(12) UK Patent Application (19) GB (11) 2 333 097 (13) A

(43) Date of A Publication 14.07.1999

(21) Application No 9900373.3

(22) Date of Filing 11.01.1999

(30) Priority Data
(31) 9800434.4 (32) 10.01.1998 (33) GB

(71) Applicant(s)
Michael James Prince
Tender Rose Cottage, 1 Cottage Mews, Aldridge, WALSALL, Staffs, WS9 0NZ, United Kingdom

(72) Inventor(s)
Michael James Prince

(74) Agent and/or Address for Service
Barker Brettell
138 Hagley Road, Edgbaston, BIRMINGHAM, B16 9PW, United Kingdom

(51) INT CL[6]
A47L 25/00 13/17 , B08B 9/20 , B65D 25/20

(52) UK CL (Edition Q)
B8T TWX
A4F FQH
B8D DFX

(56) Documents Cited
GB 2296182 A US 5429545 A US 5339486 A
US 4951344 A US 4802927 A

(58) Field of Search
UK CL (Edition Q) A4F FQH FQP , B8D DFX , B8T TWX
INT CL[6] A46B 9/02 , A47L 13/16 13/17 17/00 25/00 , B08B 9/08 9/087 9/20 9/36 , B65D 25/20 51/24
Online: WPI

(54) Abstract Title
Device for sterilising and/or cleaning beverage containers

(57) A device 1 for cleaning and/or sterilising an area around an opening in a beverage container comprises a support member 2 having secured thereto an absorbent material 3 impregnated with a cleaning and/or sterilising agent. The support member may be cup-shaped to correspond to the top of a bottle neck, or may be shaped to correspond to the top of a drinks can. The support member may be rigid and made of a plastics material. The absorbent material may be a foam or sponge material, and may be glued to the support member. The absorbent material may be impregnated with a flavouring agent.

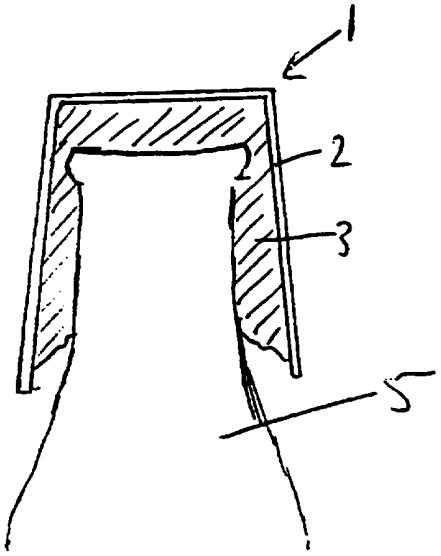


Fig 3

GB 2 333 097 A

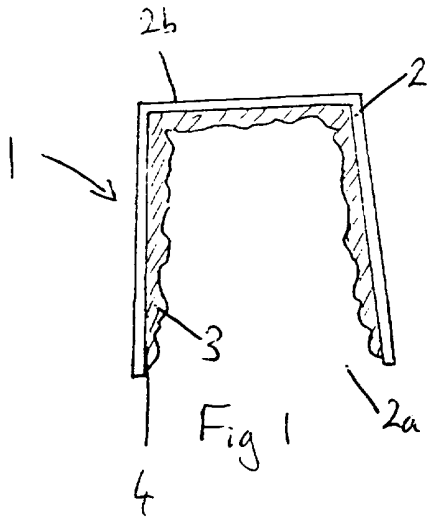


Fig 1

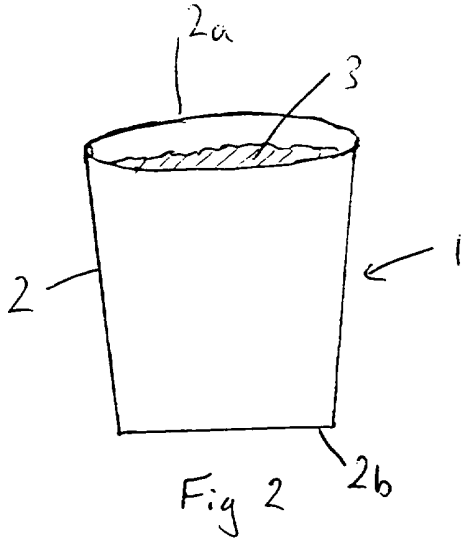


Fig 2

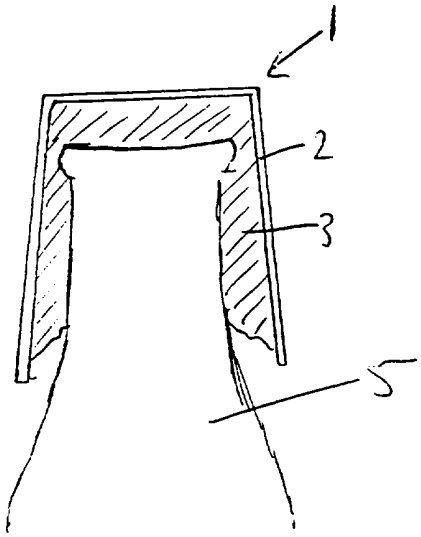


Fig 3

DEVICE FOR STERILISING OPEN BEVERAGE CONTAINERS

The present invention relates to a device for cleaning and sterilising a beverage container, in particular a bottle, where the beverage is consumed directly from the container.

It is becoming more common for beverages to be consumed directly from their container rather than from a glass or other similar vessel, for example many drinks sold in bottles and cans are consumed directly from the container. On journeys and trips it is often more convenient to drink from the container rather than to carry a glass. The beverage containers may be stored for a period of time before being sold and therefore undesirable substances can accumulate on the container. Furthermore the containers may be handled frequently before the beverage is consumed therefore permitting the transfer of whatever is present on the hands of the handler onto the container. The containers are rarely cleaned before being sold and the beverage consumed. It is also common to share beverages and accordingly two or more people may share the same container thereby transferring germs onto the container to be picked up by the next person to use it.

The above potential **health risks** in consuming beverages directly from the container are especially evident when the container is a bottle, undesirable substances being readily trapped in and around the bottle cap and bottle neck.

The object of the present invention is to provide a means to clean and sterilise a beverage container before the beverage is consumed therefrom. The device is ready to use and is disposable.

Accordingly from a first aspect the present invention provides a device for cleaning and/or sterilising an area around an opening in a beverage container comprising a support frame having secured thereto an absorbent material impregnated with a cleaning and sterilising reagent.

The support frame is preferably shaped to correspond to the area of the beverage container having the opening through which the beverage is dispensed. For example where the container is a bottle having a neck with an opening therein the support frame is preferably cup shaped to correspond to the top of the neck of the bottle and where the container is a can having a flat circular upper surface the support frame is shaped to correspond to the flat circular upper surface of the can and may be further provided with a lip depending from the support to clean and/or sterilise the side of the can that comes into contact with the mouth of the consumer.

The support frame is preferably made from a rigid material such as a plastics material, for example polyethylene or PVC (polyvinyl chloride), or cardboard. The size and shape of the support frame preferably corresponds to the area of the container that it is to cover.

The absorbent material may be absorbent tissue material, a foam material, a sponge material or any other suitable absorbent material.

The absorbent material is preferably secured to the support frame by a non-reactive non-toxic adhesive that preferably does not taint surfaces with which it comes into contact. Where the support frame is made out of polyethylene the glue may be product number 7434 supplied by 3M, a water based pressure sensitive adhesive or product number 3748 supplied by 3M, hot melt glue. Where the support frame is made out of PVC the

glue may be spray 77, a solvent based aerosol spray supplied by 3M. The absorbent material may cover the whole of the surface of the support frame that is to contact the container or alternatively it may only cover a part of the surface, for example only that part that contacts the area of the container from which the beverage is consumed.

The cleaning and/or sterilising reagent is preferably odourless and does not taint surfaces with which it comes into contact. The reagent must be harmless when ingested. An example of a suitable reagent is Milton™ solution (product of Proctor and Gamble). A solution of 15 ml of Milton in 2.5 litres of water will provide an effective sterilising agent but will not taint the beverage container. Milton solution as supplied is a 2% solution of sodium hypochlorite.

The absorbent material may also be impregnated with a flavouring agent such as fruit extracts or other flavours such as coffee, chocolate, vanilla etc. This will give a pleasant taste to the container when the beverage is consumed.

The device is preferably supplied in a ready-to-use condition and is pre-packed to keep it clean and sterile ready for use. The device may be vacuum packed.

Accordingly from a second aspect the present invention provides a method of sterilising and/or cleaning an area around an opening in a beverage container through which the beverage is to be consumed comprising the steps of placing a support frame having secured thereto an absorbent material impregnated with a cleaning and sterilising reagent over the opening in the container and moving the support frame about the opening

to ensure that the area therearound is contacted by the absorbent material before the beverage is consumed.

Preferably the support frame, absorbent material, and sterilising reagent are as described in relation to the first aspect of the invention.

The present invention will now be described by means of example only with reference to the following drawings in which:-

Figure 1 is a cross section through a device of the present invention;

Figure 2 is a perspective view of the device of Figure 1; and

Figure 3 is a cross section of the device of the Figure 1 in use.

Figures 1 and 2 show a bottle top cleaning device 1 comprising a cup shaped support frame 2 having an open end 2a and a closed end 2b, the closed end 2b being of a smaller diameter than the open end 2a.

The support frame 2 is moulded from a plastics material such as polyethylene and is sized to fit snugly over a bottle neck (Figure 3).

The support frame 2 is lined with an absorbent material 3, such as tissue, which is held in place by a layer of adhesive 4 such as hot melt glue (3M product number 3748) which is non-reactive. This device is stored, prior to use, in sterile packaging.

The tissue 3 is impregnated with a sterilising fluid such as Milton solution (Proctor and Gamble) diluted as described above.

In use, see Figure 3, the bottle 5 is opened and the device 1 is removed from its sterile packaging (not shown) and placed over the neck of the bottle 5. The device 1 is rotated to ensure that the tissue 3 impregnated with sterilising fluid contacts all areas and the neck of the bottle 5 thus cleaning and sterilising the bottle neck and area around the opening before the contents of the bottle are consumed directly from the bottle.

The used cleaning device 1 is discarded.

CLAIMS

1. A device for cleaning and/or sterilising an area around an opening in a beverage container comprising a support frame having secured thereto an absorbent material impregnated with a cleaning and/or sterilising reagent.

2. A device according to Claim 1 wherein the support frame is shaped to correspond to the area of the beverage container having the opening through which the beverage is dispensed.

3. A device according to Claim 1 or Claim 2 wherein the container is a bottle with a neck having an open top and the support frame is cup shaped to correspond to the top of the neck of the bottle.

4. A device according to Claim 1 or Claim 2 wherein the container is a can having a flat circular upper surface and the support frame is shaped to correspond to the flat circular upper surface of the can.

5. A device according to Claim 4 wherein the support frame is further provided with a lip depending from the support frame to clean and/or sterilise a side of the can that comes into contact with the mouth of the consumer.

6. A device according to any preceding claim wherein the support frame is made from a rigid material.

7. A device according to Claim 6 wherein the rigid material is a plastics material.

8. A device according to Claim 7 wherein the plastics material is polyethylene or polyvinyl chloride.

9. A device according to Claim 6 wherein the rigid material is cardboard.

10. A device according to any preceding claim wherein the absorbent material is absorbent tissue material, a foam material or a sponge material.

11. A device according to any preceding claim wherein the absorbent is secured to the support frame by a non-reactive non-toxic adhesive.

12. A device according to any preceding claim wherein the absorbent material covers the whole of the surface of the support frame that is to contact the container.

13. A device according to any one of Claims 1-11 wherein the absorbent material covers only that part of the support frame that contacts the area of the container from which the beverage is consumed.

14. A device according to any preceding claim wherein the cleaning and/or sterilising reagent is odourless and does not taint surfaces with which it comes into contact.

15. A device according to any preceding claim wherein the absorbent material is impregnated with a flavouring agent.

16. A device according to any preceding claim provided in a ready-to-use condition.

17. A device according to Claim 2 pre-packed to keep it clean and sterile ready for use.

18. A device for cleaning and/or sterilising an area around an opening in a beverage container substantially as described herein and with reference to the drawings.

19. A method of sterilising and/or cleaning an area around an opening in a beverage container through which the beverage is to be consumed comprising the steps of placing a support frame having secured thereto an absorbent material impregnated with a cleaning and sterilising reagent over the opening in the container and moving the support frame about the opening to ensure that the area therearound is contacted by the absorbent material before the beverage is consumed.

20. A method of sterilising and/or cleaning an area around an opening in a beverage container substantially as described herein and with reference to Figure 3.

The Patent Office

INVESTOR IN PEOPLE

Application No: GB 9900373.3
Claims searched: 1-20

Examiner: Michael Logan
Date of search: 19 March 1999

Patents Act 1977
Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.Q): A4F (FQP, FQH); B8D (DFX); B8T (TWX)

Int Cl (Ed.6): A46B 9/02; A47L 13/16, 13/17, 17/00, 25/00; B08B 9/08, 9/087, 9/20, 9/36; B65D 25/20, 51/24

Other: Online: WPI

Documents considered to be relevant:

Category	Identity of document and relevant passage		Relevant to claims
X	GB 2296182 A	(HARBER) whole document relevant	1-3,6,7,10 12,16,19
X	US 5429545	(MEYER) whole document relevant	1,10-12,14
X	US 5339486	(PERSIC) see col 2, line 39 - col 3, line 28	1,6,7,10, 13
Y	US 4951344	(ALKHATO) see fig 1	1,2,4-8,10 12,14,16, 19
Y	US 4802927	(BARBOUR) see figs 1-3	1,2,4-8,10 12,14,16, 19

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.