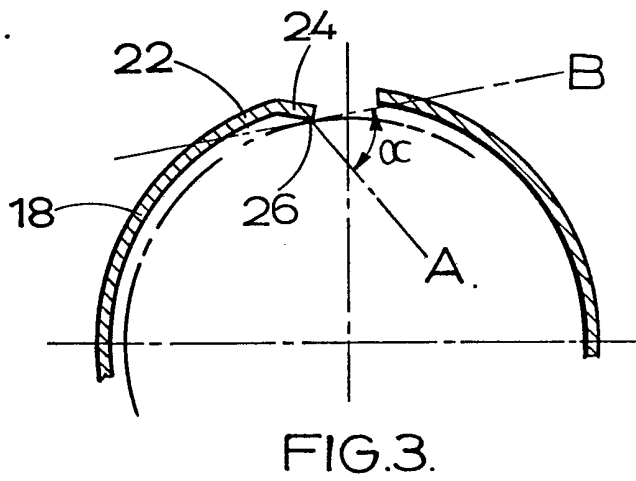
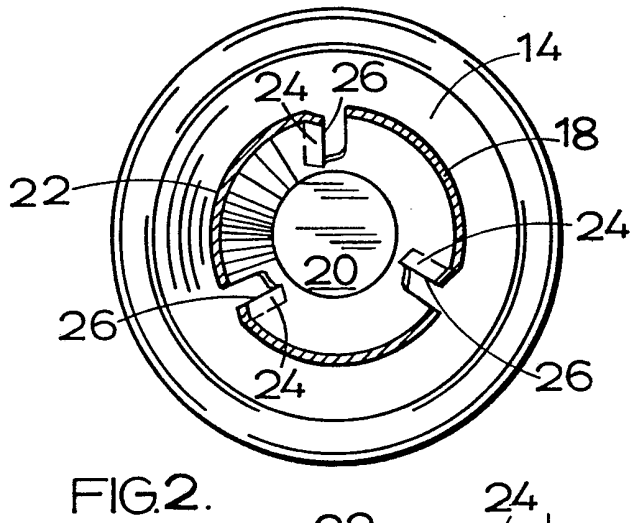
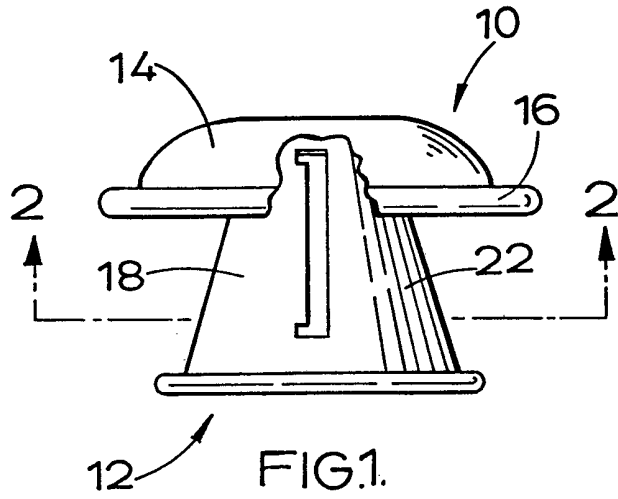
(57) An opener comprises a conical hollow body 18 in the form of a skirt from which three blades 24, spaced apart at 120° about the body axis, are returned to present indenting edges

extending longitudinally of the body. By a forcible application of the device to a screw-top, the indenting edges can be caused to indent the top, to allow the top to be unscrewed by means of the device. An aperture 28 in the body 18 enables the device to be used also to remove crown-caps.



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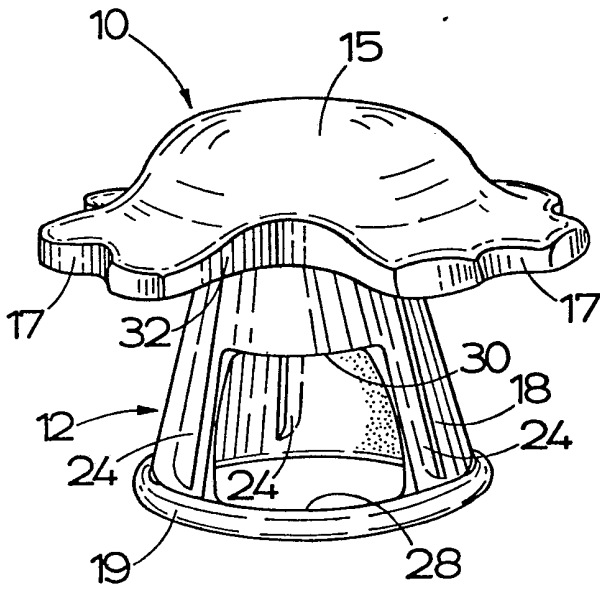


FIG. 4.

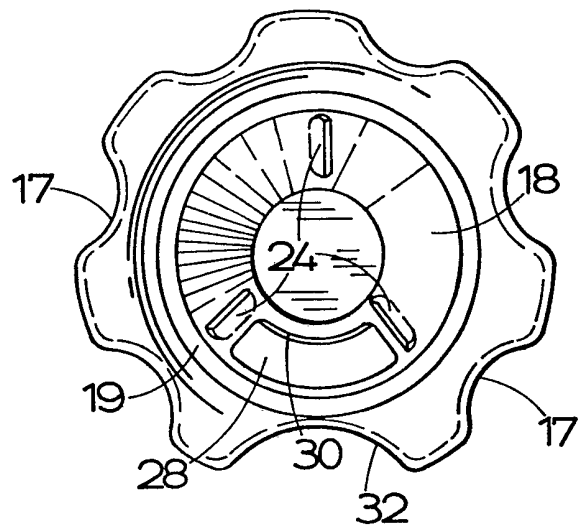


FIG. 5.

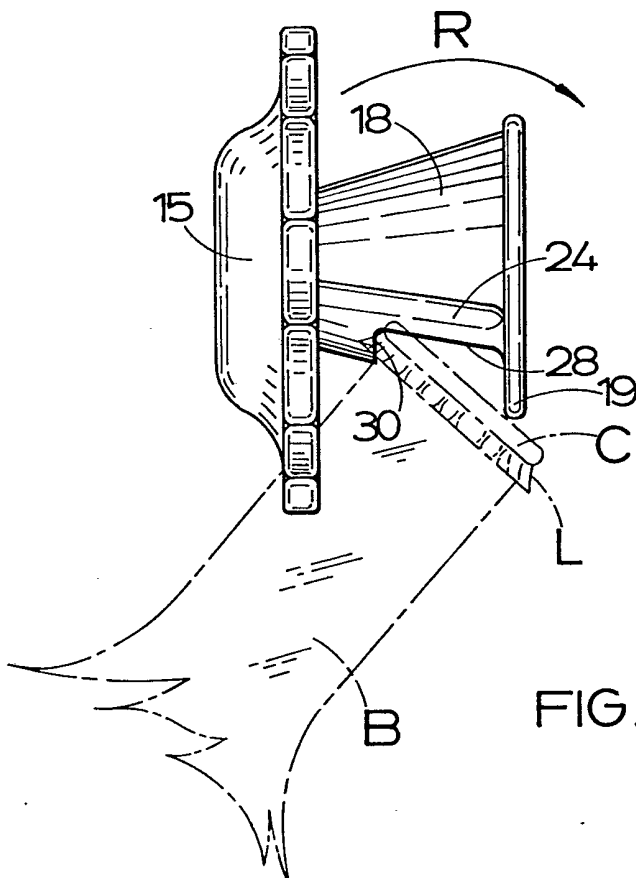


FIG. 6.

SPECIFICATION

Opener for screw-tops

This invention is concerned with a device suitable for use in unscrewing screw-tops on bottles, tins or other containers; by a "screw-top" is meant, where the term is used herein, a cap which is adapted to be threadedly engaged on a neck of a bottle, or other container, to close the container.

The invention is particularly concerned with a device of a kind (hereinafter referred to as "the kind defined") comprising gripping means presenting a plurality of converging indenting edges arranged around a central axis so that by a forcible application of the device to a screw-top on a container, with said edges contacting the screw-top, said indenting edges can be cause to indent the screw-top to prevent relative rotation between the gripping means and the screw-top in a subsequent unscrewing relative rotation between the gripping means and the container.

Difficulty in manually releasing tight screw-tops is a problem which frequently arises, the problem arising from an inability to grip and apply sufficient torque to a relatively small diameter screw-top.

There is a device of the kind defined described in U.K. patent specification No. 865801. That device comprises a metal hollow body having a conical interior surface from which three longitudinally arranged teeth project to provide the indenting edges. The device comprises also a lever which projects from one end of the hollow body and can serve both as a handle and as a crown stopper opener. It would appear that the device could most suitably be manufactured as a casting.

It is an object of the present invention to provide an improved device of the kind defined which can be manufactured cheaply and which is very efficient in operation.

The invention provides in one of its aspects a device of the kind defined in which the gripping means comprises a mounting portion in the form of a skirt and a plurality of blade-like portions turned inwards from the mounting portion to present the indenting edges.

The invention can enable a device of the kind defined to be made cheaply, for example as a metal pressing. Furthermore, the invention enables the indenting edges to be provided by portions of the device which have a degree of resilience, which can allow a ratchet effect to be utilised where more than one twist of the opener is required to release a screw-top.

For stability on a generally cylindrical screw-top, the gripping means preferably presents three indenting edges which are uniformly spaced apart (at 120°) about the central axis.

In a preferred arrangement, the edges are presented in a frusto-conical arrangement. Most preferably the indenting edges extend longitudinally of the frusto-conical arrangement (i.e. along generator lines of the notional cone), though the indenting edges need not be so

65 arranged provided they extend generally longitudinally.

Preferably, the indenting edges each face in a direction (being in the general direction of rotation) making an acute angle with a tangent to the edge. The blade-like portions are preferably turned inwards from the skirt by an angle of 10°.

It is to be expected that a device of the kind defined would find wide application in removing screw-tops from beverage bottles, and accordingly be used both domestically and in pubs and bars. However, many beverage bottles are closed not by screw-tops but by crown-caps, and it would be useful if the device could also be used to remove crown-caps; by a "crown-cap" is meant a clasping metal cap, usually lined with cork or other sealing material.

Accordingly, a device according to the invention preferably comprises levering means adapted for use in levering a crown-cap from a container.

Well-known levering means for use in removing crown-caps comprises a bearing portion adapted to engage a cap to provide a fulcrum, and a lip-engaging portion spaced-apart from the bearing portion and adapted to be engaged beneath the lip of the cap; by a rocking movement of the levering means about the fulcrum, relative to a bottle or other container on which the cap is secured, the lip-engaging portion can be caused to lift the lip of the cap to pull the cap from the container. In the device described in Specification No. 865801, hereinbefore referred to, levering means of this kind is provided by the projecting lever. In a device according to the invention, a bearing portion of levering means is preferably provided by an annular end portion of the mounting means, and a lip-engaging portion provided by an edge portion of the mounting means which borders an aperture extending in the mounting means from the edge portion towards said annular end portion. In this way, levering means is provided in a manner which allows the gripping means and the levering means readily to be provided by a single metal pressing and cheaply.

The device is preferably of metal, but could be of any suitable material. The device may be arranged to be held manually, for application to a screw-top on a container, or may be arranged to be fixedly mounted (for example, on a wall) for a container to be presented manually to the device.

The indenting edges need to be sufficiently hard and sharp to indent a screw-top, with which the device is to be used, upon a reasonable forcible application to the screw-top.

There now follow detailed descriptions, to be read with reference to the accompanying drawings, of two embodiments of the invention which each illustrate the invention by way of example.

In the accompanying drawings:

Figure 1 is a view in elevation of a first device, with a portion of a cap cut away;

Figure 2 is a view in section on the line II—II of *Figure 1*;

Figure 3 is a diagrammatic view illustrating geometry of the first device;

Figure 4 is a view of the second device in perspective;

5 Figure 5 is a plan view of the second device from beneath; and

Figure 6 illustrates use of the second device to remove a crown-cap.

10 Each of the two devices comprises holding means 10, by which it can be held comfortably manually, and gripping means 12 arranged to grip a screw-top on a container.

15 The holding means 10 of the first device (Figures 1 to 3) is in the form of a circular, domed, metal cap 14 comprising an edge portion 16 upturned to form a rounded bead.

20 The gripping means 12 of the first device comprises a generally frusto-conical hollow metal body 18 which is in the form of a skirt. An end wall portion 20 of the body 18 is spot welded to an inside surface of the cap 14, to secure together the cap 14 and the body 18.

25 The body 18 provides a frusto-conical mounting portion 22 of the gripping means, and three blade-like portions 24 of the gripping means. The three blades 24 are turned inwardly from the mounting portion to present three converging indenting edges 26 arranged around a central axis the edges extend longitudinally (i.e. following generator lines) of an inwardly-facing frusto-conical arrangement of the edges, and are uniformly spaced apart (at 120°) about the central axis.

30 As illustrated by Figure 3, each of the blades 24 projects from the mounting portion 22 in such a direction that its indenting edge 26 faces in a direction A making an acute angle α with a tangent B at the edge. As viewed from beneath (as in Figures 2 and 3) the indenting edges 26 all face clockwise, to grip a right-hand threaded screw-top in unscrewing of the top. The blades 24 are turned inwardly from the mounting portion 22 by an angle of 10°.

35 In use of the device, by a forcible application of the device to a screw-top (for example, of metal) on a container (for example, a beverage bottle) the indenting edges 26 are caused to indent the screw-top so as to grip the screw-top to prevent relative rotation between the device and the screw-top. The device, held manually by means of the cap 14, is then rotated to unscrew the screw-top from the bottle. The degree of indentation is small, but is sufficient to prevent the screw-top from slipping within the device.

40 The second device (Figures 4 to 6) is of a basically similar construction to the first device (as regards the provision of gripping means) and will be described in detail only insofar as it differs significantly from the first device. The same reference numerals are used as for the first device to indicate equivalent features.

45 The second device comprises holding means 10 comprising a moulded plastics handle 15 in the form of a generally circular domed cap comprising an edge portion providing peripheral indentations

17 to provide finger-holds.

At a maximum diameter end of the body 18 of gripping means of the device, the body is turned outwards to form a smoothly rounded annular bead 19. An aperture 28 is formed in the body 18, the aperture extending longitudinally of the body from a position adjacent the bead 19 to an edge portion 30 of the body and, circumferentially of the body, between positions adjacent two of the blades 24. The handle is formed with a deep recess 32 in its periphery, aligned longitudinally with the aperture 28, for a purpose which will be referred to hereinafter.

50 Use of the device to remove a crown-cap from a bottle is illustrated in Figure 3. The device comprises a bearing portion provided by the bead 19 adapted to engage a cap C to provide a fulcrum, and a lip-engaging portion, provided by the edge portion 30 of the body 18, which is spaced-apart from the bearing portion and adapted to be engaged beneath the lip L of the cap C. By a rocking movement of the device, indicated by the arrow R, relative to the bottle B on which the cap is secured, the lip-engaging portion can be caused to lift the lip of the cap to pull the cap from the container. The neck of the bottle B is lodged in the recess 32.

55 The body 18, providing the gripping means of the first device, and both the gripping means and the levering means of the second device, is of a construction which lends itself to cheap manufacture as a metal pressing. The blades 24, pressed out of the mounting portion 22, can readily provide sharp indenting edges; it has been found that the blades can readily be made sharp enough to pierce some screw-tops to allow a steady release of pressure from within the container, which can be of benefit with, for example, bottles containing carbonated beverages. Furthermore, the blades can have a certain amount of resilience, which can be of benefit in use of the device.

CLAIMS

110 1. A device of the kind defined in which the gripping means comprises a mounting portion in the form of a skirt and a plurality of blade-like portions turned inwards from the mounting portion to present the indenting edges.

115 2. A device according to claim 1 in which the gripping means presents three indenting edges which are uniformly spaced apart about the central axis.

3. A device according to either of claims 1 and 2 in which the edges are presented in a frusto-conical arrangement.

120 4. A device according to any one of claims 1 to 3 in which the blade-like portions are turned inwards from the skirt by an angle of 10°.

125 5. A device according to any one of claims 1 to 4 in which the gripping means is provided by a metal pressing.

6. A device according to any one of claims 1 to 5 comprising levering means adapted for use in levering a crown-cap from a container, the

levering means comprising a bearing portion adapted to engage a cap to provide a fulcrum and a lip-engaging portion spaced-apart from the bearing portion and adapted to be engaged

5 beneath the lip of the cap in order that by a rocking movement of the levering means about the fulcrum the lip-engaging portion can be caused to lift the lip of the cap to pull the cap from the container, said bearing portion being provided

10 by an annular end portion of said mounting means and said lip-engaging portion being provided by an

edge portion of the mounting means which borders an aperture extending in the mounting means from said edge portion towards said

15 annular end portion.

7. A device of the kind defined substantially as hereinbefore described with reference to Figures 1 to 3 of the accompanying drawings.

8. A device of the kind defined substantially as

20 hereinbefore described with reference to Figures 4 to 6 of the accompanying drawings.