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(54) **Improvements in caps for bottles and the like**

(57) A cap for a bottle or the like has means, such as a screw-thread, for cooperating with an opening in the bottle or the like in order to seal the contents of the bottle or the like. The cap has a container (2) which is adapted to hold a fluid material, such as a cordial concentrate or milk, and/or one or more solid objects, such as tablets or sugar. The container (2) has a releasable lid (6) and may contain a canister (4) having a lid (5). The bottom of the container (2) has a lower chamber which may be closable by a blanking lid (12). The bottle may take the form of an insulated flask adapted to contain hot or cold water.

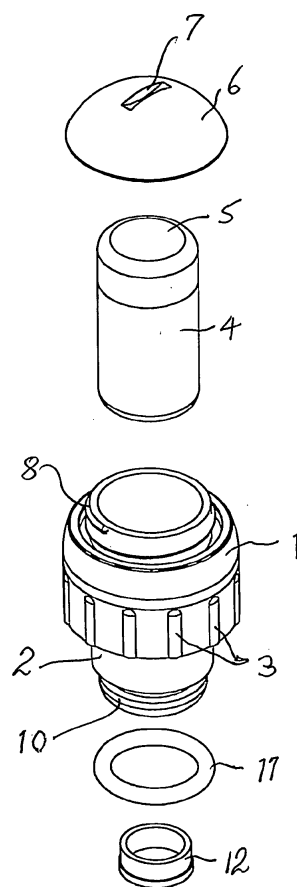


Fig. 5

Description

[0001] This invention relates to improvements in caps for bottles and the like.

[0002] According to the invention, there is provided a cap for a bottle or the like, said cap having means for co-operating with an opening in the bottle or the like in order to seal the contents of the bottle or the like and said cap further having a container adapted to hold a fluid and/or one or more solid objects and means for gaining access to the interior of the container, wherein the container is provided with a bottom and wherein a lower chamber is provided in the bottom of the container.

[0003] According to one embodiment of the invention, the cap may be provided with a screw-thread which is adapted to engage with a co-operating screw-thread on a bottle or the like for which the cap is intended.

[0004] Alternatively, the cap may be a push-fit in the opening of the bottle or the like for which the cap is intended.

[0005] The container in the cap may be provided with a releasable lid by means of which the contents of the container can be accessed and the container then re-closed.

[0006] The lid may be a simple push-fit into the cap or it may be provided with a screw-thread which is adapted to engage with a co-operating screw-thread provided at an opening to the container.

[0007] Desirably, the container is adapted to project into an opening in the bottle or the like when the cap is in position on the bottle or the like.

[0008] The lid may be provided with a slot to facilitate removal of the lid from the container.

[0009] Preferably, the container is adapted to hold a canister containing a fluid material such as a cordial concentrate. Alternatively, the container may be adapted to contain one or more solid objects such as tablets.

[0010] According to a preferred embodiment of the invention, the lower chamber is provided with an internal screw-thread and a blanking lid is adapted to engage with the internal screw-thread in the lower chamber, said lower chamber then serving to contain a fluid material or one or more solid objects when the blanking lid is screwed into the lower chamber.

[0011] An ice bottle or a flexible container having chemical heating means when pressed may be adapted to be screwed into the lower chamber.

[0012] Preferably, the container has an outer wall defining the lower chamber and the outer wall may be provided with a groove adapted to receive an O-ring or seal.

[0013] Part of the exterior surface of the cap is preferably provided with a series of knurls to facilitate removal of the cap from a bottle or the like to which the cap has been secured.

[0014] The cap is desirably made of stainless steel or of a synthetic plastics material.

[0015] The invention will now be described in detail, by way of example, with reference to the drawings, in

which:-

Fig. 1 is a perspective view of one embodiment of a cap according to the invention;

Fig. 2 is a front view of the cap shown in Fig. 1;

Fig. 3 is a vertical section on the line III - III in Fig. 2 in the direction of the arrows;

Fig. 4 is a plan view of the cap shown in Figs. 1 to 3;

Fig. 5 is an exploded perspective view of the cap shown in Figs. 1 to 4; and

Fig. 6 is a part-sectional view of an alternative arrangement.

[0016] In the drawings, like parts are denoted by like reference numerals.

[0017] Referring to the drawings, the cap according to the invention comprises a main body 1 which is formed integrally with the outer wall of a container 2. The outer diameter of the container 2 is such that it can fit into the neck of a bottle for which the cap is intended. The neck of the bottle (not shown) is intended to fit between the outside of the container 2 and the inside of the main body 1. The interior surface of the main body 1 is preferably provided with an internal screw-thread (not shown) for engagement with a corresponding external screw-thread on the outer surface of the neck of the bottle. The exterior surface of the main body 1 is provided with a series of knurls 3.

[0018] The container 2 projects beyond the upper end of the body 1 and is adapted to contain a canister 4 having a lid 5. The canister 4 is held in the container 2 by a cap lid 6 which has an internal screw-thread for engagement with a cooperating screw thread 8 on the projecting end of the container 2. The cap lid 6 is provided with a groove 7 in its upper surface to facilitate removal of the lid from the container.

[0019] The bottom of the container 2 is provided with a lower chamber 9 having an internal screw-thread (not shown). The outer wall of the container 2 defining the chamber 9 is provided with a groove 10 which is adapted to receive an O-ring or seal 11. In normal use, a blanking lid 12 is screwed into the chamber 9 as shown in Figs. 1 to 3 of the drawings. However, if desired, the blanking lid 12 may be removed and replaced by an ice bottle 13 as indicated in Fig. 6 of the drawings.

[0020] As indicated above, the canister is intended to be filled with a cordial extract or tablets and the bottle for which the cap according to the invention is intended will normally be filled with water. The contents of the canister can be poured into the bottle to provide a refreshing drink.

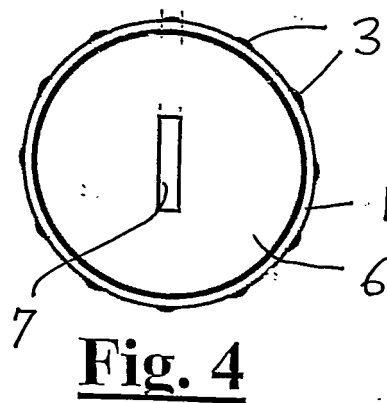
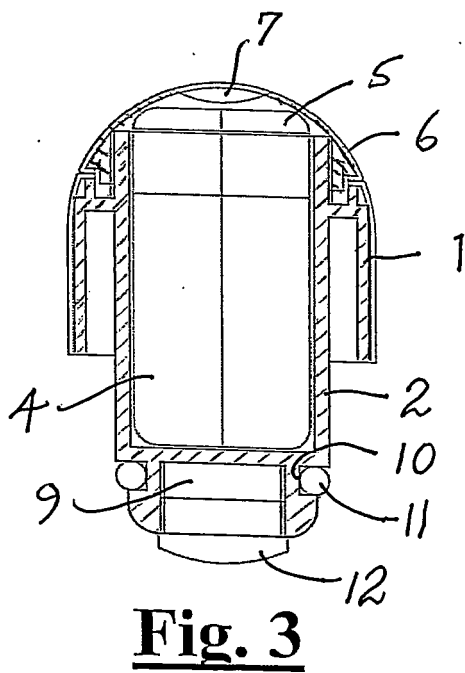
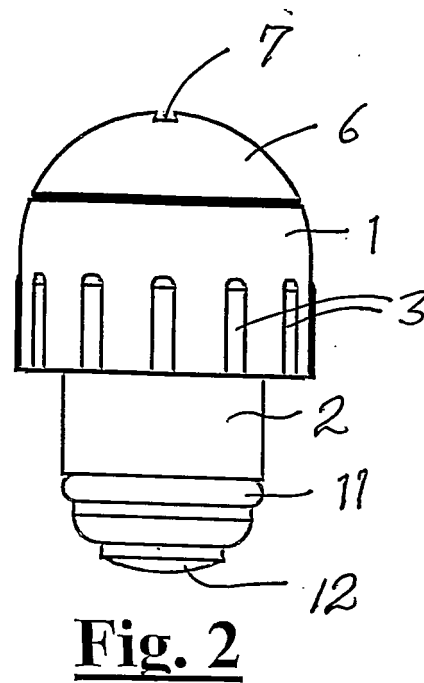
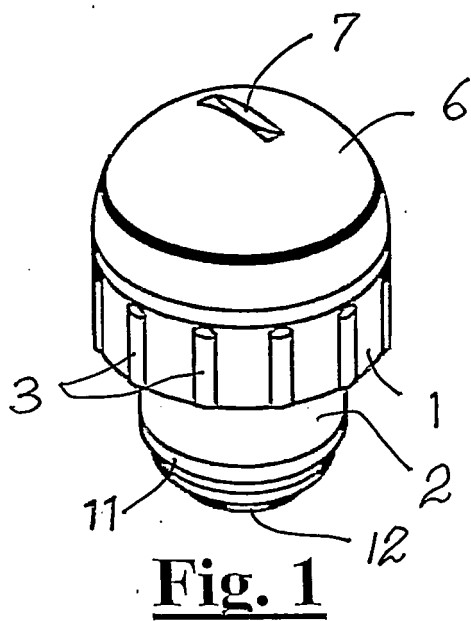
[0021] The ice bottle shown in Fig. 6 will be the kind readily obtainable and precooled in a freezer or refrigerator. It is preferred in such cases to use a bottle in the form of an insulated flask. The ice bottle could also be replaced by a flexible container having chemical heating means when pressed. In that way, a heated beverage can be obtained from the bottle or flask and the canister could contain milk and/or sugar.

[0022] The cap according to the invention may be made of any suitable material but stainless steel or a synthetic plastics material are preferred. The cap may have substantially the same diameter as the bottle for which it is intended or it may have a smaller diameter for a bottle with a reduced diameter neck portion.

[0023] The invention is not restricted to the above described embodiment but modifications and variations may be made without departing from the scope of the invention. For example, an ice cap could be inserted into the chamber 9 and held therein by the blanking lid 12. Alternatively, an ice bottle could be formed integrally with the container 2 so that the ice bottle is not detachable from the cap.

Claims

1. A cap for a bottle or the like, said cap having means for co-operating with an opening in the bottle or the like in order to seal the contents of the bottle or the like and said cap further having a container (2) adapted to hold a fluid and/or one or more solid objects and means for gaining access to the interior of the container, wherein the container is provided with a bottom **characterised in that** a lower chamber (9) is provided in the bottom of the container. 20
2. A cap according to claim 1, **characterised in that** the cap is provided with a screw-thread which is adapted to engage with a co-operating screw-thread on a bottle or the like for which the cap is intended. 30
3. A cap according to claim 1, **characterised in that** the cap is adapted to engage with a push-fit in the opening of the bottle or the like for which the cap is intended. 35
4. A cap according to any one of the preceding claims, **characterised in that** the container (2) is provided with a releasable lid (6). 40
5. A cap according to claim 4, **characterised in that** the lid (6) is adapted to be a push-fit into an opening of the container (2). 45
6. A cap according to claim 4, **characterised in that** the lid (6) is provided with a screw-thread which is adapted to engage with a co-operating screw-thread (8) provided at an opening to the container (2). 50
7. A cap according to claim 4, **characterised in that** the container (2) is adapted to project into the opening in the bottle or the like when the cap is in position on the bottle or the like. 55
8. A cap according to any one of claims 4 to 7, **characterised in that** the lid (6) is provided with a slot (7) to facilitate removal of the lid from the container.
9. A cap according to any one of the preceding claims, **characterised in that** the container (2) is adapted to hold a canister containing a fluid material, preferably in the form of a cordial concentrate. 5
10. A cap according to any one of claims 1 to 8, **characterised in that** the container (2) is adapted to contain one or more solid objects, preferably in the form of a tablet or tablets. 10
11. A cap according to any one of the preceding claims, **characterised in that** the lower chamber (9) is provided with an internal screw-thread and **in that** a blanking lid (12) is adapted to engage with the internal screw-thread in the lower chamber, said lower chamber then serving to contain a fluid material or one or more solid objects when the blanking lid is screwed into the lower chamber. 15
12. A cap according to claim 11, **characterised in that** an ice bottle or a flexible container having chemical heating means when pressed is adapted to be screwed into the lower chamber. 25
13. A cap according to any one of the preceding claims, **characterised in that** the container (2) has an outer wall defining the lower chamber and **in that** the said outer wall is provided with a groove (10) adapted to receive an O-ring or seal (11). 30
14. A cap according to any one of the preceding claims, **characterised in that** part of the exterior surface of the cap is provided with a series of knurls to facilitate removal of the cap from a bottle or the like to which the cap has been secured. 35
15. A cap according to any one of the preceding claims, **characterised in that** the cap is made of stainless steel or of a synthetic plastics material. 40



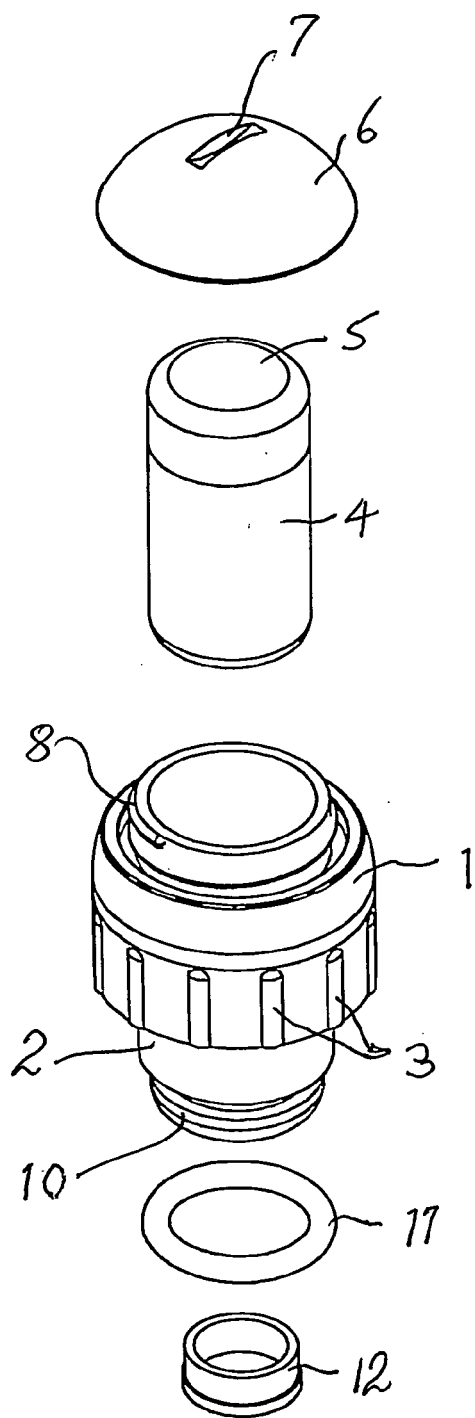


Fig. 5

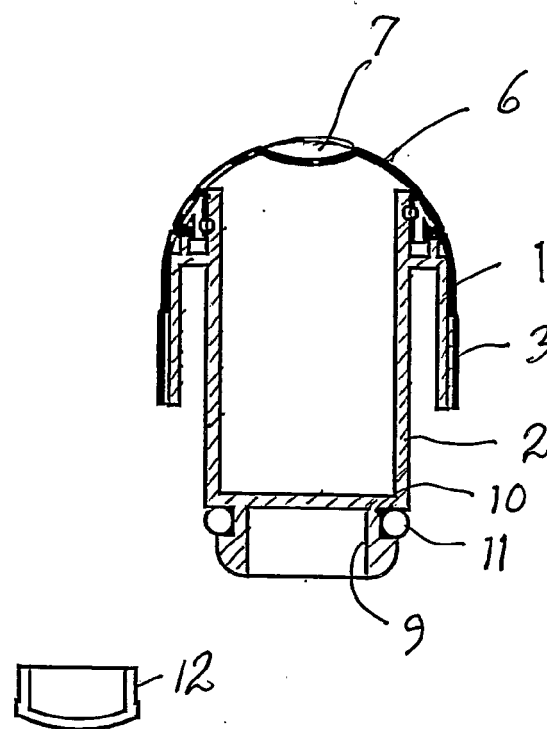


Fig. 6



EUROPEAN SEARCH REPORT

Application Number
EP 10 25 1666

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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			TECHNICAL FIELDS SEARCHED (IPC)
			B65D
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 1 December 2010	Examiner Derrien, Yannick
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			

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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
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EP 10 25 1666

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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