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(54) **CLOSURE CAP**
VERSCHLUSSKAPPE
CAPUCHON DE FERMETURE

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Description

[0001] The invention relates to closure devices with opening indication element for bottles with a threaded neck, intended primarily for liquid products, such as spir-
its.

[0002] In order to use opening indication in order to warn about tampering, various types of caps use a strip that remains on the bottle when the main part of the cap is unscrewed. Such a closure device is disclosed, for example, in French patent FR2217231 B1, and it is a cap for closing a bottle, equipped with a threaded element for installation on the neck of the bottle and containing an indication means, which is the lower part of the cap, separated from the main part by a perforation forming breakable bridges. When the cap has been unscrewed, the breakable bridges are destroyed and the strip separated from the cap falls down onto the neck of the bottle, preventing the cap from returning to its initial shape, thus signaling that the bottle has been opened.

[0003] The disadvantage of this known closure means is that with this design, the strip can be hidden under the main cap or removed from the neck by tearing the strip.

[0004] This disadvantage is partially eliminated in the technical solution according to the patent of the Russian Federation RU2223209 C2, in which the closing of a container with alcoholic beverage, usually a bottle with a neck having a thread and an annular flange, is done through a closure cap, equipped with closure means and tamper-evident means and containing two assembled together parts rigidly connected both in the direction of rotation and in the axial direction. As indicator means, an indicator belt is used, made in the form of a separate annular part, located in the lower part of the closure cap and connected to the screw cover by bridges. The indicator belt contains an inner rim provided with engaging means, which are tabs facing inside the closure cap, fixed under the annular flange of the bottle neck. In the process of opening the cap, the bridges are destroyed, the indicator belt becomes visible, and the ability of its snapping under the annular flange of the bottle prevents its reconnection with the cap and makes it difficult to easily remove it from the neck. The disadvantage of this known technical solution is the weak protection of the closure cap from accidental opening, because the connection of the indicator element with the cover of the cap by bridges is not reliable enough and can be destroyed before the first opening of the bottle both at the stage of capping and during transportation of products with such a cap to the consumer, which reduces the reliability of such an indication.

[0005] From the publication of the application for the Eurasian patent EA200501334 A1, a closure cap for a bottle with neck having a thread and an annular flange, containing a screw cover, a shell covering the cover, which is made with the ability of its lower part to go behind the annular flange, as well as an indicator belt made along the lower contour of the cover with the ability of release from under the breaks of the shell, is known. When the

cap is unscrewed, the belt is destroyed, and its visible parts appear, signaling the first opening, and when the cap is screwed again on the neck, the indicator belt released from under the shell remains outside between the joined edges of the cap shell. The disadvantage of this known technical solution is that when the bottle is closed again, the cap moves up by the amount of the released indicator belt, which does not ensure the tightness of the bottle upon reclosure, and also that the destruction of the belt by the rolled edges of the shell does not always occur, because it is part of the cover, and the radial force action does not lead to its rupture, but the belt remains firmly attached to the cover.

[0006] A closure cap according to the preamble of independent claim 1 is known from WO 01/23265 A1, containing a pourer body of predetermined axis fixed axially and angularly to the bottle, a cap having a skirt screwed onto the pourer body, a sleeve in at least two portions extending around the bottle, and a tubular appendix forming an extension of the skirt of the cap and extending around the sleeve in order to keep the at least two portions juxtaposed. The disadvantage of this design is the lack of protection of the said closure from repeated misuse, for example, the possibility of reinstalling parts of the sleeve under the skirt of the cap.

[0007] The closest analogue of the present invention in terms of functioning is the closure cap for a bottle with a threaded neck disclosed in Russian Federation patent RU191981, which comprises a screw cover, a shell, an indicator belt made along the lower contour of the cover with the ability of release from under the shell. According to the mentioned patent, the indicator belt is installed between the inner part of the shell and the outer surface of the annular element located in the lower inner part of the shell, wherein on the outer surface of the shell at the location of the indicator belt, a line of weakened strength is made. The disadvantage of such a closure cap is that the release of the belt from under the lower part of the shell indicates the opening of the bottle, but does not guarantee protection against reuse, because it is possible, by removing the cap from the bottle, to replace its contents and to hide again the indicator belt under the lower edge of the shell.

[0008] The object of the present invention is to improve the means of visual indication of the opening of a bottle cap by adding an additional element to the design of the cap, which can be released upon first opening, and which prevents the indicator ring from returning to its initial position when the bottle is closed again.

[0009] The technical result, which is achieved in this case, is to increase the reliability and security of the closure cap, indicating any opening by improving the visual indication of opening of the bottle and strengthening the protection against its bad-faith reuse.

[0010] The object and specified technical result are achieved by closure cap, comprising a closed sleeve, a sealing means configured to be installed on the neck of the bottle, an open sleeve and an indicator ring, wherein

the closed sleeve and the open sleeve form a cavity, and the indicator ring is provided with an annular belt, placed in said cavity before the first opening, and the annular belt is made with the ability to be released from said cavity during the first opening and preventing the return of the indicator ring to its initial position when the bottle is closed again, by abutment of said annular belt against a lower end surface of the open sleeve.

[0011] Implementing the indicator ring with an annular belt as a separate element, as well as its placement in the cavity between the inner sleeve and the outer sleeve, contributes to the reliable release of the indicator belt during the first opening and prevents the indicator ring from returning to its initial position when the bottle is closed again. This eliminates unintentional or intentional movement of the indicator ring after the first opening of the closure cap to a position corresponding to the position of the indicator ring before the first opening of the closure cap, providing increased reliability and security of the closure cap in comparison with known analogues, including the closest analogue. At the same time, the presence of a sealing means ensures the tightness of the bottle when it is reclosed with the cap, which is a prerequisite for the use of the claimed closure cap and its similar devices.

[0012] The object and specified technical result are also achieved in specific embodiments of the closure cap according to the present invention.

[0013] The annular belt of the indicator ring can be made continuous or discontinuous.

[0014] Preferably, the sealing means is in the form of a gasket, the diameter of which is sufficient to cover the bottle neck finish.

[0015] Preferably, the sealing means is made in the form of a gasket with an annular collar placed in the neck of the bottle.

[0016] Preferably, the closure cap comprises an outer casing at least partially enclosing the closed sleeve.

[0017] In a particular embodiment of the invention, the closure cap comprises an outer casing made of polymeric material. In another particular embodiment of the invention, the outer casing is made of metal.

[0018] Further, with reference to the attached figures, possible embodiments of the claimed closure cap are described in detail, which, however, do not limit the invention.

[0019] The figures show:

fig. 1 shows a general view with a partial section of an embodiment of the closure cap in closed state before the first opening;

fig. 2 shows a general view with a partial section of an embodiment of the closure cap according to fig. 1 in closed state after the first opening;

fig. 3 shows a general view with a partial section of another embodiment of the closure cap in closed state before the first opening;

fig. 4 shows a general view with a partial section of another embodiment of the closure cap according to

fig. 3 in closed state after the first opening.

[0020] Reference numbers in the figures indicate the following elements:

- 1 - closed sleeve;
- 2 - gasket;
- 3 - open sleeve;
- 4 - cavity;
- 5 - indicator ring;
- 6 - annular belt;
- 7 - stop;
- 8 - outer casing;
- 9 - outer wall.

[0021] The closure cap comprises a closed sleeve 1, made with means of fixation on the bottle neck, for example, in the form of a thread, and interacting with the outer surface and/or thread of the bottle neck. The closed sleeve 1 has a sealing means on the bottle neck, made in the form of an annular protrusion on the inner end surface of the said sleeve 1 or in the form of a gasket 2, the diameter of which is sufficient to overlap the bottle finish, and preferably made of foamed polymeric material as a separate part or in the form of an elastic polymeric material gasket with an annular collar placed in the neck of the bottle.

[0022] The device also comprises an open sleeve 3 forming a cavity 4 with the closed sleeve, and indicator ring 5 with elastic annular belt 6 bent outward along the upper contour.

[0023] The annular belt 6 can be made continuous or discontinuous and, before the first opening of the closure cap, is placed in the cavity 4 between the closed sleeve 1 and the open sleeve 3 in such a way as to be kept from falling out during closing.

[0024] The indicator ring 5 can be made with the ability of resting against the annular flange of the bottle, for this reason, stops 7 are made on its inner surface, for example, in the form of a continuous protrusion or abutting tabs.

[0025] The device may also comprise an outer casing 8 at least partially enclosing the closed sleeve 1. This provides an increase in the rigidity of the closed sleeve 1, which affects the reliability and security of the closure cap. The ends of the outer casing 8, when made of metal, can be bent under the lower end surface of the closed sleeve 1 and/or open sleeve 3.

[0026] The outer casing 8 can be made of metal, such as aluminum, steel foil, etc., in particular by punching, or of polymeric material, in particular by injection molding. During the manufacturing process, coatings and means of identification can be applied to the side and end surfaces of the outer casing 8 by methods, for example, of hot stamping, offset, screen or pad printing, white, colored, transparent or metallized varnishes. The coating can also be applied by spray deposition or vacuum deposition.

[0027] In a preferred, but not mandatory, embodiment of the invention, the closed sleeve 1 can be provided with an outer wall 9 placed between the outer casing 8 and the open sleeve 3, as shown in Figs. 3, 4. This allows increasing the rigidity of the open sleeve 3, further preventing the indicator ring 5 from being deliberately re-introduced into its initial position after the first opening of the closure cap.

[0028] The closed sleeve 1, the open sleeve 3 and the indicator ring 5 are injection molded from polymer materials such as polypropylene or polyethylene.

[0029] The assembly of the finished closure cap is carried out by mutual fixation of the indicator ring 5 and the open sleeve 3, after which the closed sleeve 1 is installed, fixing it relative to the open sleeve 3, wherein a cavity 4 is formed for placing the annular belt 6 of the indicator ring 5 in it.

[0030] The claimed closure cap operates as follows.

[0031] During the first unscrewing of the closure cap, the closed sleeve 1 together with the open sleeve 3 is separated along the threaded connection from the neck of the bottle. In this case, the indicator ring 5 with the annular belt 6 is released and remains on the neck of the bottle, signaling the first opening. When the bottle is closed again, the annular belt 6 prevents the indicator ring 5 from returning to its initial position due to its abutment against the lower end surface of the open sleeve 3.

[0032] The proposed technical solution opens up wide opportunities for providing different options for the appearance of closure caps, and also allows to increase the degree of protection of finished products from counterfeiting and improve the sealing of the closure while maintaining high manufacturability of closure caps in large-scale factory production.

Claims

1. Closure cap comprising a closed sleeve (1), sealing means configured to be installed on a neck of a bottle, an open sleeve (3) and an indicator ring (5), wherein the closed sleeve (1) and the open sleeve (3) form a cavity (4), and the indicator ring (5) is provided with an annular belt (6) placed in said cavity (4) before the first opening, **characterized in that** said annular belt (6) being made with the ability to be released from said cavity (4) during the first opening and preventing the return of the indicator ring (5) to its initial position when closing the bottle again by abutment of said annular belt (6) against a lower end surface of the open sleeve (3).
2. The closure cap according to claim 1, **characterized in that** the annular belt (6) is continuous or discontinuous.
3. The closure cap according to claim 1, **characterized in that** the sealing means is made in the form of a

gasket (2), the diameter of which is sufficient to cover the bottle neck finish.

4. The closure cap according to claim 1, **characterized in that** the sealing means is made in the form of a gasket (2) with an annular collar placed in the neck of the bottle.
5. The closure cap according to claim 1, **characterized in that** it comprises an outer casing (8) at least partially enclosing the closed sleeve (1).
6. The closure cap according to claim 5, **characterized in that** the outer casing (8) is made of polymeric material.
7. The closure cap according to claim 5, **characterized in that** the outer casing (8) is made of metal.

Patentansprüche

1. Verschlusskappe, umfassend eine geschlossene Hülse (1), Siegelmittel, die zur Installation auf einem Flaschenhals konfiguriert sind, eine offene Hülse (3) und einen Indikationsring (5), wobei die geschlossene Hülse (1) und die offene Hülse (3) einen Hohlraum (4) bilden und der Indikationsring (5) mit einem ringförmigen Band (6) versehen ist, das vor dem ersten Öffnen in dem Hohlraum (4) angeordnet ist, **dadurch gekennzeichnet, daß** das ringförmige Band (6) so hergestellt ist, dass es während des ersten Öffnens aus dem genannten Hohlraum (4) gelöst werden kann und die Rückkehr des Indikationsrings (5) in seine Ausgangsposition beim erneuten Verschließen der Flasche durch Anschlag des ringförmigen Bandes (6) an einer unteren Endfläche der offenen Hülse (3) verhindert werden kann.
2. Die Verschlusskappe gemäß Anspruch 1, **dadurch gekennzeichnet, daß** das ringförmige Band (6) kontinuierlich oder diskontinuierlich ist.
3. Die Verschlusskappe gemäß Anspruch 1, **dadurch gekennzeichnet, daß** das Siegelmittel in Form einer Abdichtung (2) ausgeführt ist, deren Durchmesser ausreicht, um die Mündung des Flaschenhalses abzudecken.
4. Die Verschlusskappe gemäß Anspruch 1, **dadurch gekennzeichnet, daß** das Siegelmittel in Form einer Abdichtung (2) mit ringförmigem Kragen ausgeführt ist, der im Flaschenhals eingesetzt ist.
5. Die Verschlusskappe gemäß Anspruch 1, **dadurch gekennzeichnet, daß** sie eine Außenhülle (8) umfaßt, die die geschlossene Hülse (1) zumindest teilweise umschließt.

6. Die Verschlusskappe gemäß Anspruch 5, **dadurch gekennzeichnet, daß** die Außenhülle (8) aus Polymermaterial hergestellt ist.
7. Die Verschlusskappe gemäß Anspruch 5, **dadurch gekennzeichnet, daß** die Außenhülle (8) aus Metall hergestellt ist. 5

Revendications

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1. Bouchon de fermeture comprenant un manchon fermé (1), un moyen d'étanchéité agencé pour être installé sur un goulot d'une bouteille, un manchon ouvert (3) et une bague indicative (5), dans lequel le manchon fermé (1) et le manchon ouvert (3) ménagent une cavité (4), et la bague indicative (5) est pourvue d'une ceinture annulaire (6) placée dans ladite cavité (4) préalablement à la première ouverture, **caractérisé en ce que** ladite ceinture annulaire (6) étant réalisée apte à être libérée de ladite cavité (4) au cours de la première ouverture et à empêcher le retour de la bague indicative (5) à sa position initiale lors d'une nouvelle fermeture de la bouteille par mise en butée de la dite ceinture annulaire (6) contre une surface d'extrémité du manchon ouvert (3). 15 20 25
2. Bouchon de fermeture selon la revendication 1, **caractérisé en ce que** la ceinture annulaire (6) est continue ou discontinue. 30
3. Bouchon de fermeture selon la revendication 1, **caractérisé en ce que** le moyen d'étanchéité est conformé en un joint (2), dont le diamètre est suffisant pour protéger le goulot de la bouteille. 35
4. Bouchon de fermeture selon la revendication 1, **caractérisé en ce que** le moyen d'étanchéité est réalisé en forme d'un joint (2) comportant une collerette annulaire placée dans le goulot de la bouteille. 40
5. Bouchon de fermeture selon la revendication selon la revendication 1, **caractérisé en ce qu'il** comprend une enveloppe extérieure (8) entourant au moins partiellement le manchon fermé (1). 45
6. Bouchon de fermeture selon la revendication 5, **caractérisé en ce que** l'enveloppe extérieure (8) est fabriquée en un matériau polymérique. 50
7. Bouchon de fermeture selon la revendication 5, **caractérisé en ce que** l'enveloppe extérieure (8) est fabriquée en métal. 55

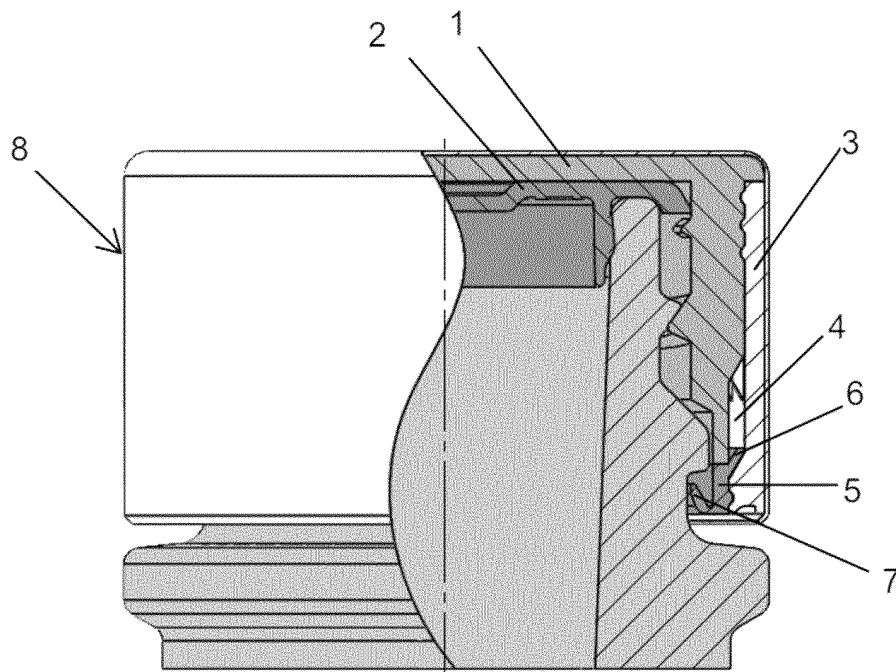


Fig. 1

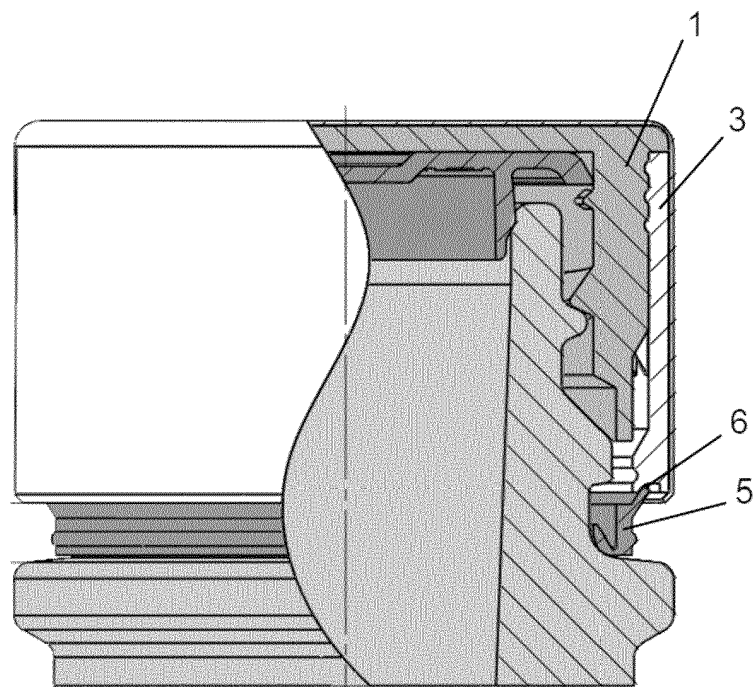


Fig. 2

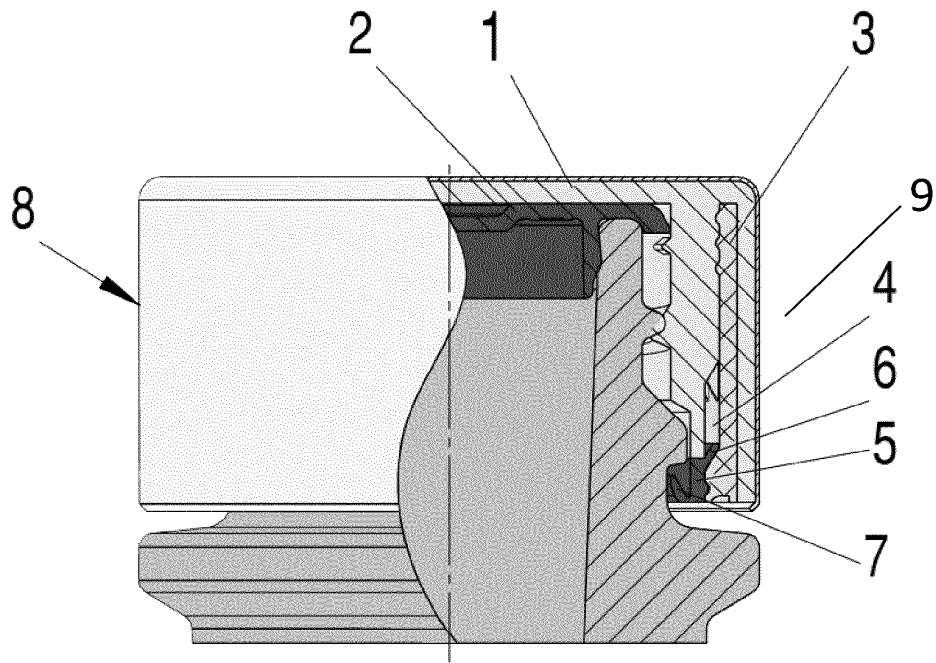


Fig. 3

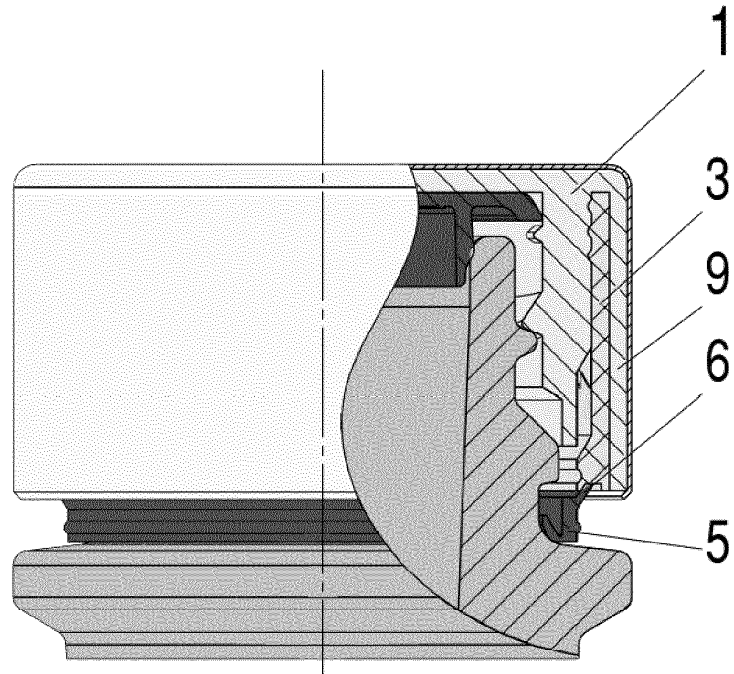


Fig. 4

REFERENCES CITED IN THE DESCRIPTION

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