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(54) **CAP FOR GLASS BOTTLES**

(57) The invention relates to a cap for glass bottles comprising a body (1) with skirting (2) with at least three cuts (3) made from the outside to the inside of the body (1), wherein a core (4) is provided with at least three reinforcement ribs (5) and a first concave region or area (4a) that coincides with a second concave region or area (6a) is provided on the inside of the body (1), creating a chamber; and wherein said second concave region (6a)

is integrated into a second body (6) attached to the first body (1) and wherein said second body (6) comprises a flange (7) having a plurality of cuts (7a), whereas in the lower part thereof, said second body (6) has a threaded area (8) in which a plurality of lips (8a) are defined and in which reinforcement spokes (9) are provided contiguously.

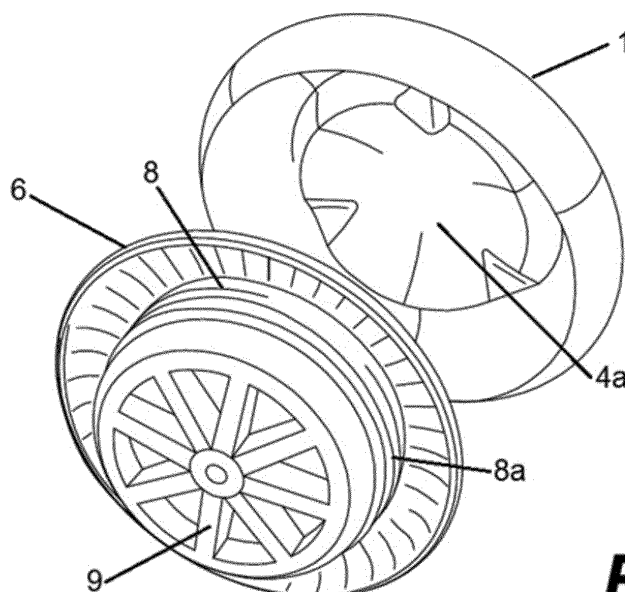


FIG.2

Description

TECHNICAL FIELD

[0001] The object of the present invention relates to a cap for glass bottles that is easy to handle and provides for opening glass bottles without having to use tools of any type.

PRIOR ART

[0002] A wide range of caps for glass bottles are known today whose function is to prevent on one hand the liquid contained therein from spilling out and, on the other, to preserve the properties of the liquid contained therein.

[0003] The so-called "crown cap" is among the most commonly used types of caps in the prior art. This type of cap is generally metallic and its main feature is that it fits to the outer contour of the rim of the opening of the bottle as a result of the presence of creases made in the cap itself when it is fixed by industrial means on said rim or opening of the bottle. Some examples of these caps are disclosed in patent documents US 1,074,907, US 1,580, 544 and US 1,155,890.

[0004] These known caps, which are standard as regards their use on the market, have the main drawback that an external tool or opener is necessary for removing them from the bottle since any manual tampering that allows opening them is impossible as a result of the aforementioned creases.

[0005] Caps or lids that are screwed onto the neck of the bottle, which obviously requires making a threading in the cap or lid and another threading on the opening of the bottle or neck thereof, are also known in the prior art.

[0006] Caps that are coupled to the neck of the bottle and retained and fixed to said opening through a ring are also known, where a given force must be exerted in order to remove said ring and thereby open it, which is not usually altogether easy, and on some occasions it may be necessary to ultimately use an external tool suitable for effectively opening it, particularly when the ring breaks.

[0007] To solve the aforementioned problems, patent document ES2381727, which belongs to the same inventors as the present invention, discloses a lid for glass bottles, preferably made of aluminum or any other type of suitable plastic material, characterized in that it is formed from an inverted cup-like body, with skirting or an annular outer flange for being fitted on the outer surface of the corresponding rim of the neck of the bottle to be sealed; the body having a concentric annular V-shaped rib fitting onto the inner contour of the opening of the neck of the bottle, said rib defining an upwardly domed surface.

[0008] Likewise, patent application WO201213839 also shows a solution disclosing a lid for glass bottles, preferably made of metal or any other type of suitable plastic material, comprising a body with skirting or an outer flange that is segmented by conical slits, characterized

in that said flange comprises a plurality of longitudinal conical grooves transverse to the axis of the lid and running around the periphery of the flange, being configured to fit onto the outer surface of the rim of the neck of the bottle to be sealed; the body having a concentric annular V-shaped rib fitting onto the inner contour of the opening of the neck of the bottle, which has a liner, said rib defining an upwardly domed surface.

[0009] Nevertheless, and despite the fact that said patent documents considerably improve the prior art as regards the need to use tool for opening bottles (whether said tool is external or a built-in ring), said structure, however, does not allow withstanding the internal pressures due to the carbon gas present in carbonated beverages or generated during industrial pasteurization processes.

DISCLOSURE OF THE INVENTION

[0010] The present invention relates to a cap for glass bottles, as described in claim 1 enclosed with the present specification and incorporated herein by reference. The dependent claims show particular solutions of the cap which are also incorporated herein by reference.

[0011] One object of the present invention relates to a cap for glass bottles that solves the aforementioned problems and whose structure furthermore allows withstanding the pressure of carbon gas contained or generated during the different beverage treatment processes. The possibilities of using the present cap for packaging any type of beverage susceptible to being housed in a glass bottle, such as sodas, waters, beers or the like, are homogenized as a result of the cap described in the present invention.

[0012] As a result of its particular design and shape, the cap object of the invention shows good behavior with respect to the carbon gas contained in beverages housed in glass bottles, preventing it from internally doming, which would make it difficult to open.

[0013] Likewise, by including the cap herein proposed, the pressure for opening the bottle will be applied for the most part to the central part of the cap, which in turn means that the force exerted for opening it will be less, increasing the number of potential users (since even less force is required for opening it) to segments of the population who, for physical reasons (children, the elderly), have the most difficult time at present opening containers of this type.

[0014] As a result, the cap herein describes allows withstanding pressures of up to seven bar, which increases the possibilities of said cap being used in any industrial beverage bottling process.

[0015] Once the cap is used and has been opened, it takes on a visible and characteristic triangular shape, such that reuse thereof is prevented, thereby increasing its hygiene performance.

[0016] Throughout the description and the claims the word "comprises" and variants thereof are not meant to exclude other technical features, additions, components

or steps. For the persons skilled in the art, other objects, advantages and features of the invention will be inferred in part from the description and in part from putting the invention into practice. The following examples and drawings are provided by way of illustration and do not mean to restrict the present invention. Furthermore, the present invention covers all the possible combinations of particular and preferred embodiments herein indicated.

DESCRIPTION OF THE DRAWINGS

[0017] A series of drawings that help to better understand the invention and which expressly relate to an embodiment of said invention provided as a non-limiting example thereof is very briefly described.

Figure 1 shows an exploded top view of the cap for glass bottles, object of the present invention.

Figure 2 shows an exploded bottom view of the cap for glass bottles.

Figure 3 shows a view of the cap for glass bottles from the lower part thereof.

Figure 4 shows a second view of the cap for glass bottles from the lower part thereof.

Figure 5 shows a plan view of the lower part of the cap.

DETAILED DISCLOSURE OF THE INVENTION

[0018] The attached drawings show a preferred embodiment of the invention. More specifically, the cap for glass bottles comprises a body (1) with skirting (2) with at least three cuts (3) made from the outside of the skirting (2) to the inside of the body (1) in which a core (4) is provided and to which pressure is applied for opening the cap herein described.

[0019] At least three reinforcements (5) in the form of ribs are reinforcing the core, the function of which is to provide greater robustness to the assembly and prevent excessive deformation of the body (1) since said reinforcements (5) do not deform during opening.

[0020] A first concave region (4a) that coincides with a second concave region (6a) arranged in the opposite position and which is an integral part of a second body (6) integrally attached to the first body (1), is provided on the inside of the body (1) and coinciding with the position of the core (4).

[0021] Both concave regions (4a, 6a) opposite one another create a chamber or space that allows the tilting of the cap during the deformation thereof when opening it, in addition to providing certain safety to the cap itself since the pressure to be applied on the core (4) of the first body (1) while opening is homogenized, regardless of the internal pressure withstood by the cap.

[0022] The second body (6) comprises a flange (7) around the periphery configured, on one hand, for fitting onto the outer surface of the rim of the bottle, and on the other, onto the skirting (2) of the body (1), creating the mentioned second concave region (6a) in the central part therein.

[0023] In turn, the entire periphery of said flange (7) incorporating a plurality of cuts (7a) which prevent resistance when opening, and accordingly making opening easier.

[0024] The second body (6) also comprises in the lower part thereof a threaded area (8) in turn defining a plurality of lips (8a) improving grip on the neck of the bottle and providing the sealing required for properly preserving the liquid contained in the bottle and its properties.

[0025] Finally, contiguous to said threaded area (8) there is provided a plurality of spokes (9) in the form of reinforcement which help to improve the results with respect to internal pressure.

[0026] In a practical embodiment, the body (1) and the second body (6) are made forming a single body.

[0027] Likewise, in a particular embodiment of the present invention, the second body (6) may incorporate a series of inner ribbing or reinforcements making it easier to open cap herein proposed.

[0028] In a particular embodiment, the body (1) will have a series of grooves along the skirting (2) thereof making it easier to seal it during the industrial bottling process.

Claims

1. A cap for glass bottles, **characterized in that** it comprises:

a) a first body (1) in turn comprising:

- a. a skirting (2) with at least three cuts (3) made from the outside of the skirting (2) to the inside of the body (1); and
- b. a core (4) with at least three reinforcement ribs;

b) a second body (6) integrally attached to the first body (1) and in turn comprising:

- a. a flange (7) incorporating a plurality of cuts (7a) around the periphery;
- b. a threaded region (8) in the lower part of the second body (6) in turn comprising:

i. a plurality of lips (8a); and

- c. a plurality of reinforcement spokes (9) contiguous to the threaded region (8);

wherein a first concave region or area (4a) that co-

incides with a second concave region or area (6a) integrated into the second body (6) is provided on the inside of the body (1) and coinciding with the position of the core (4); and wherein both concave areas (4a, 6a) are opposite one another, such that they define a chamber or space therebetween configured for the tilting of the cap during the deformation thereof in the process of opening it. 5

2. The cap according to claim 1, wherein the body (1) has a plurality of grooves along its skirting (2). 10

3. The cap according to any one of claims 1-2, wherein the second body (6) incorporates a series of inner ribbing or reinforcements. 15

4. The cap according to any of the preceding claims, wherein the body (1) and the second body (6) are integrated into a single body. 20

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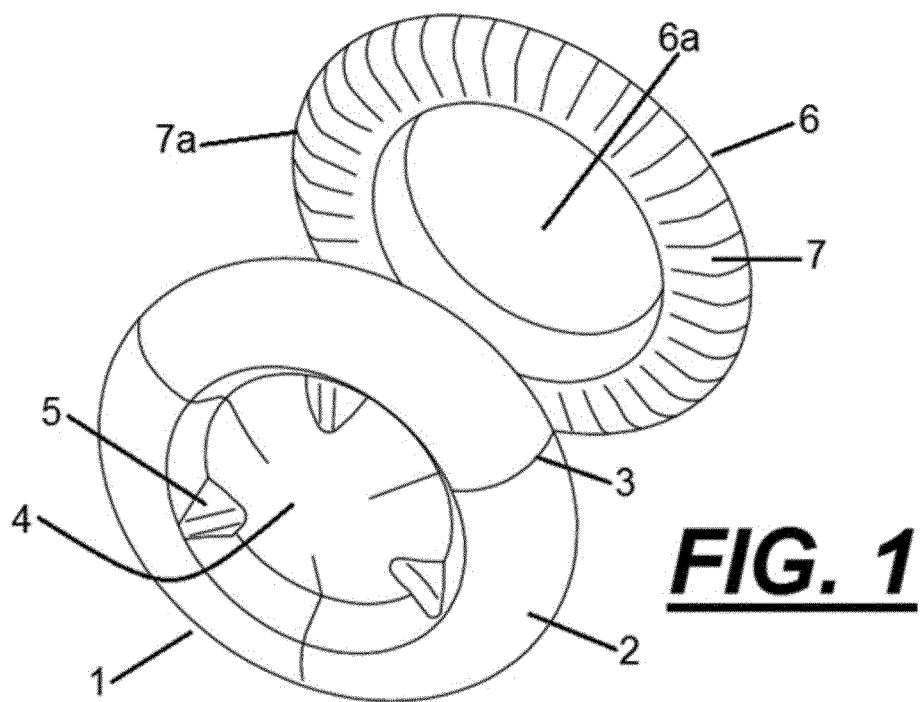
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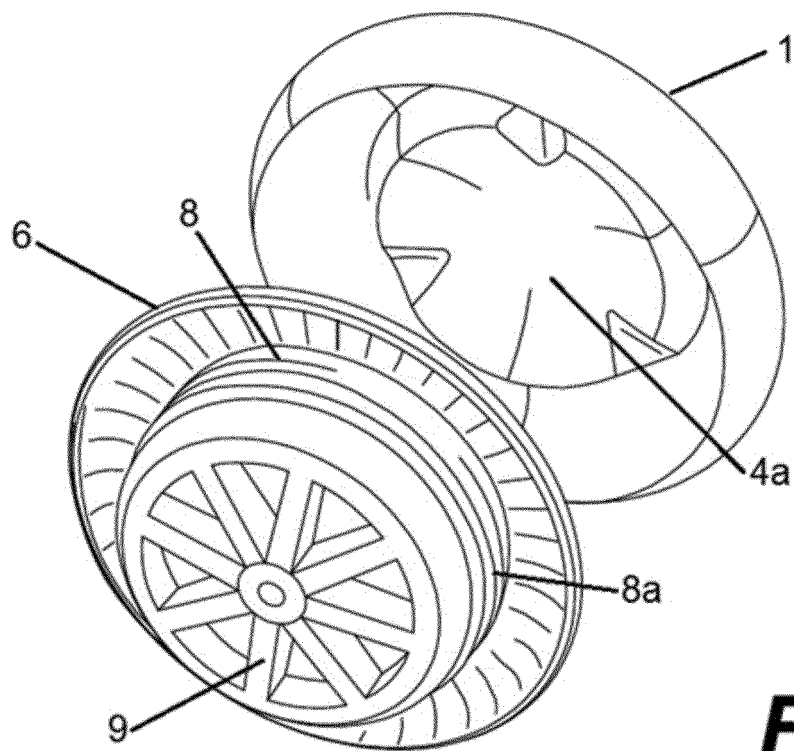


FIG.2

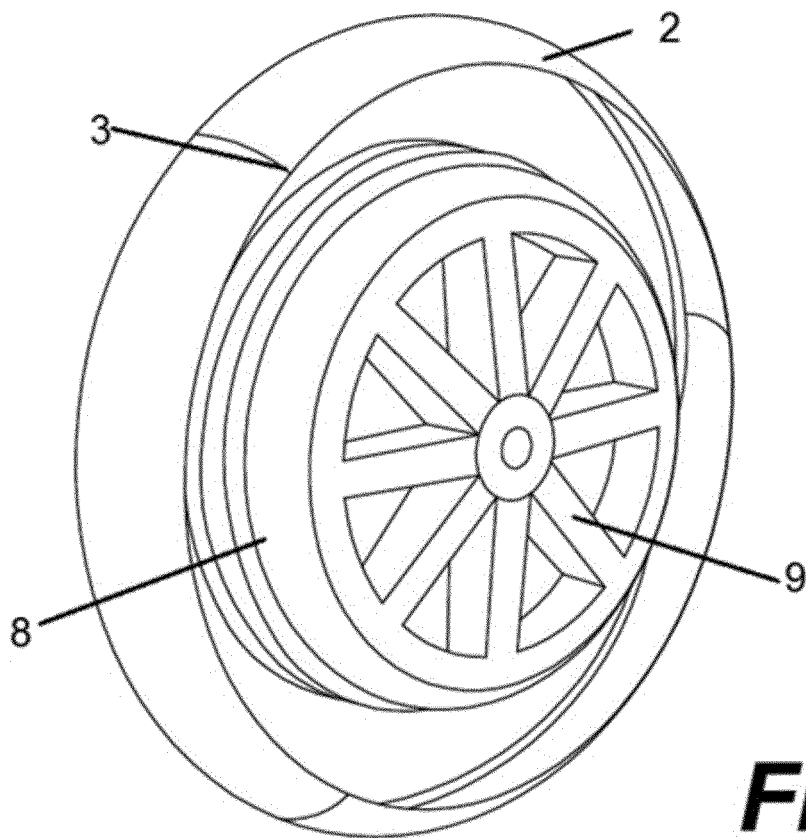


FIG.3

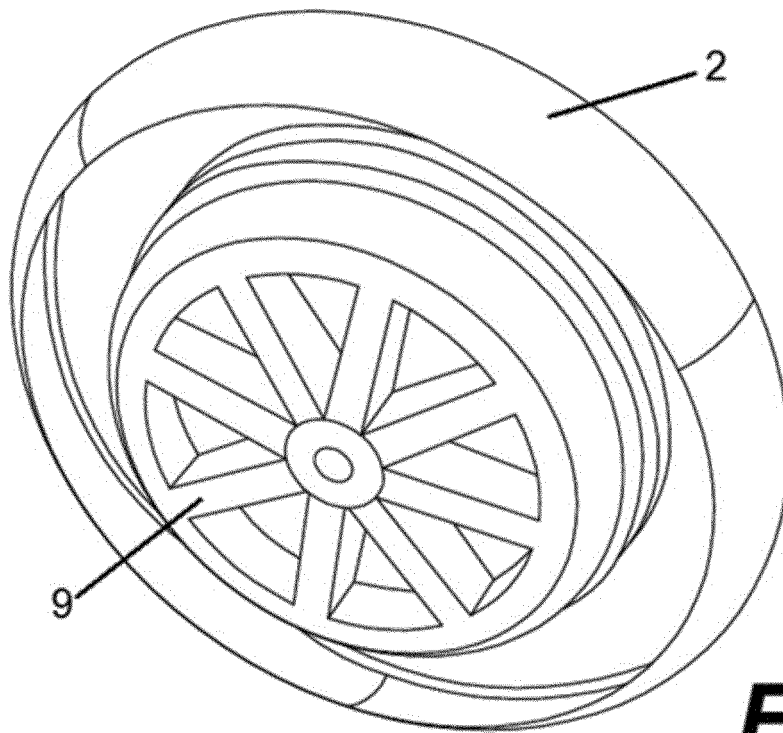


FIG. 4

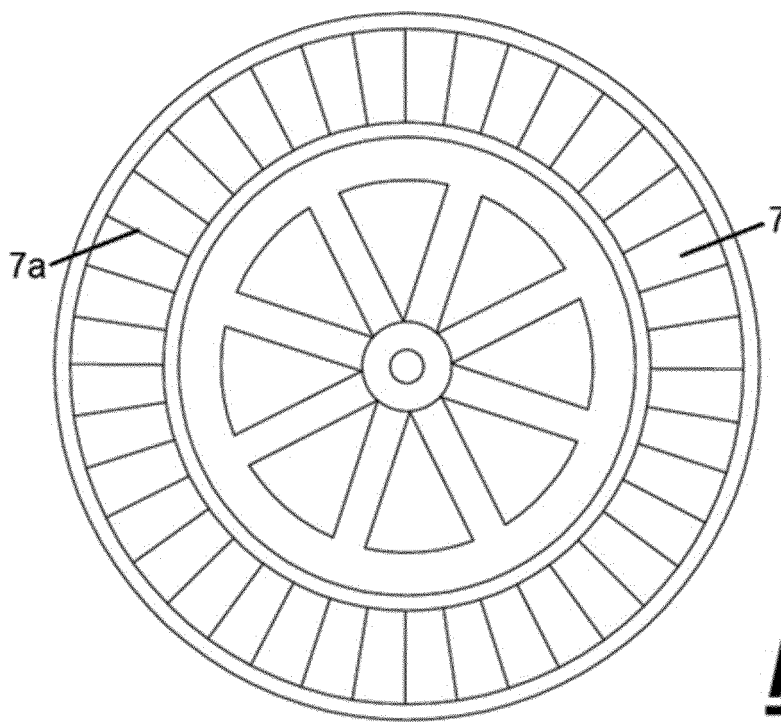


FIG. 5

INTERNATIONAL SEARCH REPORT

International application No.
PCT/ES2015/070186

A. CLASSIFICATION OF SUBJECT MATTER

See extra sheet

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

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

EPODOC, INVENES

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0594494 A1 (SOCIÉTÉ LORRAINE DE CAPSULES METALLIQUES - MANUFACTURE DE BOUCHAGE) 27/04/1994, Abstract; figure 1	1-4
A	WO 9216426 A1 (BRUHN) 01/10/1992, Abstract; figures	1-4
A	US 3208617 A (R.R. BARON) 28/09/1965, column 2, line 48 - column 3, line 15; figures	1-4
A	US 3109549 A (E.L. CONKLIN) 05/11/1963, column 2, line 11 - column 3, line 24; figures	1-4
A	WO 2012013839 A1 (CLIPPS ALUMINIUM SYSTEMS Y ACTIVO MARK) 02/02/2012, Abstract; figures (cited in the application)	1

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

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance.	
"E" earlier document but published on or after the international filing date	
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"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
"O" document referring to an oral disclosure use, exhibition, or other means.	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other documents, such combination being obvious to a person skilled in the art
"P" document published prior to the international filing date but later than the priority date claimed	"&" document member of the same patent family

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01/07/2015

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Form PCT/ISA/210 (second sheet) (July 2009)

INTERNATIONAL SEARCH REPORT

International application No.

Information on patent family members

PCT/ES2015/070186

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Form PCT/ISA/210 (patent family annex) (July 2009)

INTERNATIONAL SEARCH REPORT

International application No.

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CLASSIFICATION OF SUBJECT MATTER

B65D41/12 (2006.01)

B65D41/42 (2006.01)

B65D41/58 (2006.01)

REFERENCES CITED IN THE DESCRIPTION

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