March 21, 1961 F. G. PELLETT 2,975,947

DISPENSING TYPE CLOSURES

Filed May 3, 1957

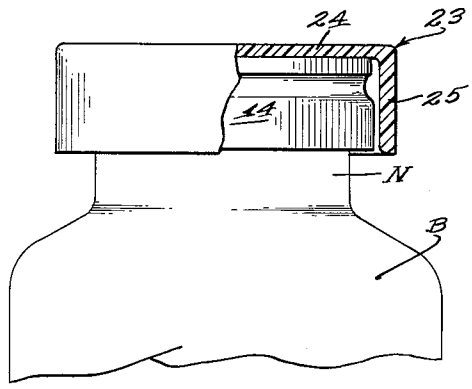


Fig. 1.

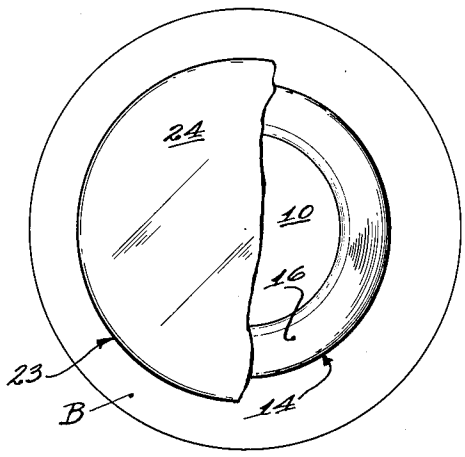


Fig. 2.

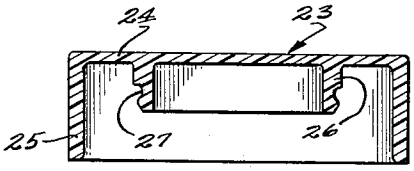


Fig. 4.

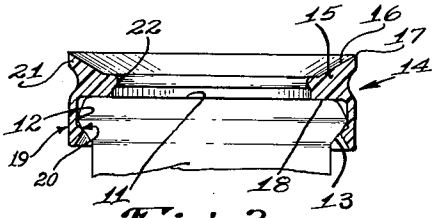


Fig. 3.

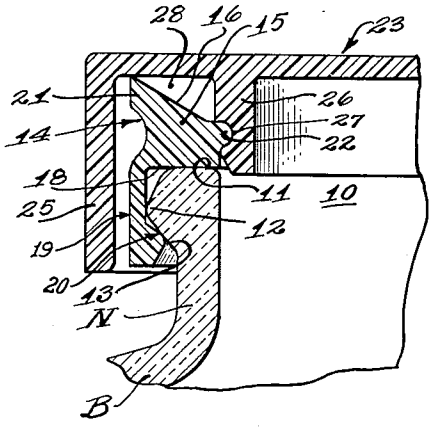


Fig. 5.

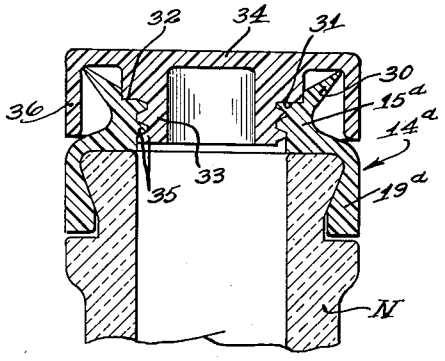


Fig. 6.

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DISPENSING TYPE CLOSURES

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1 Claim. (Cl. 222—546)

The present invention is a dispensing type closure preferably formed of polyethylene or some plastic material having like characteristics and is intended for attachment to glass containers such, for example, as bottles and jars.

An object of my invention is the provision of a simple and effective pour-out fitment and closure combination in which the pour-out fitment, as a separate element, is securely attachable to the neck of a bottle, for example, and by reason of its being formed of polyethylene or some such material has the ability to accommodate itself contourwise to and compensate for slight variations in the glass finish dimensions. The pour-out fitment itself is in the form of an annulus and is closable by means of a separate cover element, these two parts being separably secured together in such fashion as to insure effective sealing of the container. Having already provided reliable sealing contact between the pour-out fitment and the glass, it is a comparatively simple matter to interconnect the two plastic parts in a fashion to complete the package sealing operation.

Another object of my invention is the provision of a structure of the above character in which the cover element not only effectively seals the filling and discharge opening in the pour-out fitment but also protects a pouring surface and cut-off edge of said fitment against contamination.

A further object of my invention is the provision in a dispensing closure of the above character of a structure providing a continuous annular dead air space between the pour-out fitment and the cover.

It is also an object of my invention to provide a two-part dispensing type closure in which connection between the two elements includes an annular flange projecting into an annular pour-out fitment to which it is separably connected and stop means for limiting the extent of possible projection of the flange into said fitment.

It is likewise an object of my invention to provide in such a closure connecting means between the pour-out fitment and cover which will permit ready separation of the cover from the fitment without disturbing the sealing relationship between the fitment and bottle or jar.

Other objects will be in part apparent and in part pointed out hereinafter.

In the drawings:

Fig. 1 is a fragmentary side elevational view with parts in section showing one embodiment of my invention.

Fig. 2 is a top plan view with a portion of the cover broken away.

Fig. 3 is a transverse sectional view of the pour-out fitment attached to the neck portion of a glass container.

Fig. 4 is a vertical transverse sectional view of a cover which is intended for use with the fitment shown in Fig. 3.

Fig. 5 is a fragmentary detail sectional view showing the pour-out fitment and cover of Figs. 3 and 4 assembled upon the neck of a glass container.

Fig. 6 is a view similar to Fig. 5 showing a slightly modified form of the invention.

That form of my invention illustrated in Figs. 1 through 5 is intended for use with and attachment to the neck N of a bottle B or the like glass container. The neck, as is customary, defines a filling and discharge opening 10 and the outer end of the neck assumes the form of a flat annular rim 11 designed for sealing contact with an element of the dispensing closure, as will be apparent presently. Externally of the neck is an annular rib 12 of such cross-sectional shape as to provide a downwardly and inwardly inclined retaining surface 13 completely encircling said neck. This retaining surface is designed for holding engagement with a portion of a pour-fit fitment 14 (Figs. 2 and 5), which is preferably formed of polyethylene or some other plastic material having like characteristics with respect to flexibility, porosity and non-wettability of its exposed surfaces.

This fitment comprises a ring-like body 15 including an upwardly, outwardly inclined pouring surface 16 terminating in a continuous cut-off edge 17. The lower side 18 of this body 15 lies in a plane normal to the axis of the fitment and is intended for snug sealing contact with the flat rim 11 at the outer end of the container neck. For the purpose of securely holding these two surfaces in sealing contact, an attaching flange 19 is molded integral with the body 15, such flange being of annular form and depending from the outer lower corner of said body. This flange is of such internal diameter that it can be telescoped over the aforementioned rib 12 on the container neck. Internally of the depending attaching flange 19 or skirt is a locking bead 20, such being positioned near the lower margin of said flange 19 and so spaced from the surface 18 of the body 15 that it has effective holding engagement with the previously mentioned retaining surface 13 and provides tight sealing engagement between the rim 11 and lower side 18 of the pour-out filament. Because of the inherent flexibility of this plastic material, the fitment being also properly dimensioned will accommodate itself to any expected normal variations in the dimensions of the neck and integrally formed rib 12, so as to insure perfectly reliable sealing between the fitment and the glass. Immediately above the upper end of the attaching flange 19, the fitment is grooved or channeled (Fig. 5) to impart some additional degree of flexibility to a lip portion 21 of the pour-out fitment. Internally of the pour-out fitment is a locking bead 22 which projects radially inward and constitutes a portion of the means for securing the pour-out fitment and a cover 23 together for the purpose of finally closing the bottle B.

This cover 23 (Figs. 1, 4 and 5) may well comprise a top disc-like member or panel 24 of sufficient diameter to close the opening through the pour-out filament and overlie and protect the cut-off edge 17. Depending from the periphery of this disc-like member is a skirt 25 which is concentric with the attaching flange 19 of the pour-out fitment and may well be coextensive axially therewith. As stated heretofore, this cover protects the pouring surface and cut-off edge of the pour-out element against contamination. For the purpose of separably connecting the cover to the pour-out element in such fashion that the cover may be removed quite readily independently of the pour-out element, I have provided a structure including a depending ring-like flange 26 which in the final assembly projects well into the annular pour-out fitment and is formed with an external annular groove or recess 27 intended to accommodate the bead 22 carried by the latter. The dimensions of the interlocking bead 22 and recess or groove 27 are such that their holding effectiveness is somewhat less than that of the connection between the pour-out element and the bottle neck. Thus, as explained heretofore, the cover is removable independently of the pour-out element. By reason of the illustrated contact between the cover and cut-off edge of

the pour-out element together with the locking and sealing engagement of the flange **26** and the body **15**, there is provided a dead-air space **28** of annular form between said pour-out element and a marginal peripheral portion of the cover such as may very well aid in retarding the entry of outside air into the package.

In Fig. 6, I have shown a slight modification wherein the pour-out element **14a** is attachable to the bottle neck in much the same fashion as is illustrated in the preferred form of my invention. Here the pour-out fitment includes a body portion **15a** formed with an upwardly and outwardly tapered flexible pouring lip **30** at the base of which is a flat annular shoulder **31** intended to provide a stop for engagement with an annular abutment **32**, the latter being provided externally of a ring-like flange **33** which depends from the upper wall or panel **34** of the cover. This flange and the interior surface of the annular pour-out fitment are provided with cooperating screw threads **35** which effectively separably secure the two elements together. A depending flange **36** on the panel portion **34** aids the latter in closing and protecting the pour-out lip **30**. The diameter of this depending flange **36** may very well be the same as that of the attaching skirt **19a** of the pour-out fitment. As in the preferred form, the structure just described insures effective holding and sealing engagement between the pour-out element and glass irrespective of minor imperfections and variations in the glass finish dimensions. Because these plastic parts can be molded to much closer tolerances than glass, it will also be appreciated that no great difficulty is encountered in providing an effective seal between the two plastic parts. Thus, a properly sealed package is readily attainable.

Modifications may be resorted to within the spirit and scope of the appended claim.

I claim:

In combination with a container having a neck provided with a central discharge opening for the container,

said neck having an external annular flange forming a retaining surface, a ring shaped pour-out fitment formed of a resilient plastic material secured to said neck and provided with a central axial discharge opening, said fitment having a sealing surface engageable with the terminal end surface of said neck and being formed with a continuous top pouring surface inclined outwardly and upwardly terminating in an annular cut-off edge, an annular peripheral skirt on said fitment, said skirt terminating in an enlarged portion extending radially inwardly, said portion having a surface cooperating with the retaining surface of said external flange to secure said fitment to said neck, said fitment having an annular rib extending radially inwardly within said central opening, a cover comprising a disc-like member having a diameter sufficient to overlie and engage said cut-off edge, said cover having an annular skirt extending into the central opening of said fitment, said last mentioned skirt having a shallow annular groove cooperating with said rib to secure said closure to said fitment, the dimensions of said rib and groove being substantially less than that of said enlarged portion whereby the force required to separate said closure from said fitment is substantially less than that required to remove said fitment from said container.

References Cited in the file of this patent

UNITED STATES PATENTS

2,614,727	Robinson	Oct. 21, 1952
2,625,306	Murphy	Jan. 13, 1953
2,630,944	Wheaton	Mar. 10, 1953
2,673,663	Calabro	Mar. 30, 1954
2,690,861	Tupper	Oct. 5, 1954
2,706,065	Stone	Apr. 12, 1955
2,715,480	Livingstone	Aug. 16, 1955
2,785,839	DuPree	Mar. 19, 1957
2,844,290	Slade	July 22, 1958
2,848,145	Livingstone	Aug. 19, 1958