

(19)



(11)

EP 2 674 053 A1

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:

18.12.2013 Bulletin 2013/51

(51) Int Cl.:

A44B 6/00 (2006.01)

A44B 15/00 (2006.01)

B67B 7/16 (2006.01)

(21) Application number: **12172309.2**

(22) Date of filing: **15.06.2012**

(84) Designated Contracting States:

**AL AT BE BG CH CY CZ DE DK EE ES FI FR GB
GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO
PL PT RO RS SE SI SK SM TR**

Designated Extension States:

BA ME

(74) Representative: **Lawman, Matthew John Mitchell**

et al

EIP

Fairfax House

15 Fulwood Place

London, WC1V 6HU (GB)

(71) Applicant: **Guerrini, Dominic**

London SW3 4BX (GB)

Remarks:

Amended claims in accordance with Rule 137(2)

EPC.

(72) Inventor: **Guerrini, Dominic**

London SW3 4BX (GB)

(54) **Key ring**

(57) The present invention provides a key ring (18) capable of removing a crown cap (10) from a bottle. The crown cap has a rim (12) and a top (11). The key ring can admit and retain keys and comprises a closed loop including a first portion having a pair of elongated arms (20,22) that extend in the same general direction (Y) and are spaced apart in an orthogonal direction (X) by a distance of 10 to 40mm. The bottle can be opened by locating one of the arms (22) under the rim of a crown cap

while the other of the arms (20) is located on the top of the crown cap and the key ring is twisted in the direction of arrow A. The length of the loop in the direction (Y) is at least 20 mm so that the loop includes a second portion (25) that extends laterally beyond the crown cap by a distance that allows the key ring to be engaged by the user to twist the key ring and lever the cap off the bottle. A key (30) on the key ring and/or an extension (26) of the key ring loop in the X direction can assist in levering the cap off the bottle.

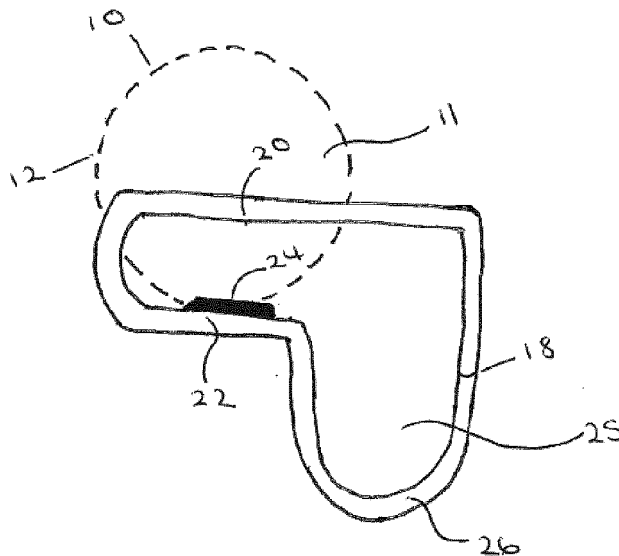


Figure 5

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Description

Technical Field

[0001] The present invention relates to a key ring that can admit and retain keys on it.

Background Art

[0002] Bottles are often sealed with crown corks, also known as crown caps, such as depicted in Figure 1 having a top 11 and a rim 12 composed of a series of spaced flutes. Such caps have a diameter of about 30mm and a depth of about 6mm. The flutes are crimped around the neck of a bottle to seal it. In order to open such crown caps, a bottle opener is used that engages under the fluted rim 12 and also engages the top 11; a lever action is applied to prise the crown cap off the bottle. Key ring fobs that can be used as bottle openers are well known for attachment to normal key rings. However, they have the disadvantage that they are bulky and heavy.

Disclosure of Invention

[0003] The present invention is as defined in the accompanying claims.

[0004] Generally speaking, the invention relates to a key ring that is itself capable of removing a crown cap from a bottle. The key ring is formed as a closed loop and especially a single closed loop having curved sections that allow keys to be moved readily around the loop.

[0005] The key ring is configured to admit, retain and remove keys; this configuration can be provided by making the key ring as a split ring having a helical path for admitting and removing keys from the ring, as is well known. Alternatively, the key ring may be formed with a break that is spanned by a bridge that can be opened to admit and remove keys and kept closed to retain keys on the key ring.

[0006] The key ring of the present invention has a pair of spaced-apart elongate arms that extend in the same general direction as each other. In the present specification, the direction in which the arms extend will be referred to as the "Y direction" and the length of the key ring in the Y direction will be referred to as the "Y length". Similarly, the spacing between the arms will be referred to as the "X direction" while the distance between the arms will be referred to as the "X width". The arms may be straight and parallel to each other, but a certain amount of curvature in the arms and a small variation in the separation between the arms can be tolerated while still performing the dual function of a key ring and a bottle opener.

[0007] As mentioned, the arms should extend in the same general direction (Y direction) and be separated by a distance (X width) of 10 to 40mm, e.g. 12 to 26mm for example 14 to 22mm, such as 15 to 19mm, e.g. about 17mm. With such an arrangement, it is possible to use one arm to engage under the fluted rim 12 of a crown

cap while the other arm is applied against the top 11 of the crown cap. The key ring can then be twisted to lever the fluted rim off the bottle. The axis of the twisting motion will lie in the Y direction. In accordance with the present invention, the application of this twisting motion on the key ring is provided by extending the key ring in the Y direction so that a lateral portion of the key ring lies alongside the crown cap as it is being opened as described above. In order to provide this lateral portion, the length of the loop in the Y direction is preferably at least 20mm and, although there is no theoretical upper limit, a key ring with a length of more than 100mm is cumbersome to carry around and so the length of the loop in the Y direction would not generally exceed that. In addition, the longer the Y length is, the more the key ring will flex when the twisting motion is applied to remove the cap from the bottle. In practice, the length of the loop in the Y direction will generally be in the range of 20 to 40mm e.g. 22 to 35mm, for example 23 to 30mm, such as about 25mm. The limits in any series of ranges quoted in this specification can be exchanged and so the present invention contemplates ranges with any of the minima in the series in combination with any of the maxima, e.g. it contemplates a range for the length of the loop in the Y direction of 22 to 40mm.

[0008] In order to increase the twisting force applied by the key ring to the cap, a key that is already on the key ring can be positioned so that it returns on itself (i.e. it spans the lateral portion and engages the ring at 2 points spaced apart in the X direction) and the key can then be twisted to lever the cap off the bottle. Instead of a key, another lever can be introduced into this lateral portion to help lever the crown cap off the bottle. A further way of providing leverage to increase the twisting force removing the cap is to extend the key ring in the lateral portion in the X direction, for example by at least 10mm, as will be more fully discussed below.

[0009] In order to lever a crown cap off a bottle, it is not necessary for the arm engaging the top of the cap to extend across the centre of the cap and it is possible to lever the cap off by engaging an edge portion of the cap only. As mentioned above, the separation between the arms (the X width) should be in the range of 10 to 40mm, such as 10 to 26 mm. If the X width is towards the top end of this range, the arm engaging the top surface of the cap will have to be longer in order to span the cap at its point of engagement with the top surface and therefore, in order to provide the above-mentioned lateral portion, the length of the key ring in the Y direction will have to be larger than if the X width lies towards the bottom of the above range. Therefore, if the X width is towards the top of the above range, for example 20 to 26mm or even more, then the length of the key ring in the Y direction should preferably lie outside the lower values of the above ranges. However, as mentioned above, it is desirable to limit the length of the key ring for reasons of convenience and to avoid undue flexing when the twisting motion is applied to remove the cap from the bottle.

Therefore if the X width is towards the top of the above range, the Y length may, for example be 25 to 50mm, for example 27 to 40mm. Accordingly, a separation between the arms (X width) of 15 to 19mm, e.g. about 17mm, in combination with a length of the key ring in the Y direction of 22 to 28mm, such as 25mm, has been found to be most preferred. Also preferred is for the Y length to exceed the X width, e.g. the ratio of Y length to X width may be at least 1.1:1, for example 1.25:1 to 3:1, e.g. 1.4:1 to 2:1.

Description of Drawings

[0010]

Figure 1 is an image of a crown cap;
 Figures 2 to 5 are schematic views of a key ring in accordance with the present invention; and
 Figure 6 is a schematic view of a key ring in accordance to the present invention that shows the use of a key to increase the leverage force of the bottle opener.

Detailed Description of Invention

[0011] Figure 1 is a picture of a standard crown cap 10 (also called a crown cork), which has a top surface 11 and a rim 12 composed of a series of spaced flutes, which are crimped onto the neck of a bottle in order to seal it.

[0012] Figure 2 shows a key ring of the present invention having a split ring configuration with the opening of the split ring to admit keys to the key ring being shown by the reference number 18. The key ring has a pair of straight arms 20, 22 that are separated by a distance X of 10 to 40, e.g. 12 to 26 mm and in one embodiment is 17mm.

[0013] The length of the key ring Y is 20 to 32 mm or even longer and in one embodiment is 25mm as against a distance X of 17mm. Figure 2 also shows a bottle top 10. Part of the key ring can be flattened as shown by the reference number 24 in order to assist in the engagement of the key ring with the bottom rim 12 of the cap 10. When such a portion engaging under the rim is provided, the distance X is measured between such a portion and the other arm. As can be seen from figure 2, the flattened portion 24 of the arm 22 is placed under the rim 12 of the cap 10 while the other arm 20 engages the top of the cap 10. This means that the right hand side of the key ring (as seen in Figure 2) extends beyond the side of the cap to provide a lateral portion 25 and can be used to lever the cap off the bottle by grasping the lateral portion 25 of the key ring and applying a twisting action shown by an arrow A. In this context, additional force can be applied using a lever extending through the lateral portion 25 of the key ring, i.e. the right-hand part of the key ring of Figure 2. Such leverage can be applied by a key on the key ring that is returned on itself, as shown in Figure 6. Alternatively or in addition, the leverage can be provided

by increasing the width of the direction X in the above-mentioned lateral portion (shown in the right hand side of Figure 2). This will be described in connection with Figures 3 to 6.

5 [0014] Instead of providing a flattened portion 24, a lug (not shown) may be welded to the ring to provide a similar effect.

[0015] Referring now to Figure 3, it can be seen that only the left hand side of the key ring (indicated by the arrow Y1) is used for engaging the crown cap while the right hand side of the key ring (indicated by the width Y2) is a lateral portion 25 that has an additional loop 26 to increase the width of the key ring in the X direction, which allows a user to engage the loop 26 with his thumb and twist the key ring as shown by arrow A; the additional width provided by the loop 26 increases the force of the twisting action, which makes it is easier to remove the bottle top. The additional width in the X direction provided by the loop 26 is preferably at least 10 mm as compared cap to the separation between the arms in the left hand, engaging portion of the key-ring.

[0016] A similar arrangement is shown in Figure 4 except that two loops 26 and 28 are provided at the end of each of the arms 20, 24, which provides greater torque for the twisting movement shown by arrow A to remove the cap from the bottle, as already described in connection with Figures 2 and 3.

[0017] Figure 5 is essentially the same as Figure 3 except that the loop 26 has been extended by a further distance in the X direction, for example at least 20 mm beyond arm 22.

[0018] As already described, a lever can be used to increase the torque of the twisting action. This lever may be a key 30 already provided on the key ring, as shown in Figure 6.

[0019] As will be evident, it is necessary to make the key ring so that it is robust enough to withstand the twisting action mentioned above to remove a crown cap from a bottle.

[0020] The key ring of the present invention may be made of the same material as key rings are currently made of, e.g. stainless steel or chromium plated steel, and can be made using standard metal forging processes.

Claims

1. A key ring capable of removing a crown cap from a bottle, which crown cap has a rim and a top, wherein the key ring is configured to admit and retain keys and comprises a closed loop including a first portion having a pair of elongated arms that extend in the same general direction (Y) and are spaced apart in an orthogonal direction (X) by a distance of 10 to 40mm, whereby one of the arms can be located under the rim of a crown cap while the other of the arms is located on the top of the crown cap, and wherein

the length of the loop in the direction (Y) in which the arms extend is at least 20 mm, whereby the loop includes a second portion that extends laterally beyond the crown cap by a distance that allows the key ring to be engaged by the user to lever the cap off the bottle.

2. A key ring as claimed in claim 1, wherein the pair of elongated arms are spaced apart by a distance of 12 to 26mm, e.g. 14 to 22 mm, for example 15 to 19 mm, such as about 17 mm.
3. A key ring as claimed in claim 1 or claim 2, wherein the length of the loop in the direction (Y) in which the arms extend is 20 to 40mm, e.g. 22 to 32 mm, for example 22 to 28 mm, such as about 25 mm.
4. A key ring as claimed in any preceding claim, wherein the Y length exceeds the X width, e.g. the ratio of Y length to X width is at least 1.1:1, for example 1.25:1 to 3:1, e.g. 1.4:1 to 2:1.
5. A key ring as claimed in any preceding claim, wherein the second portion has a width in the said orthogonal direction (X) that is at least 10 millimetres greater than the separation between the arms.
6. A key ring as claimed in claim 5, wherein the second portion comprises a loop that extends in the said orthogonal direction (X) beyond only one of the arms.
7. A key ring as claimed in claim 5, wherein the second portion comprises a loop that extends in the said orthogonal direction (X) beyond both of the arms.
8. A key ring as claimed in any tree seeding claim, wherein a flat land is provided on the inside of at least one of the arms to engage under the rim of a crown cap.
9. A key ring as claimed in any preceding claim which is configured to allow a key on the key ring to act as a lever by spanning the key ring second portion so that it contacts the ring at 2 points that are spaced apart from each other in the X direction, whereby the key can be twisted to assist in levering the cap off the bottle.
10. A method of removing a cap from a bottle using a key ring as claimed in any preceding claims which comprises engaging one of the arms in the first section under the rim of the cap and engaging the other of the arms in the first section with the top of the cap and twisting the second portion lying laterally beyond the cap to lever the cap off the bottle.

Amended claims in accordance with Rule 137(2) EPC.

1. A key ring capable of removing a crown cap from a bottle, which crown cap has a rim and a top, wherein the key ring is configured to admit and retain keys and comprises a closed loop including a first portion having a pair of elongated arms that extend in the same general direction (Y) and are spaced apart in an orthogonal direction (X) by a distance of 10 to 40mm, whereby one of the arms can be located under the rim of a crown cap while the other of the arms is located on the top of the crown cap, and wherein the length of the loop in the direction (Y) in which the arms extend is at least 20 mm, whereby the loop includes a second portion that extends laterally beyond the crown cap by a distance that allows the key ring to be engaged by the user to lever the cap off the bottle.
2. A key ring as claimed in claim 1, wherein the pair of elongated arms are spaced apart by a distance of 12 to 26mm, e.g. 14 to 22 mm, for example 15 to 19 mm, such as about 17 mm.
3. A key ring as claimed in claim 1 or claim 2, wherein the length of the loop in the direction (Y) in which the arms extend is 20 to 40mm, e.g. 22 to 32 mm, for example 22 to 28 mm, such as about 25 mm.
4. A key ring as claimed in any preceding claim, wherein the length of the key ring in the Y direction exceeds the width of the key ring in the X direction, e.g. the ratio of the length in the Y direction to the width in the X direction is at least 1.1:1, for example 1.25:1 to 3:1, e.g. 1.4:1 to 2:1.
5. A key ring as claimed in any preceding claim, wherein the second portion has a width in the said orthogonal direction (X) that is at least 10 millimetres greater than the separation between the arms.
6. A key ring as claimed in claim 5, wherein the second portion comprises a loop that extends in the said orthogonal direction (X) beyond only one of the arms.
7. A key ring as claimed in claim 5, wherein the second portion comprises a loop that extends in the said orthogonal direction (X) beyond both of the arms.
8. A key ring as claimed in any tree seeding claim, wherein a flat land is provided on the inside of at least one of the arms to engage under the rim of a crown cap.
9. A key ring as claimed in any preceding claim which is configured to allow a key on the key ring to act as a lever by spanning the key ring second portion so

that it contacts the ring at 2 points that are spaced apart from each other in the X direction, whereby the key can be twisted to assist in levering the cap off the bottle.

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10. A method of removing a cap from a bottle using a key ring as claimed in any preceding claims which comprises engaging one of the arms in the first section under the rim of the cap and engaging the other of the arms in the first section with the top of the cap and twisting the second portion lying laterally beyond the cap to lever the cap off the bottle.

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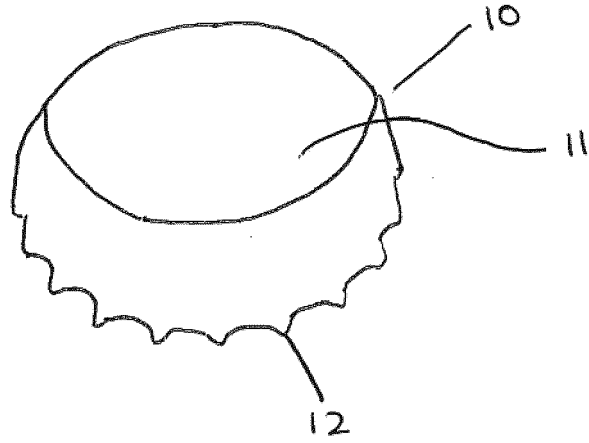


Figure 1

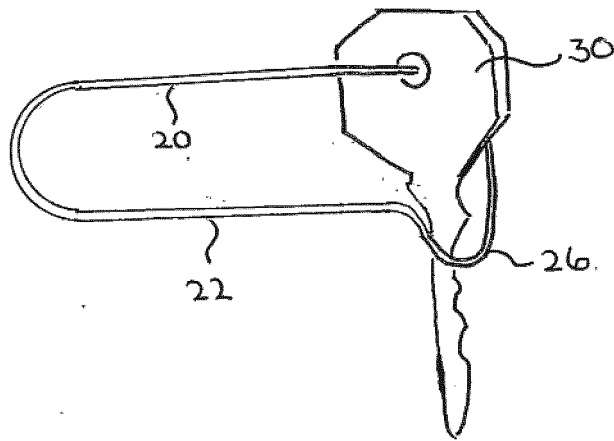


Figure 6

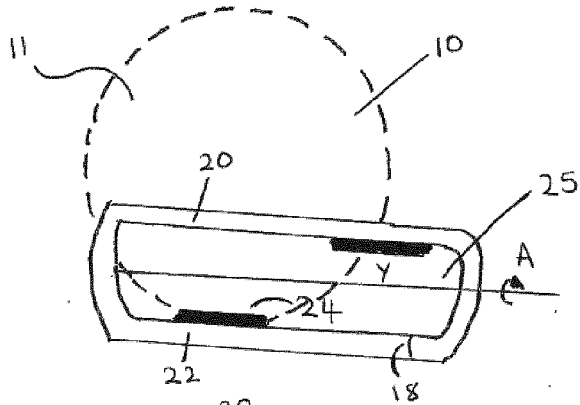


Figure 2

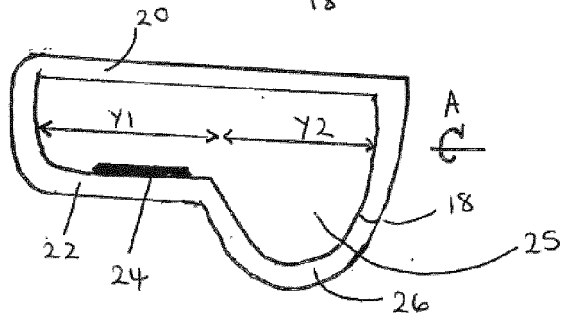


Figure 3

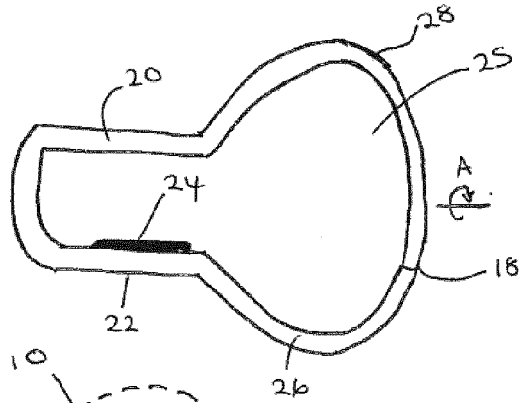


Figure 4

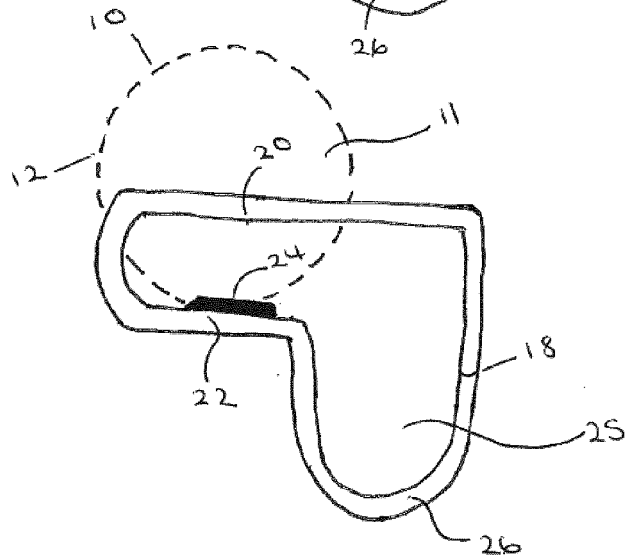


Figure 5



EUROPEAN SEARCH REPORT

Application Number
EP 12 17 2309

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 5 438 555 A (KIM HO C [US]) 1 August 1995 (1995-08-01)	1-8,10	INV. A44B6/00 A44B15/00 B67B7/16
A	* abstract; figures 1-4 * * column 2, line 44 * * column 3, lines 28-35 *	9	
A	GB 661 798 A (HAROLD EVES) 28 November 1951 (1951-11-28) * abstract; figures 1-5 * * page 1, lines 8-15 * * page 1, line 68 - page 2, line 13 *	1	
A	US 2009/158899 A1 (EISENBRAUN KENNETH D [US]) 25 June 2009 (2009-06-25) * abstract; figures 1-4 * * paragraphs [0013] - [0016] *	1	
A	US 2010/078541 A1 (FATHI FARVARDIN [US] ET AL) 1 April 2010 (2010-04-01) * abstract; figures 11,13 * * paragraph [0051] *	1	
A	US 2003/037581 A1 (CHRISTOPHE PROST [TW]) 27 February 2003 (2003-02-27) * abstract; figures *	1	
A	GB 10462 A A.D. 1910 (INSTANTER LTD [GB]; BERTRAND FRANK WYLER [GB]) 15 September 1910 (1910-09-15) * abstract; figures 1-6 *	1	TECHNICAL FIELDS SEARCHED (IPC) A44B B67B
1 The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 26 November 2012	Examiner Contreras Aparicio
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		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	

EPO FORM 1503 03/02 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
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26-11-2012

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