

A BOTTLE CAP

FIELD OF INVENTION

- 5 The present invention relates to a bottle cap, particularly to aid in dispensing contents within a bottle.

BACKGROUND

- 10 Seasoning and flavouring liquids typically found in a kitchen, for example, tomato sauce, chilli sauce, mustard, and the like can be difficult to dispense from their respective bottles due to the viscosity of the liquids. There have been some attempts to resolve the
15 aforementioned difficulties, but while the solutions may work to some degree, they typically do not aid the elderly, or those with some medical ailments which adversely affect the ability/use of hands.

- In some instances, the bottles used for containing the liquids are rigid and yet compressible. However, the use of such bottles require users
20 to have the capability of compressing the bottle, and thus, cannot be usable in a desired manner if a user does not have strength to compress the bottle (it should still be sufficiently rigid to stand independently) with a hand. Examples of such users without strength to compress the bottle with a hand include, for example, elderly users,
25 users with arthritis, users recovering from a stroke episode, and so forth.

In other instances, the bottles used for containing the liquids are rigid and non-compressible. Users have to provide a secure grip of the bottle to shake the bottle for egress of the contents in the bottle. Correspondingly, there will be issues if a user does not have strength
5 to hold the bottle securely. Examples of such users without strength to securely hold the bottle with a hand include, for example, elderly users, users with arthritis, users recovering from a stroke episode, and so forth.

10 In view of the aforementioned issues, it is evident that improvements in relation to dispensing viscous liquids from bottles are desired.

SUMMARY

15 There is provided bottle cap configured to actuate at least one valve upon application of a pinching action, the bottle cap comprising:

a first end configured to be fitted to an opening portion of a bottle;

a second end having a larger cross-sectional area than the first
20 end; and

a mid-section between the first and second ends, the mid-section including a main chamber, the main chamber being defined by a wall including the at least one valve.

25 It will be appreciated that the broad forms of the invention and their respective features can be used in conjunction, interchangeably and/or independently, and reference to separate broad forms is not intended

to be limiting.

DESCRIPTION OF FIGURES

- 5 A non-limiting example of the present invention will now be described with reference to the accompanying drawings, in which:

FIG 1 is a side view of an example bottle cap of the present invention;

FIG 2 is a cross-section view of the bottle cap of FIG 1; and

- 10 FIG 3 is a side view of the bottle cap of FIG 1 during use when placed on a platform.

DETAILED DESCRIPTION

- 15 The present invention discloses a bottle cap which is able to facilitate dispensing of a viscous liquid from a bottle. The bottle cap is configured to allow the elderly and users with grip issues to readily dispense the viscous liquid with minimal effort and minimal risk of dropping the bottle.

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- It should be appreciated that the term “bottle cap” is intended to include an object which is configured to cover an opening of a bottle, and ensure contents within the bottle are not exposed to ambient elements. The object can be fitted at a production/packaging source of the contents within the bottle, or the object can be retro-fitted to a
25 bottle.

Referring to FIGs 1 and 2, there are shown, respectively, a side view and a cross-sectional view of an example of a bottle cap 100. The bottle cap 100 is made from food-grade silicone, and is sufficiently flexible for a compressible surface, and yet also sufficient rigid to function as a base for an inverted bottle during use, as shown in FIG 3. The food-grade silicone is also stretchable to aid in fitment of the bottle cap 100 to an opening portion 55 of the bottle 50. It should be appreciated that the bottle cap 100 is not limited to use with a bottle shape as depicted in FIG 3.

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The bottle cap 100 includes a first end 105 and a second end 110. The first end 105 includes a wall 115 which is configured to conform to a shape of the opening portion 55 of the bottle 50 when the bottle cap 100 is fitted to the bottle 50. When the bottle cap 100 is fitted to the bottle 50, the second end 110 acts as a base when the bottle 50 is placed on a platform. The second end 110 should have a greater cross-sectional area than the first end 105 for stability reasons when the second end 110 acts as the base.

20 A mid-section 120 of the bottle cap 100 as shown in FIG 2 includes thread features 125 to enable the bottle cap 100 to be secured to threads on the bottle 50, such that the bottle cap 100 is able to be screwed onto the bottle 50. In some embodiments, the mid-section 120 does not include any thread features, and consequently, the bottle cap 100 is secured to the bottle 50 using a friction fit.

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The bottle cap 10 also includes a gripping portion 130, the gripping

portion 130 being located between the mid-section 120 and the second end 110. The gripping portion 130 can include a plurality of ribs 135, the ribs 135 being to enhance a tactile feel when a user pinches the gripping portion 130. In addition, when the bottle cap 10 is used as a base as depicted in FIG 3, the ribs 135 may be compressed with each other and this correspondingly provides enhanced structural rigidity to the bottle cap 10 when it is used as a base.

The bottle cap 100 also includes a main chamber 140 located around the mid-section 120 portion. During use of the bottle cap 100 as shown in FIG 3, the main chamber 140 is defined by a mouth of the bottle 50, the wall 115 and an inner wall 145. The inner wall 145 includes at least one valve 150 embedded within the inner wall 145. The at least one valve 150 functions to allow passage of liquid in a direction from the first end 105 to the second end 110, and not the other direction.

During use of the bottle cap 100, when the bottle cap 100 is used in a configuration as shown in FIG 3, contents from the bottle 50 are drained into the main chamber 140 until the main chamber 140 is completely filled. The at least one valve 150 is configured to allow the passage of liquid only when the gripping portion 130 is subsequently pinched due to the pressure applied by contents within the fully filled main chamber 140, and not during other circumstances.

The bottle cap 100 also includes a secondary chamber 155, the secondary chamber 155 being defined by the inner wall 145 and the wall 115. The secondary chamber 155 is sufficiently large to enable

contents within the secondary chamber to be removed/wiped such that a cleanliness of the secondary chamber 155 is maintained, at least for food safety and/or hygiene purposes.

5 It should be appreciated that use of the bottle cap 100 in a manner as shown in FIG 3 provides advantages to users, particularly the elderly, and users with grip issues. With the use of the bottle cap 100, users will be able to dispense viscous liquids from the bottle 50 by holding the bottle 50 in the orientation shown in FIG 3 and pinching the
10 gripping portion 130 of the bottle cap 100. When the bottle 50 is able to be placed at rest in a manner as shown in FIG 3, the viscous liquids in the bottle 50 settle at a mouth of the bottle 50 due to gravity, and as such, issues like, for example, residual contents sticking to a base of the bottle after a majority of contents of the bottle 50 have been
15 dispensed can also be avoided. As such, the user will no longer need to shake the bottle 50 vigorously to dispense viscous liquids in the bottle 50 and risk dropping the bottle 50 when attempting to dispense viscous liquids in the bottle 50.

20 Throughout this specification and claims which follow, unless the context requires otherwise, the word “comprise”, and variations such as “comprises” or “comprising”, will be understood to imply the inclusion of a stated integer or group of integers or steps but not the exclusion of any other integer or group of integers.

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Persons skilled in the art will appreciate that numerous variations and modifications will become apparent. All such variations and

modifications which become apparent to persons skilled in the art, should be considered to fall within the spirit and scope that the invention broadly appearing before described.

CLAIMS

1. A bottle cap configured to actuate at least one valve upon application of a pinching action, the bottle cap comprising:
 - 5 a first end configured to be fitted to an opening portion of a bottle;
 - a second end having a larger cross-sectional area than the first end; and
 - a mid-section between the first and second ends, the mid-section including a main chamber, the main chamber being defined by
10 a wall including the at least one valve.
2. The bottle cap of claim 1, further comprising a gripping portion between the mid-section and the second end.
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3. The bottle cap of claim 2, wherein the gripping portion includes a plurality of ribs, the plurality of ribs being configured both to enhance a tactile feel and to enhance structural rigidity of the bottle cap.
- 20 4. The bottle cap of claim 3, wherein the structural rigidity of the bottle cap is enhanced with compression of the plurality of ribs.
5. The bottle cap of any of claims 1 to 4, wherein the first end is configured for screw-fitting.
- 25 6. The bottle cap of any of claims 1 to 4, wherein the first end is configured for friction-fitting.

7. The bottle cap of any of claims 1 to 6, wherein the bottle cap is fabricated from food-grade silicone.
- 5 8. The bottle cap of any of claims 1 to 7, wherein the bottle cap is configured to be used as a bottle base.