# United States Patent [19]

**Shaw et al.**

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[45] **Jan. 8, 1974**


[54] **CONTAINER**


[76] Inventors: **James Anthony Carpenter Shaw; Eva Shaw,** both of Tabacum, Mareeba, Australia



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[30] **Foreign Application Priority Data**

June 8, 1970 Australia ..... 1460/70

[52] **U.S. Cl.** ..... **220/93,** 220/95

[51] **Int. Cl.** ..... **B65d 25/10,** B65d 25/32

[58] **Field of Search** ..... 220/93, 95; 215/1 A; 206/56 R



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*Primary Examiner*—William T. Dixson, Jr.

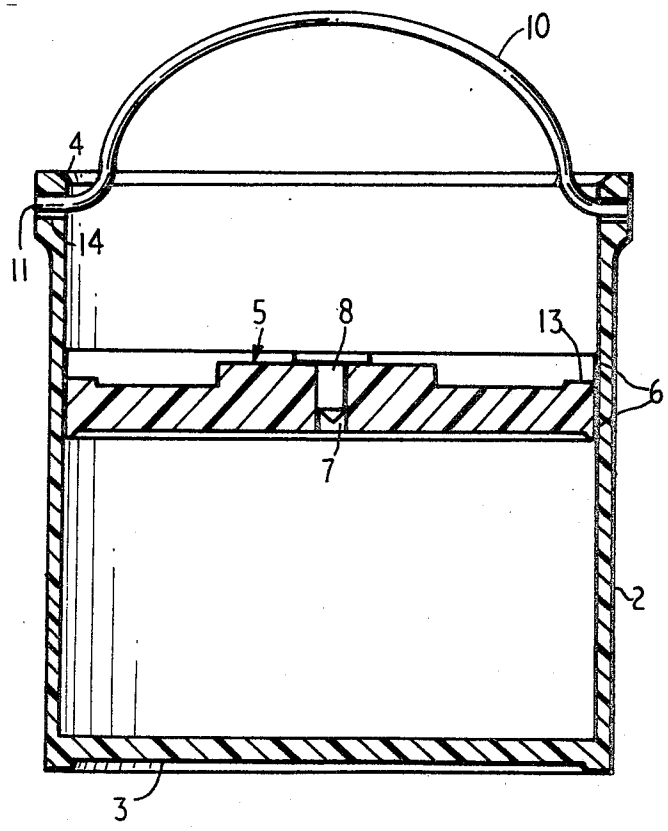
*Attorney*—Emory L. Groff and Emory L. Groff, Jr.



[57] **ABSTRACT**

The invention relates to containers for the preservation of materials which evaporate, deteriorate or oxidise when exposed to air. Preservation is achieved by a closure member sealingly movable in the container in contact with the contents and exclude air from the surface of the contents.


**4 Claims, 7 Drawing Figures**



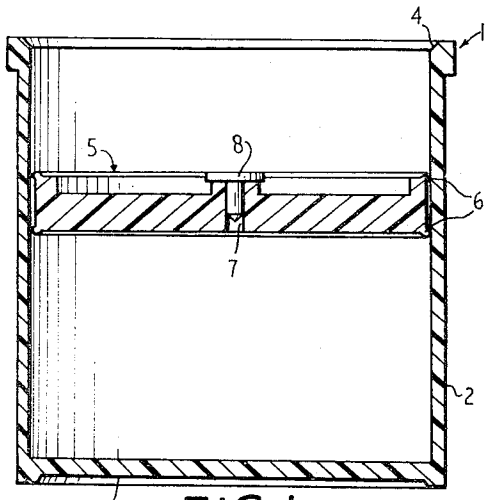



FIG. 1

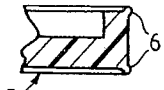



FIG. 2

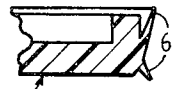



FIG. 3

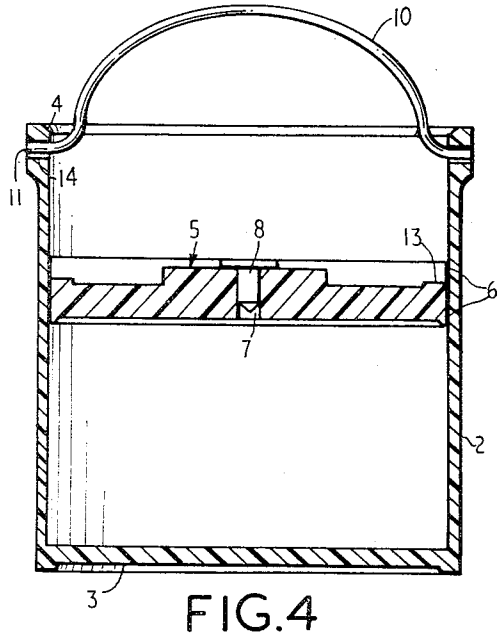



FIG. 4

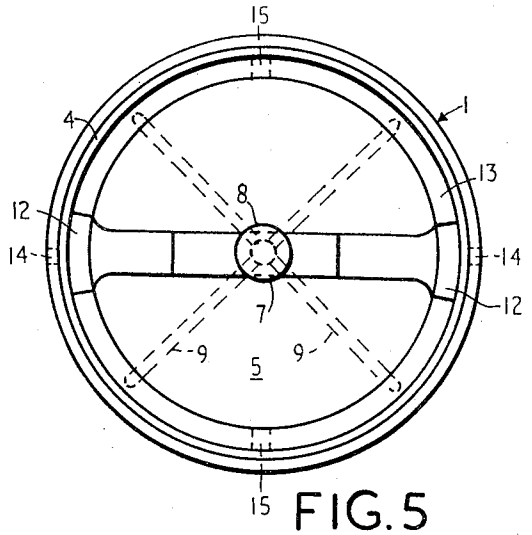



FIG. 5

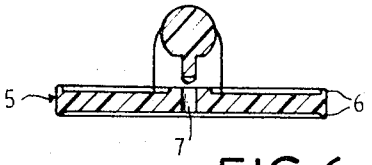



FIG. 6

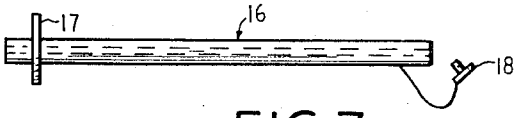



FIG. 7

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# CONTAINER

This invention has been devised to provide an improved container, principally for materials which evaporate, deteriorate or oxidise if not stored in a preserving environment away from air. The container is not limited to storing such materials and because of its versatility it may be considered as a general purpose container.

One potential use of the container is in the storage of paint. Other uses are in the storage of chemicals, pharmaceuticals, cosmetics, wines, foods or other substances which evaporate, oxidise or deteriorate with exposure to air.

Accordingly the container of this invention comprises a body part and a closure part, said body part forming a material holding reservoir closed at one end, open at the other end and bounded peripherally by a wall to provide the reservoir with a substantially uniform cross-section throughout its length, the closure part being in the form of a piston adapted to contact the contents of the container, and having peripheral sealing means to sealingly engage the reservoir wall, and have a closable air bleed passage therethrough.

The invention is described with reference to the accompanying drawings in which

FIG. 1 is a sectional elevation of the container with one form of closure mounted in the body part.

FIG. 2 is a fragmentary sectional view of the closure shown in FIG. 1.

FIG. 3 is a fragmentary sectional view of an alternative form of closure.

FIG. 4 is a sectional elevation of the container of FIG. 1 fitted with a handle.

FIG. 5 is a plan view of the container with the handle removed.

FIG. 6 is a sectional elevation of the closure incorporating a captive air bleed passage plug.

FIG. 7 illustrates a tubular dispenser which may be inserted in the air bleed passage.

The container body part 1 may be made of metal, glass, plastic, earthenware, timber or any other air impervious material. The body part 1 is a cylindrical reservoir defined by a wall 2 and a bottom 3. The open end of the container has a chamfered mouth 4 to facilitate the entry of a closure 5 to be described.

The container closure 5 is made of any suitable material and is in the form of a thin piston having a peripheral lip or lips 6 to sealingly engage the surface of the body wall 2. An air bleed hole 7 is formed through the closure 5 and a plug 8 (which may be captive as shown in FIG. 6) is provided therefor. Alternative to the sealing lips shown there can be an "O" ring or rings (not illustrated) to serve the same purpose or a ring having the lip configuration as shown in FIG. 3. The sealing means may be integral with the closure 5 or made as a separate ring of resilient material mounted in a peripheral groove in the closure 5.

In order to facilitate exhausting the air from a container as the closure 5 is brought into close proximity to the contents, radial grooves 9 are provided on the undersurface of the closure. From FIG. 5 where the grooves are shown dotted, it will be observed that the grooves 9 extend from near to the periphery of the closure 5 to the air bleed hole 7. The grooves 9 also permit air to enter the container as the closure is withdrawn. The withdrawal of the closure 5 is thus facilitated by



spreading air over the surface of the container contents and thereby limiting the degree of initial suction between the undersurface of the closure 5 and the surface of the contents.

When a handle is required it is formed of spring steel wire having a bowed part 10 with outwardly pointing ends 11 designed to spring outwards to a greater width than the distance across the top of the container. The handle ends 11 fit into slots 12 on the top of the rim 13 of the closure, and into diametrically opposed holes 14 in the wall 2. The slots 12 are made wide to facilitate assembly when the container is filled. The handle is adapted to fold down within the rim 13 of the closure 5. To facilitate the withdrawal of the closure 5, there are diametrically opposed holes 15 in the rim 13 of the closure at 90° to the slots 12. The handle ends 11 on being removed from the holes 14 can be inserted in the holes 15, then by gripping the handle part 10, a press-in or withdrawal force can be exerted on the closure 5.

The air bleed hole 7 may be threaded to receive a threaded plug, in place of the plug 8, or a valve (not shown). The valve could be a one-way valve or a pressure operated two-way valve. The valve could be used in conjunction with a separate nipple mounted in the closure 5. The nipple could, for example, be adapted for use with a supply of non-oxidising gas, e.g. carbon-dioxide, so that the gas introduced through the nipple would displace air from the container leaving an oxygen free atmosphere in the container.

A dispenser in the form of a tube 16 may be provided to screw or fit the air bleed hole 7. It has a flange 17 to abut the closure 5 and a cap 18 to seal the outer end.

We claim:

1. A container and closure therefor comprising a body part, said body part forming a material holding reservoir closed at one end, open at the other end and bounded peripherally by a wall to provide the reservoir with a substantially uniform cross-section throughout its length, said closure including a piston, peripheral sealing means on said piston engaging said reservoir wall in sealing relationship thereto, said sealing means including a resilient lip extending angularly downwardly and outwardly towards the closed end of said reservoir, the outer dimensions of said lip being, when in an uncompressed state, slightly greater than the internal dimensions of said container, said closure having an air bleed hole therethrough and provided with means for closing said hole, said reservoir wall having a pair of diametrically opposed holes therethrough adjacent the upper limit thereof, a handle having a pair of ends detachably secured within said wall holes for carrying said reservoir, said closure including an upstanding peripheral rim provided with diametrically opposed slots alignable with said wall holes to permit attachment of said handle ends without interference from said closure rim, said closure rim provided with a pair of diametrically opposed holes angularly offset substantially 90° from said closure rim slots and engageable with said handle ends when detached from said wall holes to facilitate upward and downward movement of said closure within the container without angular displacement of said closure.

2. A container and closure according to claim 1 wherein the means for closing the air bleed hole comprises a captive plug.

3. A container and closure according to claim 1 wherein the means for closing the air bleed hole comprises a tube insertable into said air bleed hole, said tube including a supporting flange adjacent one end and a closure cap at its other end.

4. The container claimed in claim 1 wherein said reservoir is cylindrical in cross-section.

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