March 19, 1963 W. R. SCHOLLE 3,081,911

DRAINAGE FITTING FOR COLLAPSIBLE CONTAINER

Filed Sept. 29, 1960

Fig. 1

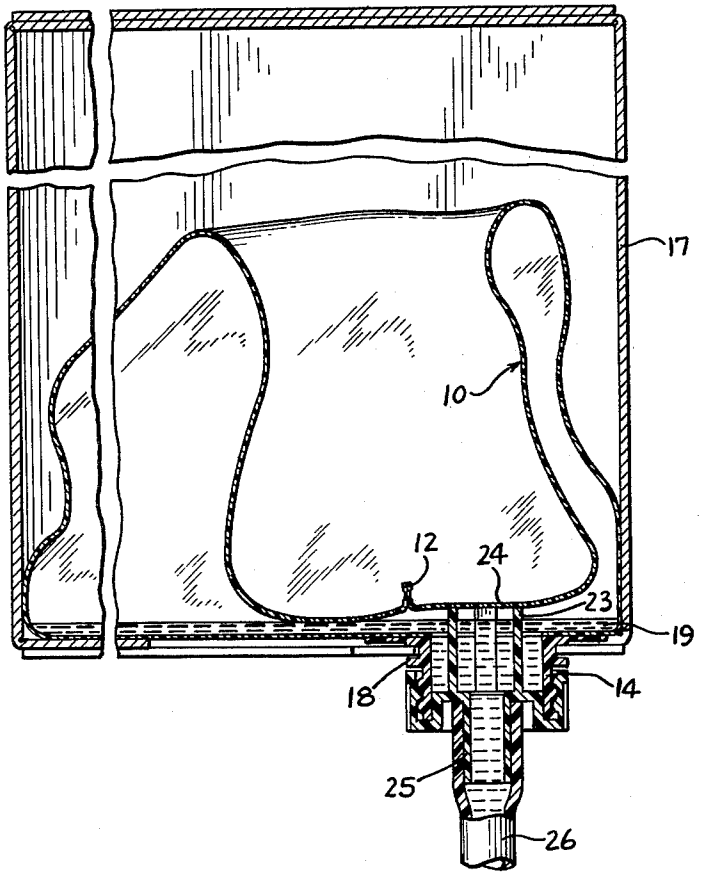


Fig. 2

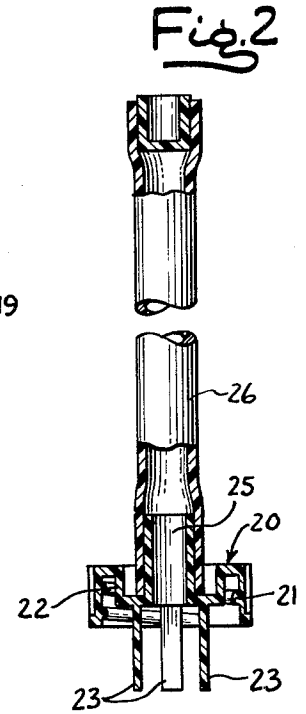
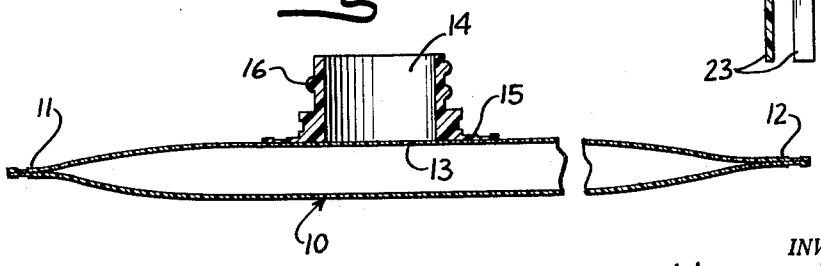


Fig. 3



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DRAINAGE FITTING FOR COLLAPSIBLE CONTAINER

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This invention relates to dispensing devices for flexible, collapsible receptacles or containers composed of plastic film material which are adapted for packaging and dispensing of edible liquids such as milk, or liquid chemicals such as battery acid, etc.

Such flexible containers, which are often of the envelope type, are conventionally provided with an apertured area adjacent one end or edge, to which is fused the annular flange of a spout or nozzle through which the flexible receptacle is filled and the contents dispensed. These nozzles are further conventionally formed with, for example, an external thread or bead or bayonet by means of which a closure cap or dispensing hose or fitting can be engaged.

For shipping and handling purposes, these flexible containers are further conventionally encased in a relatively rigid paperboard outer container, the outer container being formed with flaps or scored areas through which the aforesaid nozzle may be projected for dispensing purposes, and dispensing is generally conducted with the outer container disposed in a manner whereby the spout is lowermost for the obvious purpose of maximum drainage of the contents.

The object of maximum drainage is, however, often defeated in that during collapse of the plastic bag a surface area thereof may prematurely descend into overlying and sealing engagement with the apertured area, with resultant entrapment and economic waste of a portion of the liquid contents.

It is therefore the object of the present invention to provide means for preventing oversealing of the liner bag aperture whereby more complete drainage and consequent economy is obtained.

This I accomplish by means of a fitting adapted to be secured to the spout or nozzle of the liner bag which includes spaced fingers or groups which prevent an opposed bag surface from coming into sealing relationship with the bag opening, and thus serves to maintain a free drainage path.

Other objects and advantages, together with the details of construction and arrangement of parts, will be apparent from the following specification and accompanying drawing, wherein:

FIG. 1 is a vertical sectional view of a container in dispensing position embodying the device of the present invention.

FIG. 2 is a sectional view of the fitting of the present invention with an elongated dispensing tube engaged thereto.

FIG. 3 is a sectional view of a flexible collapsible liner bag with a nozzle or spout secured to an apertured area of the bag prior to engagement thereto of the characterizing fitting of the present invention.

Referring to the drawings, the reference numeral **10** indicates a flexible, collapsible container or liner bag composed of plastic sheet material, such as polyethylene, which may be of the envelope type, that is the bag may be formed of tubular stock, the tube being transversely cut and fused at opposed ends as at **11** and **12** to form a closure. One layer of this bag is formed with an aperture **13**, preferably adjacent one of its defining edges, and a nozzle or spout **14** is disposed in embracing relationship to the aperture **13** and fused to the bag surface by means of its integral annular flange **15**.

As indicated in FIG. 3, the spout **14** is provided with

external threads **16**, or in the alternative with beads or bayonets, for subsequent engagement thereover of a closure cap not shown. Normally, this liner bag after being filled is disposed within a protective or reinforcing relatively rigid outer container, generally indicated as **17**, which is suitably formed of corrugated paperboard.

This container **17** is suitably provided with marked or scored flap portions which may be elevated or severed to provide an opening as at **18** through which the spout **14** may be projected for the purpose of dispensing liquid contents **19** from the liner bag. The dispensing position can be as shown in FIG. 1 with the spout **14** opening downwardly, or dispensing may be accomplished by laying the carton on one of its long sides with the spout **14** lowermost and projecting horizontally, i.e., with the container lying on its right side as shown in FIG. 1. Even though the liner bag **10** may be partially or spot adhered or otherwise partly secured to the outer container body **17**, as the contents **19** are dispensed the liner bag **10** collapses and very often a surface layer portion of the liner bag **10** comes into overlying and sealing engagement with the aperture **13** so as to prevent complete dispensing of all of the contents which, as previously indicated, often may be considerable and in any event is always an economic loss.

In order to prevent such sealing of the opening **13** I provide a fitting such as is generally indicated at **20** having a collar portion which is internally threaded or the like at **21** complementary to the means **16** on and thereby adapted to embrace the nozzle **14** and to be secured thereto after the normal closure cap has been removed. This fitting **20** has a portion which telescopes within the nozzle **14**, such as inwardly projecting return bent portion **22** from which there inwardly projects a plurality of axially extending spaced fingers or prongs **23**, leaving radial openings between them. These fingers or prongs **23** are of a length such that they extend beyond the layer of the plastic bag **10** to which the nozzle **14** is secured so that, as is illustrated clearly in FIG. 1, the possibility of a liner bag portion **24** coming into overlying or sealing engagement with the aperture **13** is prevented. Thus, residual liquid contents are permitted to flow out of the liner bag **10** and through the nozzle **14** without impairment.

The particular fitting **20** as illustrated comprises an externally axially projecting tubular portion **25** to which there may be engaged an elongated dispensing tube **26**. However, it will be understood that the present invention is not limited to such adaptation. It will also be understood by those skilled in the art that modifications may be made in my invention without departing from the scope thereof as comprehended by the following claims.

I claim:

1. A dispenser fitting for separable engagement with an externally threaded rigid annular spout carried by and embracing an apertured area in a wall of a collapsible receptacle composed of plastic sheet material and for insuring complete drainage of liquid material contained in said receptacle, said fitting comprising a cap including an internally threaded cylindrical collar portion for engagement about said nozzle, an annular cap head portion, an axial integral tube extending outwardly from said cap head and embracing the annulus thereof, and a plurality of spaced fingers disposed parallel to said tube and extending about the annulus of said cap in a direction inwardly thereof, said fingers being of a length to project into and beyond said spout and into the confines of said receptacle whereby to provide a free fluid passage therefrom through said spout and said fitting.

2. The combination with a collapsible receptacle composed of plastic sheet material including an externally threaded rigid annular spout carried by and embracing an apertured area in a wall thereof of a dispenser fitting for

separable engagement therewith and for insuring complete drainage of liquid material contained in said receptacle, said fitting comprising a cap including an internally threaded cylindrical collar portion for engagement about said nozzle, an annular cap head portion, an axial integral tube extending outwardly from said cap head and embracing the annulus thereof, and a plurality of spaced fingers disposed parallel to said tube and extending about the annulus of said cap in a direction inwardly thereof, said fingers being of a length to project into and beyond said spout and into the confines of said receptacle whereby

to provide a free fluid passage therefrom through said spout and said fitting.

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