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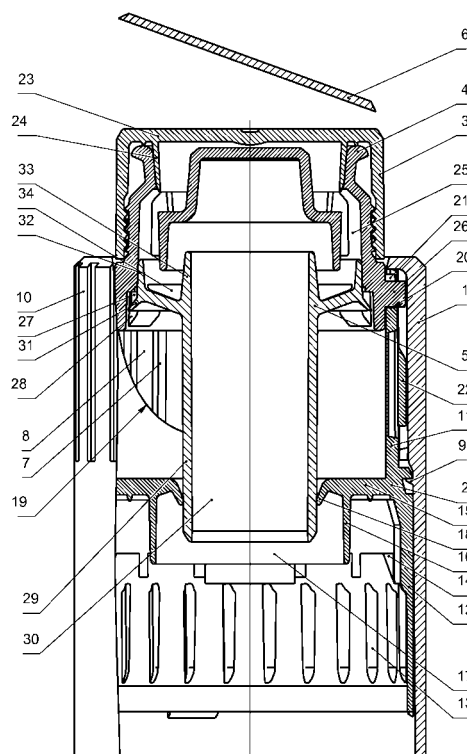
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(54) **CLOSURE CAP WITH A WITHDRAWABLE LID**

(57) A closure with an extensible cap comprises an external body with a face wall, a seating body with fixing means to the container is mounted in the external body, and also a pouring assembly with an outlet, installed in the seat body, a closure additionally comprises an extensible removable cap, made with a possibility of an axial forward movement in the direction of opening relatively to the external body, and also with a possibility of multiple opening and closing of the container while partially using the liquid, additionally providing means of visual indication, evidencing that the container was opened and reclosed.



## Description

**[0001]** The invention can be used in the food industry and relates to the closures for bottles, which applied for storage and bottling strong beverages, providing indication of its opening and preventing re-filling of the bottles with off-grade alcohol products.

**[0002]** Different closures with extensible tubes for discharging the liquid are known in the art: RU utility model patent no. 30726, Int. Cl. B65D 47/36, published 10.07.2007; RU utility model patent no. 22937, Int. Cl. B65D 41/34; 41/38, published 10.05.2002; or having discharge tubes mounted on the body so as to allow its longitudinal movement: RU utility model patent no. 65483, Int. Cl. B65D 41/34, published 10.08.2007; RU utility model patent no. 23290, Int. Cl., B65D 39/00, published 10.06.2002.

**[0003]** The closures of this type usually comprise a decorative metal or plastic casing with an element indicating first opening of the bottle, and a polyethylene cap with a discharge device, which extends upwards and opens while turning a decorative casing of the bottle. When the casing rotates in the reverse direction the cap operates as a stop valve unit that closing an opened bottle and preventing thereby its contents from evaporation.

**[0004]** A drawback of this type of devices is complexity of the construction, insufficiently high level of protection from unauthorized opening, but also there is a probability of foreign objects falling into the open nozzle and the discharge tube after first opening of the bottle.

**[0005]** In the technical decision concerning RU patent № 2180311 (Int. Cl. B65D 47/20, published 10.03.2002) a discharge device is made as a sleeve with an annular projection with a thread, on which a cap with a nozzle is installed for discharging the liquid and splines on its external side surface. A breakable unit is located on the face part of the decorative casing, and a shut-off sleeve is made with splines on the internal surface and installed in the decorative casing with a possibility of its mutual turning relatively to discharge sleeve and an interaction of its splines with splines of the cap for disclosing an axial removing and breaking of the breakable unit by nozzle.

**[0006]** The drawbacks of these devices are:

- constant openness of an external orifice of the extensible nozzle, in which a part of liquid can be left, that contributes to agglomeration of pollution of different type.
- a possibility of returning of extensible nozzle into initial position and restoration of breakable unit, for example, with the help of adhesive, that allows using a container with unauthorized liquid repeatedly.
- multiple removing of extensible nozzle in both directions often leads to jamming of pouring channel during exploitation because of frequent change of pressure in the container during pouring the liquid.

**[0007]** The closest engineering solution is RU utility

model patent №67550 (Int. Cl. B65D41/34, published 27.10.2007).

**[0008]** Said closure comprises fixedly attached to each other external and seating bodies, a one-way valve unit with shut-off ball and sealing rings to provide a tight fitting on the neck of the container, a shaped extensible dispenser with a cap and discharge element made as a whole with a support body in the lower part and having arresters on the external cylindrical surface. Before pouring liquid from the container, an external body is turning, by entering the vertical ribs of the cap and the response ribs of the external body into the interaction. There occurs a turn in the direction of screw slicing of extensible dispenser on the arresters and its rise. As a result of rise an extensible dispenser embosses shut-off element and control hatch of external cylindrical body, destroying spot-glued connection of the shut-off element and control hatch, correspondingly, with the cap and the external body. While rotating of the protective body in the reverse direction, lowering of a extensible dispenser and closing of a discharge element are carried out with the help of shut-off element of the cap.

**[0009]** But said device complicates the construction, doesn't provide enough sealing and security of closing the pouring hole of extensible dispenser and also not enough reliably provide unauthorized protection and is uncomfortable while exploitation. Besides, there is an opportunity of reinstalling of shut-off element of the cap that can mislead a consumer.

**[0010]** Closing of the external orifice of the pouring sleeve after opening while exploitation envisages lowering of the pouring sleeve. Herewith the exploitation of the device can be connected with a necessity of multiple rotation of the protective body in the reverse direction putting in motion all 3 movable elements of construction that increases the chance of jamming of the extensible system. Using of the said shut-off element of the cap leads to its destroying and full its breaking while multiple opening and closing while exploitation. Besides, the shut-off element doesn't provide tight and reliable closing of pouring hole, that can lead to pouring of the liquid while inclination of the bottle.

**[0011]** In a base of the invention is carried out a problem of increasing of the sealing and reliability of closing the pouring hole of the extensible dispenser by changing the construction of the device, making an additional level of protection, increasing of the convenience while using the device.

**[0012]** Said problem solves in such a way that, a closure with an extensible cap that is adapted to be applied to a mouth and neck of the container for liquid, comprising an external body 1 with a face wall, a seating body 2 with fixing means to the container, that is mounted in the external body 1, and also a pouring assembly with an outlet 25, installed in the seat body 2, a closure additionally comprises an extensible cap 3, that is able to be disconnected while extensible position of the pouring assembly, and also means for extension of the cap with pouring

assembly, made with a possibility of an axial forward movement of the cap in the direction of opening relatively to the seating body, while rotational movement of the external body, evidencing about opening of the container.

**[0013]** A particular case of the invention comprises means for extension of the cap with pouring assembly is made like lifting elements, made on the pouring assembly, with a possibility of interaction with sloping surfaces, made on the seating body.

**[0014]** A particular case of the invention, a breakable unit with a possibility of its separation as a result of application physical force while extension of the cap is located on the external surface of the face wall of external body.

**[0015]** A particular case of the invention, the cap 3 is connected with the pouring assembly by means of thread connection or by tight fitting with a possibility of maintaining the sealing in any position of the container.

**[0016]** Preferably, after first opening the removable cap 3 is made with a possibility of limitation the reverse motion upon reclosure of the container.

**[0017]** The embodiment of the present invention characterized by above combination of features and realization of its purpose is supported by description of the closure design made according to the present invention. Description of the design is illustrated graphically:

On the figure is illustrated general view of the closure in partial cross-section in the open state.

**[0018]** The closure consists of the external body 1, a seating body 2, installed in the external body, the extensible cap 3, pouring assembly, located in the seating body, which comprises pouring sleeve 4 and a discharge tube 5.

**[0019]** The external body 1 is made as a cylindrical sleeve element, on the end surface of which there is a breakable unit 6 with a possibility of removing it as a result of application physical force by pouring assembly while opening the container. On the internal surface of the external body 1 in the upper part, vertical stop projections 7 and grooves 8 are made, and also fixing elements 9 for connecting with the seating body 2 and for retaining of it in the axial direction. On the external side surface of the body 1 the ribs 10 can be made for convenient using by claw of the consumer while opening.

**[0020]** The seating body 2 is made as through cylindrical sleeve and consists of 2 indivisible parts: upper 11 and lower 12.

**[0021]** In the lower part in the internal surface of the seating body 2 fixing means 13, 14 are made for tight fitting on the neck of the container, and also there is an annular area 15, in the lower part of which an annular projection 16 with a throughput orifice 17 and with a tightening element 18 are made.

**[0022]** In the upper part on the external surface of the seating body 2 guiding bevel projections 19 are made, in the upper part of which angular portions with horizontal

edge 20 and with vertical edge 21 are made. Besides, the reverse locks 22 are made as extending bead, the edge of extending part of this bead is made clockwise in the direction of opening, on the external side surface of the seating body 2

**[0023]** The extensible removable cap 3 is made as a cylindrical cap with muffled upper face wall 23 and fitted on the pouring sleeve 4. Herewith, the external cylindrical surface of the cap can be ribbed, and on the internal surface of its face wall a tightening annular projection 24 is made. The removable cap 3 is installed on the pouring sleeve 4 with a possibility of multiple opening and closing of the container while partial using of the liquid, providing its sealing in any position of the container. Herewith, the removable cap 3 may be of a color contrasted to that of the external body 1, and also external cylindrical surface of the cap can be ribbed.

**[0024]** Inside the seating body 2 an extensible pouring assembly is made in the axial direction, consisted of the pouring sleeve 4, connected with the discharge tube 5 by indivisible connection.

**[0025]** Pouring sleeve 4 is made with the outlet 25. On the outer side surface of the pouring sleeve 4 diametrically positioned lifting elements 26 are made for interaction with bevel surfaces 19 of the seating body 2 during opening of the container. The pouring sleeve 4 comprises one or more circumferential orifices 27 around the sleeve with a projecting element 28, formed between axially extending portions of the sleeve, what is more the projecting element is on the lower circumferential edge of one of the orifices.

**[0026]** The discharge tube 5 is made from elastic material and has a nozzle 29 with a through-pass channel 30, tightly fitted by tightening element 18 in the throughput orifice 17 of the annular projection 16, retaining sealing in any position of the pouring assembly and of the container. On the side surface of the discharge tube, an external annular portion 31 is made for engaging with the projecting element of the pouring sleeve 4 and for fixation in the axial direction. In the upper part of the discharge tube 5 the ribs of rigidity 34 are made between external wall 32 and internal wall 33 with a possibility of preventing the deformation during axial assembling with the pouring sleeve 4.

**[0027]** The given closure is assembled with all parts as a single unit.

**[0028]** The discharge tube 5 is tightly installing in the pouring sleeve 4, forming the pouring assembly, the removable cap 3 is fitting on the pouring sleeve 4. Assembled construction is further installing in the seating body 2 and is fixing in the external body 1. The closure is installing and fixing on the neck of the bottle by fixing means of the seating body 2.

**[0029]** The device works as following:

**[0030]** While initial opening of the device by turning of the external body 1 in the direction of screwing, stop projections 7 and grooves 8 transfer the movement through lifting elements 26 of the pouring sleeve in the direction

of guiding bevel surface of the seating body 2, putting the pouring assembly in forward-rotational motion, simultaneously beginning lifting movement of the removable cap 3, pouring sleeve 4 and discharge tube 5. During lifting the cap 3 presses on the face wall of the external body 1, as a result of which a breakable unit removes.

**[0031]** The lifting elements of the pouring sleeve 4, moving in the direction of bevel surfaces, go out on the horizontal edge and are limited by vertical stop edge, limiting further moving of the cap 3 in the axial and radial direction. The removable cap 3 entirely goes out the limits of the external body 1 and can be opened for pouring the liquid from the container. While partial using of the liquid the cap 3 can be used repeatedly, retaining sealing in any position of the bottle.

**[0032]** An impossibility of returning the cap 3 in the initial position is providing by stop element 22, which rigidly sets against the stop projections 7 and doesn't give an opportunity of reverse rotation of the external body 1.

**[0033]** All parts of the closure are made of ecologically friendly polymeric materials, such as polyethylene and polystyrene, using highly efficient thermoplastic automatic machines by injection molding in molds with a system of hot channels, and dies. The bottle is closed by top-down pressing in a capping machine.

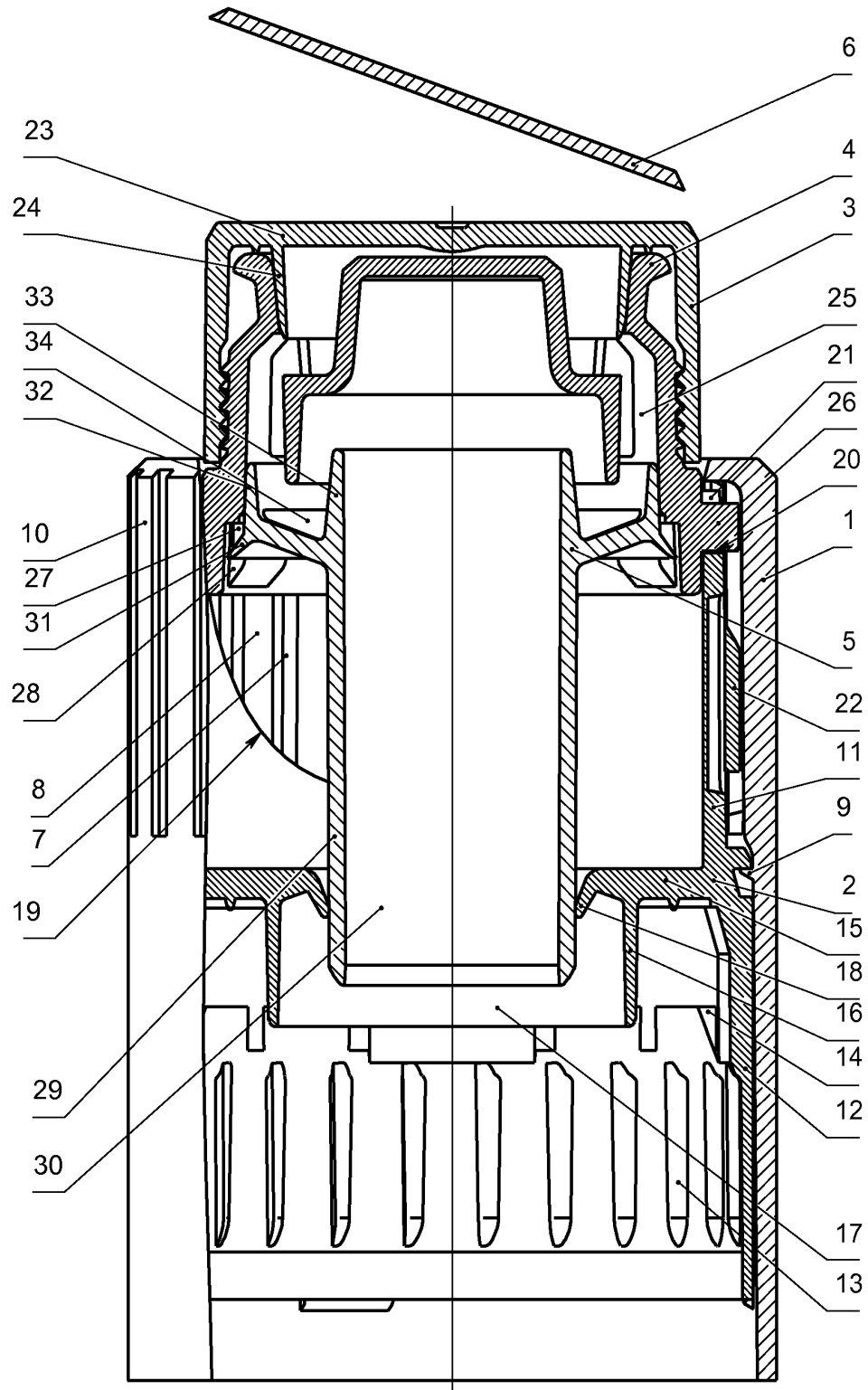
**[0034]** The proposed invention allows increasing the sealing of the closure with extensible pouring assembly during multiple exploitation of the container with liquid, to increase the security of closing of the pouring orifice of the extensible pouring assembly, and also provides additional level of unauthorized protection.

## Claims

1. A closure with an extensible cap that is adapted to be applied to a mouth and neck of the container for liquid, comprising an external body with a face wall, a seating body with fixing means to the container, that is mounted in the external body, and also a pouring assembly with an outlet, installed in the seat body, a closure additionally comprises an extensible cap, that is able to be disconnected while extensible position of the pouring assembly, and also means for extension of the cap with pouring assembly, made with a possibility of an axial forward movement of the cap in the direction of opening relatively to the seating body, while rotational movement of the external body, evidencing about opening of the container.
2. A closure to claim 1, **characterized** that means for extension of the cap with pouring assembly is made like lifting elements, made on the pouring assembly, with a possibility of interaction with sloping surfaces, made on the seating body.
3. A closure to claim 1, **characterized** that a breakable

unit with a possibility of its separation as a result of application physical force while extension of the cap is located on the external surface of the face wall of external body.

4. A closure to claim 1, **characterized** that the cap is connected with the pouring assembly by means of thread connection or by tight fitting with a possibility of maintaining the sealing in any position of the container.
5. A closure to claim 1, **characterized** that after first opening the removable cap is made with a possibility of limitation the reverse motion upon reclosure of the container.



## INTERNATIONAL SEARCH REPORT

International application No.

PCT/EA2009/000010

<b>A. CLASSIFICATION OF SUBJECT MATTER</b> <b>B65D 47/36 (2006.01)</b> According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b> Minimum documentation searched (classification system followed by classification symbols) <b>B65D 47/36, 51/18, 47/24</b> 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) <b>Esp@cenet, USPTO, DB, RUPAT, NCIPI, WIPO, EAPO</b>		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	UA 35550 U (INOSTRANNOE CHASTNOE PROIZVODSTVENNOE UNITARNOE PREDPRIYATIE "ALKOPAK") 25.09.2008, page 5, lines 25-50, 54-58, 61-62, figures 1-7	1-5
A	RU 67550 U1 (SHALMIEV MIKHAIL YAKUBOVICH) 27.10.2007	1-5
A	EA 006731 B1 (INOSTRANNOE UNITARNOE PROIZVODSTVENNOE PREDPRIYATIE KOMPANII "BELKAPS BETAILINGUS GMBKH" BELKEPS ) 28.04.2006	1-5
A	FR 2631318 A 1 (SIMONE MOREL) 17.11.1989	1-5
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.		
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Date of the actual completion of the international search <b>08 February 2010</b>		Date of mailing of the international search report <b>18 February 2010</b>
Name and mailing address of the ISA/ RU		Authorized officer
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**REFERENCES CITED IN THE DESCRIPTION**

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**Patent documents cited in the description**

- WO 30726 A [0002]
- WO 22937 A [0002]
- WO 65483 A [0002]
- WO 23290 A [0002]
- WO 2180311 A [0005]
- WO 67550 A [0007]