

(19)



Europäisches Patentamt

European Patent Office

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(11)

Publication number:

0 083 506

A1

(12)

EUROPEAN PATENT APPLICATION

(21) Application number: 82306998.4

(51) Int. Cl.²: B 65 D 41/26, B 65 D 41/04

(22) Date of filing: 30.12.82

(30) Priority: 04.01.82 GB 8200077

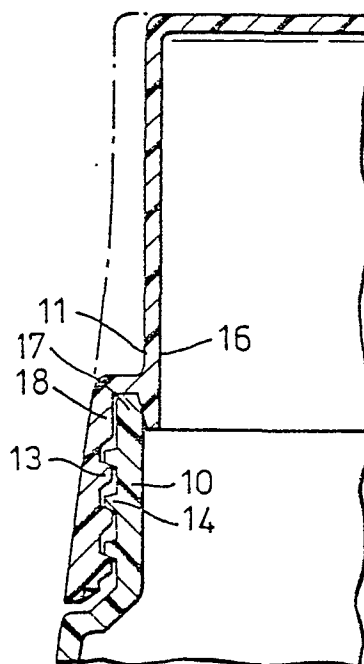
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(84) Designated Contracting States: GB

(43) Date of publication of application: 13.07.83
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(54) Closure cap.

(57) A combined closure cap and measuring cup has a conventional roof-plus-skirt form. However contrary to standard practice the engagement with which the cap is secured to a bottle, and the seal are formed in the skirt remote from the roof. This has the advantage of preventing residues of liquid in the cap from draining down the exterior of the bottle.



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CLOSURE CAP

The invention relates to a closure cap for sealing the neck of a container.

It is now quite normal for consumer products such as detergent liquids to be sold in large volume containers. For instance, detergent fabric softening compositions are sold in plastics containers of 4 litre capacity and dish-washing liquids in containers of up to 10 litres. Very often, these containers are styled so that for aesthetic reasons it is desirable to provide a closure cap of substantial size. Furthermore, some products are sold in containers, the caps of which are designed to act as a measure and are consequently of large volume, perhaps 60-120 millilitres.

At present, normal practice in the art, when a large volume cap is specified, is to arrange for the neck of the container to extend upwardly inside the skirt of the cap and to be sealed at the roof, often by a tapered annulus fitting within the neck of the container.

The above arrangement is shown in Figure 1 of the accompanying drawings, which shows a vertical section through a part of a large volume closure cap. The neck (10) of a screw-threaded bottle extends upwardly inside the skirt (11) of the cap. The upper part of the skirt is provided with screw-threads (13) engaging with the screw threads (14) on the neck of the container and the roof (15) of the cap is provided with a projecting tapered annulus (16) which fits inside the neck of the container to provide a seal.

A disadvantage of the arrangement shown in Figure 1 is that if the cap is used as a measure for liquid, residues are able to run down the sides of the bottle, making it unpleasant to handle.

In accordance with the present invention there is provided a combined closure cap and measuring cup for a container, formed with a roof, with a skirt, with an engagement adapted to co-operate with a corresponding engagement on the container so as to retain the cap on the neck of the container, and with sealing means adapted to engage in sealing relationship with the neck of the container, wherein both the engagement and the sealing means are formed in the skirt remote from the roof.

Embodiments of the closure caps of the invention are shown in Figures 2 to 7 each of which shows a vertical section through that part of the cap bearing the engagement and sealing means, and the corresponding part of the bottle neck.

In each of the figures the container is formed with a shorter neck (10) than that shown in Figure 1. The skirt (11) of the cap is provided with an engagement in the form of screw threads (13) which co-operate with corresponding screw threads (14) on the bottle neck.

Referring now specifically to Figure 2, the skirt of the cap is stepped, the engagement consisting of the screw threads (13) being carried on the large diameter part. In

this embodiment the sealing means consists of a tapered, downwardly projecting sealing ring (16) which is formed as a continuation of the smaller diameter part of the skirt. The edge of the bottle neck consequently engages the U
5 shaped channel formed by the upper part of the screw threaded portion of the skirt (18) and the sealing ring (16), and this aids sealing also.

In Figure 3 a similar arrangement is shown except that the skirt of the cap is flared rather than stepped.
10 Instead of being a continuation of the skirt wall, the sealing ring (16) projects therefrom at an acute angle to butt against the top surface of the bottle neck and form a seal.

In Figure 4 the sealing means consists of a separate
15 sealing plug (17) of lined cork or of deformable plastics material which may be a loose fit in the closure cap and a press fit in the bottle neck, in which case it will need to be removed separately from the neck after removing the cap.

Referring now to Figure 5, the sealing means in this
20 embodiment is also a separate insert, in this case a dished plastics insert (18), the outside of the dish wall butting against an angled surface (19) on the inside of the bottle neck and the edge of the wall butting against a second angled surface on the interior of the skirt at (20) and
25 thereby forming a seal.

In Figure 6 an embodiment is shown which is similar to that shown in Figure 3 except that here the outwardly projecting sealing ring (16) butts against a conical surface (21) formed on the outside of the bottle neck.

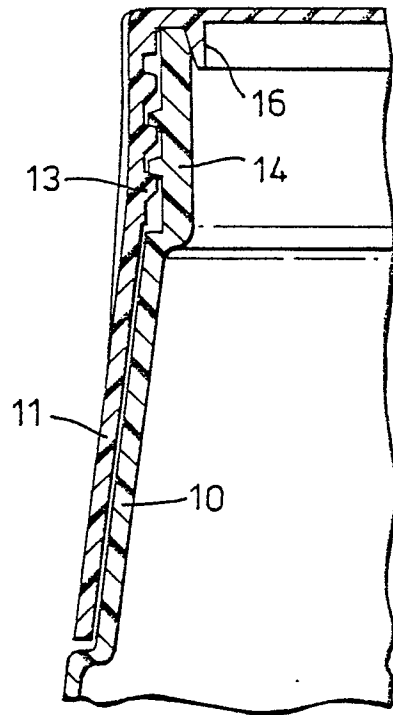
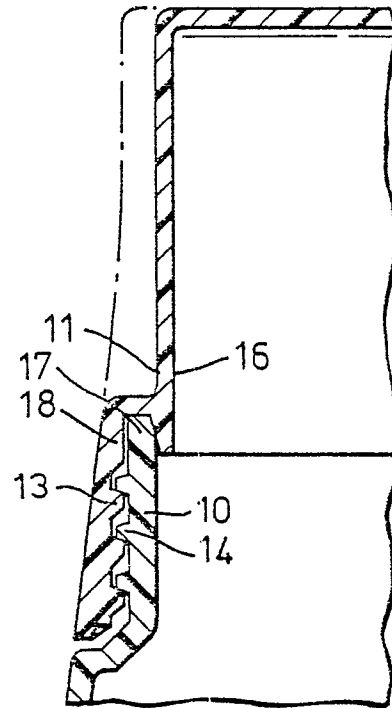
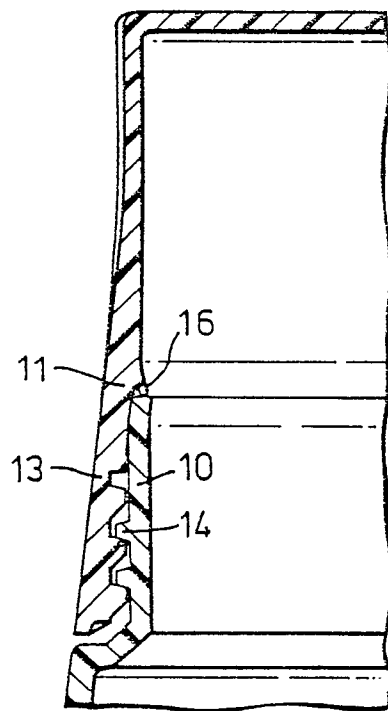
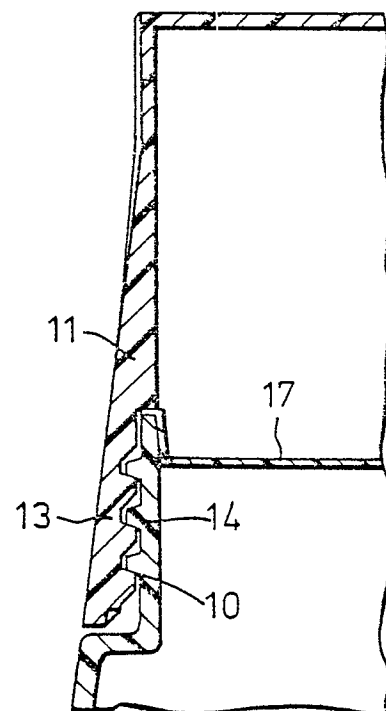
30 Finally, referring to Figure 7, an embodiment is shown in which the sealing means consists of a sealing ring (16) formed on the edge of the skirt which butts against a shoulder (22) formed on the bottle neck.

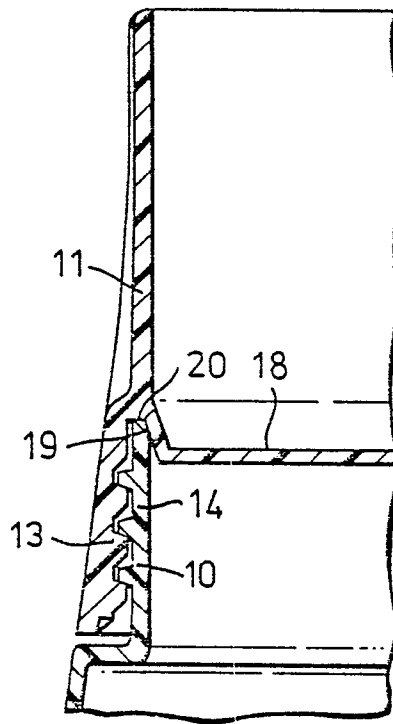
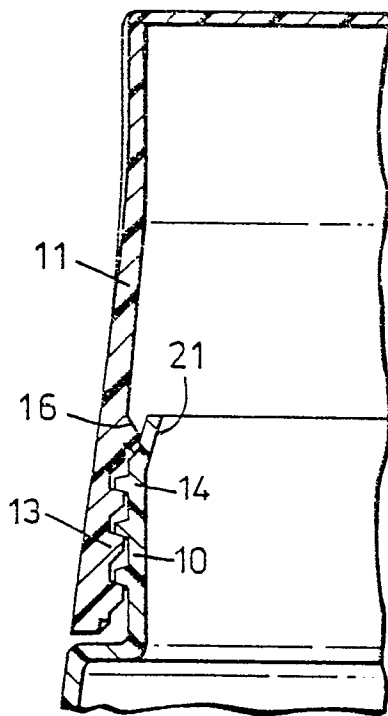
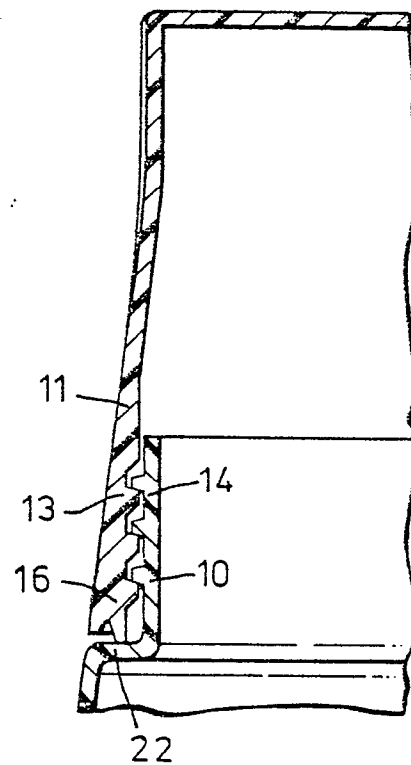
The designs illustrated in Figures 2-7 can have two
35 advantages. First, it is possible with all the designs to make a saving on the amount of material needed to form the

container, since it is unnecessary to provide a long neck
extending upwardly inside the skirt of the cap. Secondly,
the location of the seal minimizes liquid running down the
container when the cap has been used as a measuring cap for
5 measuring the container's liquid contents.

CLAIMS:

1. A combined closure cap and measuring cup for a container formed with a roof, with a skirt, with an engagement adapted to co-operate with a corresponding engagement on the container so as to retain the cap on the neck of the container, and with sealing means adapted to engage in sealing relationship with the neck of the container, wherein both the engagement (13) and the sealing means (16) are formed in the skirt (11) remote from the roof.
2. A combined closure cap and measuring cup according to claim 1 wherein the inner surface of the skirt extends into a tapered, downwardly projecting sealing ring (16).
3. A combined closure cap and measuring cup according to claim 1 wherein the sealing means (16) is formed separately from the remainder of the cap.
4. A combined closure cap and measuring cup according to claim 1 wherein the sealing means (16) comprises an outwardly projecting sealing ring arranged to butt against a bottle neck.
5. A combined closure cap and measuring cup according to claim 4 wherein the sealing ring is arranged to butt against the inside of a bottle neck.

*Fig. 1.**Fig. 2.**Fig. 3.**Fig. 4.*

*Fig. 5.**Fig. 6.**Fig. 7.*



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EUROPEAN SEARCH REPORT

0083506

Application number

EP 82 30 6998

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 3)
X	CH-A- 279 583 (MÜLLER & KREMPEL) *Figures 1,3; page 1, lines 36-41*	1,2,4	B 65 D 41/26 B 65 D 41/04
X	FR-A-2 101 088 (S.A. WARIN-RAPEAUD) *Figures; page 1, lines 30-32*	1,2,4	
Y	US-A-3 851 784 (GRYNCEWICZ) *Figures 1,2; column 2, lines 43-45*	1-4	
Y	EP-A-0 031 980 (HEINO, J.) *Figure 1; page 2, lines 23-31; page 3, lines 12-15*	1-4	
A	EP-A-0 034 998 (AICHINGER) *Figures 1,2; page 6, lines 8-11*	5	TECHNICAL FIELDS SEARCHED (Int. Cl. 3) B 65 D
A	DE-A-2 153 071 (STEINER) *Figures 1,6*	5	
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 07-04-1983	Examiner STEEGMAN R.
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			