Nov. 14, 1944. O. E. KUHLMAN 2,362,905

POUR-OUT CLOSURE

Filed July 3, 1941

Fig. 1.

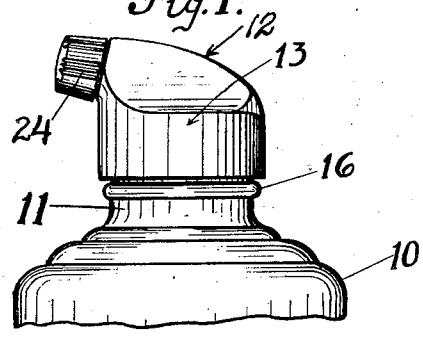


Fig. 2.

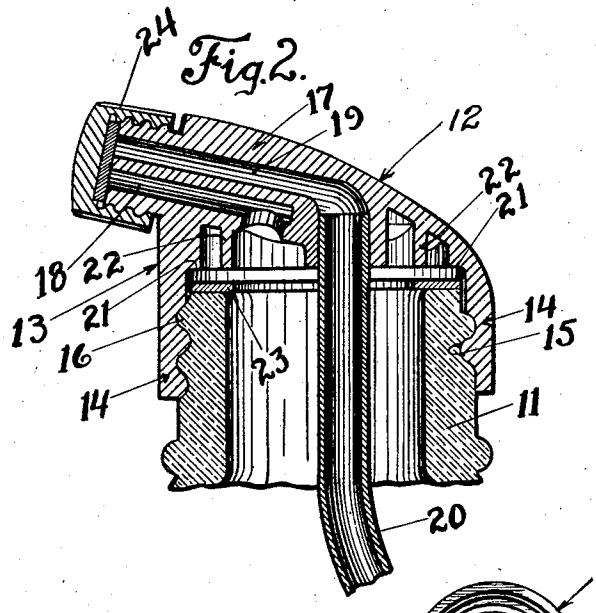
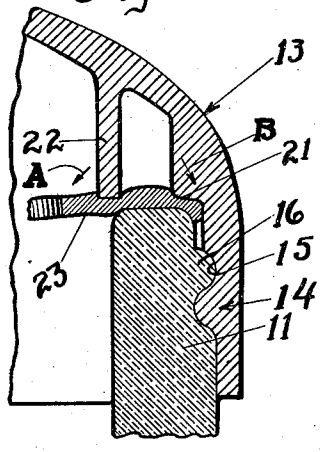


Fig. 3.



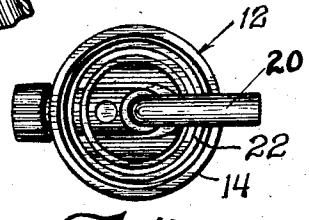


Fig. 4.

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POUR-OUT CLOSURE

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2 Claims. (Cl. 222—542)

This invention relates to a pour-out closure and has special reference to a spout for directing the flow of fluid from a container, the spout extending from a main body portion which engages and seals the contents of the container when not in use.

More particularly, this invention relates to a pour-out closure for containers comprising a main body portion having an annular depending skirt with connecting means for detachable engagement with the neck of the bottle, the main body portion having an oblique spout and an open-ended passage extending axially of the spout for discharging liquid from the container. A shoulder extends radially inwardly from the skirt for seating on the top and adjacent the outer edge of the neck of the container and an annulus is spaced from the shoulder for seating on the top and adjacent the inner edge of the neck of the container, the shoulder and annulus providing a double seal for the container.

The present invention will hereinafter be described in the association of a pour-out closure with a bottle for containing writing fluids wherein it may be desirable to fill small individual bottles of writing fluid from a supply bottle. It is essential, of course, to seal hermetically the larger supply bottle when stored and not in use, while it is desirable to direct readily and conveniently the flow of fluid from the bottle when supplying the individual bottles.

The spout is provided with an open-ended passage which is divided into pouring and vent openings. The vent opening permits air to enter the container for replacing the fluid poured from the bottle. The provision of the air vent avoids the pulsating effect ordinarily accompanying a single opening which is common to both the pouring and vent passages. The spout is preferably provided with a closure for sealing the divided passage forming the pouring and vent openings and the mouth of the neck of the bottle is provided with a double seal on the inside and the outside of the upper edge of the neck.

In the construction shown in the drawing, the annulus depends from the top of the main body portion and occupies a spaced relation with the shoulder formed radially inwardly from the skirt which permits of a substantially uniform cross section throughout the entire closure. The spacing of the annulus from the shoulder permits stretching of the gasket disposed on the top of the neck of the bottle across the thickness of the material forming the neck and provides pressure on the outer and inner edge portions thereof. Since the closure is preferably formed of a plastic material there is a certain amount of resiliency and at least there is a tendency for the annulus and the shoulder to be forced in opposite directions, owing to the slight curvatures at the edges of the upper end of the neck.

One of the objects of this invention is to provide a pour-out closure of the character indicated above wherein a double seal is effected at the upper edges of the neck of the bottle or other container.

Another object of this invention is to provide a pour-out closure for bottles or other containers of the type hereinabove mentioned wherein the closure may be formed with a substantially uniform cross section to obviate any so-called "sinks" in the material.

It is also an object of this invention to provide a pour-out closure of the type indicated above wherein the gasket between the closure and the neck of the bottle is stretched between the outer and inner edges thereof.

It is a further object of this invention to provide a pour-out closure as above mentioned which is comparatively inexpensive to manufacture, is efficient and simple in operation and is durable.

Other objects and advantages of this invention will hereinafter be more particularly pointed out and for a more complete understanding of the characteristic features of this invention, reference may now be had to the following description when taken together with the accompanying drawing, in which latter:

Figure 1 is a front elevational view of a pour-out closure embodying the features of this invention, the closure being shown as applied to a bottle for containing writing fluids and the bottle being shown fragmentarily;

Fig. 2 is a central vertical sectional view of the pour-out closure shown in Fig. 1, the view being on an enlarged scale with only a portion of the neck of the bottle being shown and the closure not occupying a fully closed position;

Fig. 3 is an enlarged fragmentary sectional view of a portion of Fig. 2, showing the relation of the closure with the neck of the bottle and the sealing gasket when in a closed position; and

Fig. 4 is an underneath plan elevational view of the closure shown in Fig. 1, the bottle being omitted.

Referring now more particularly to the drawing, the pour-out closure of this invention is shown as being adapted for use with a bottle 10 having an externally threaded neck portion 11. The bottle has been shown with external threads

on the neck thereof merely for the purpose of indicating a connecting means which may have detachable engagement with a pour-out closure, although, of course, it will be understood that other connecting means may be substituted therefor and that the pour-out closure may be adapted to frictionally or otherwise engage the bore of the neck in accordance with standard usage.

The pour-out closure 12 comprises a main body portion 13 having an annular depending skirt 14 with connecting means 15 in the form of threads for detachable engagement with threads 16 on the neck of the bottle. The pour-out closure is preferably formed of a plastic composition, hard rubber, or other more or less resilient material, although, of course, it is apparent that any substantially rigid material may be employed.

The main body portion 13 of the closure is provided with an oblique spout 17 having an open-ended passage extending axially thereof in communication with the open-ended neck of the bottle, the passage being preferably divided into pouring and vent openings 18 and 19 respectively. A tube 20 is preferably secured to the main body portion for communication with the vent opening 19 and extends therefrom into the container to terminate at an air space when the bottle is tilted for pouring.

A shoulder 21 extends radially inwardly from the skirt 14 for seating on the top and adjacent the outer edge of the neck 11 of the container. A flange 22 in the form of an annulus depends from and is preferably formed integrally with the main body portion 13 of the closure, the annulus being spaced radially inwardly from the shoulder for seating on the top and adjacent the inner edge of the neck 11 of the bottle. A gasket 23 rests on the top of the neck of the bottle for engagement by the annulus 22 and the shoulder 21.

When the closure is disposed on the neck of the bottle in a sealing relation, the annulus 22 and the shoulder 21 are forced against the gasket 23 and onto the top of the neck 11 of the bottle. The sealing gasket 23 is compressed between the edges of the bottle and the annulus and the shoulder at spaced areas about its periphery and by reason of the provision of a slight radius on the inner and outer edges of the top of the neck of the bottle there is a tendency for the annulus and the shoulder to spread apart and effect a stretching of the gasket over the top edge of the neck of the bottle. Also the gasket is compressed directly over the inner and outer edges of the neck of the bottle to effect a double seal. The pouring and vent openings are sealed by a threaded closure 24 engaging threads on the end of the oblique spout 17.

While but a single embodiment of this invention is herein shown and described, it is to be understood that various modifications thereof may be apparent to those skilled in the art without departing from the spirit and scope of this invention and, therefore, the same is only to be limited by the scope of the prior art and the appended claims.

I claim:

1. A pour-out closure for containers comprising a main body portion having a depending skirt with connecting means for detachable engagement with the neck of said container, said main body portion having a spout and an open-ended passage extending axially of said spout for discharging liquid from said container, a gasket disposed on the upper end of the neck of said container, a shoulder extending radially inwardly from said skirt for forcing said gasket against the top and adjacent the outer edge of the neck of said container, and an annulus spaced from said shoulder a distance less than the width of said neck for forcing said gasket against the top and adjacent the inner edge of the neck of said container, said shoulder and annulus tending to stretch the gasket across the top of said container neck and providing a double seal for said container.

2. A pour-out closure for containers comprising a main body portion having a depending skirt with connecting means for detachable engagement with the neck of said container, said main body portion having a spout and an open-ended passage extending axially of said spout for discharging liquid from said container, a gasket disposed on the upper end of the neck of said container, a shoulder extending radially inwardly from said skirt for forcing said gasket against the top and adjacent the outer edge of the neck of said container, and an annulus spaced from the said shoulder for forcing said gasket against the top and adjacent the inner edge of the neck of said container, said shoulder and annulus providing a double seal for said container.

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