



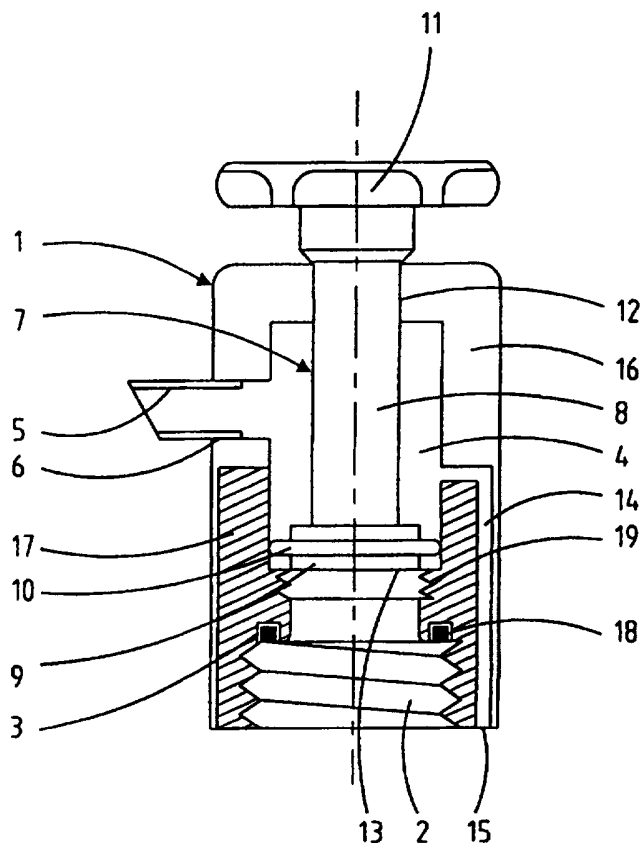
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<p>(21) International Application Number: PCT/NL97/00128</p> <p>(22) International Filing Date: 12 March 1997 (12.03.97)</p> <p>(30) Priority Data: 1002577 12 March 1996 (12.03.96) NL</p> <p>(71) Applicant (for all designated States except US): ON-TOP PRODUCTS B.V. [NL/NL]; Hoekvaartweg 14, NL-1771 RP Wieringerwerf (NL).</p> <p>(72) Inventors; and (75) Inventors/Applicants (for US only): BIEZE, Jan, Wouter, Herman [NL/NL]; Noord Brabantstraat 196 II, NL-1083 BH Amsterdam (NL). LEGUÉ, Gerardus [NL/NL]; Kamperfoelieweg 2, NL-1032 HN Amsterdam (NL).</p> <p>(74) Agent: VAN BREDA, Jacques; Octrooibureau Los en Stigter B.V., Weteringschans 96, NL-1017 XS Amsterdam (NL).</p>		<p>(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, ARIPO patent (GH, KE, LS, MW, SD, SZ, UG), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).</p> <p>Published With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments. In English translation (filed in Dutch).</p>

(54) Title: BOTTLE CLOSURE WITH POURING SPOUT

(57) Abstract

The invention relates to an exchangeable closing and pouring cap for a container for liquids having an opening for pouring, in particular a soft drink bottle, provided with suitable connecting means for placing the cap on the pouring opening, an outlet in the cap for the liquid connection between the container and a spout (5) on the cap and a plunger element (7) which is movable between a closing position and an opening position thereby closing respectively opening the outlet. The cap is provided with an air inlet (14) which, synchronously with the outlet, is closed respectively opened also by means of the plunger element. The air inlet at the side of the cap which is intended to be placed on the container for liquids, is provided with an opening (15).



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BOTTLE CLOSURE WITH POURING SPOUT

The invention relates to an exchangeable closing and pouring cap for a container for liquids having an opening for pouring, in particular a soft drink bottle, provided with suitable connecting means for placing the cap on the pouring opening, an outlet in the cap for the liquid connection between the container and a spout on the cap and a plunger element which is movable between a closing position and an opening position thereby closing respectively opening the outlet wherein the cap is provided with an air inlet which, synchronously with the outlet, is closed respectively opened also by means of the plunger element.

Such a cap is known from the European patent application EP-A 0 692 432. The closing and pouring cap disclosed therein is particularly suitable for soft drink bottles. It is especially in the area of soft drink bottles that a good cap is much needed. Particularly in catering establishments precious time is wasted by every time having to unscrew and after pouring having to screw on the standard screw cap in the case where larger soft drink bottles are being used. Moreover, with carbonated soft drinks the very well-known problem exists of the carbon dioxide disappearing quickly if the bottle is not closed properly, or remains open too long during pouring. Also, the soft drink bottles become larger and larger nowadays, making it more and more important that the bottle can be closed well and that the bottle remains open for the shortest time possible.

The cap disclosed in the European patent application is provided with an air inlet in the wall opposite the spout. This results in the problem that under certain circumstances, especially when the container for liquid is not handled with particular care, which may especially be the case in the above-mentioned catering establishments, the liquid will leave the container for liquid not only via the spout, but also via the air inlet in the wall opposite the spout.

It is now the objective of the invention to solve this problem and to achieve further advantages which will be explained below.

To this effect the cap of the invention is characterized, in that the air inlet at the side of the cap which is intended to be placed on the container for liquids, is provided with an opening. By positioning the opening of the air channel like this, the liquid is only able to leave the container for liquids via the spout, even if the container for liquids is being handled especially awkwardly, as in the pouring position the opening of the air channel is facing upward.

This may be realized particularly well if the air inlet comprises a channel extending substantially parallel with the cap's longitudinal direction.

A particularly advantageous manner to manufacture the cap in which the channel and the location of the opening as desired according to the invention are realized, is provided when the cap comprises an outer housing and in it a central part which together form the channel. Both the outer housing and the central part may be realized by means of injection moulding, the channel-forming parts being formed by recesses in either the outer housing or the central part.

In a particular aspect of the invention the cap is characterized, in that near the connecting means a sealing ring is provided suitable to abut against the rim of the pouring opening of a container of liquids. This makes the cap to be placed on the container for liquids permanently leak-tight while, if this sealing ring is made from a resilient material, the cap is also to a certain extent tightened on the container of liquids. By this means, leaking of liquid and carbon dioxide from the cap is prevented over a long period of time.

It is desirable that the sealing ring is fitted into a groove such that the inner and outer edge of the sealing ring abut against the walls of the groove. This prevents that the sealing ring is inadvertently removed, as it might afford points of application for said inner

and outer edge. This also makes the cap according to the invention safe for children.

Both the valve seal and the carbon dioxide-preserving action of the cap according to the invention are promoted due to the fact that the plunger element
5 comprises a rod which, at the side of the cap that is to be placed on the container for liquids, comprises a disc that is provided around its periphery with a thread suitable to interact with a corresponding thread at the
10 inside of the cap, to allow the cap to be tightened in the closed position. By this means sealing the container for liquids can be simply achieved by turning the plunger element so that the thread of the disc interacts with the thread at the inside of the cap, thus fastening it in the
15 closed position.

The invention will be further elucidated with reference to the drawing of one single non-limiting embodiment of the invention.

Fig. 1 is a schematic, perspective view of a soft
20 drink bottle with on it an embodiment example of the exchangeable closing and pouring cap according to the invention.

Fig. 2 is a vertical cross-section of the exchangeable closing and pouring cap according to the invention.

25 The drawing, and in particular Fig. 1 shows a soft drink bottle A, for which the invention is in particular, but not exclusively, intended. The invention can also be used on bottles for other liquid products or on other kinds of containers. Reference number 1 indicates the
30 closing and pouring cap according to the invention in its entirety.

Fig. 2 shows the cap 1 in more detail. One can see that the cap at the underside is provided with thread 2 fitting the thread around the pouring opening in the neck
35 of the bottle A. Depending on the bottle A or other container, the thread 2 may naturally be replaced by other suitable connecting means, such as a bayonet fitting or the like. In the case as shown, the cap 1 seals onto the top rim of the bottle A by means of a sealing ring 18. The

sealing ring 18 is admitted into a groove 3, such that the inner and outer edge of the sealing ring 18 abut against the walls of the groove 3. The cap 1 is further provided with an adjoining passage 4 in alignment with the pouring opening of the bottle A, opening into a spout 5. This spout 5 may be formed from separate tube pieces fixed in bore holes 6 in the lateral wall of the cap 1, but, of course, the spout 5 may also be formed integrally with the wall of the cap 1. The shape of the spout 5 may be chosen to facilitate pouring. Also, an air inlet 14 is provided opposite the spout 5 to let air into the bottle, making faster and more even pouring possible. At the side of the cap 1 to be placed on the container for liquids A, the air inlet 14 is provided with an opening 15. The air inlet is further formed by a channel 14 running substantially parallel with the longitudinal direction of the cap 1. In the embodiment shown, this channel is formed because the cap 1 comprises an outer housing 16 and in it a central part 17, both of which are provided with recesses forming the channel 14.

Closing and opening of the passage 4 to the spout 5 respectively the air inlet 14 is effectuated with the aid of a plunger element 7 serving as sealing element, which plunger element 7 in this case consists of a rod 8, which at its end facing the bottle A is provided with a disc 9 having a groove with a peripheral O-ring 10 or the like for sealing, and at the end opposite thereto a control knob 11. This control knob 11 is located outside the cap 1 and the rod 8 of the plunger-like element 7 is led out to it via a passage 12 in the top of the cap without losing the seal. With the aid of the control knob 11, the plunger element 7 can be moved between a lower, closed position, indicated by the full lines and an open position (not shown) in which the passage 4 to the spout 5 and the air inlet 14 is opened. The closing position of the plunger element 7 is determined by a stop or seating 13. Around its circumference the above-mentioned disc 9, which is located at one end of the rod 8 of the plunger element 7, is provided with a thread 19 suitable to interact with a

corresponding thread at the inside of the cap 1, to allow the cap 1 to be tightened in the closed position, that is to say, tightening the disc 6 up against the stop or seating 13.

5 It will be clear from the above that the invention provides a simply constructed and easily usable cap, allowing for fast pouring and at the same time providing a reliable seal.

CLAIMS

1. An exchangeable closing and pouring cap (1) for a container for liquids (A) having an opening for pouring, in particular a soft drink bottle, provided with suitable connecting means (2) for placing the cap (1) on the
5 pouring opening, a passage (4) in the cap (1) for the liquid connection between the container (A) and a spout (5) on the cap and a plunger element (7) which is movable between a closing position and an opening position thereby closing respectively opening the passage (4) wherein the
10 cap (1) is provided with an air inlet (14) which, synchronously with the passage (4) is closed respectively opened also by means of the plunger element (7),
characterized in that the air inlet (14) at the side of the cap (1) which is intended to be placed on the con-
15 tainer for liquids (A), is provided with an opening (15).

2. A cap in accordance with claim 1, **characterized** in that the air inlet comprises a channel (14) extending substantially parallel with the cap's (1) longitudinal direction.

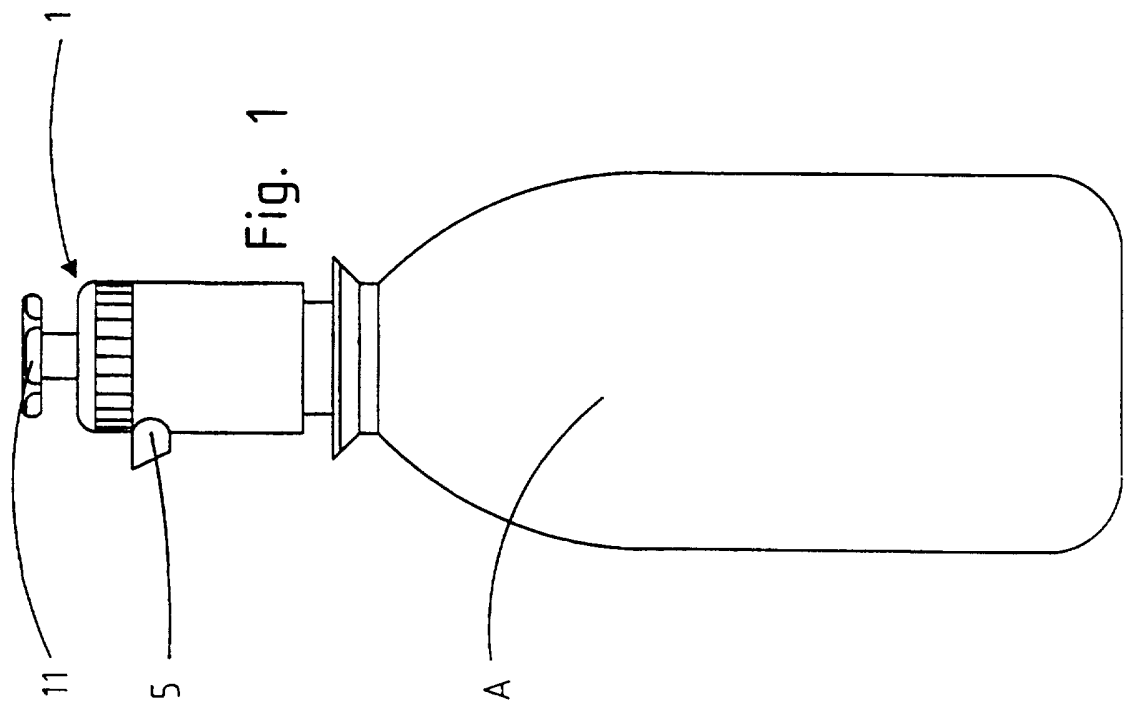
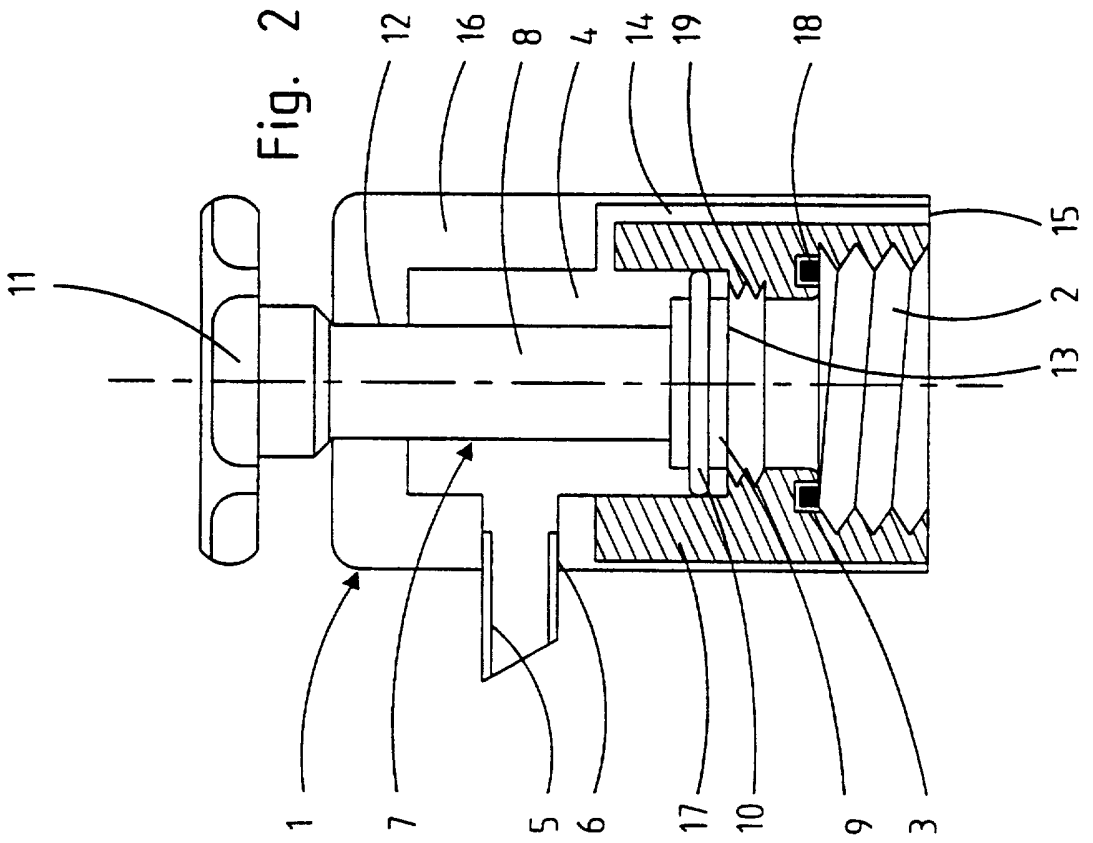
20 3. A cap in accordance with claim 1 or 2, **characterized** in that the cap (1) comprises an outer housing (16) and in it a central part (17) which together form the channel (14).

25 4. A cap in accordance with one of the preceding claims, **characterized** in that near the connecting means (2) a sealing ring (18) is provided suitable to abut against the rim of the pouring opening of a container of liquids (A).

30 5. A cap in accordance with claim 4, **characterized** in that the sealing ring (18) is fitted into a groove (3) such that the inner and outer edge of the sealing ring (18) abut against the walls of the groove.

35 6. A cap in accordance with one of claims 1-5, **characterized** in that the plunger element (7) comprises a rod (8) which, at the side of the cap (1) that is to be placed on the container for liquids (A), comprises a disc

(9) that is provided around its periphery with a thread (19) suitable to interact with a corresponding thread at the inside of the cap (1), to allow the cap (1) to be tightened in the closed position.



INTERNATIONAL SEARCH REPORT

International Application No

PCT/NL 97/00128

A. CLASSIFICATION OF SUBJECT MATTER
 IPC 6 B65D47/24 B65D47/32

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)
 IPC 6 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 practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 692 432 A (BIEZE) 17 January 1996 cited in the application	1,2
Y	see column 3, line 14 - line 23; figure 3 ---	3-5
A	EP 0 107 954 A (ROLLS-ROYCE) 9 May 1984	1,2
Y	see page 8, line 24 - page 9, line 12; figure 7 ---	3
A	US 2 337 276 A (SANCHIS) 21 December 1943 see page 2, line 39 - line 64; figures 5-7 ---	1
Y	GB 2 022 064 A (BAXTER TRAVENOL) 12 December 1979 see figures 2,4 ---	4,5
A	DE 120 819 C (POSNO) 26 May 1900 see the whole document -----	6

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

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Information on patent family members

International Application No

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