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(54) **Cap opener**

(57) Caps with pull rings can be difficult to remove, especially for persons having weak finger strength.

In order to facilitate the removal, a cap opener according to the present invention can be applied. The opener comprises a handle (1) which is provided with an elevation in the form of a bent part (2) having an elongated slot or opening (3). By inserting the pull ring (4) into the opening (3), the ring will extend over the handle (1) to the effect that the handle (1) can be raised and thus release the cap (5,6) easily and effortlessly.

The opener can be applied to cans as well as to bottles having caps with pull rings (4).

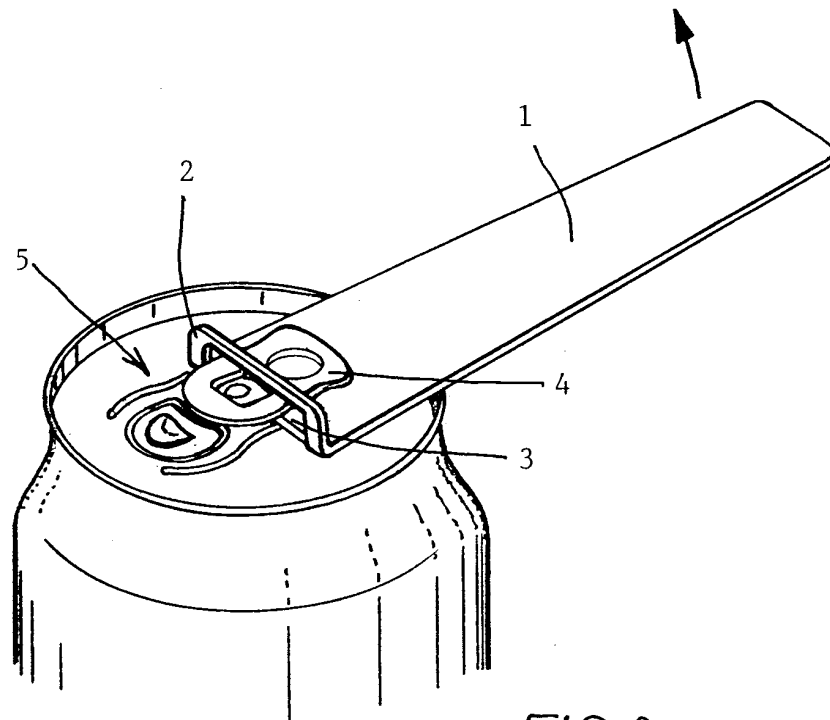


FIG. 3

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Description

Prior Art

[0001] The present invention relates to a cap opener for use with caps provided with pull rings, comprising an elongated lever or handle, preferably plate shaped.

[0002] Containers provided with taps are especially known as beverage containers. In cans such caps are normally an integrated part of the lid, and they are provided with a gripping part, such as a ring or a tongue, which can be released partly or completely by the fingers of the user whereby the container can be opened.

[0003] Similarly, plastic bottles having caps which are provided with a pull ring for removal of the cap from the bottle have been fabricated.

[0004] Such caps have the common problem that they require a certain amount of effort. Persons having weak fingers may therefore have great difficulty opening such containers. In addition to efforts, there is also the risk of injury to the fingernails, in particular where the ring must be released and lifted from the lid.

[0005] A number of auxiliary devices applicable for opening cans are known.

[0006] US Pat. nos. 4.309.921 and 4.957.622 describe examples of such openers, comprising a handle in the form of a piece of plate having a depressed section to form an opening into which the pull ring of the can can be inserted. The pull ring is lifted upwards by raising the handle, and the can is opened.

[0007] These known openers will engage the pull ring by means of the depressed section, which will open the can when the handle is tipped upwards.

[0008] These known openers, however, cannot be applied to bottle caps having a pull ring since they do not have a defined edge upon which the opener can tip when the handle is lifted.

[0009] Consequently, the opening operation is not controlled, and the removal of the cap is unreliable, requiring a careful and big lifting movement in order to release the cap from the bottle.

Object of the Invention

[0010] It is an object of the present invention to facilitate the opening of such caps, and this object is achieved by means of an opener having a handle, one end of which is bent to form a raised part having an elongate opening through which the pull ring of a cap of a can or of a bottle can be inserted over the handle.

[0011] The problem is thus solved in an extremely simple manner as the opening of the opener is merely inserted over the pull ring of the cap, whereupon the handle of the opener can be raised or tipped whereby the cap, whether that of a can or that of a bottle having a pull ring, is removed.

[0012] The operation requires very little effort since the moment arm is long and a cap can easily be re-

moved by means of such an opener, even by persons with weakened finger strength, especially because the tipping movement occurs over a well-defined bending edge which controls the opener during the tipping movement.

[0013] By configuring the bent up edge at right angles to the handle, as defined in claim 2, the ring can easily be tipped or rolled off when the handle is tipped in a smooth sliding movement.

[0014] By configuring the opening such that the metal pull ring of a can may readily be inserted and the plastic ring of plastic caps can be inserted under a small deformation, as defined in claim 3, the ring will remain in the opening, abutting against the handle during lifting and tipping of the handle without the risk of the opener letting go its hold of the ring.

[0015] By configuring the opening parallel to the over and/or underside of the handle, as defined in claim 4, a perfectly steady pull on the ring and thus on the cap will be exerted since the handle turns about the bent edge.

[0016] Finally, it is advantageous as defined in claim 5 and 6, to fabricate the opener from a stainless steel plate or by plastic or metal moulding.

The Drawings

[0017] Embodiments of the invention will be described in detail below with reference to the drawings, in which

Fig. 1 illustrates an example of an opener adapted for pull rings;

Fig. 2 illustrates a sectional view of the opener shown in Fig. 1;

Fig. 3 illustrates the opener applied to a can;

Fig. 4 illustrates the opener applied to a bottle;

Fig. 5 illustrates a second example of a multi-purpose opener;

Fig. 6 illustrates the lifting operation of a screw cap by means of the opener.

Description of embodiments

[0018] An opener according to the invention can be fabricated from a piece of plate material, as shown in Fig. 1.

[0019] The opener must be so configured that one end constitutes a lever or a handle 1 having the purpose of constituting a lever arm when the opener is in use, as will be explained below.

[0020] One of the side edges of the lever 1 is provided with an elevation or a bent up part of the plate for the formation of a right-angled, upright part, a flap 2.

[0021] The flap 2 has an elongate, through-going opening 3, as shown in Fig. 2.

[0022] The height of the elevated part 2 is preferably app. 8-10 mm, the height of the elongate opening 3 is app. 3-5 mm, and the length app. 20 mm.

[0023] Fig. 3 illustrates how the opener of the invention is used to open a can.

[0024] The can is provided with a cap 5, which is connected to a pull ring 4 abutting against the lid of the can. This ring 4 is easily lifted by means of a sharpened edge, which is not shown, of the handle 1, whereupon the ring can be released.

[0025] The opening 3 can then be inserted over the ring 4, as illustrated in the drawing, and as the handle 1 is subsequently raised, as indicated by an arrow, the cap will be removed by rolling the ring off the lid. This is an extremely easy operation requiring very little effort, and removal of the cap without risk of damaging the can is ensured.

[0026] Fig. 4 illustrates how the opener is applied to a plastic bottle with the plastic pull ring 4.

[0027] The ring 4 is introduced into the opening 3 under slight deformation in the lateral direction of the ring 4. The opener and the ring thus fit together when the ring expands after insertion. The opener is thus prevented from falling off, and as the opener is tilted in the direction of the arrow, the cap 6 will roll off the bottle easily and effortlessly, requiring merely a slight lifting of the opener.

[0028] Fig. 5 illustrates a combined opener, which in addition to the opener parts 2, 3 for caps with pull rings comprises a traditional cap opener 7 and a lid opener 8. Fig. 6 illustrates how the lid opener works. The lid 9 is often very difficult to release due to a negative pressure often present in the bottle. In order to eliminate the negative pressure a lifting flap 8 can be applied, as illustrated in Figs. 5 and 6, to be engaged under the lid 9, and by tilting the handle in the direction of the arrow the lid will be lifted to an extent where air will enter the bottle. Even weak fingers will then be able to remove the lid.

[0029] The opener can be fabricated either of metal or plastic in a commonly known manner and it may also be provided with imprints, etc. for advertising purposes or as an eye-catcher.

that the elevated part (2) extends substantially at right angles to the handle (1) and has a height of app. 8-10 mm.

- 5 3. Cap opener according to claim 1, characterized in that the height of the elongated opening (3) is app. 3-5 mm, and the length app. 20 mm.
- 10 4. Cap opener according to claim 3, characterized in that the opening (3) extends substantially parallel to the underside of the handle (1).
- 15 5. Cap opener according to any of the claims 1-4, characterized in that it is made of steel plate.
- 20 6. Cap opener according to any of the claims 1-5, characterized in that it is made by plastic or metal moulding.

Claims

1. Cap opener for use with caps provided with pull rings, comprising an elongate lever, handle, preferably plate shaped, characterized in that one end of the handle (1) is bent to form an elevated part (2) having an elongate opening (3) adapted for the insertion over the handle of the pull ring (4) of a cap (5) of a can or a bottle (6) can be inserted over the handle (1).
2. Cap opener according to claim 1, characterized in

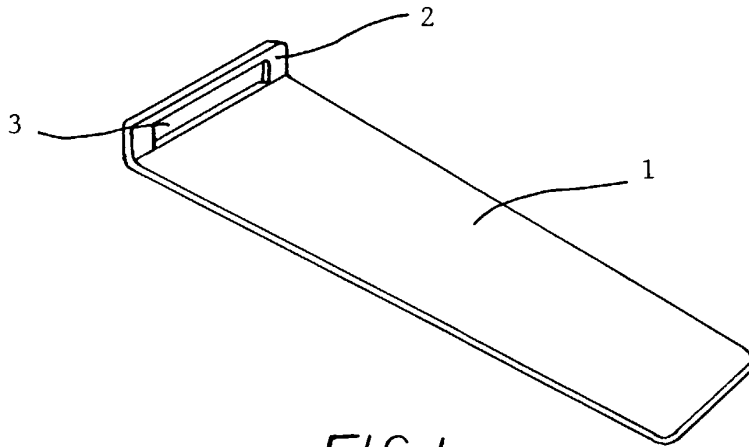


FIG. 1

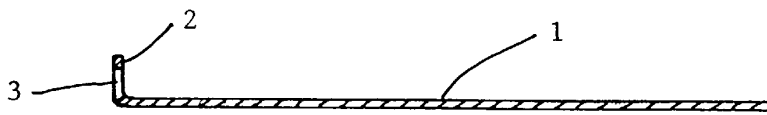


FIG. 2

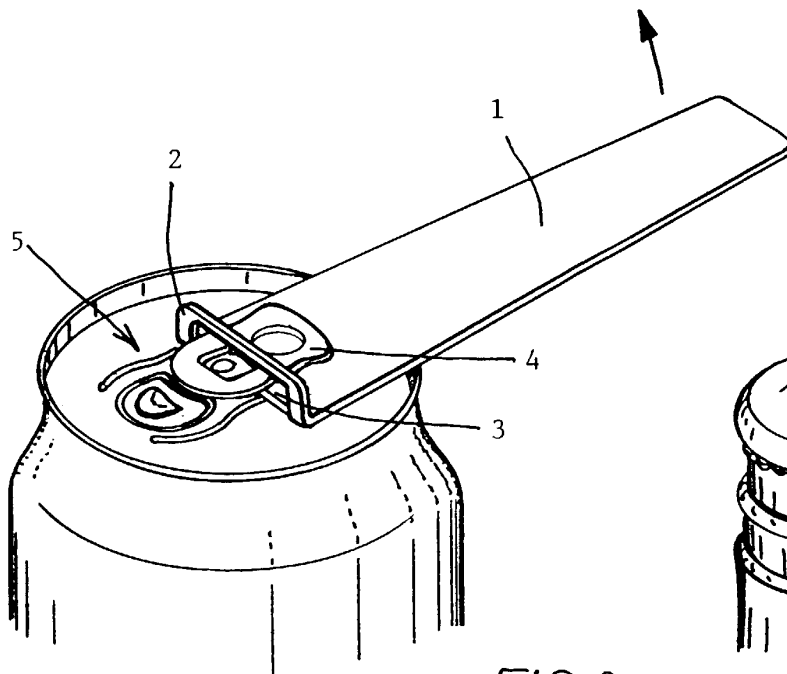


FIG. 3

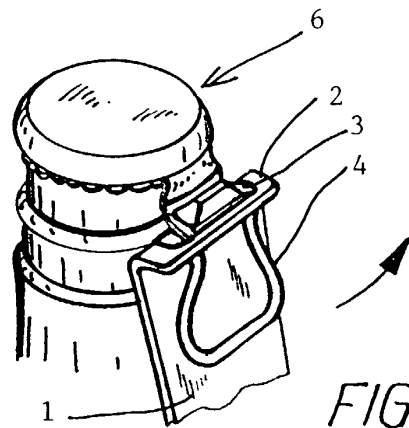


FIG. 4



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EUROPEAN SEARCH REPORT

Application Number
EP 00 61 0077

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			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			B67B
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
THE HAGUE		18 January 2001	Martínez Navarro, A.
CATEGORY OF CITED DOCUMENTS		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ----- & : member of the same patent family, corresponding document	
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**ANNEX TO THE EUROPEAN SEARCH REPORT
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EP 00 61 0077

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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18-01-2001

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82