

Feb. 11, 1969

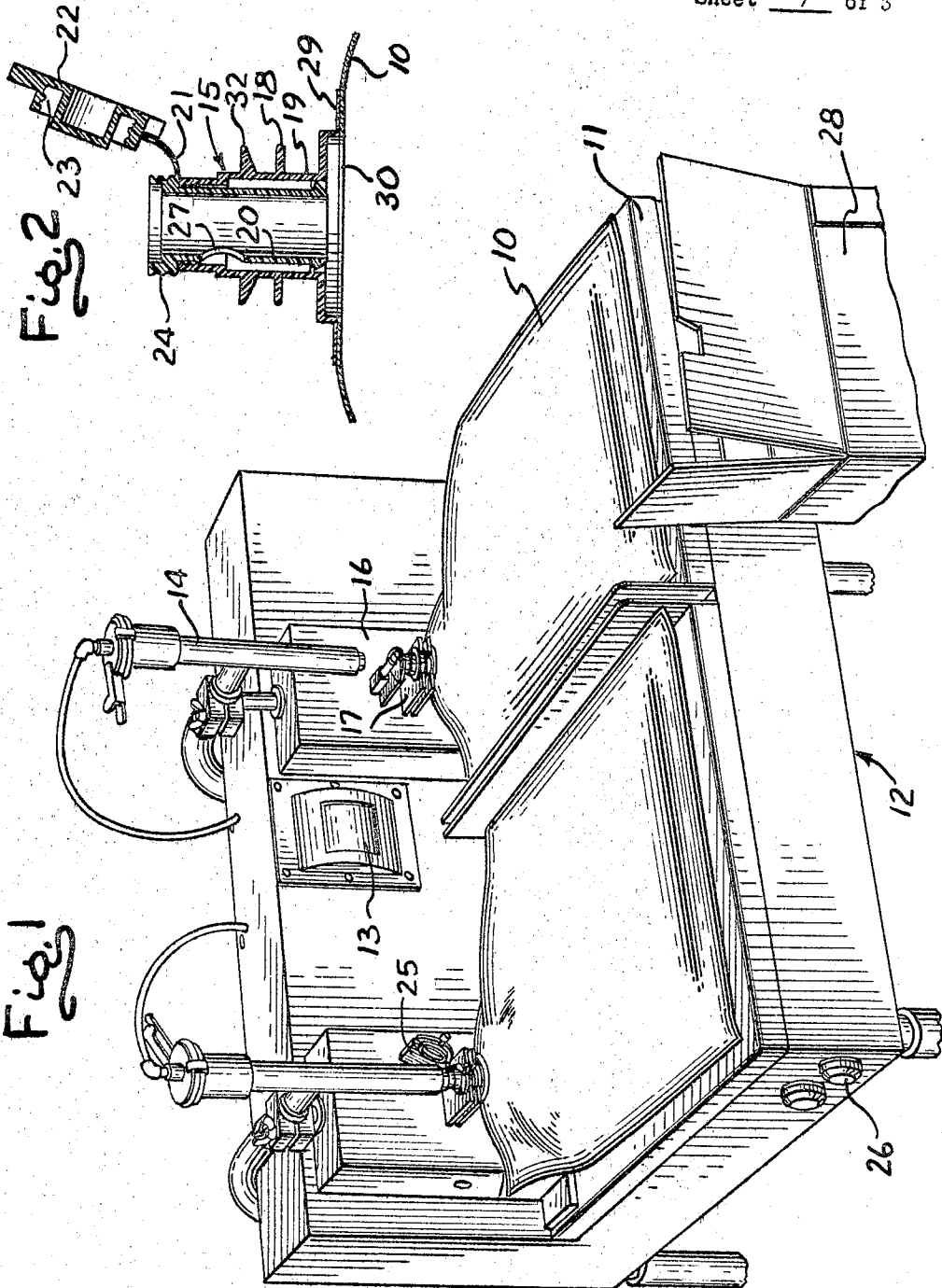
W. R. SCHOLLE

3,427,646

CONTAINER OPENING, FILLING AND CLOSING APPARATUS

Filed Feb. 5, 1965

Sheet 1 of 3



INVENTOR
WILLIAM R. SCHOLLE

by: Gary, Parker, Jeatt & Cullinan
ATTYS.

Feb. 11, 1969

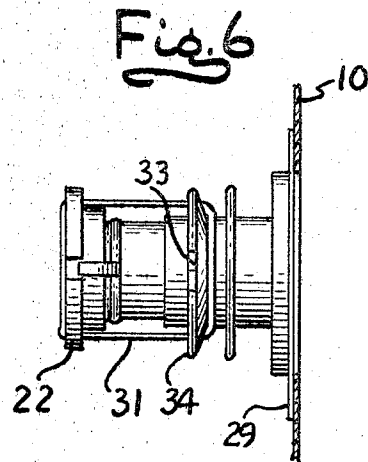
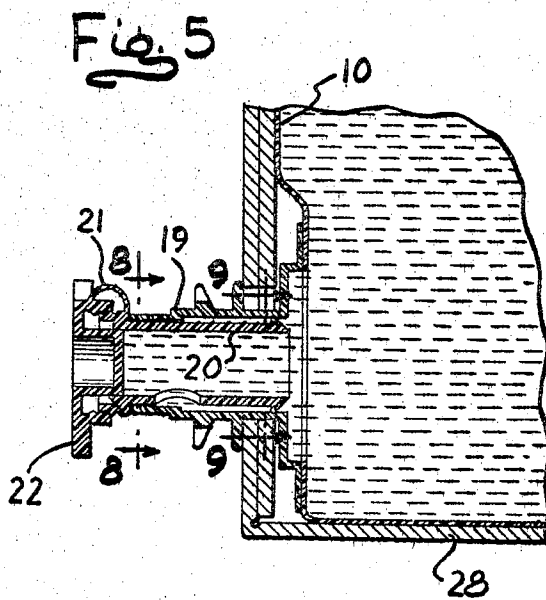
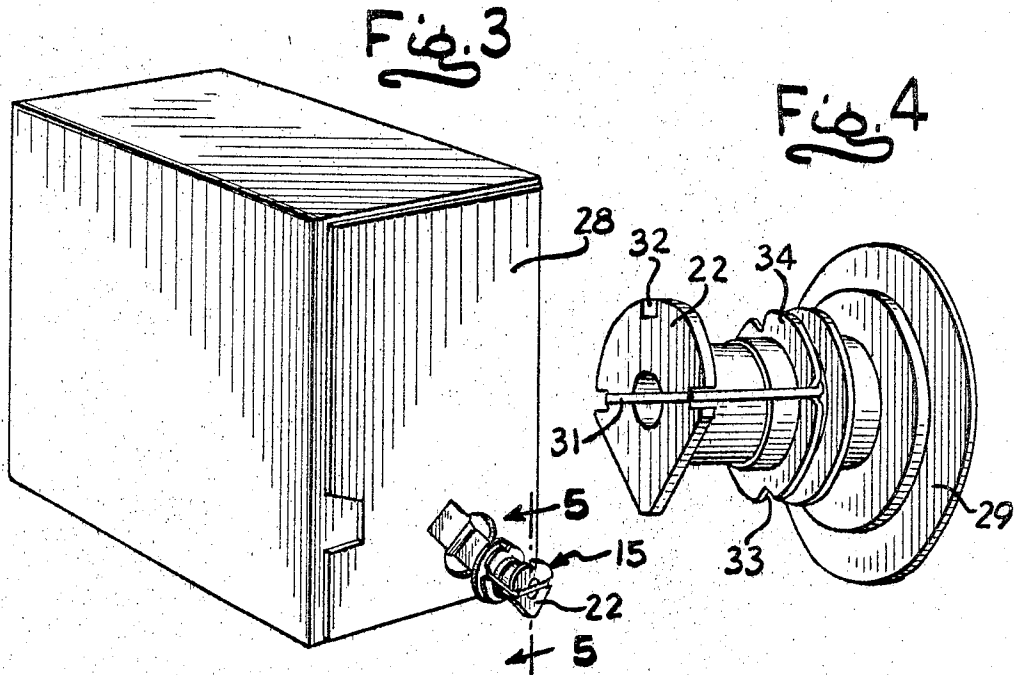
W. R. SCHOLLE

3,427,646

CONTAINER OPENING, FILLING AND CLOSING APPARATUS

Filed Feb. 5, 1965

Sheet 2 of 3



INVENTOR
WILLIAM R. SCHOLLE

by: Gary, Parker, Justus & Cullinan
ATTYS.

Feb. 11, 1969

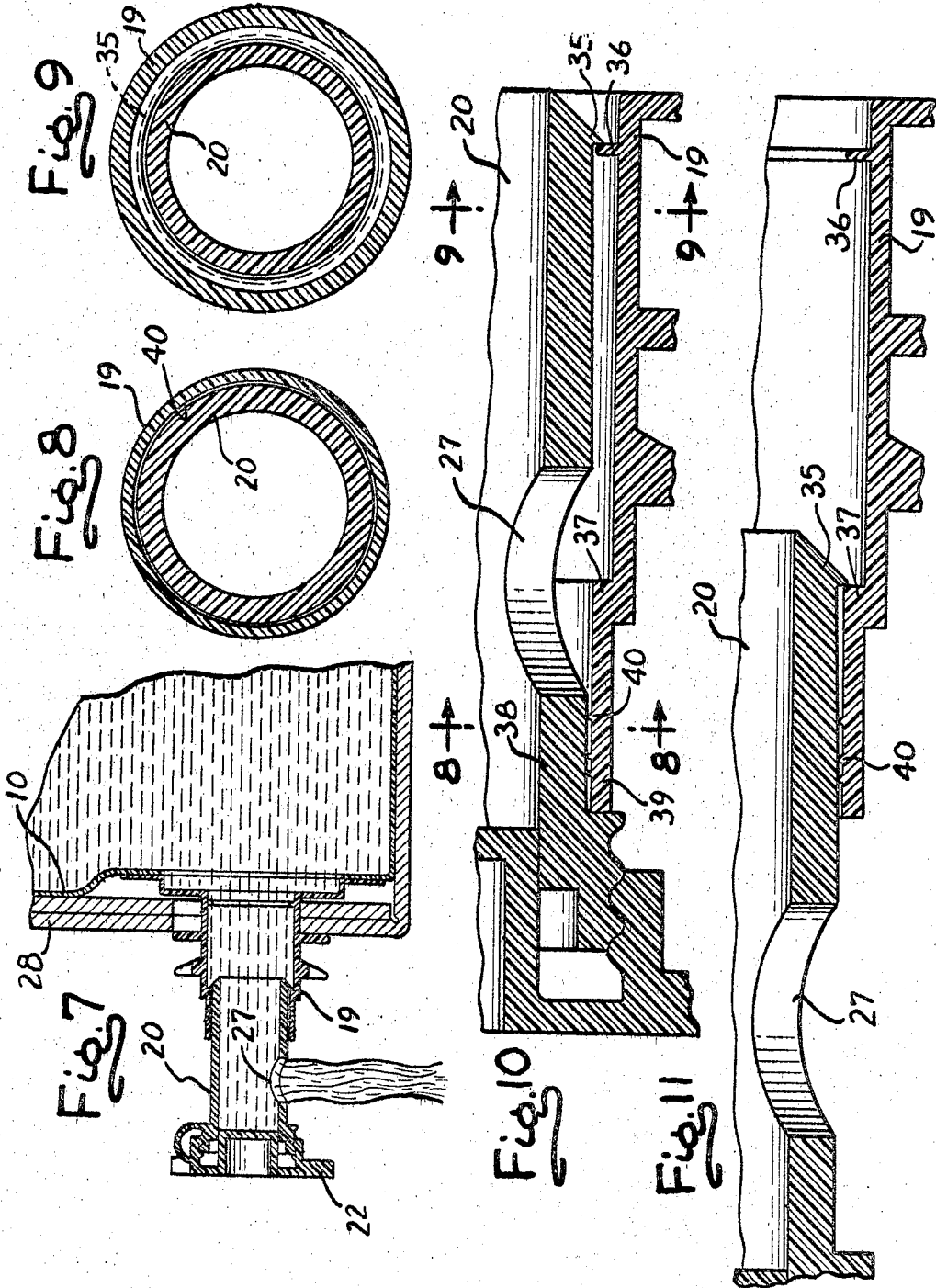
W. R. SCHOLLE

3,427,646

CONTAINER OPENING, FILLING AND CLOSING APPARATUS

Filed Feb. 5, 1965

Sheet 2 of 3



INVENTOR
WILLIAM R. SCHOLLE

by Gary, Parkers, Juetten & Cullinan
ATTYS.

1

2

3,427,646
CONTAINER OPENING, FILLING AND
CLOSING APPARATUS

William R. Scholle, Long Beach, Calif., assignor to Scholle
Container Corporation, Northlake, Ill., a corporation
of Illinois

Filed Feb. 5, 1965, Ser. No. 430,588

U.S. Cl. 53—281

Int. Cl. B65b 3/04; B65d 5/74, 39/04

1 Claim

ABSTRACT OF THE DISCLOSURE

Relates to a dispensing spigot secured to a flexible container, the spigot comprising an outer sleeve component and an inner telescopically engaged tube having a lateral opening through which the contents may be dispensed when the inner tube is withdrawn to expose the lateral opening. The outer end of the tube is further provided with a frictionally engaged separable cap by means of which the container may be filled, the filling means further comprising means for holding the spigot in vertical position and means for sequentially separating the cap when filling the container and then replacing the cap.

This invention relates to improvements in dispensing containers, to filling and dispensing spigot means therefor, and to means for filling said container with fluent material.

The invention in general pertains to means for filling and dispensing fluent materials from a flexible bag generally composed of thermoplastic sheet material such as polyethylene and adapted to contain materials such as milk, water, fruit juices, chemicals and the like while the bag is disposed in a rectangular paperboard container.

It is a particular object of the present invention to provide novel means for filling such liner bags and for dispensing the contents therefrom.

The present invention pertains to the employment of spigots secured about a communicating opening in the plastic liner bag of the class aforesaid, the spigot comprising a sleeve retaining in telescopic and reciprocal engagement therein a tube closed at its outer end for dispensing purposes and having a lateral opening which is adapted to be withdrawn from the sleeve for incremental dispensing purposes and projected inwardly thereof to conceal the lateral opening at the end of the dispensing operation.

In lieu of filling a sealed bag of the class aforesaid through the lateral opening in the spigot or in lieu of probing a sealed filled bag with a combination spigot and probe, the present invention provides novel means for filling the plastic liner bag through the spigot.

More specifically the present invention provides the outer end of the reciprocal tube component of the spigot with a separable cap which normally retains the spigot closed and keeps the unfilled bag in sanitary condition until it is desired to fill the bag, said cap being removable so as to permit the bag to be filled through the resulting open end of the tube, after which the cap is resealed and dispensing can be conducted by means of the spigot in usual manner.

The invention further relates to novel means for automatically opening an endwise closed spigot, filling the liner or container bag therethrough and then reclosing the cap.

Other objects of the invention, its details of construction, arrangement of parts, and economies thereof, will be apparent from a consideration of the following specification and accompanying drawings, wherein:

FIG. 1 is a perspective view of liner bags provided

with spigots in accordance with the present invention in position on a filling apparatus which automatically opens and closes the spigot closure cap.

FIG. 2 is a vertical section through a spigot of the present invention engaged to the liner bag showing the closure cap thereof in open position.

FIG. 3 is a perspective view of a paperboard container embodying the liner bag and attached spigot of the present invention.

FIG. 4 is a perspective view of the spigot of the present invention in closed position, both with respect to filling and dispensing.

FIG. 5 is a fragmentary section on the line 5—5 of FIG. 3.

FIG. 6 is a side elevational view of the spigot shown in FIG. 4.

FIG. 7 is a fragmentary sectional view similar to that of FIG. 5 but with the spigot in dispensing position.

FIG. 8 is a section on the line 8—8 of FIG. 10.

FIG. 9 is a section on the line 9—9 of FIG. 10.

FIG. 10 is an enlarged fragmentary sectional view through the spigot in non-dispensing position, and

FIG. 11 is a similar enlarged fragmentary sectional view showing the spigot in open dispensing position.

Referring to the drawings, the reference numeral 10 indicates a plastic liner or container bag seated on the platform 11 of a scale type filling device generally indicated as 12, wherein after the contents of the bag 10 reach a predetermined weight indicated on the scale 13, filling thereof with fluent materials through the tube 14 automatically terminates in well known manner.

During the period when the liner bag 10 is on the scale 12, its spigot, generally indicated as 15, is held on the scale standard portion 16 by means of the slotted holder plate 17 which engages the annular flange 18 on the sleeve portion 19 of the spigot. As shown in detail in FIG. 2, the spigot further comprises a tube portion 20 which is disposed in telescopic engagement within the sleeve 19, this tube having integrally joined thereto by means of the flexible hinge 21 a closure cap 22. This closure cap in the illustration shown is adapted for frictional interlocking engagement with the tube 20 by means of the inner annular ridges 23 in the cap 22 which frictionally engage and interlock with the external annular complementary ridges 24 on the tube 20.

As further shown in FIG. 1, the cap 22 is received within the pivotally disposed holder 25 which first engages the cap 22 while it is seated on the tube 20 before filling, somewhat as shown in the right-hand portion of the illustration of FIG. 1. Upon actuation of the scale 12 by means of the electric starter button 26, the pivotal holder 25 removes the cap 22 from the spigot tube 20 and holds it away during the time when liquid is passing from the filling tube 14 into the bag 10 through the spigot 15. Upon termination of the filling operation when a predetermined weight has been reached and the filling tube 14 moved out of position, the holder 25 is sequentially and automatically pivoted downwardly and the cap 22 is replaced in frictional interlocking engagement over the upper end 24 of tube 20. During this filling operation the tube 20 is held in position within the sleeve 19 so that the lateral aperture 27 in the tube 20 remains concealed and closed by the sleeve 19.

Upon completion of the filling operation, the filled bag 10 can be dropped into the rectangular paperboard container generally indicated as 28 and the open end of the container sealed.

The sleeve 19 of the spigot includes an annular flange 29 which is bonded to the liner bag 10 about a communicating opening 30 formed therein, the flange 19 and bag 10 being desirably fused together when both of the

components are of thermoplastic material such as polyethylene, polypropylene, or the like.

To normally maintain the spigot closed and to provide resistance against accidental dispensing, resilient means such as a rubber band 31 can be extended about and between the cap 22 and the flange 32 on the spigot 15, both the cap 22 and the flange 32 being provided with a series of peripheral notches such as at 33 and 34 for anchoring the rubber band 31, a plurality of notches being provided in the members 22 and 34 for varied angular relationship of the cap 22 with respect to the flange 34.

The slidable tube 20 is further provided with means for limiting its reciprocal movement within the sleeve 19, these means comprising an annular ridge 35 adjacent the inner end of tube 20. This ridge 35 is yieldably engageable in one position with the annular projection or rib 36 on the inner end of sleeve 19, engagement of the ridge 35 over the rib 36 tending to hold the spigot in closed position and against accidental displacement thereof from said position until opened for dispensing, displacement requiring a small amount of force. In a similar manner, the tube 20 is held against accidental and unintended outward withdrawal or disengagement from sleeve 19 by means of the annular shoulder 37 disposed adjacent the outer end of the sleeve 19. Thus, after the tube 20 is disengaged from the sleeve 19, that is, when the portion 35 is drawn over the portion 36, outward withdrawal or movement of the tube 20 from the sleeve 19 is prevented by abutment of the ridge 35 against the shoulder 37 as seen in FIG. 11. It is understood, of course, the whole assembly being made of somewhat resilient flexible plastic material, that when positively desired, the tube 20 can be fully withdrawn from the sleeve 19, and conversely the tube can be formed separate and assembled by inserting the tube 20 so that its ridge 35 can first pass over the shoulder 37 and then when desired can pass over the rib 36.

For providing a good seal between the parts, the outer diameter of the tube 20 is slightly enlarged adjacent its forward end as at the portion 38, while conversely the inner diameter of the sleeve 19 can be somewhat narrowed at its forward end 39. As an aid in maintaining a tight seal so as to prevent seepage of liquid through the aperture 27, the sleeve 19 adjacent its end portion 39 is further provided with one or more internal annular beads 40 which act as sealing rings.

Although I have shown and described the preferred embodiment of my invention, it will be understood by those skilled in the art that changes may be made in the

details thereof without departing from its scope as comprehended by the following claim.

I claim:

1. The combination with a receptacle of filling means therefor, said receptacle comprising a container composed of flexible thermoplastic sheet material, said filling means comprising a relatively rigid spigot comprising a sleeve member, an integral annular external flange carried by said sleeve member in bonded engagement with said container about a communicating opening formed therein, a second spaced annular flange on said sleeve, a tube in part slidably engaged within said sleeve and formed with a lateral dispensing opening covered by and withdrawable from said sleeve for dispensing contents of said receptacle, the inner end of said tube remaining open and disposed within said sleeve, the opposed end of said tube including an annular external shoulder retaining it outwardly of said sleeve, said outer end including a separable frictionally engaged flanged cap whereby the container can be filled with fluent material through the open outer end of said tube when the cap is lifted therefrom, means comprising a standard, a slotted holder plate on said standard adapted to be disposed beneath said second annular flange for engaging and disposing said tube in vertical position above said receptacle, means for injecting fluent material into said container through said tube when its cap is separated, holder means engageable with and adapted to receive the flange of said cap and pivot means on said standard projecting normally therefrom and parallel to said slotted holder and spaced from the axis of said tube and fixedly secured to said holder means for sequentially lifting said cap from its tube before filling and for reseating it thereafter.

References Cited

UNITED STATES PATENTS

2,355,073	8/1944	Hothersall	53—42	X
3,087,518	4/1963	Scholle	141—315	X
3,214,881	11/1965	Hayes	53—42	
3,242,951	3/1966	Curie et al.	53—37	
3,299,606	1/1967	Weikert	53—281	

TRAVIS S. McGEHEE, *Primary Examiner.*

ROBERT L. FARRIS, *Assistant Examiner.*

U.S. Cl. X.R.

53—37; 229—17