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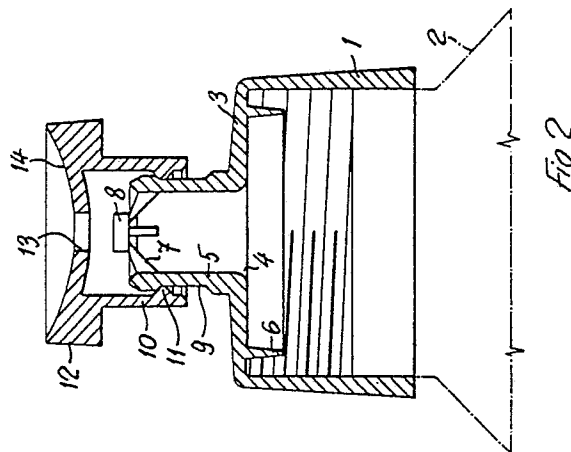
(71) Applicant: **MIRA LANZA S.p.a.**
Via Rivarolo 14
I-16161 Genova(IT)

(72) Inventor: **Castellani, Rinaldo**
Passo Moglia 2/20
I-16167 Genova-Nervi(IT)

(74) Representative: **Porsia, Attilio et al**
c/o Succ. Ing. Fischetti & Weber-Dr. Porsia
Via Caffaro 3/2
I-16124 Genova(IT)

(54) Closing device for liquid bottles.

(57) A closing device for liquid bottles, of the type including a fixed concentric plugging member (8) at the mouth of the bottle pouring spout (9), and a cylindrical element (10) coaxial to said spout (9), closed on one side by a bottom part (12) having a complementary hole (13) that matches said plugging member (8). Said cylindrical element (10) is capable of sliding from a position in which the plugging member (8) closes said hole (13) to a position in which the hole (13) is disengaged from said plugging member (8). The bottom part (12) of the cylindrical element (10) is formed, on its outer side, with a hollow (14) converging into said hole (13).



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"Closing device for liquid bottles"

The present invention refers to closing devices for liquid bottles.

Closing devices are known which are composed of a pouring spout having a plugging element in the shape of a pin held by spokes in the middle of the mouth of the bottle pouring spout, coaxing with an outlet hole bored in the middle of the bottom surface of a cylindrical member concentric with said spout and capable of sliding axially along it, so that in one sliding position of the cylindrical member the outlet hole of the bottle is closed, while in the opposite position it is open.

The major drawback of said known devices is that the liquid adhering to the distributing outlet tends to drip down the sides of the bottle after each pouring. This inclination of the liquid is particularly annoying when the bottles hold oily, or viscous, or coloured liquids dirtying the user's hands.

It is therefore the main object of this invention a device for use as a dispensing spout closure member in liquids dispensing bottles of the above described type provided with means to catch the liquid drops adhering to the pouring spout and to convey them back into the bottle.

According to its main feature, the invention comprises a closing device for liquid bottles, of the type including a fixed concentric plugging member at the mouth of the bottle pouring spout, and a cylindrical element coaxial to said spout, closed on one side by a bottom part having a complementary hole that matches said plugging element, said cylindrical element being capable of sliding from a position in which the plugging element closes said hole to a position in which the hole is disengaged from said plugging element, characterized in that said bottom part is formed, on its outer side, with a hollow converging into said hole.

Advantageously, the said hollow is a funnel-shaped hollow.

Further characteristics and advantages of this invention will be better shown in the following description of an embodiment of the invention executed according to the attached drawing, wherein:

Figure 1 is an axial sectional view of the device according to the invention in its closed position, and

Figure 2 is a view similar to that of Figure 1, of the device in the open position.

Referring to the drawings, the device is composed in a known manner of a cylindrical collar 1 having an inner thread to be screwed on the outer thread of the bottle neck diagrammatically indicated as 2.

Collar 1 has a bottom surface 3 having a center

hole 4 that communicates with a cylindrical pouring spout 5. On the inner side of bottom surface 3 a ring-shaped projection 6 is provided which engages the bottle mouth 2. The mouth of pouring spout 5 shows four spoke elements 7 holding in their center a cylindrical element 8 raised above the level of the mouth of spout 5, which constitutes the plugging member of said closing device, as it will be better described in the following. The outer cylindrical skirt of spout 5 shows a large ring-shaped channel 9 extending from an area close to its base to an area close to its free edge.

Number 10 indicates a cylindrical member concentric with spout 9. The inner diameter of said cylindrical member 10 is slightly larger than the outer diameter of spout 5; on its inner surface, said cylindrical element shows a ring-shaped rib 11 designed to engage a ring-shaped channel 9. The opposite side of element 10 is closed by a bottom surface 12 having in its center a hole 13 whose inner diameter is substantially equal to the outer diameter of plug 8. According to the major characteristic of the improvement of this invention, bottom surface 12 has, on its outer side, a hollow 14 converging into center hole 13.

Thanks to this characteristic, any quantity of poured liquid that remains in the outlet hole 13 at the end of each pouring operation will flow back into the bottle 2.

It is one of the advantages of this invention that the diameter of bottom 12 is larger than the diameter of member 10 which it is secured to, so that it enlarges the surface of the cup-shaped drip-catching part 14 and it provides an extremely good grip to operate the moving part 10-14.

Claims

1) A closing device for liquid bottles, of the type including a fixed concentric plugging member (8) at the mouth of the bottle pouring spout (9), and a cylindrical element (10) coaxial to said spout (9), closed on one side by a bottom part (12) having a complementary hole (13) that matches said plugging member (8), said cylindrical element (10) being capable of sliding from a position in which the plugging member (8) closes said hole (13) to a position in which the hole (13) is disengaged from said plugging member (8), characterized in that said bottom part (12) is formed, on its outer side, with a hollow (14) converging into said hole (13).

2) A device according to claim 1 characterized by the fact that the said hollow (14) is funnel-shaped

3) A device according to claim 1 or 2, characterized in that the diameter of said bottom part (12) is larger than the diameter of the cylindrical element (10) bearing it.

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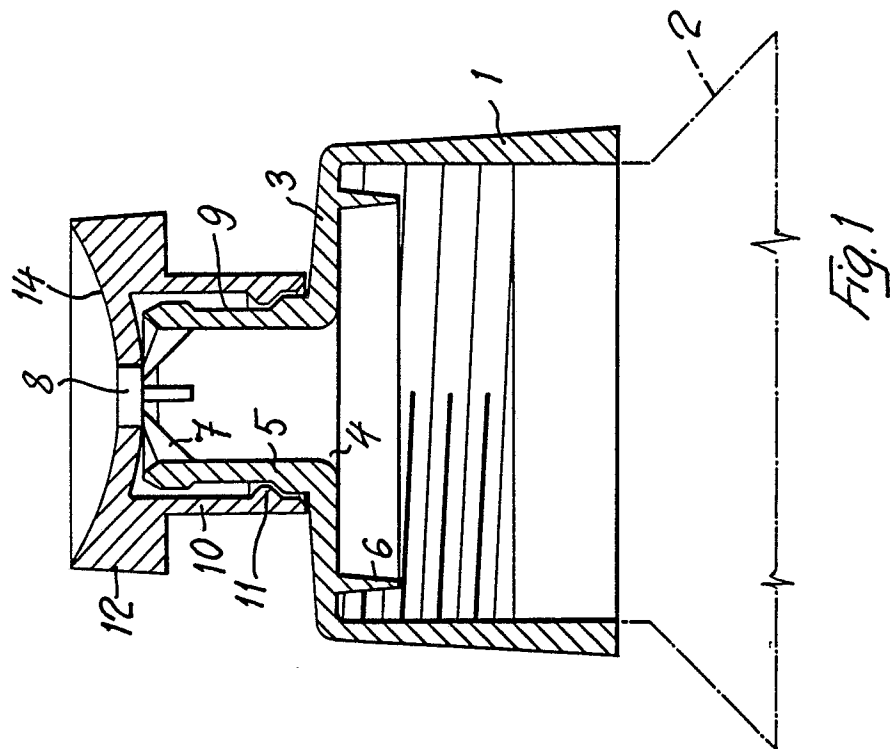
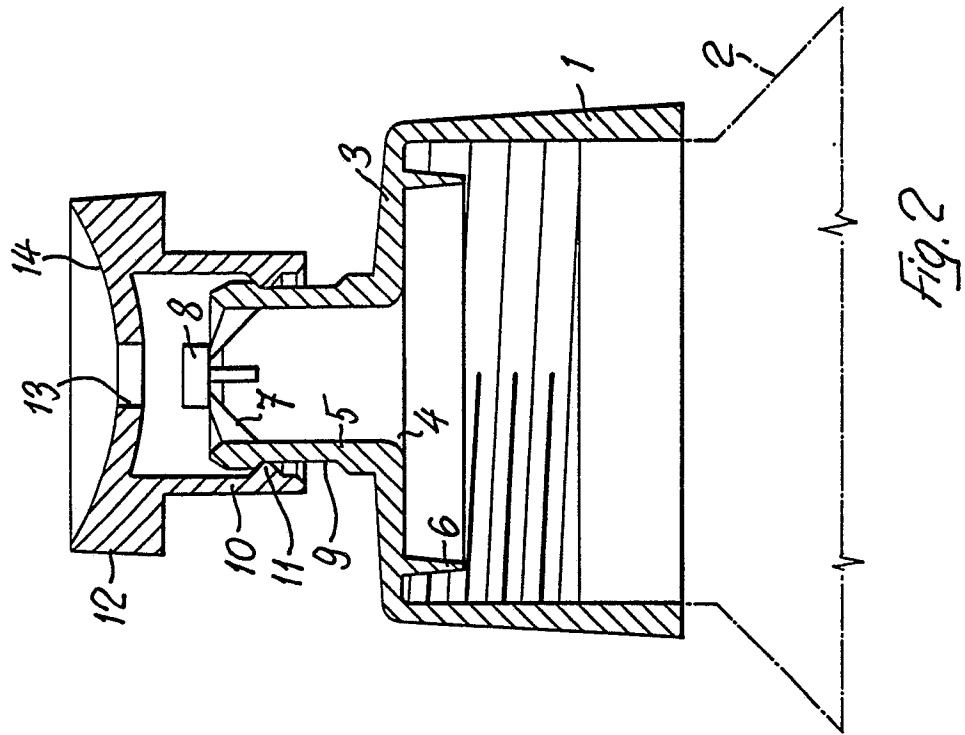
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DOCUMENTS CONSIDERED TO BE RELEVANT			EP 88108616.9
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.4)
X	US - A - 3 175 741 (PORTER) * Fig. 2,3 * --	1-3	B 65 D 47/26 B 65 D 35/46
X	FR - A - 1 129 213 (SAVITCHI, WEINFELD) * Fig. 5,6,7 * --	1-3	
A	US - A - 4 474 314 (ROGGENBURG, JR) * Fig. 7,9 * --	1	
A	DE - A1 - 2 619 825 (NILSON) * Fig. 5 * ----	1	
			TECHNICAL FIELDS SEARCHED (Int. Cl.4)
			B 65 D 35/00 B 65 D 41/00 B 65 D 47/00 B 65 D 83/00 B 05 B 11/00
The present search report has been drawn up for all claims			
Place of search VIENNA		Date of completion of the search 27-10-1988	Examiner CZUBA
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	