



(12) **EUROPEAN PATENT APPLICATION**
published in accordance with Art. 153(4) EPC

(43) Date of publication:
13.09.2017 Bulletin 2017/37

(51) Int Cl.:
B65D 41/14 (2006.01) B65D 51/24 (2006.01)

(21) Application number: **15856949.1**

(86) International application number:
PCT/BR2015/000077

(22) Date of filing: **18.05.2015**

(87) International publication number:
WO 2016/070250 (12.05.2016 Gazette 2016/19)

(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
Designated Validation States:
MA

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(30) Priority: **05.11.2014 BR 202014027661 U**

(54) **STRUCTURAL ARRANGEMENT APPLIED TO A BOTTLE CAP**

(57) The present utility model related to a structural arrangement applied to a bottle cap, belonging to the technical sector of general packaging accessories, and specifically to a cap for bottles containing beverages, such as beer, water, soft drinks or any other beverage that is packaged in a bottle, that provides very advantageous practical, safe and functional results. The present utility model patent comprises a metal cap (1) provided with an L-shaped lever/handle (2) in which the smaller segment (21) and the extremity of the larger segment (22), which is close to the vertex, are attached to the upper face and to the peripheral wall of the cap (1) by welding, gluing, pinning or any other attachment means, the lightly grooved vertical larger segment (22) forming the "handle" having a ring-pull (23) at the extremity of same. Optionally, according to figures 1.6 and 1.8, the extremity of the larger segment (22), which is close to the vertex, is formed around the peripheral wall of the cap (1), forming a corrugated area with the same "relief/molded" system present in the cap (24).

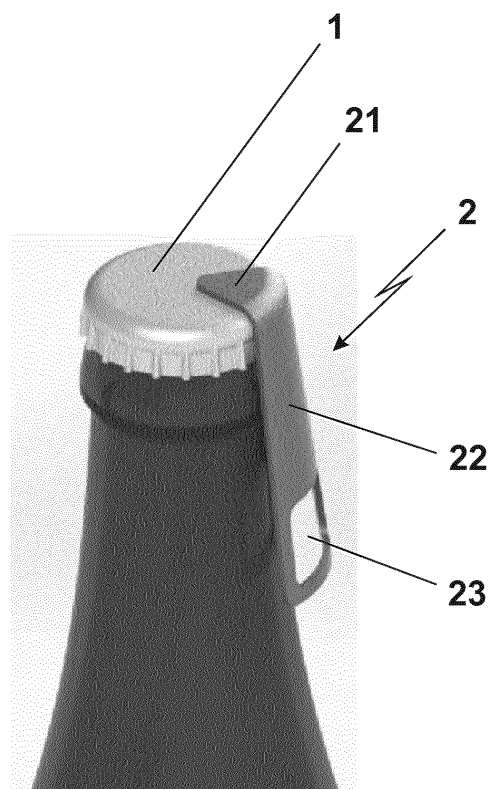


Fig. 1.1

Description

DISCLOSURE OF THE INVENTION

[0001] The present Utility Model Patent is directed to a structural arrangement applied to a bottle cap, pertaining to the technical sector of packaging accessories in general, more particularly a cap for bottles of beverages, such as beer, water and soft drink or any other beverage that uses the bottle as a packing container, through which advantageous practical, safe and functional results are attained.

STATE OF THE ART

[0002] In accordance with to www.papodebar.com, in the 1880's, carbonated beverages started to become quite popular in bars, but it was quite complicated to take them home. Generally, the bottles have been sealed with corks or ceramic, wood and metal caps, but they could not retain the carbonic gas efficiently. Still worse, in the event they contacted the liquid, it could become toxic. Until William Painter solved the problem by inventing in 1891, the crown cap provided with a cork disk inside same that prevented the beverage from contacting the metal (plastics are used nowadays for such purpose). The cap, with its corrugated edge, was the perfect solution for sealing, without any leak, the bottles containing carbonated liquids. After inventing the crown cap in 1894, William Painter invented its faithful partner the can opener.

[0003] The crown cap has been used for a long time in the company of the indispensable can opener, until the advent of the so-called "long neck" disposable beer bottles, the traditional caps have been replaced by the new caps that can be threaded to the mouths of the bottles, thus eliminating the need to use the can opener. However, in addition to the regular bottles that kept on using the traditional cap a new ecological appeal is paving the way to new returnable beer bottles and the old soft drink bottles, that use old caps and the indispensable can opener, which is many times inconvenient when using such containers.

[0004] Thus, in order to extend the use of disposable container, without the inconvenience of carrying a can opener, the present invention has developed a structural arrangement of a bottle cap and its constructive variants, thus making it possible to open bottles having a cap provided with a lever that allows same to be opened.

DESCRIPTION OF THE INVENTION

[0005] The present utility model patent will be better understood through the description of the figures that represent schematically:

Figure 1.1: a perspective view of the new structural arrangement applied to a bottle cap;

Figure 1.2: a perspective view showing the bottle cap closed;

Figure 1.3: a perspective view showing the bottle cap partially opened;

Figure 1.4: a perspective view showing the bottle cap almost fully opened;

Figure 1.5: a perspective view showing the bottle cap fully opened;

Figure 1.6: a perspective view showing the bottle cap closed, with the lever following the undulation of the edge;

Figure 1.7: a perspective view showing the bottle cap partially opened, with the lever following the undulation of the edge;

Figure 1.8: a perspective view showing the bottle cap fully opened, with the lever following the undulation of the edge;

Figure 2.1: a perspective view of a first constructive variant of the bottle cap, with the lever at angles;

Figure 2.2: a side view of a first constructive variant of the bottle cap, with the lever at angles;

Figure 3.1: a front view of a second constructive variant of the cap made as a single body;

Figure 3.2: a perspective view showing the cap made as a single body in an opened state;

Figure 3.3: a perspective view of the cap made as a single body in a closed state;

Figure 3.4: a perspective view of the cap made as a single body in a partially opened state;

Figure 3.5: perspective view of the cap made in a single body in a fully opened state;

Figure 4.1: a perspective view showing a third constructive variant of the bottle cap closed, with the lever provided with a guillotine type perforator;

Figure 4.2: a perspective view showing a third constructive variant of the cap opened, with the lever provided with a guillotine type perforator;

Figure 4.3: a perspective view showing a third constructive variant of the cap partially opened, with the lever provided with a guillotine type perforator;

Figure 4.4: a perspective view showing a third constructive variant of the cap fully opened, with the lever provided with a guillotine type perforator, with the "tip/tooth" already inserted in the cap so that the carbonic gas may escape, thus releasing the pressure that retains the cap;

Figure 4.5: a side cut view showing a third constructive variant of the cap closed, with the lever provided with a guillotine type perforator with a "tip/tooth";

Figure 4.6: a side cut view showing a third constructive variant of the cap opened, with the lever provided with a guillotine type perforator with a "tip/tooth";

Figure 5.1: a front view of a fourth constructive variant of the bottle cap, with the lever provided with an internal hook;

Figure 5.2: a side cut view showing a fourth constructive variant of the cap closed with the lever provided with an internal hook;

Figure 5.3: a side cut view showing a fourth constructive variant of the cap opened with the lever provided with an internal, half hook;

Figure 5.4: a front view of a fourth constructive variant of the cap with the lever provided with an internal hook;

Figure 5.5: a back view of a fourth constructive variant of the cap with the lever provided with an internal hook;

Figure 5.6: a perspective view showing a fourth constructive variant of the cap closed with the lever provided with an internal hook;

Figure 5.7: a perspective view showing a fourth constructive variant of the cap fully opened with the lever provided with an internal hook;

Figure 6.1: a perspective view of a fifth constructive variant of the bottle cap made of a plastic material/polycarbonate/glass/fiber;

Figure 6.2: a front view of a fifth constructive variant of the bottle cap made of a plastic material/polycarbonate/glass/fiber;

Figure 6.3: a perspective view of a fifth constructive variant of the bottle cap made of a plastic material/polycarbonate/glass/fiber, stressing out the upper face;

Figure 6.4: a side cut view of a fifth constructive variant of the bottle cap made of a plastic material/polycarbonate/glass/fiber;

Figure 6.5: a perspective view of a fifth constructive variant of the bottle cap made of a plastic material/polycarbonate/glass/fiber in a closed state;

Figure 6.6: a perspective view of a fifth constructive variant of the bottle cap made of a plastic material/polycarbonate/glass/fiber in an opened state;

Figure 6.7: a perspective view of a fifth constructive variant of the bottle cap made of a plastic material/polycarbonate/glass/fiber in a partially opened state;

Figure 6.8: a perspective view of a fifth constructive variant of the bottle cap made of a plastic material/polycarbonate/glass/fiber in a fully opened state.

[0006] In accordance with Figures 1.1 to 1.8, the present utility model patent comprises a metal cap (1), provided with an L-shaped lever/handle (2), whose smaller segment (21) and the end of the larger segment (22) are close to the vertex, attached to the upper face and the peripheral wall of the cap (1) by weld, glue, pin or any other attachment means, said larger segment (22) being vertically positioned and slightly grooved for the "handle" having a slit (23) at the end thereof. Optionally, in accordance with Figures 1.6 and 1.8, the end of the larger segment (22), close to the vertex, is arranged following the peripheral wall of the cap (1), forming a corrugated region with the same relief/flange system existing in the cap (24).

[0007] In accordance with Figures 2.1 and 2.2, in a first constructive variant, the lever for the handle (2), can be

arranged at angles, forming a vertical segment (221) from the vertex that ends in an oblique segment (222) that, in turn, ends in a vertical segment (223).

[0008] In accordance with Figures 3.1 to 3.5, in a second constructive variant, the cap (1) and the lever (2) is made as a single body (12), said lever (2) extending from the edge of the peripheral wall of the cap (1).

[0009] In accordance with Figures 4.1 to 4.6, in a third constructive variant, the lever (2), is provided at the end of the smaller segment (21) with an inclination that forms a perforating "tip/tooth" (211), which, at the time the cap (1) is opened, perforates the upper face thereof, releasing the inner pressure and thus making it easy to release the respective cap (1) with the aid of the lever (2). See the perforating "tip/tooth" already inserted into the cap that removes the pressure/carbonic gas.

[0010] In accordance with Figures 5.1 and 5.7, in a fourth constructive variant, the lever/handle (2) is integral with the cap at the upper end thereof and provided with two hooks in the lower portion of the cap (25) at the edge of the bottle and on which the cap (1) is attached/fixed, said cap (1) being or not already attached to the lever (2). The function of the hooks (25) is to "force" and expel the bottle cap.

[0011] In accordance with Figures 6.1 to 6.8, in a fifth constructive variant, the cap (1) and the lever/handle (2) is made of plastic, polycarbonate, fiber/glass and molded in a single part, and said material may be opaque or transparent.

[0012] With the structural arrangement applied to a bottle cap thus obtained, it offers the following advantages in relation to its equivalents known so far:

- it stimulates the use of returnable bottles without the need to use the can opener;
- an easy, practical and fast way to open the cap, mainly of the so-called "long neck" disposable beer bottles;
- more safety and speed since the lever is already in the correct position of the "handle" aiming at the immediate opening;
- it makes it possible to use recycled materials in the cap.

[0013] The scope of the present utility model patent demonstrates its innovation both in the national and international market, thus not having to be limited to the use of bottles, but also the terms defined in the claims and its several equivalents.

Claims

1. A STRUCTURAL ARRANGEMENT APPLIED TO A BOTTLE CAP, **characterized by** comprising a metal cap (1) provided with an L-shaped lever/handle (2) whose smaller segment (21) and the end of the larger segment (22), close to the vertex, are attached to

the upper face and the peripheral wall of the cap (1), by weld, glue, pin or any other attachment means, said larger segment (22) being vertically positioned and slightly grooved for the "handle" having a slit (23) at the end thereof; optionally, the end of the larger segment (22), close to the vertex, is arranged following the peripheral wall of the cap (1), forming a corrugated region with the same relief/flange system existing in the cap (24).

2. THE STRUCTURAL ARRANGEMENT APPLIED TO A BOTTLE CAP, according to claim 1, **characterized in that**, in a first constructive variant, the lever for the "handle" (2) is arranged at angles, forming a vertical segment (221) from the vertex that ends in an oblique segment (222) that, in turn, ends in a vertical segment (223).
3. THE STRUCTURAL ARRANGEMENT APPLIED TO A BOTTLE CAP, according to claim 1, **characterized in that**, in a second constructive variant, the cap (1) and the lever (2) are made as a single body (12), said lever (2) extending from the edge of the peripheral wall of the cap (1).
4. THE STRUCTURAL ARRANGEMENT APPLIED TO A BOTTLE CAP, according to claim 1, **characterized in that**, in a third constructive variant, the lever (2) is provided at the end of the lesser segment (21) with an inclination that forms a perforating "tip/tooth" (211) which, at the time the cap (1) is opened, perforates the upper face thereof, releasing the inner pressure and thus making it easy to release the respective cap (1) with the aid of the lever (2).
5. THE STRUCTURAL ARRANGEMENT APPLIED TO A BOTTLE CAP, according to claim 1, **characterized in that**, in a fourth constructive variant, the lever/handle (2) is integral with the cap at the upper end thereof and provided with two hooks in the lower portion of the cap (25) at the edge of the bottle and on which the cap (1) is attached/fixed, and said cap (1) is or not already attached to the lever (2); wherein the function of the hooks (25) is to "force" and expel the bottle cap.
6. THE STRUCTURAL ARRANGEMENT APPLIED TO A BOTTLE CAP, according to claim 1, **characterized in that**, in a fifth constructive variant, the cap (1) and the lever/handle (2) are made of plastic, polycarbonate, fiber/glass and molded in a single part, and said material may be opaque or transparent.

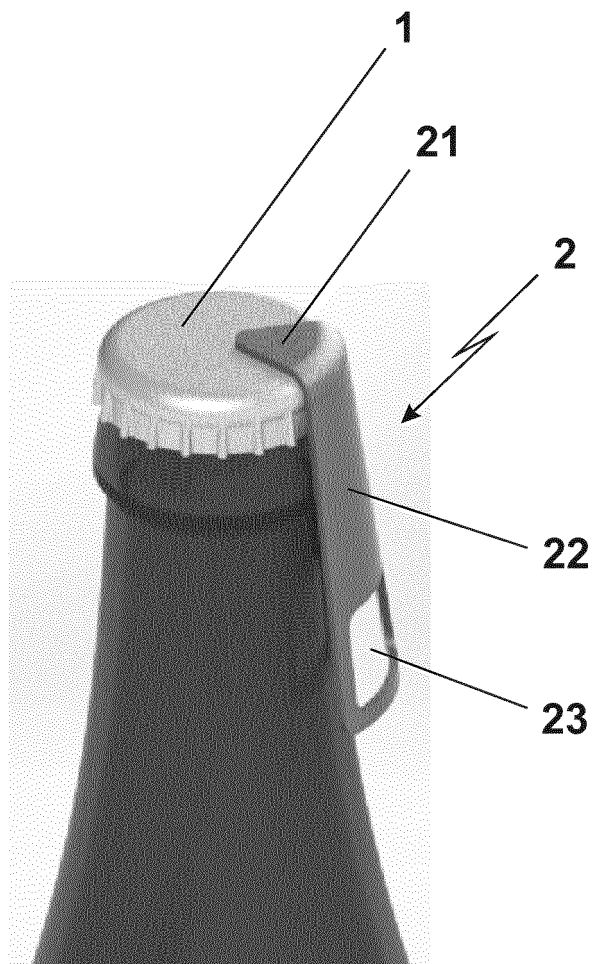


Fig. 1.1

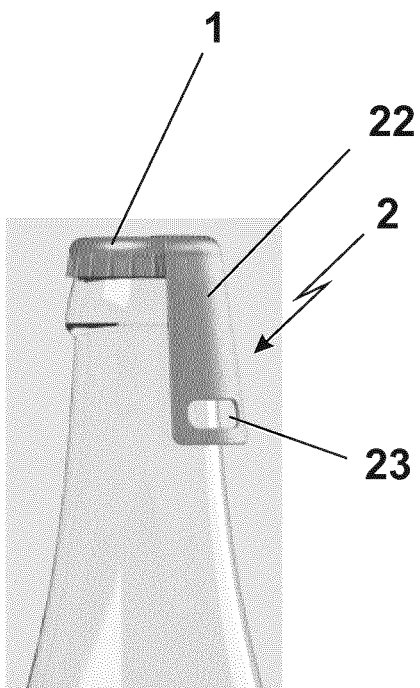


Fig. 1.2

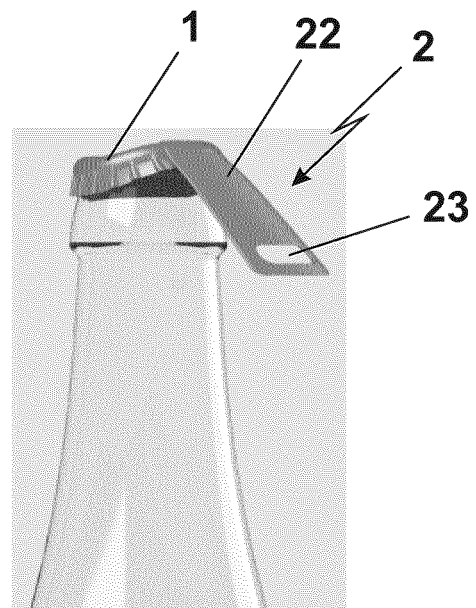


Fig. 1.3

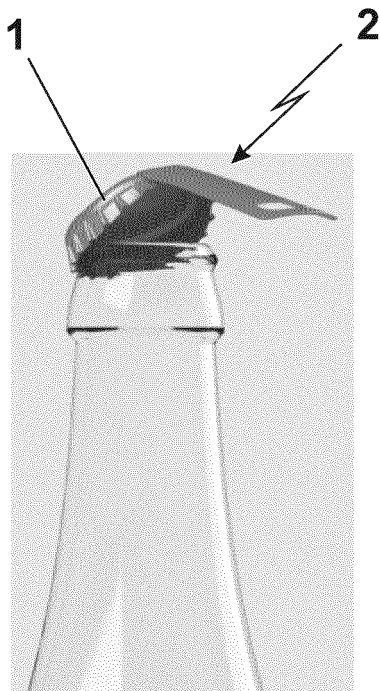


Fig. 1.4

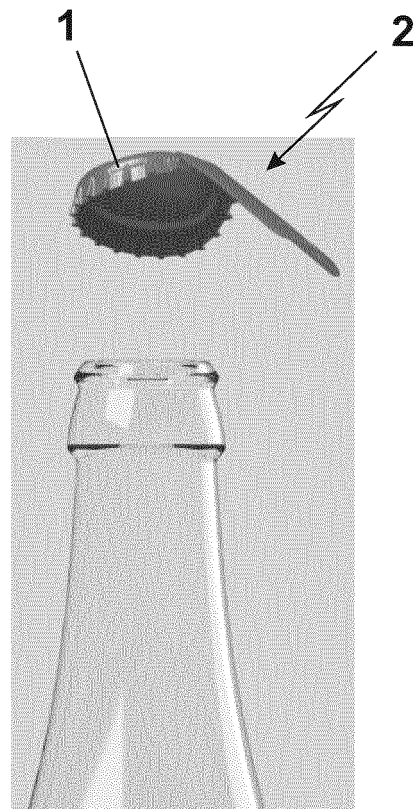


Fig. 1.5

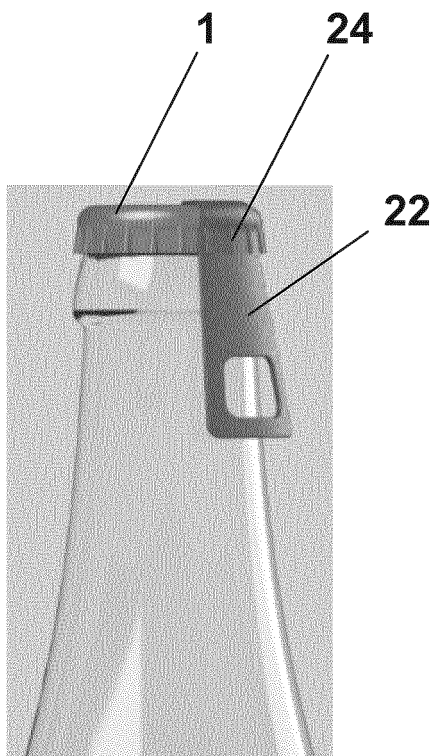


Fig. 1.6

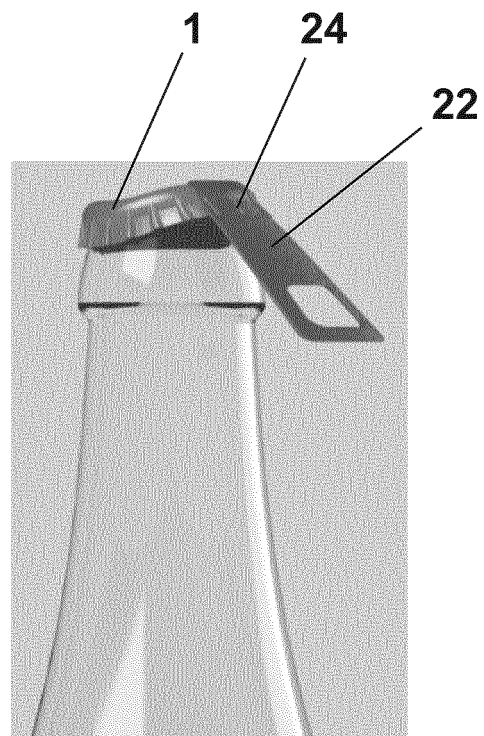


Fig. 1.7

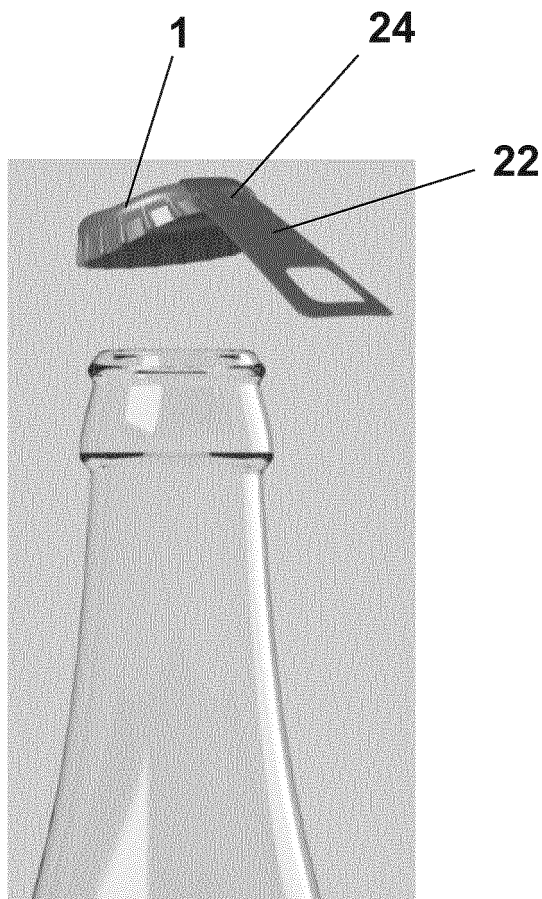


Fig. 1.8

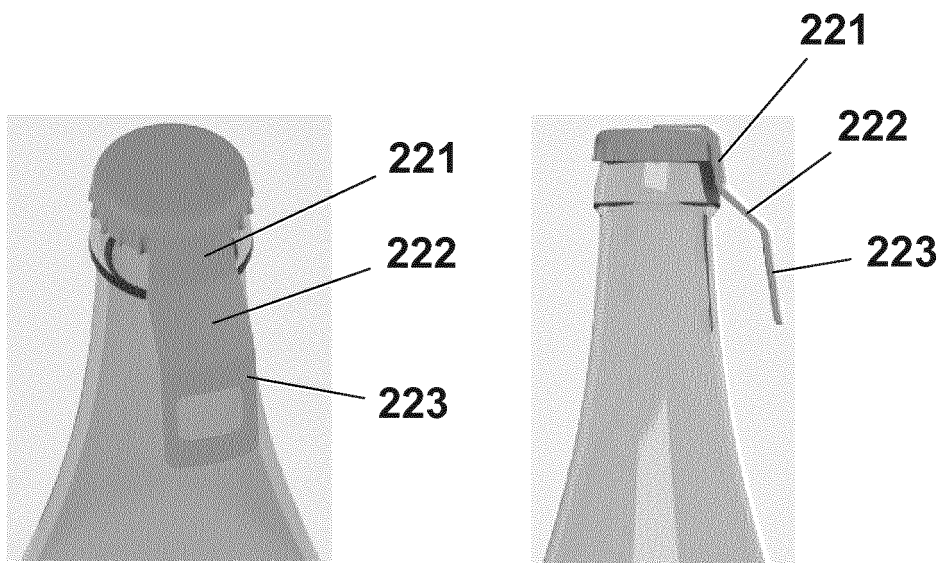


Fig. 2.1

Fig. 2.2

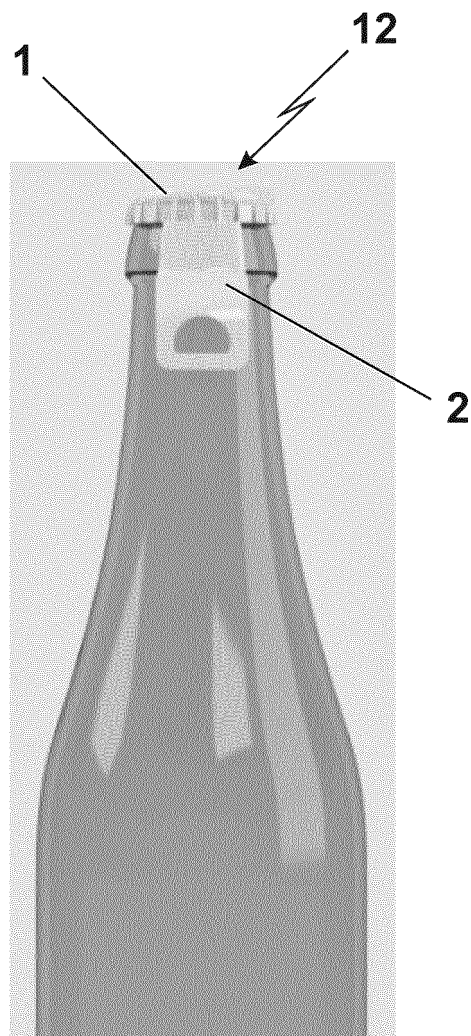


Fig. 3.1

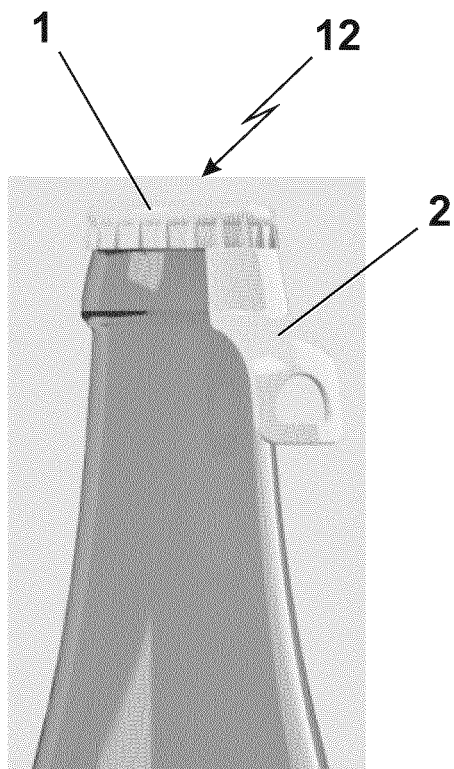


Fig. 3.2

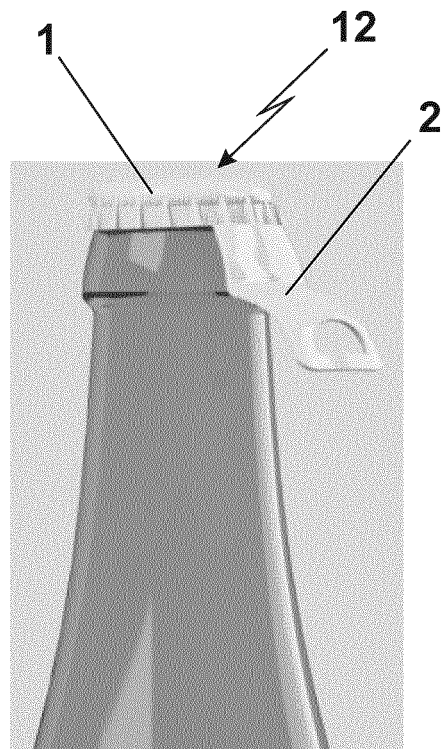


Fig. 3.3

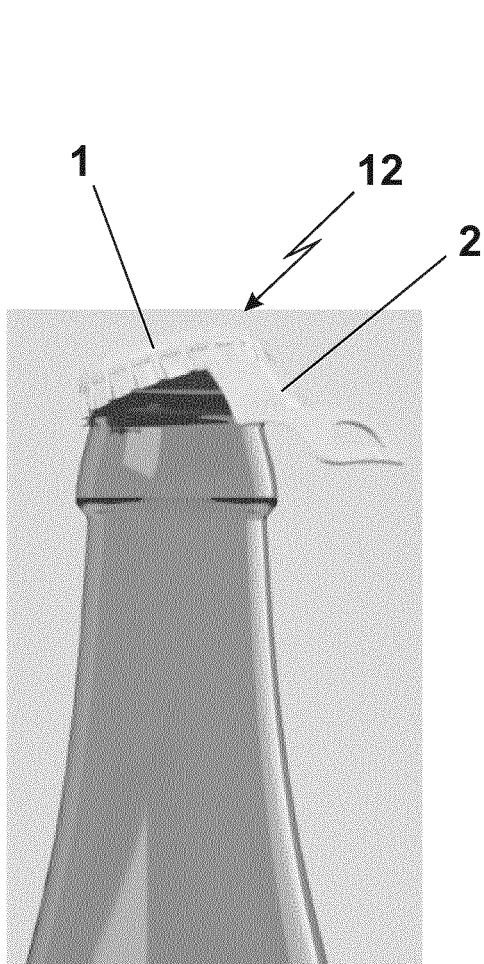


Fig. 3.4

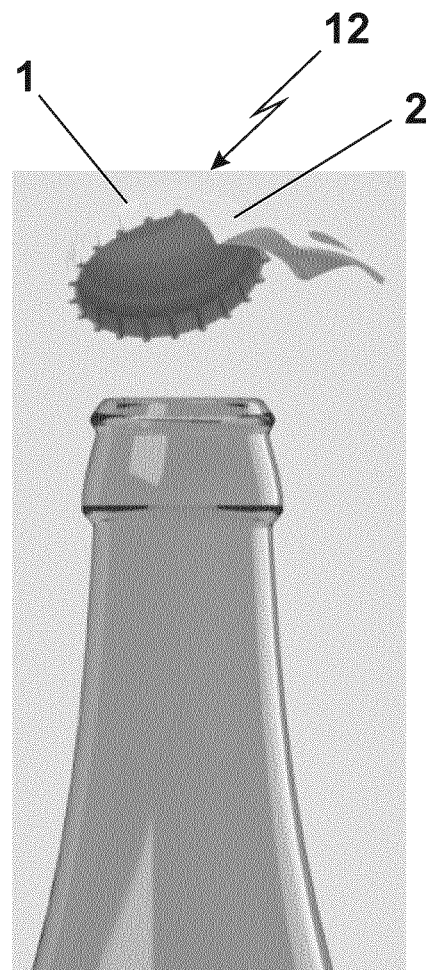


Fig. 3.5

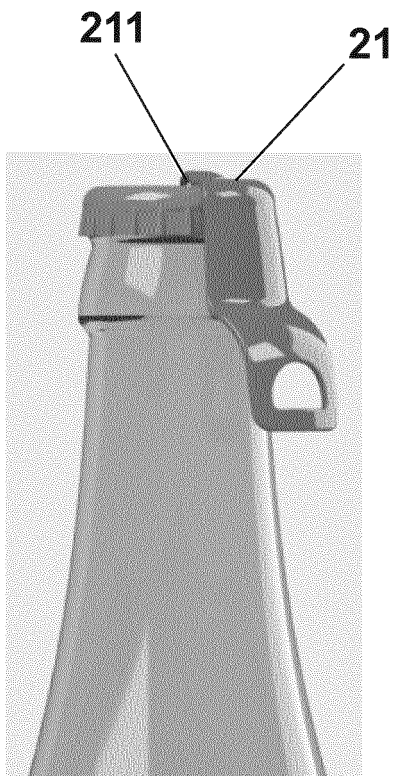


Fig. 4.1

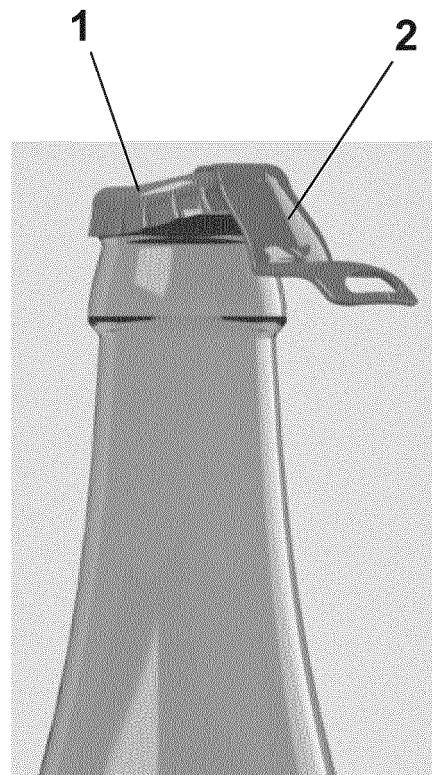


Fig. 4.2

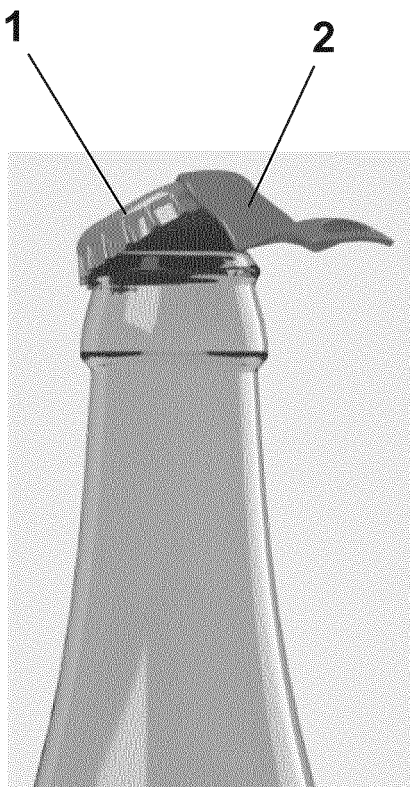


Fig. 4.3

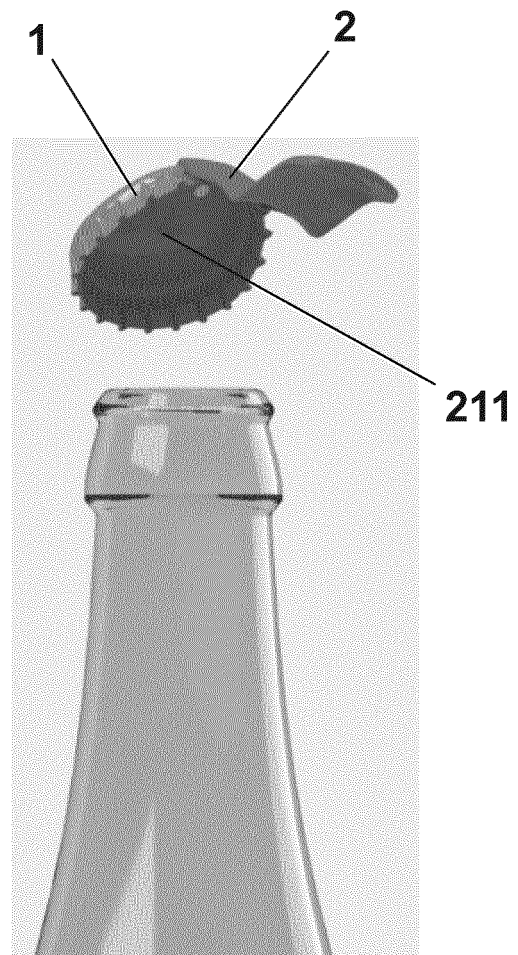


Fig. 4.4

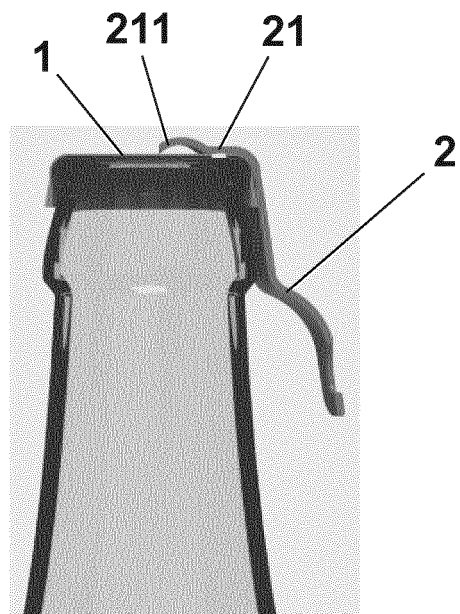


Fig. 4.5

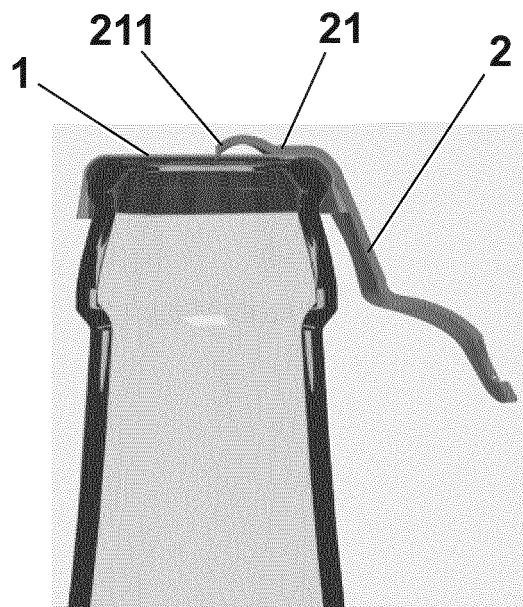


Fig. 4.6

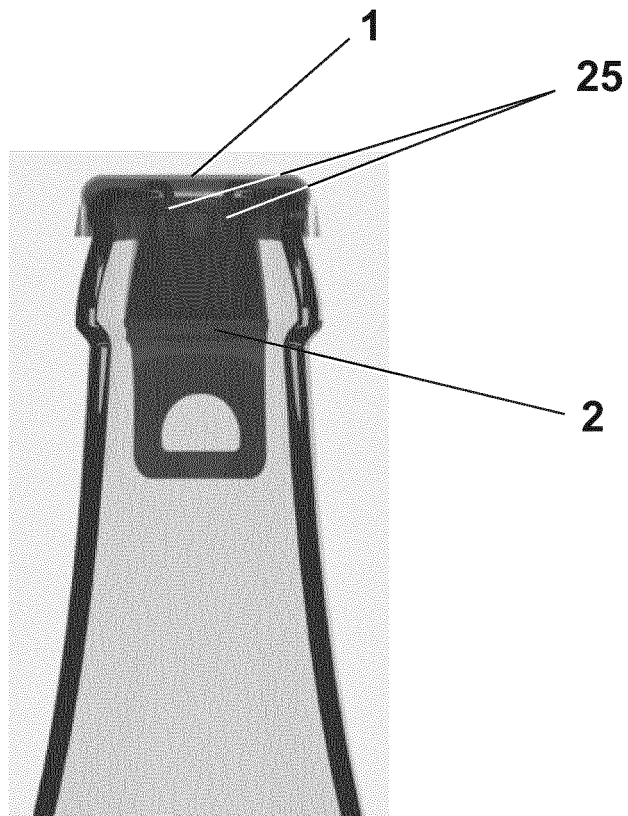


Fig. 5.1

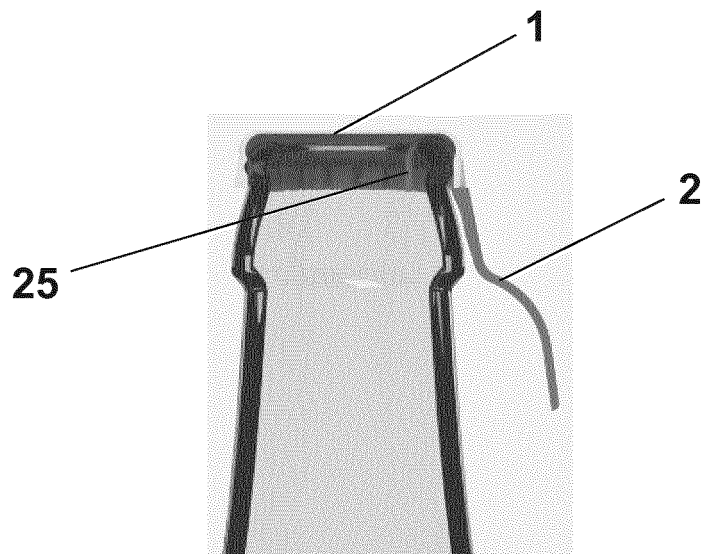


Fig. 5.2

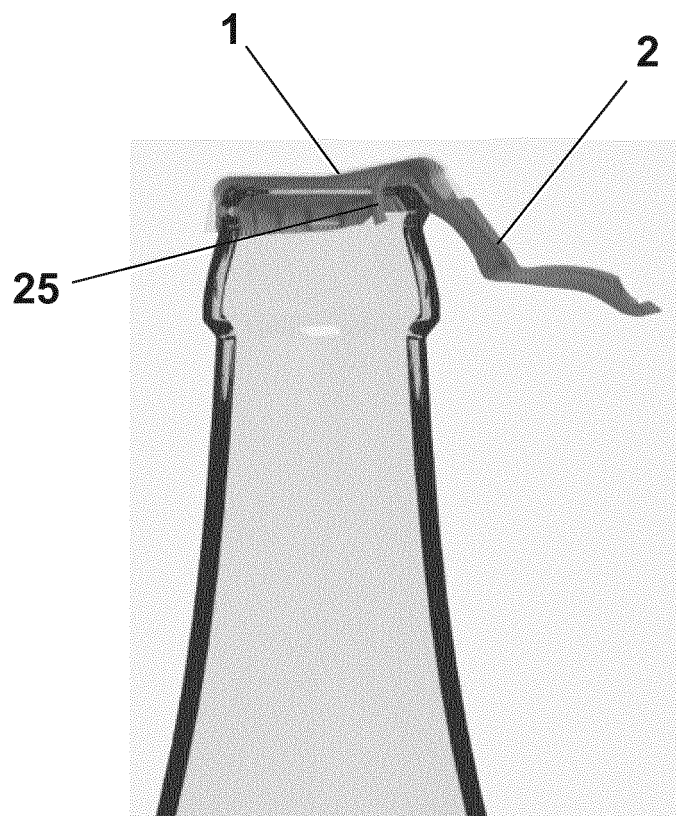


Fig. 5.3

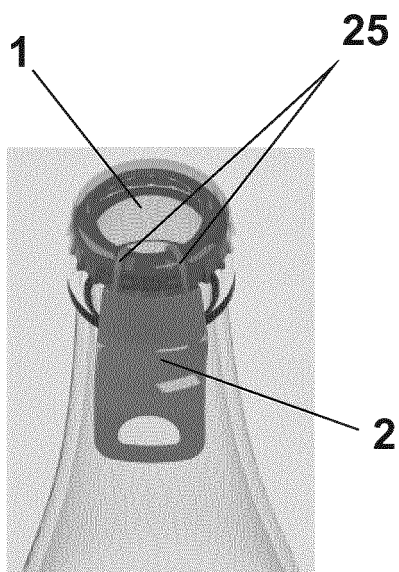


Fig. 5.4

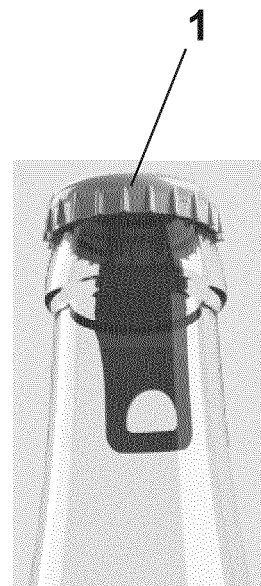


Fig. 5.5

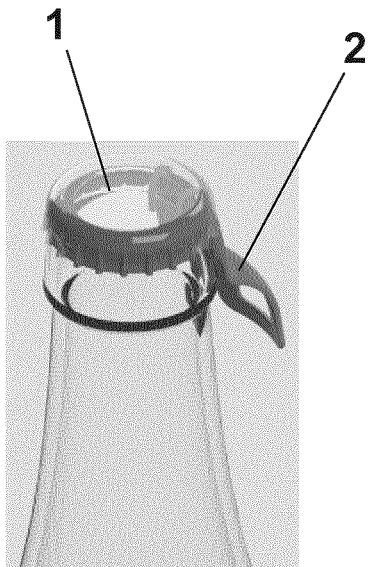


Fig. 5.6

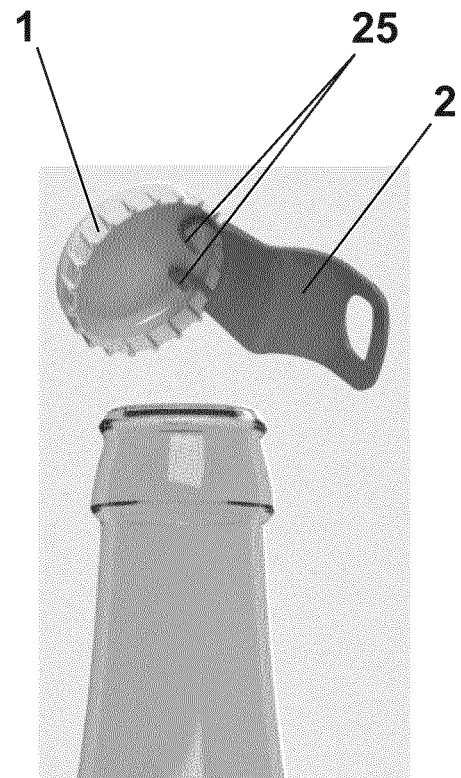


Fig. 5.7

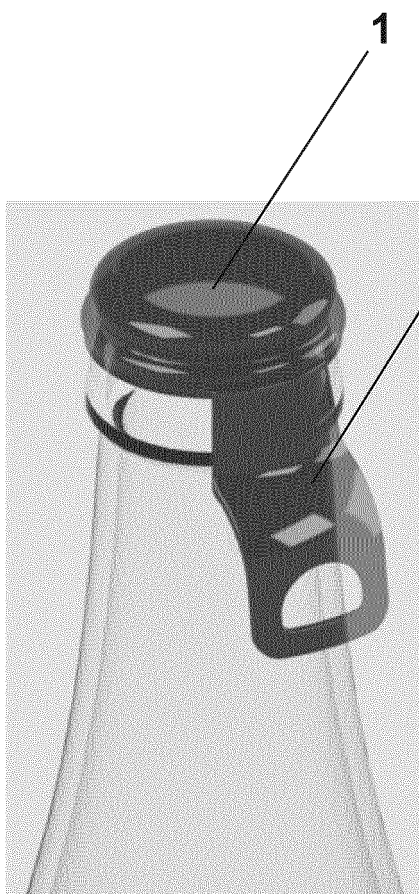


Fig. 6.1

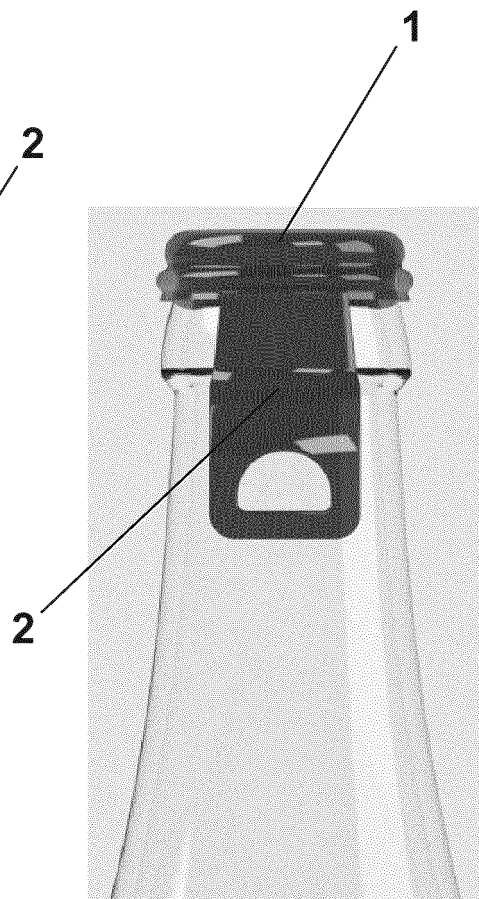


Fig. 6.2

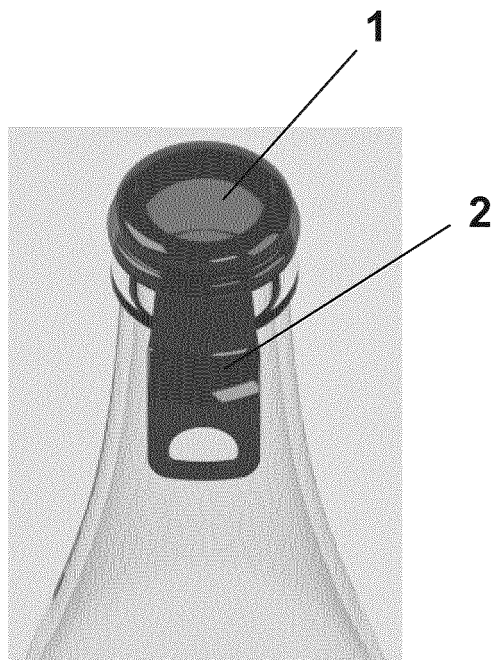


Fig. 6.3

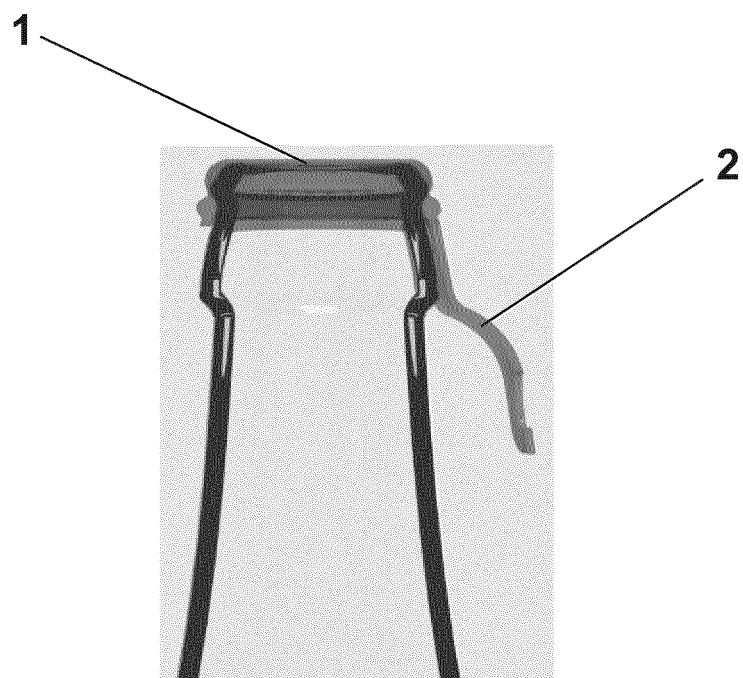


Fig. 6.4

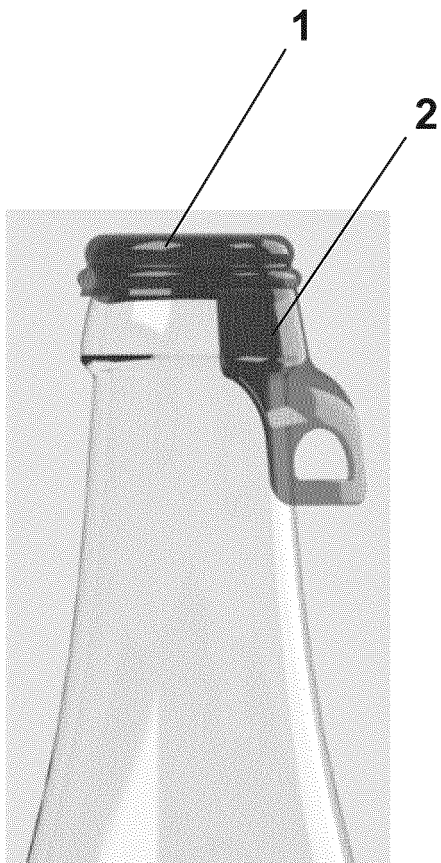


Fig. 6.5

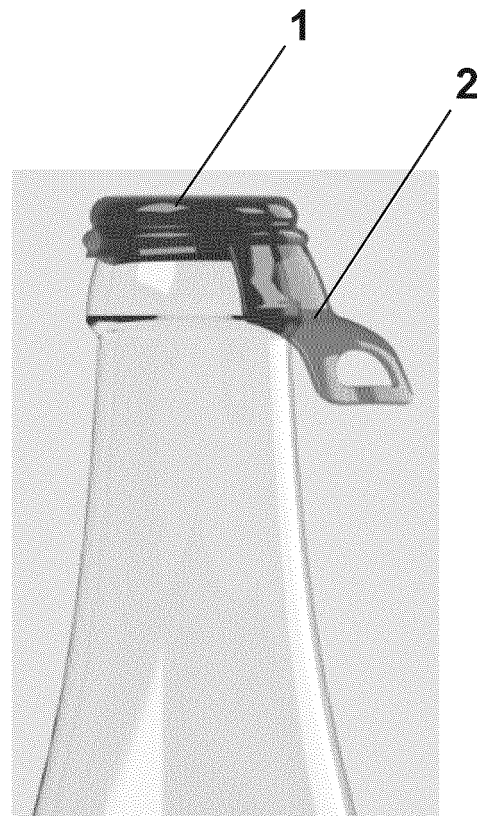


Fig. 6.6

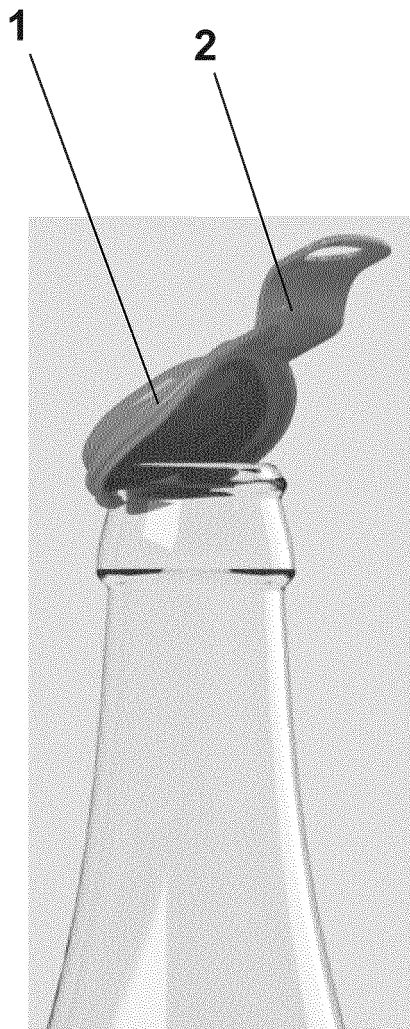


Fig. 6.7

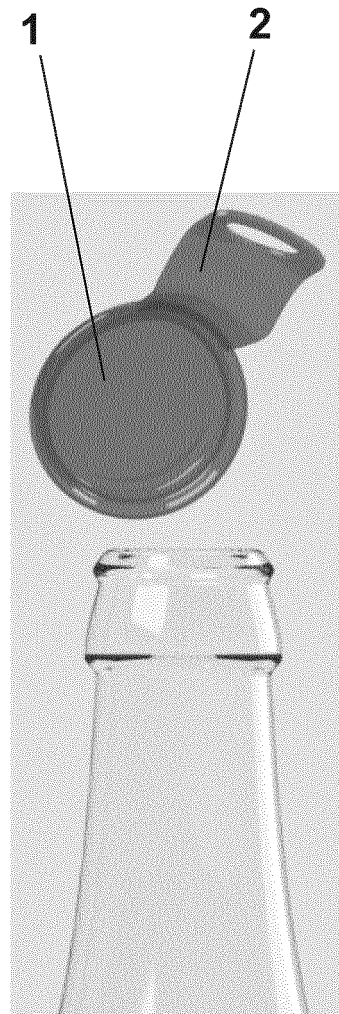


Fig. 6.8

INTERNATIONAL SEARCH REPORT

International application No.

PCT/BR2015/000077

A. CLASSIFICATION OF SUBJECT MATTER

B65D41/14 (2006.01), B65D51/24 (2006.01)

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

B65D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Banco de Patentes - INPI/BR

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPODOC, GooglePatents

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2769560 A (LEE ROBERT F) 06 NOV 1956 (06.11.1956) See column 1, lines 46-57; Figures 1, 2 and 3	1, 2
Y X	DE 4406917 A1 (MUHS HENRIK [DE]) 31 AUG 1995 (31.08.1995) See Figures 2 and 3	1, 2 3
X	US 1874208 A (EDWIN REARDON ROBERT) 30 AUG 1932 (30.08.1932) See page 1, column 2, lines 76-75, figures 1 and 2	5
X	US 2005189313 A1 (WALTERS LAWRENCE S JR [US]) 01 SEP 2005 (01.09.2005) See paragraph [0046] and figures 1-5	6

☒ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:

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"P" document published prior to the international filing date but later than the priority date claimed

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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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"&" document member of the same patent family

Date of the actual completion of the international search

24 JUL 2015 (24.07.2015)

Date of mailing of the international search report

17 AUG 2015 (17.08.2014)

Name and mailing address of the ISA/

INPI

Authorized officer

Camila Mie Ujikawa Wellele

Facsimile No.

Telephone No.

+55 21 3037-3493/4307

INTERNATIONAL SEARCH REPORT

International application No.

PCT/BR2015/000077

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2046173 A (LENHOFF JOHN A) 30 JUN 1936 (30.06.1936) See column 2, lines 18-35; figure 1	4
A	US 2781142 A (BAKER LLOYD B) 12 FEB 1957 (12.02.1957) See figures 5 and 6	5
A	US 2557830 A (LAZAREVICH GEORGE D) 19 JUN 1951 (19.06.1951) See figures 1-5	5
A	GB 200679 A (EUGEN DAHL) 19 JUL 1923 (19.07.1923) See figures 1 and 2	1 and 3
A	DE 29600761 U (ZUNKER HUBERTUS DR [DE]) 28 NOV 1996 (28.11.1996) See figures 2 and 3	1 and 3
A	US 1706720 A (HENRY WETTSTEIN) 26 MAR 1929 (26.03.1929) See claims 1-4; figures 2 and 3	3

Form PCT/ISA/210 (continuation of second sheet) (January 2015)

EP 3 216 714 A1

INTERNATIONAL SEARCH REPORT Information on patent family members

International application No.
PCT/BR2015/000077

5	US 2769560 A	1956-11-06	None	
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