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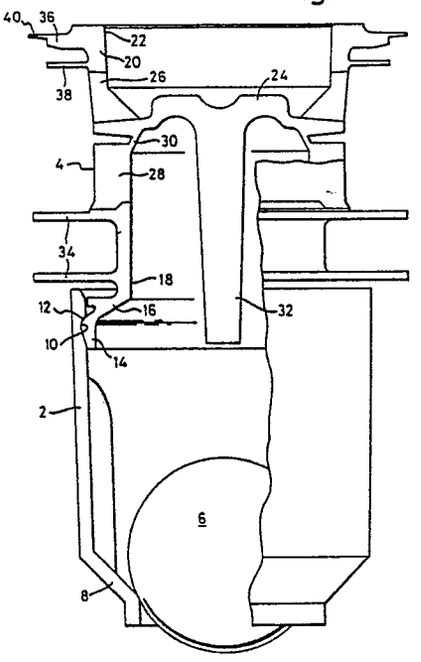
(54) Non-refillable pourer fitment.

(57) A non-refillable pourer fitment which fits within the neck of a container comprises outer and inner parts (4,2) captively attached together, and a non-return valve member (6) which permits the contents of the container to be poured out through the fitment but prevents flow into the container. The outer part (4) is provided at or adjacent its outer end with an outwardly-directed annular flange (36) which overlies the rim of the container to which it is applied, a flexible outwardly-directed annular fin (38) being adapted, on application of the fitment to the neck of the container, to be squeezed between the rim of the container and the annular flange (36).

Fig. 1



EP 0 367 427 A1

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 refilling 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 refilling 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. Amongst the known fitments are those described in our Patent Specifications Nos: GB-B-2008531 and GB-A-2191754, and EP-A-0035918.

A particular problem exists in the liquid-tight sealing of the fitment. All known fitments are pushed axially into the neck of the container on which they are used, and are normally held within said neck by friction, or by deforming an element on the fitment into engagement with a corresponding element in the container neck. Frictional fitting is enhanced by annular sealing ribs moulded to the outer wall of the fitment as shown for example in Specifications GB-B-2008531 and GB-A-2191754.

When used on certain types of container finish, such known fitments may allow slight leakage of contents, and thus drippage, during pouring. It is an object of the present invention to provide a fitment which overcomes such drippage problems.

According to the present invention there is provided a non-refillable pourer fitment adapted to fit within the neck of a container comprising outer and inner parts captively attached to each other and a non-return valve member adapted to permit the contents of the container to be poured out through the fitment but substantially to prevent flow into the container, wherein the outer part is provided at or adjacent its outer end with an outwardly directed annular flange adapted to overlie the rim of the container to which it is applied, or an internal annular ledge thereof, a flexible outwardly directed annular fin formed on the outer part inwardly of the annular flange being adapted, on application of the fitment to the neck of the container, to be squeezed between the rim or ledge of the container neck and the flange on the outer part.

Thus, as the fitment is applied to the neck of the container, the annular fin is contacted by the rim of the container, or the internal annular ledge, and is deflected towards the annular flange. Further movement of the fitment into the container neck squeezes the annular fin between the rim or ledge on the container neck and the annular flange on the fitment, and forms a liquid-tight seal.

In one embodiment of the invention the annular flange on the outer part of the fitment is provided, at its radially outer extremity, with a flexible lip. This may be formed around part only of the annular flange, thereby to act as a directional pourer, or it may be formed around the entire periphery of the annular flange, so that it acts as a secondary seal when a closure, e.g. a screw-type metal closure, is applied to the neck of the container.

The pourer fitment of the invention may take the basic form of that described in Specification GB-B-2008531 or GB-A-2191754, those fitments being modified by the provision of an annular flange and flexible annular fin at the outer end of the outer part.

The two parts of the pourer fitment are suitably moulded from a flexible and resilient polymeric material such as polypropylene or polyethylene, and may be attached to each other by snap-fitting. For example, the inner part of the fitment may be provided with an annular groove into which is snapped a corresponding annular bead formed on the outer part of the fitment. The outwardly-directed annular flange formed on the outer part and adapted to overlie the rim of the container, or an internal annular ledge thereof, suitably has a thickness in the range 0.6-1.2mm. preferably 0.8 to 1.0mm. The flexible outwardly-directed annular fin formed on the outer part of the fitment suitably is of a thickness in the range 0.2-0.3mm. preferably 0.25mm. The flexible lip formed on the annular flange, which itself is preferably annular, and may be of tapered form, suitably has a mean thickness in the range 0.15-0.25mm.

The invention will now be described with reference to the accompanying drawings, in which

Figure 1 is a diagrammatic part section of a non-refillable pourer fitment according to the invention, and

Figure 2 is a part section elevation of the outer part of the fitment, seated in the neck of a container.

Referring to Figure 1, a pourer fitment according to the invention consists of an inner part 2 and an outer part 4 captively attached together. The inner part 2, which retains a ball-shaped valve member 6 seated on a frusto-conical valve seat 8, is provided at its upper end (when viewed in the normal direction of use) with an annular groove 10. Snap-fitted into groove 10 is an annular shoulder

12 formed at the lower end of the outer part 4. The parts 2 and 4 are moulded separately and thereafter snap-fitted together.

The fitment is basically of the same form as that described in our Specification No: GB-A-2191754. Thus the outer fitment part 4 has at its inner end a longitu dinal bore formed of a first portion 14 merging through a frusto-conical ramp portion 16 into a second portion 18 of radius smaller than that of portion 14. At the upper end of the fitment is a cylindrical wall portion 20 surrounding a dispensing aperture 22.

Centrally disposed of the fitment is an obturator disc 24 having a radius greater than that of bore portion 18. Obturator disc 24 is attached to cylindrical wall 20 by means of four circumferentially-spaced stays 26, which are in effect moulded integrally with the wall and peripheral portions of the obturator disc 24.

Obturator disc 24 is also attached to four circumferentially-spaced pillars 28 at the upper end of the bore portion 18. The attachment between the obturator disc 24 and each pillar 28 is through a flexible frangible bridge 30.

Centrally disposed on the underside of the obturator disc 24 is an axially-extending peg 32, which coacts with ball valve 6 to limit the movement of the ball valve in the inner part of the fitment.

Flexible annular ribs 34 cooperate with the inside of the neck of the container into which the fitment is inserted, to give a fluid-tight seal.

An additional seal is provided by an annular flange 36 at the upper end of the outer part of the fitment, and a cooperating flexible annular fin 38 formed therebelow.

When the fitment is inserted into the neck of a container, the annular fin 38 is deformed and "squeezed" between the flange 36 and the rim or internal ledge of the container, as shown in Figure 2. This provides an effective secondary-seal, and a further seal is provided by a tapered annular lip 40 formed on the flange 36, which deforms into engagement with the radius at the mouth of the container.

Claims

1. A non-refillable pourer fitment adapted to fit within the neck of a container comprising outer and inner parts captively attached to each other and a non-return valve member adapted to permit the contents of the container to be poured out through the fitment but substantially to prevent flow into the container, wherein the outer part is provided at or adjacent its outer end with an outwardly-directed annular flange adapted to overlie the rim of the container to which it is applied, or an internal annular ledge thereof, a flexible outwardly-directed annular fin formed on the outer part inwardly of the annular flange being adapted, on application of the fitment to the neck of the conttainer, to be squeezed between the rim or ledge of the container neck and the flange on the outer part.

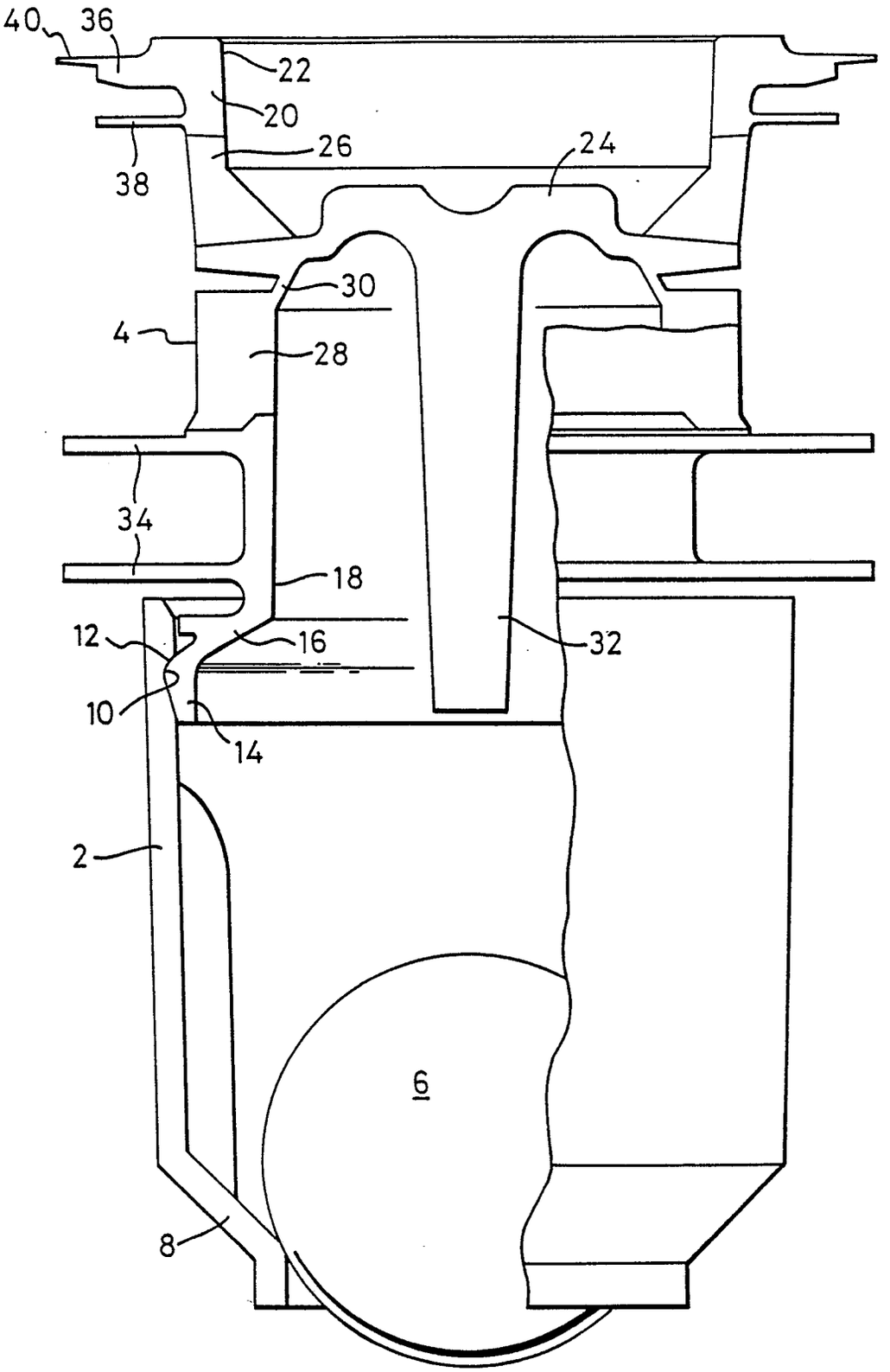
2. A fitment according to claim 1 wherein a lip is formed on the radially outer extremity of the flange.

3. A fitment according to claim 2 wherein said flexible lip is an annular lip.

4. A fitment according to any of claims 1 to 3 wherein a valve member is located and movable in a longitudinal bore in the inner part and the outer part is 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, being attached to the outer part by at least one frangible stay.

5. A fitment according to any of claims 1 to 3 wherein a valve member is located and movable in a longitudinal bore in the inner part and the outer part is 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, 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.

Fig. 1



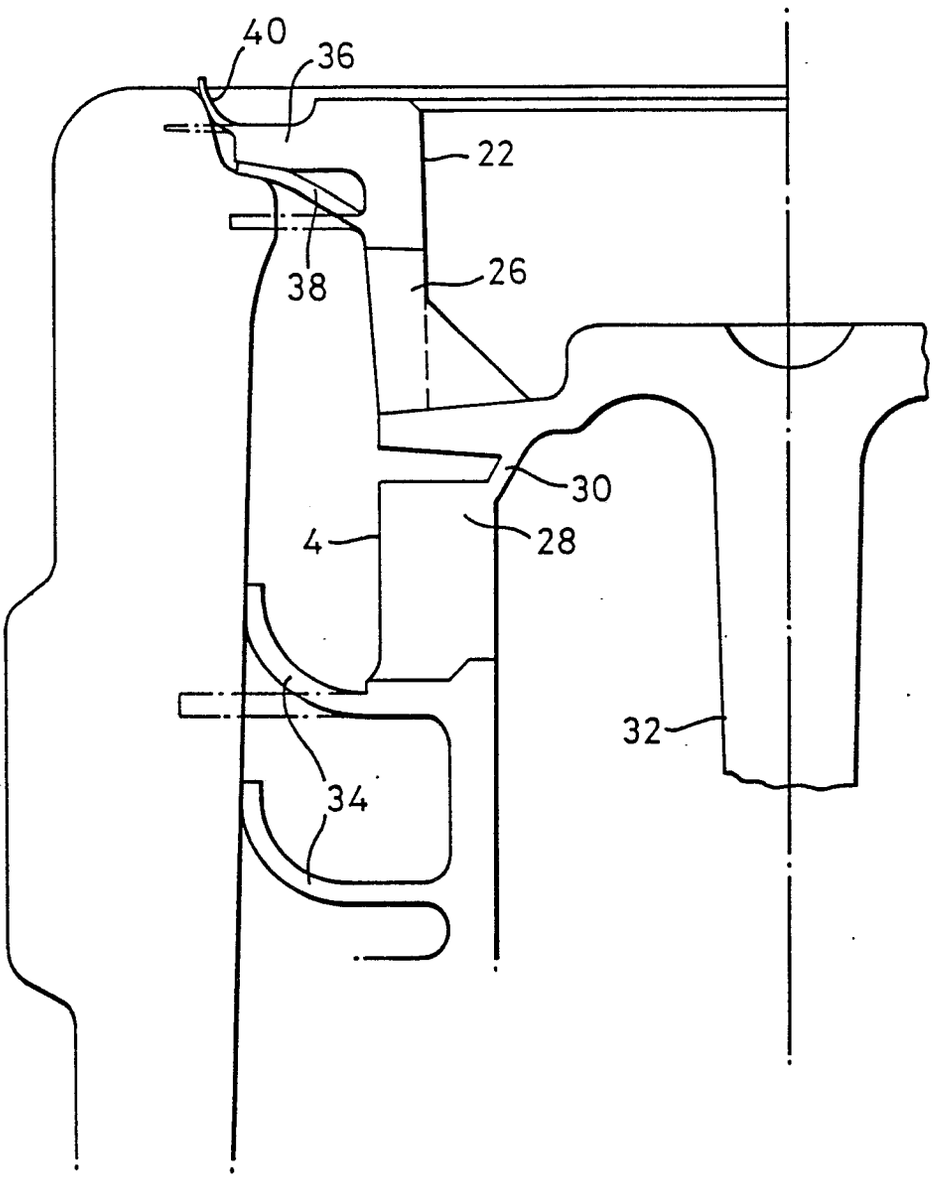


Fig. 2

European Patent Office

EUROPEAN SEARCH REPORT

Application Number

EP 89 31 0426

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
A	FR-A-2 351 871 (TETRA-PAK DEVELOPPEMENT S.A.) * P. 4, l. 28-34; figures * ---	1	B 65 D 49/02
A,D	EP-A-0 249 438 (UNITED GLASS LTD) * Revendication 1; figures * & GB-A-2 191 754 -----	1,4,5	

TECHNICAL FIELDS SEARCHED (Int. Cl.5)

B 65 D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	12-01-1990	CLARKE A.J.

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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T : theory or principle underlying the invention
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