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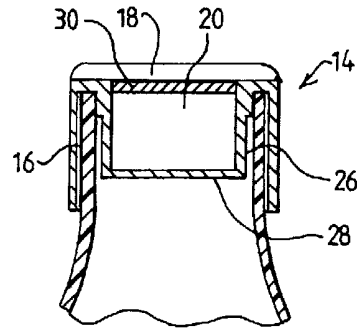
(56) Documents Cited:
GB 2363776 A **GB 2307903 A**
GB 2291864 A **GB 2267693 A**
GB 2007198 A **EP 0269066 A1**
US 4106673 A

(58) Field of Search:
UK CL (Edition T) **B8D, B8T**
INT CL⁷ **B65D**
Other: **ONLINE: EPODOC, JAPIO, WPI**

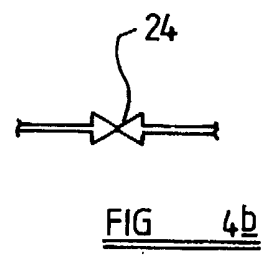
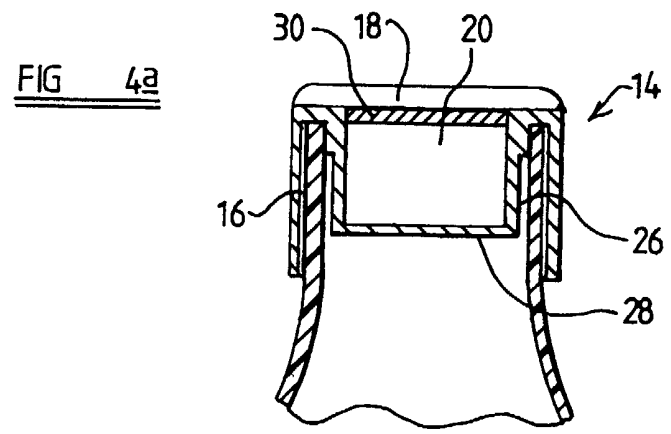
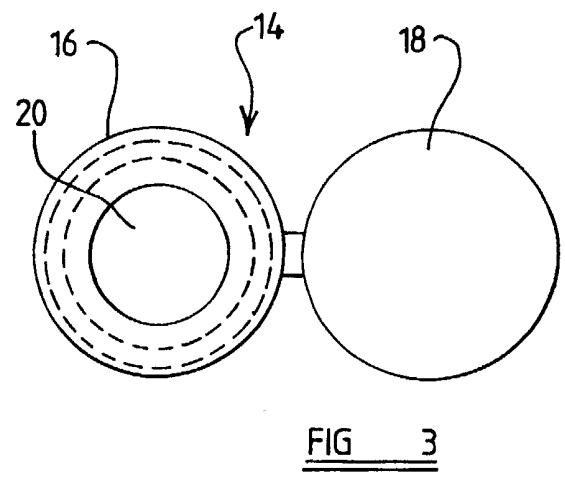
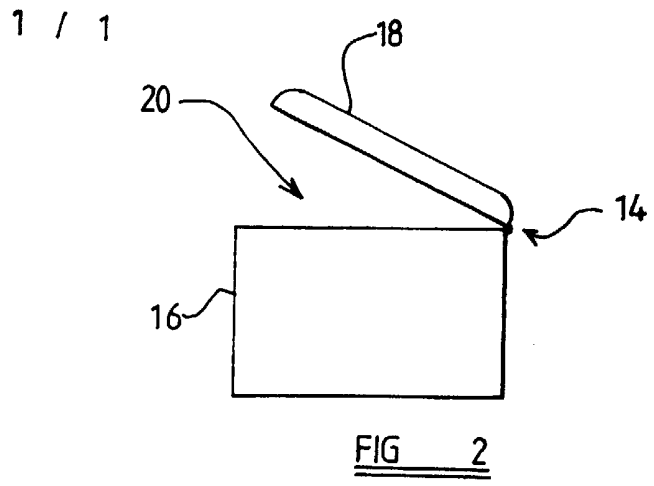
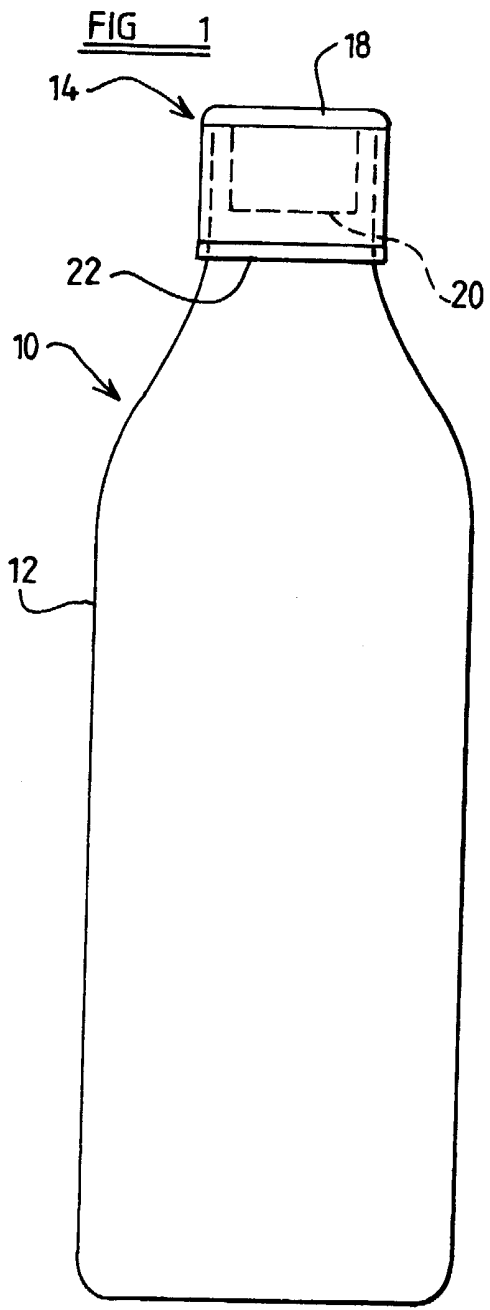
(54) Abstract Title: **Closure for containers having integral container**

(57) A closure (14) for a container (16), in this case a bottle of liquid, is described. The closure comprises a second container (20), access to the second container (20) being via flip-top lid (18) which is attached to the closure (14). The closure is manufactured by injection moulding using a two-shot one-piece moulding process.

FIG 4a



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Title: Closures for Containers

Description of Invention

This invention relates to closures for containers. In particular, but not exclusively, this invention relates to closures for containers of liquid, such as bottles.

Taking pills is not necessarily a simple process. Many people find pills difficult to swallow, particularly in the absence of an adequate supply of water. This difficulty may be exacerbated by certain medical conditions. Currently the only way to be sure of such a supply is to carry a bottle of water at all times, the size of which may be inconvenient.

Furthermore, if it is necessary to take a pill at short notice, due to for example a sudden headache, an entire packet of pills must be purchased although only one or two may be needed.

Pill storage boxes are known, but these are generally designed for people who are taking a large number of different pills and function as organisers and/or reminders.

According to a first aspect of this invention there is provided a closure for a first container, the closure comprising a second container.

This invention involves the realisation that a closure for a container can usefully provide storage space, for example, for pills, which may make use of normally empty storage space within the container.

Preferably the second container comprises a lid, which conveniently is accessible whether the closure is in an open or a closed position.

Preferably the closure is suitable for providing access to a bottle or other container of liquid.

The second container may be disposed at least partially within, preferably wholly within, the first container when the closure is in its closed position.

There are any number of suitable ways in which the closure may be manufactured, but preferably the closure is of a plastics material and conveniently it is a one-piece moulding.

Similarly the closure may be fastened to the first container in any number of ways, but preferably the connection between the closure and the first container is liquid tight and, conveniently, tamperproof. These requirements may be implemented easily by using a screw-top closure.

The connection between the lid and the second container is also preferably tamperproof, but, since it is in general advantageous that the closure be relatively small compared to the container, a snap-top construction is preferred for the lid.

The second container may be suitable for storing a pill or capsule, particularly a vitamin pill. Alternatively it could be suitable for storing a liquid, for example a liquid to be mixed with a liquid stored in the first container. Gin and tonic would be examples of suitable liquids to use. The second container could also be suitable for storing a powder.

According to a second aspect of this invention there is provided a container comprising a closure as described above. Preferably the container is a bottle, or otherwise suitable for storing a liquid.

According to a third aspect of this invention there is provided a method for manufacturing a closure as described above comprising moulding the closure in one piece.

An embodiment of the invention will now be described by way of example only with reference to the accompanying drawings in which:

FIGURE 1 shows schematically a perspective view of a container according to the invention;

FIGURE 2 shows schematically a side view of a closure according to the invention;

FIGURE 3 shows schematically a top view of the closure in an open position;

FIGURE 4a shows schematically a section through the closure in a closed position; and

FIGURE 4b shows schematically a detailed view of a hinge.

A first container 10 comprising a bottle 12, adapted to contain water and a closure 14 is shown in Figure 1. The closure 14 comprises a screw cap 16 which connects the closure 14 to the bottle 12 and a flip-top, lid 18 which, when open, gives access to a second container 20, which also forms part of the closure 14.

The closure 14 is connected to the bottle 12 by a tamper-proof seal 22, and the lid 18 is connected to the closure 14 by a further tamper-proof seal 30, conveniently a foil sheet which covers the entry into the second container 20.

The closure 14 is shown in more detail in Figures 2, 3 and 4. The flip-top lid 18 covers the entire top of the screw-cap 16, being connected thereto by a moulded hinge 24. The lid 18, when open, provides access to the cylindrical second container 20 which comprises a wall 26 and a base 28. The wall 26 is arranged just inside the screw cap 16, and extends to the lower end of the screw cap 16. Thus the second container 20 is disposed entirely within the screw cap 16. This presents a neat appearance, saves space, and means that the second container 20 is unlikely to be damaged. If desired the second container 20 could extend further into the bottle 12 to provide more storage space.

The dimensions of the components of the closure 14 will vary depending on those of the container, but in the embodiment shown, a 330 ml bottle, the first container conveniently has a diameter of approximately 34 mm and a height of approximately 19 mm, the thickness of the lid 18 being around 4 mm. Since the walls of the screw cap 16 and the second container 20 are

approximately 1 mm thick the internal diameter of the second container is approximately 28 mm, giving it a volume of approximately 9230 mm².

The closure 14 is manufactured in one-piece using an injection moulding process. The hinge 24, and the thread of the screw cap 16 may all be simultaneously formed in this process. The closure 14 is two colours, the second container 20 being of a different colour than the screw cap 16 and the flip-top lid 18. The closure 14 is therefore manufactured as a twin-shot moulding. If the product were of only one colour, however, it could be manufactured using a single-shot moulding.

The closure 14 is of a plastics material, conveniently polyethylene (low density or high density). Other plastics material such as polypropylene or ethylene-vinylacetate are also suitable for use in this method.

In use the bottle 16 is filled with a liquid, for example mineral water whilst the second container 20 may be empty initially. The lid 18 is then opened by a user, breaking the tamper-proof seal. The user then places whatever they desire to store in the second container 20 and closes the lid 18. Alternatively the product may be sold with a substance, for example vitamin pills or a headache cure, already in the second container 20. Using the closure as a pill container has many advantages. The consumer can control their dosage of the pills and has greater knowledge of the contents than may be the case with a "vitamin drink". The container acts as a reminder to the consumer and can easily be re-used. One example of a medical condition which could be aided by the closure is deep vein thrombosis, for example a closure containing aspirin could be sold with a bottle of mineral water on aeroplanes.

The user then removes the screw cap 16 from the bottle

The skilled person will appreciate that many alterations and additions could be made to the closure. For example the dimensions of the closure may be altered so that it can be fitted on different sizes of container. Naturally other products could be stored in the containers. For example, tonic could be stored

in the bottle 16 and gin in the second container 20, allowing the user to mix the drinks when required and control the strength of the gin and tonic to their taste.

In the present specification "comprises" means "includes or consists of" and "comprising" means "including or consisting of".

The features disclosed in the foregoing description, or the following claims, or the accompanying drawings, expressed in their specific forms or in terms of a means for performing the disclosed function, or a method or process for attaining the disclosed result, as appropriate, may, separately, or in any combination of such features, be utilised for realising the invention in diverse forms thereof.

CLAIMS

1. A closure for a first container, the closure comprising a second container.
2. A closure for a first container according to Claim 1 in which the second container comprises a lid.
3. A closure for a first container according to Claim 2, in which the lid is accessible whether the closure is in an open or a closed position.
4. A closure for a first container according to any of Claims 1 to 3 in which the closure is suitable for providing access to a bottle or other container of liquid.
5. A closure for a first container according to any preceding claim in which the second container is disposed at least partially within the first container when the closure is in its closed position.
6. A closure for a first container according to Claim 5 in which the second container is disposed wholly within the first container when the closure is in its closed position.
7. A closure for a first container according to any preceding claim made of a plastics material.
8. A closure for a first container according to any preceding claim being a one-piece moulding.

9. A closure for a first container according to any preceding claim in which the connection between the closure and the first container is liquid-tight.
10. A closure for a first container according to any preceding claim in which the connection between the closure and the first container is tamperproof and the connection between the closure and the lid is tamperproof.
11. A closure for a first container according to any preceding claim being a screw-top closure.
12. A closure for a first container according to any preceding claim in which the lid is a snap-top lid.
13. A container comprising a closure according to any preceding claim.
14. A container according to Claim 13, in which the container is a bottle.
15. A method for manufacturing a closure according to any one of Claims 1 to 12 comprising moulding the closure in one piece.
16. A closure substantially as hereinbefore described with reference to the accompanying drawings.
17. Any novel feature or novel combination of features described herein and/or in the accompanying drawings.



INVESTOR IN PEOPLE

Application No: GB 0215218.9
Claims searched: 1-16

Examiner: Darren Williams
Date of search: 12 December 2002

Patents Act 1977 : Search Report under Section 17

Documents considered to be relevant:

Category	Relevant to claims	Identity of document and passage or figure of particular relevance
X	1-9, 11, 12, 15	GB 2267693 A (THERMOS) see whole document
X	1-11, 15	GB 2307903 A (BEESON) see whole document
X	1-4, 7-9, 11, 12, 15	US 4106673 (DONOGHUE) see whole document
X	1-5, 7-9, 12, 15	GB 2007198 A (DART) see whole document
X	1-5, 7-9, 11, 15	EP 0269066 A1 (MITSUBISHI) see whole document
X	1-4, 7-9, 12, 15	GB 2291864 A (SENOBLE) see whole document
X	1-9, 15	GB 2363776 A (AUTOBAR) see whole document

Categories:

X Document indicating lack of novelty or inventive step	A Document indicating technological background and/or state of the art.
Y Document indicating lack of inventive step if combined with one or more other documents of same category.	P Document published on or after the declared priority date but before the filing date of this invention.
& Member of the same patent family	E Patent document published on or after, but with priority date earlier than, the filing date of this application.

Field of Search:

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC^T:

B8D, B8T

Worldwide search of patent documents classified in the following areas of the IPC^T:

B65D

The following online and other databases have been used in the preparation of this search report:

EPODOC, JAPIO, WPI