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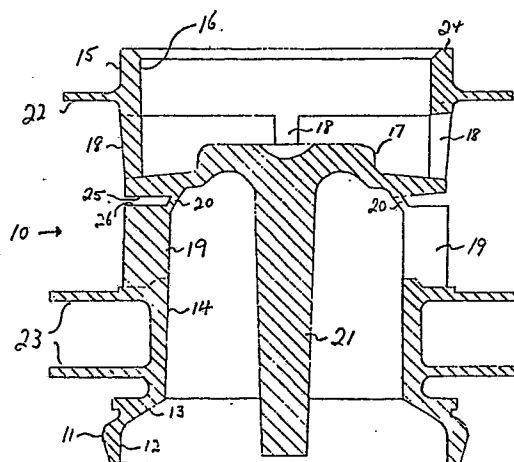
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⑤④ **Non-refillable pourer fitment.**

⑤⑦ A non-refillable pourer fitment for the neck of a container comprises inner (not shown) and outer (10) parts captively attached to each other, a valve member located and movable in a longitudinal bore in the inner part and the outer part being formed with a longitudinal bore at its inner end and a dispensing aperture (16) at its outer end, the longitudinal bore in the outer part varying in radius along its length from a portion (12) of relatively large radius to a portion (14) of relatively small radius, and an obturator disc (17) intermediate the portion (14) and aperture (16) having a radius greater than the radius of portion (14). The obturator disc (17) is attached through frangible bridges (20) to a series of pillars (19) spaced circumferentially around the outer part, the bridges (20) being sufficiently flexible as to allow the disc (17) to contact the tops of the pillars (19) when pressure is applied to the fitment at its outer end during insertion of the fitment into a container neck.



Description

"NON-REFILLABLE POURER FITMENT"

This invention relates to fitments for bottles and other containers, and particularly to such fitments which allow the contents of the container to be dispensed by pouring but prevent the re-filling of the container. Such fitments are generally known in the art as "non-refillable pourer fitments".

Such fitments are particularly used in the spirits trade, for example on whisky and gin bottles. It is not unknown for such bottles to be tampered with, for example by emptying a proportion of their contents and re-filling them with, say, water. The use of non-refillable pourer fitments to a substantial extent prevents this tampering with the contents of the bottles, whilst allowing those contents to be freely dispensed.

Various types of non-refillable pourer fitments are known and used, and they vary in effectiveness. Thus, with certain fitments it is necessary to provide special closure caps to fit over or around the fitment and the container neck; with other fitments, it is possible to "poison" the contents of the containers by means of a high-pressure jet of liquid strategically aimed through the fitment; other fitments can be removed from the bottles by means of hooks or other tools.

The fitment described in our Patent Specification No. GB-B-2008531 overcomes all these problems. It comprises a non-refillable pourer fitment for the neck of a container comprising inner and outer parts captively attached to each other, a valve member located and movable in a longitudinal bore in the inner part and the outer part being formed with a longitudinal bore at its inner end and a dispensing aperture at its outer end, the longitudinal bore in the outer part varying in radius along its length from a portion of relatively large radius to a portion of relatively small radius, an obturator disc intermediate the portion of relatively small radius and the outer end having a radius greater than the relatively small radius, and being attached to the outer part by at least one frangible stay.

The fitment of our above-mentioned patent specification prevents "poisoning" of the contents of the container by means of the obturator disc being of sufficiently large radius as to prevent a jet of "poisoning" liquid impinging upon, and dislodging, the valve member; and since attempts to remove the fitment have the effect of breaking it before removal becomes possible, tampering cannot occur without being clearly evident.

Bottles are, of course, filled and capped at high speed, and care must be taken with fitments of the relatively complicated and sophisticated type of those described in Specification GB-B-2008531 to ensure that the frangible stays connecting the obturator disc to the outer fitment part do not break during insertion of the fitment into a bottle. It is the object of the present invention to provide a fitment wherein this possible drawback is avoided.

According to the present invention there is provided a non-refillable pourer fitment for the neck

of a container comprising inner and outer parts captively attached to each other, a valve member located and movable in a longitudinal bore in the inner part and the outer part being formed with a longitudinal bore at its inner end and a dispensing aperture at its outer end, the longitudinal bore in the outer part varying in radius along its length from a portion of relatively large radius to a portion of relatively small radius, and an obturator disc intermediate said portion of relatively small radius and said outer end and having a radius greater than said relatively small radius, in which the obturator disc is attached through frangible bridges to a series of pillars spaced circumferentially around the said outer part, the bridges being sufficiently flexible as to allow said disc to contact the tops of said pillars when pressure is applied to said fitment at its outer end during insertion into the container neck.

The pourer fitments of the present invention thus suitably consist of three separately formed parts which are subsequently assembled together, namely outer and inner parts and a valve member. The outer and inner parts are preferably made of plastics material, such as for example polyethylene, polypropylene or polystyrene, and are suitably shaped such that they may be snap-fitted together, for example by means of one of the parts having an annular rib which snaps into and is retained in an annular groove formed in the other part.

The valve member is suitably a glass or steel ball the limit of whose movement towards the pouring outlet of the fitment is suitably controlled by a peg integrally formed with the outer part of the fitment.

The pourer fitment of the invention is preferably provided with one or more flexible sealing ribs which in use provide a tight seal against the inside of the bore of the container into which the pourer is fitted. These sealing ribs may be formed integrally with either the outer or the inner part of the fitment.

The invention is illustrated by means of the accompanying drawing, which is a diagrammatic part-section or elevation of the outer part of a non-refillable pourer fitment according to the invention.

The fitment comprises an inner part not shown, but suitably of a form similar to that shown in Figure 4 or Figure 5 of Patent Specification GB-B-2008531 and an outer part 10 captively-associated by a snap-fitting engagement with the inner part. Both the inner and outer parts are mouldings of plastics material, for example polyethylene, polypropylene or polystyrene.

The lower end of outer part 10 is provided with an annular bead 11 which is snap-fittedly engaged in a complementary groove in the inner part. Outer fitment part 10 has at its inner end a longitudinal bore formed of a first portion 12 merging through a frusto-conical ramp portion 13 into a second portion 14 of radius smaller than that of portion 12.

At the upper end of the fitment is a cylindrical wall portion 15 surrounding a dispensing aperture 16.

Centrally disposed of the fitment 10 is an obturator disc 17 having a radius greater than that of bore portion 14. Obturator disc 17 is attached to cylindrical wall 16 by means of four circumferentially-spaced stays 18, which are in effect moulded integrally with the wall 16 and peripheral portions of the obturator disc 17.

Obturator disc 17 is also attached to four circumferentially-spaced pillars 19 at the upper end of the bore portion 14. The attachment between the obturator disc 17 and each pillar 19 is through a flexible frangible bridge 20.

Centrally disposed on the underside of the obturator disc 17 is an axially-extending peg 21, which coacts with the valve member in the inner part of the fitment (not shown) to limit the movement of that valve member, in the manner shown in Specification GB-B-2008531.

Flexible annular ribs 22 and 23 cooperate with the inside of the neck of the container into which the fitment is inserted, to give a fluid-tight seal.

When the fitment is inserted into the neck of a container, pressure is applied to the annular surface 24 of the cylindrical wall 16. Reaction to this pressure is experienced by sealing ribs 23, with the result that wall 16 and obturator disc 17 move axially relative to the rest of the fitment part 10. Such relative axial movement is permitted by flexible bridges 20, which flex to such an extent as to allow pressure face 25 on the underneath of the obturator disc 17 to come into contact with reaction face 26 on the top of each pillar 19. Thus, pressure applied to cylindrical wall 16 is transmitted to the lower part of the outer fitment part 10, to ensure a smooth, breakage-free insertion of the fitment into the container.

Any attempt to remove the fitment from the container, in order to adulterate or dilute the contents thereof, results in the breaking of the frangible bridges 20 and consequently the removal of the cylindrical wall 16 and the attached obturator disc 17. This provides clear evidence of "tampering".

Claims

1. A non-refillable pourer fitment for the neck of a container comprising inner and outer parts captively attached to each other, a valve member located and movable in a longitudinal bore in the inner part and the outer part being formed with a longitudinal bore at its inner end and a dispensing aperture at its outer end, the longitudinal bore in the outer part varying in radius along its length from a portion of relatively large radius to a portion of relatively small radius, and an obturator disc intermediate said portion of relatively small radius and said outer end and having a radius greater than said relatively small radius, characterised in that the obturator disc is attached through frangible bridges to a series of pillars spaced circumferentially around the said outer part, the bridges being sufficiently flexible as to allow said disc to contact the tops of said pillars when

pressure is applied to said fitment at its outer end during insertion into the container neck.

2. A fitment according to claim 1, wherein the inner and outer parts are separately formed and subsequently assembled together.

3. A fitment according to claim 2, wherein the outer and inner parts are snap-fitted together.

4. A fitment according to any of claims 1 to 3 wherein the outer and inner parts are made from polyethylene, polypropylene or polystyrene.

5. A fitment according to any of claims 1 to 4, wherein the inner part is of the form shown in Figure 4 or Figure 5 of Patent Specification GB-B-2008531.

6. A fitment according to any of claims 1 to 5 wherein there are four pillars spaced circumferentially around the outer part and four frangible bridges join the obturator disc to the pillars.

