

Feb. 3, 1970

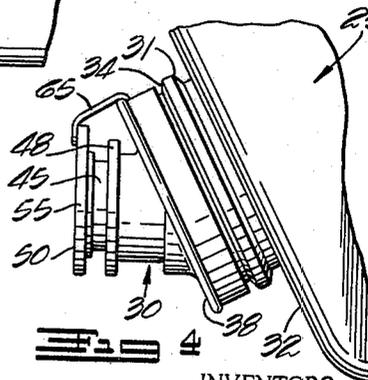
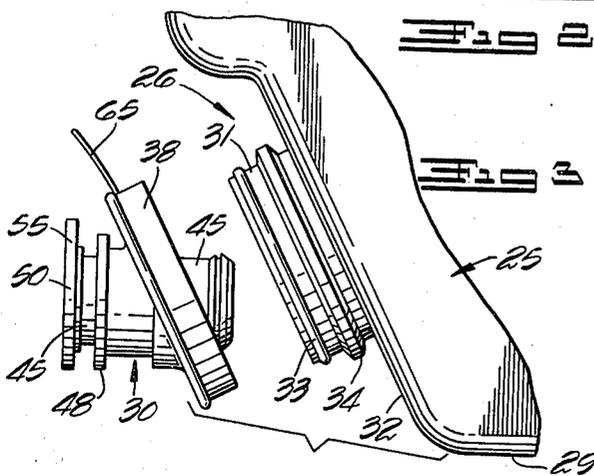
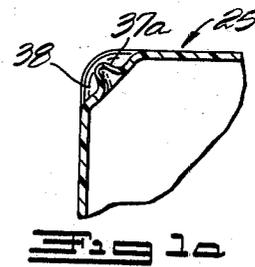
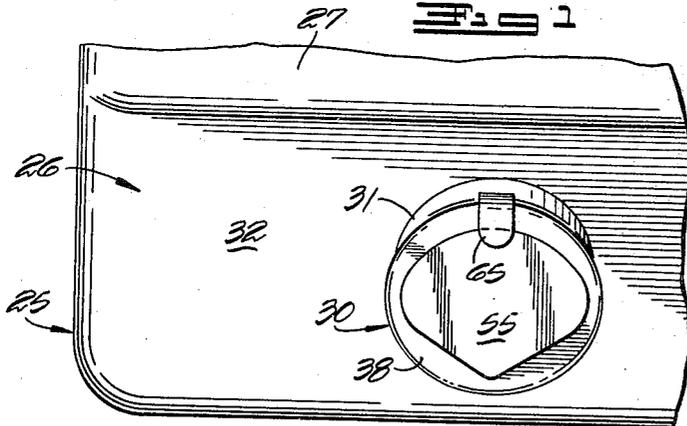
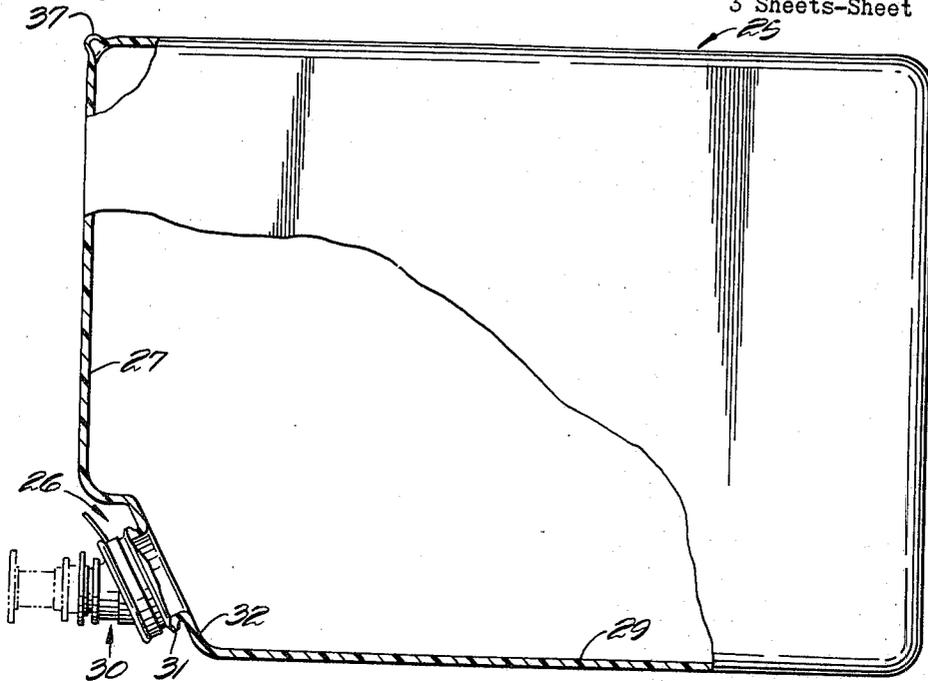
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3,493,146

LIQUID CONTAINER WITH DISPENSING VALVE

Filed May 18, 1967

3 Sheets-Sheet 1



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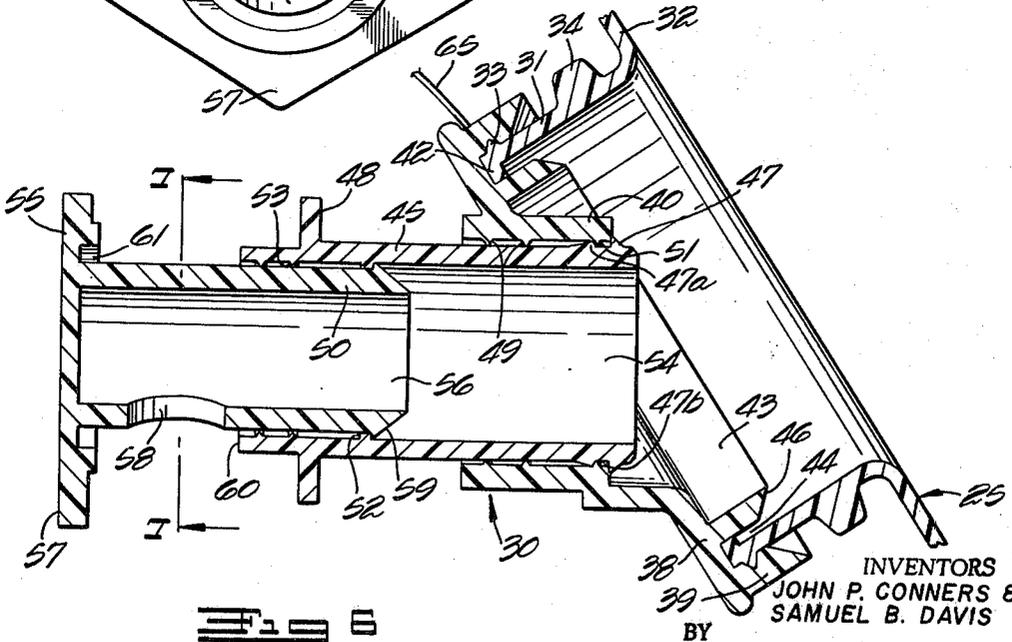
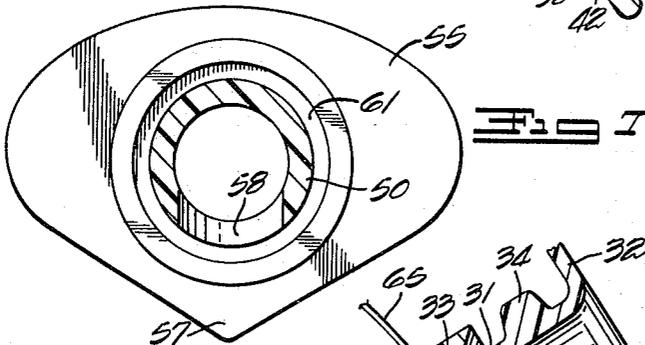
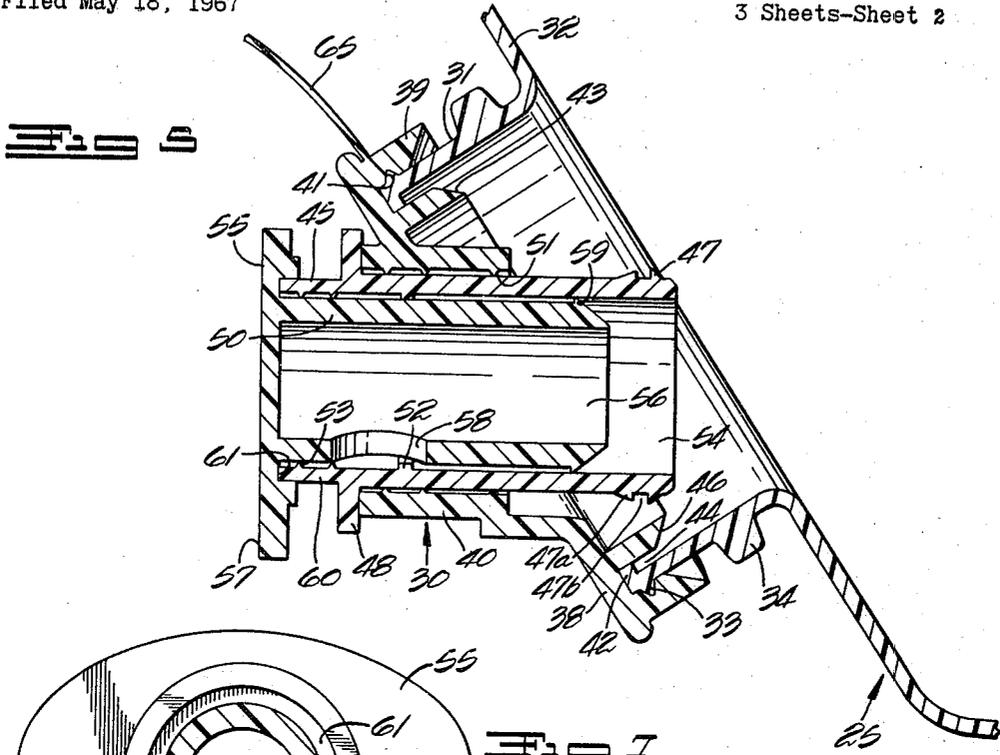
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LIQUID CONTAINER WITH DISPENSING VALVE

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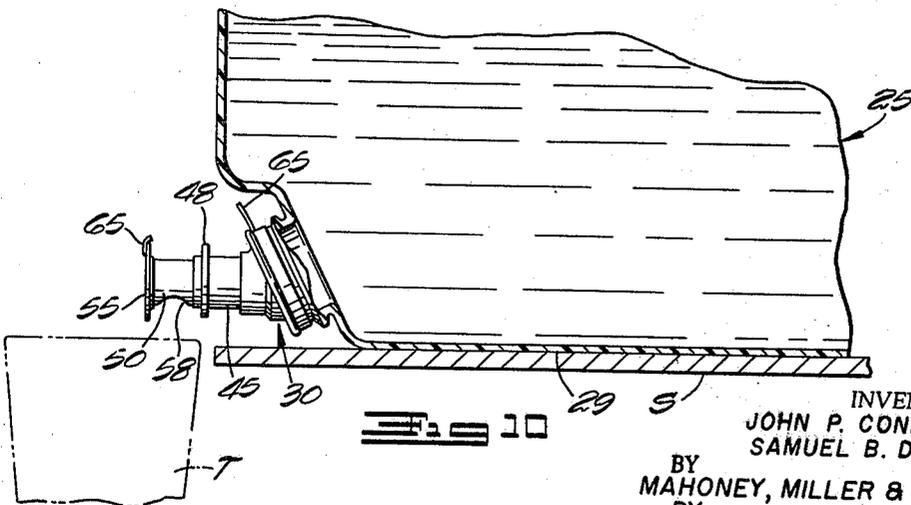
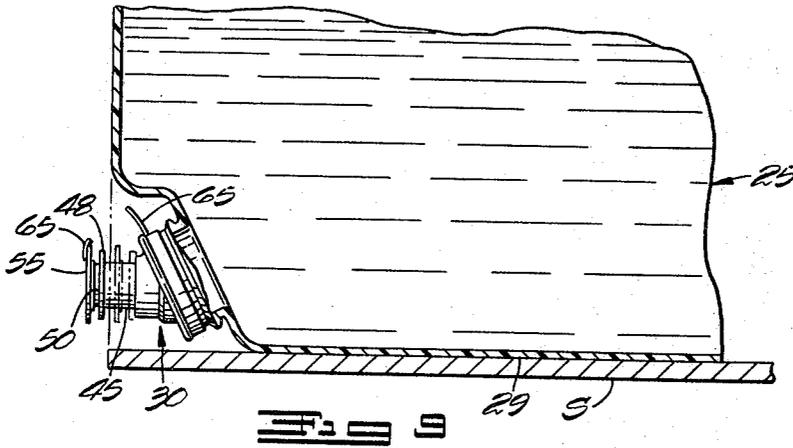
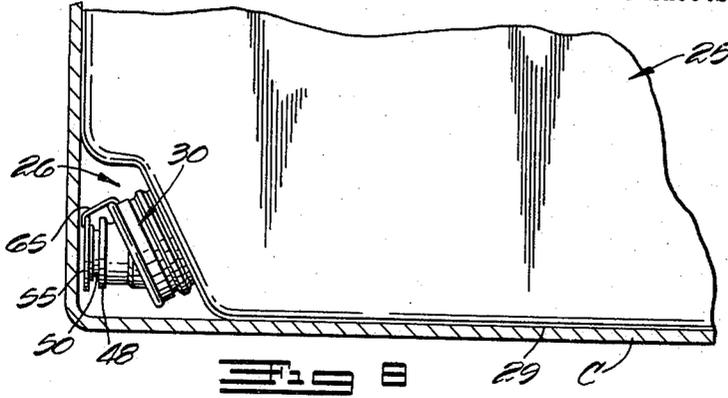
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LIQUID CONTAINER WITH DISPENSING VALVE

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3 Sheets-Sheet 3



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3,493,146

LIQUID CONTAINER WITH DISPENSING VALVE
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Continuation-in-part of application Ser. No. 615,753, Feb. 13, 1967, now Patent No. 3,430,284. This application May 18, 1967, Ser. No. 639,470

The portion of the term of the patent subsequent to Mar. 4, 1986, has been disclaimed

Int. Cl. B67d 5/32, 3/00; B65d 25/40

U.S. Cl. 222-153

6 Claims

ABSTRACT OF THE DISCLOSURE

A liquid container of rigid or semi-rigid thermoplastic resin material of substantially cubical form with a vertical front wall and a horizontal bottom wall connected by an angular transversely extending wall with a neck formed thereon through which the container is preferably filled and through which liquid may be dispensed from the container. On the neck is mounted a dispensing valve assembly which includes a valve sleeve slidably mounted in a positioning sleeve, with the latter sleeve slidably mounted within the neck and movable outwardly to move the outer portion of the valve sleeve from a protected position, inwardly of the front vertical wall, to an extended dispensing position outwardly beyond said wall, means being provided for holding the positioning sleeve in its outer extended position. In addition, the valve sleeve is provided with a shroud arrangement for normally enclosing the outer end of the positioning sleeve and a tamper-proof seal arrangement connected between the valve sleeve and the neck for showing whether either the valve sleeve or the positioning sleeve has been moved from its original position. Also, vent means is provided for allowing entrance of air into the container for the dispensing operation.

This application is a continuation-in-part of our application Ser. No. 615,753, filed Feb. 13, 1967, now U.S. Patent No. 3,430,284.

BRIEF DESCRIPTION OF DRAWINGS

The accompanying drawings illustrate a liquid container and dispensing valve thereon which have the improvements of this invention embodied therein.

In these drawings:

FIGURE 1 is a side elevational view, partly broken away, of one form of liquid container with one form of dispensing valve assembly mounted thereon showing the container resting on its bottom wall surface in dispensing position.

FIGURE 1a is a sectional view illustrating a different type of vent for the container.

FIGURE 2 is an enlarged fragmentary front elevational view showing the lower corner of the container with the valve assembly mounted thereon.

FIGURE 3 is an enlarged fragmentary side elevational view of the dispensing valve assembly spaced from the associated container neck at the recessed corner of the container.

Figure 4 is an enlarged fragmentary side elevational view showing the valve assembly mounted on the container with the movable valve member sealed in closed position.

FIGURE 5 is an enlarged axial sectional view of the dispensing valve assembly on the container with the valve assembly retracted and the valve member closed but not sealed.

FIGURE 6 is a view similar to FIGURE 5 with the

seal on the valve assembly broken and with the assembly extended into dispensing position and with the valve opened.

FIGURE 7 is a transverse sectional view taken along line 7-7 of FIGURE 6.

FIGURE 8 is a fragmentary sectional view showing the container, with the valve assembly mounted thereon, positioned in a shipping case with the valve assembly and associated container neck protected from contact with the case.

FIGURE 9 is a schematic view showing the container and valve assembly of FIGURE 8 positioned on a shelf with the valve-mounting means extended so as to dispose the valve in dispensing position beyond the shelf.

FIGURE 10 is a view similar to FIGURE 9 but showing the valve opened to dispense the liquid from the container.

DETAILED DESCRIPTION OF DRAWINGS

With specific reference to the drawings, a preferred form of the liquid container is indicated in FIGURES 1 to 10 generally by the numeral 25 and the dispensing valve assembly mounted thereon is indicated generally by the numeral 30.

The container 25 is preferably substantially rigid or semi-rigid and formed from thermoplastic resin material such as polyethylene, propylene, or the like. It is preferably formed by a blowing operation so that it will have relative thin wall sections and, consequently, will have a minimum overall weight. In this example, the container is formed with a recess or pocket recessed within the contour of the container and shown in the preferred example as a recessed corner 26 which preferably extends completely transversely across that corner of the container which would be formed by continuations of the vertical plane of the flat front wall 27 and the horizontal plane of the flat bottom wall 29. All of the other corner junctions of the various walls of the container 25 are at substantially right angles and it will be noted that the container is, with the exception of the corner 26, of substantially cubical form, having rectangular longitudinal vertical, longitudinal horizontal and transverse vertical cross sections. As an example of the use, the container is made for containing and dispensing milk and will be made of standard or common forms or sizes such that two of the containers will fit snugly side-by-side in the usual wire shipping or handling cases now commonly employed in home-delivery dairies.

The container 25 is provided at the corner 26 with the neck 31 which is formed integral with the angularly-disposed transverse wall 32 which extends the full width of the front of the container and joins the front wall 27 with the bottom wall 29. The axis of the neck 31 is normal to the plane of the wall 32 and, therefore, is downwardly and outwardly inclined. Therefore, the integral neck 31 extends downwardly and outwardly from the lower front portion of the container and there will be a gravity flow of liquid from the container through the neck 31 when the filled or partially-filled container is resting on the bottom 29 and the valve of the assembly 30 is open.

The angular disposition of the neck 31 not only provides for mounting the valve assembly 30 in a convenient protected location but also facilitates manufacture of the container in a blow mold. The neck will be formed at the continuous neck ring of the blow mold and will be free of mold parting lines. This is important in producing the outwardly projecting continuous sealing lip 33 on the exterior of the neck (FIGURES 5 and 6) which is spaced slightly axially inwardly from the outer extremity thereof and which is free of projections so as to provide for a more effective seal. Axially inwardly

of the sealing ring 33, a heavier reinforcing ring 34 is also preferably formed on the neck. The neck will be semi-rigid but can be flexed to some extent which is desirable in mounting the valve assembly 30 thereon. Also, the disposition of the neck 31 as indicated makes it possible to substantially fill the container, the filling being accomplished by a filler machine nozzle engaging the neck 31. Since the container 25 is substantially rigid, it must be provided with a vent means. This may be provided by means of a hollow teat 37 (FIGURE 1) which may project from the container at the upper and forward corner thereof and which may be snapped-off to provide a vent opening so that air pressure can enter the container and cause the liquid to flow therefrom when the valve is opened. It may also be desirable to recess the vent projection to safeguard against the possibility of it being accidentally broken off by contact with various objects or surfaces. Thus, the arrangement illustrated in FIGURE 1a may be provided where the teat 37a may be disposed within the concavity or recess 38 so that its outermost point will be inwardly of surrounding wall surfaces of the container and will be protected thereby from contact with other objects or surfaces. The recess 38 will be of sufficient area to permit ready access to the projection for snapping it off to vent the container.

As indicated, this form of the valve assembly 30 is adapted to be mounted on the neck 31 and it is so formed, as shown in FIGURES 1 and 4, that it can be mounted with its main axis horizontal, that is, parallel with the bottom wall 29 or at a right angle to the vertical front wall 27. The valve assembly 30 is shown best in FIGURES 1 and 3-7 and is made of a substantially rigid thermoplastic resin such as polyethylene, propylene, or the like. It may be termed a three-piece valve and is preferably molded and includes a cap portion 38 having an integral guide-sleeve or collar 40 formed thereon with the cap portion tilted or at an angle to the axis of the guide-sleeve. Mounted in the guide-sleeve 40 in sliding telescopic relationship thereto is a valve-mounting and positioning sleeve 45 and mounted in the sleeve 45 in sliding telescopic relationship thereto is the dispensing valve member 50.

The cap portion 38 has an annular inwardly extending peripheral flange or skirt 39 formed thereon and, as indicated in FIGURES 5 and 6, this flange is provided with a continuous annular locking groove 41 on its inner surface which is adapted to receive the locking ring 33 when the skirt 39 is slipped over the neck. This groove is so located that when the skirt is slipped over the neck, the ring 33 will snap into the groove and lock the cap portion on the neck. A sealing means is provided by an inwardly extending lip flange 42 which engages the outer surface of an inner skirt 43 which is concentric with the skirt 39. Thus, the cap 38 is provided with an inwardly opening annular socket 44 which receives the neck 31 and the neck and walls of the socket are provided with associated engaging locking and sealing portions. The outer skirt 39 is substantially rigid and will engage the neck extremity as it is positioned in the socket 44 and, if necessary, will flex the neck to cause the sealing lip 42 thereof to engage the inner skirt 43 with an effective sealing contact. Thus, if the neck 31 becomes slightly out-of-round during the curing of the resin thereof, it will be reshaped as it is forced into the socket 44. To facilitate entrance of the neck extremity into the socket, the inner skirt 43 is provided with a beveled surface 46 at its outer surface and inner extremity which serves to cam the extremity of the neck into the socket. As indicated best in FIGURES 5 and 6, locking of the cap 38 on the neck 31 is provided for by the ring 33 snapping into the groove 41 of the outer skirt 39.

As indicated previously and as shown best in FIGURES 5 and 6, the valve mounting and positioning sleeve 45 is slidably telescopically positioned in the guide sleeve 40. Both sleeves are of annular form and concentrically disposed. The sleeve 40 is of uniform diameter throughout its length and the sleeve 45 extends completely through

the sleeve 40 and projects therefrom at both its inner and outer ends. The projecting inner end of the sleeve 45 is provided with an annular radially outwardly projecting stop ring or shoulder 47 which will engage the inner end of the sleeve 40 (FIGURE 6) to limit outward axial relative sliding movement of the sleeve 45 when it is extended to its outermost position. Adjacent the outer projecting end of the sleeve 45 but spaced axially inwardly therefrom, the sleeve is provided with a radially outwardly projecting flange 48 which serves as a finger grip. The inner surface of the guide sleeve 40 is smooth except that it is provided with a series of axially spaced inwardly projecting sealing rings 49 and a sealing and stop ring 51. The latter ring 51 preferably projects inwardly to a greater extent and is located adjacent the inner end of the sleeve whereas a pair of the rings 49 are located axially within the outer end of the sleeve. When the sleeve 45 is retracted into the sleeve 40 (FIGURE 5), all these rings serve as sealing rings between the sleeve 40 and the sleeve 45. When extended (FIGURE 6), the ring 51 will snap into a groove 47b formed ahead of the stop shoulder 47 by a shoulder or ring 47a which has an outer tapered surface with which the ring 51 contacts to help it snap into the groove 47b when the sleeve 45 moves axially outwardly. At this time, the shoulder 47 will contact the inner end of the sleeve 40 and prevent outward movement whereas the ring 51 will snap into the groove and normally prevent axial inward movement of the sleeve 45 relative to the sleeve 40 as well as provide an effective seal between the two sleeves at this location. Thus, the sleeve 45 will be restrained from moving axially in either direction but, if desired, it could be forced back into the sleeve 40, since the ring 51 will yield under sufficient pressure and permit inward passage of the shoulder 47a. The inner surface of the sleeve 45 is mainly smooth and continuous but an inwardly projecting stop shoulder or ring 52 is formed thereon toward the outer end of the sleeve but spaced axially inwardly thereof. In addition, farther toward its outer end there are provided inwardly extending axially spaced sealing rings 53. With the sleeve 45 of the form described, there is a liquid passage 54 formed therein and extending axially completely therethrough.

The valve member 50 is also in the form of an annular sleeve and, as indicated above, is telescopically slidably mounted in the supporting and positioning sleeve 45 and is in concentric relationship thereto. This sleeve has a liquid passageway 56 formed therein and extending axially thereof, being open at its inner end and being closed at its outer end by an integral cap and tab pull 55. This cap can be gripped with the fingers to axially move the valve 50 in the sleeve 45 and is in the form of a projecting flange which is partly semicircular, as indicated in FIGURE 7, but has a radially extending integral arrow or pointer 57. Toward its outer end, the valve member 50 is provided with a dispensing opening 58 leading from the passage 56 with its axis radially disposed. The tip of the arrow 57 is in the same axial plane as the center of the opening 58 and the tip will always point toward that opening. The inner end of the valve member 50 is provided with a radially projecting stop shoulder or ring 59 which is adapted to contact with the shoulder 52 of the surrounding sleeve 45 to limit outward axial movement of the valve sleeve 50 relative to the sleeve 45. It will be noted that the outer surface of the sleeve 50 is of uniform diameter and that the sealing rings 53 and stop ring 52 of surrounding sleeve 45 tightly surround and frictionally engage therewith. Consequently, when the valve 50 is pushed inwardly, it will be frictionally held tightly in sealing engagement with the surrounding sleeve 45 and will be held in its inner sealing and closed position until actually pulled outwardly by means of the tab pull 55.

An important feature of this invention is the formation of the valve assembly so that it is completely sanitary and is provided with means for readily indicating whether or not it has been tampered with before the container

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reaches the consumer. This is particularly important in providing a container and valve assembly for dispensing milk in the home. It is important to provide a tamper-proof seal which is affixed at the filling plant, such as a dairy, and which must be broken in order to open the valve. Also, it is important to prevent any of the valve surfaces, with which the liquid contacts, from contamination and this is accomplished in the present invention by providing what might be termed a shroud arrangement which the liquid will flow at times when it is being dispensing operation.

The one form of shroud arrangement is shown best in FIGURES 5 and 6. As previously indicated, the finger grip flange 48 is spaced axially inwardly or rearwardly of the outer end of the positioning sleeve 45 which provides for an exposed outer end extremity edge, or lip 60 over which the liquid will flow at times when it is being dispensed through the dispensing opening 58 of the valve 50. When the valve member 50 is fully extended, as indicated in FIGURE 6, the opening 58 will be outwardly beyond the edge 60 but as the opening, during the initial outward opening movement of the valve 50, moves over this edge, the liquid will pass over this edge. Consequently, it is important to normally keep this edge shrouded or covered to keep it free of contamination which would be later transmitted to the milk as it is being dispensed. For this purpose, the inner surface of the pull tab 55 is provided with an annular groove or shroud chamber 61 opening axially inwardly and directly surrounding the outer surface of the valve sleeve 50. This chamber 61 is so located and of such size that it will receive the outer edge 60 of the sleeve 45 when the valve 50 is in its closed position, as indicated in FIGURE 5. Thus, at this time the outer end of the sleeve 45 will be enclosed and protected from contamination. It will be noted that at this time (FIGURE 5) the tab 55 is spaced axially from the flange 48. It will also be noted that the flange 48 is spaced axially inwardly or behind the edge 60 so that when the valve 50 is being opened and liquid flows over the edge 60, it will not contact with the flange 48.

The tamper-proof seal according to this invention comprises a suitable seal member connecting the movable valve to a relatively fixed member so arranged that the seal member must be broken when the valve is moved to open position. It is important that this member be readily visible so that it can be readily viewed whether it is intact or separated by breaking or cutting. Thus, in the example given in FIGURES 5 and 6, it is illustrated as a narrow flexible strip 65 which may have its one end anchored to the relatively fixed cap 38. If the container is filled through the open valve, such as in the condition illustrated in FIGURE 6, the seal strip 65 will not be connected to the valve member 50 until the filling is completed and the valve is closed to the position shown in FIGURE 5. Then its free end will be connected to the valve member 50, preferably to the tab 55, so that the valve cannot now be moved axially outwardly unless the connecting seal 65 is broken. The seal strip may be a thermoplastic material and be heat sealed at both ends to the respective relatively axially fixed members 38 and 50. It is shown intact in FIGURES 4 and 8 and broken in FIGURES 9 and 10. It would have to be broken or cut even to move the sleeve 45 axially outwardly. If the container is filled by removing the entire cap 38 and the valve it carries, the seal strip 65 may be connected when the valve is manufactured. Thus, as long as the seal strip 65 is unbroken after the container is filled, there will be a readily visible indication that the valve has not been disturbed. Thus, a tamper-proof seal is provided which will give confidence to the consumer that the container has not been disturbed prior to his receiving it.

Many other tamper-proof seals may be provided but will take the form of a connection between the movable valve member and a relatively fixed point on the valve assembly or container.

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In use of the container and valve assembly described, the container 25 will be filled with the liquid through the valve assembly itself or through the container neck 31 and then the valve assembly 30 will be mounted thereon with the positioning sleeve 45 in its retracted position, as shown in FIGURE 5, at which time the flange 48 contacts with the outer end of the guide sleeve or collar 40. The seal strip 65 will be connected to the valve member 50 at this time and the outer end or lip 60 of the sleeve 45 will be enclosed by the shroud chamber 61 of the pull tab 55. The rings 49 and 51 on the interior of the sleeve 40 will create sufficient frictional force on the sleeve 45 to keep it in its retracted position and will provide a seal between the exterior of the sleeve 45 and the interior of the sleeve 40 intermediate the axial extent of the sleeve 40. The valve sleeve 50 at this time will be pushed inwardly as far as possible with its tab pull 55 spaced axially outwardly from the finger-engaging flange 48, and will tend to stay there. The dispensing opening 58 will be disposed axially inwardly of the outer end of the sleeve 45 and will be covered thereby. In addition, there will be a sealing action between the outer portion of the sleeve 50 and the surrounding sleeve 45 axially outwardly of the opening 58 by the rings 53 on the sleeve 45. Thus, liquid will be prevented from flowing from the passage 56 out through the opening 58. One or more of the containers 25 may be positioned in a case C, as indicated in FIGURE 8, with its bottom 29 resting on the bottom of the case, and it will be noted that the valve assembly 30 will be recessed in the corner pocket 26 so that it will not be damaged by contact with the corner of the case.

When the container reaches the consumer, it is removed from the case and may be supported in dispensing position with its bottom wall 29 resting on a shelf S. The container will be vented at 37 or 37a and care will be taken that the pointer 57 will point straight downwardly, as indicated in FIGURE 7, to insure that the dispensing opening 58 is lowermost so that liquid will flow downwardly properly from the container when the valve is opened. The axis of the valve member 50 will now be horizontal and its outer or tab end 55 will be in substantially vertical alignment with the outer edge of the shelf, as indicated by broken lines in FIGURE 9. However, to properly position the valve for dispensing without interference with the shelf, the positioning sleeve 45 is pulled outwardly to the full line position indicated in FIGURE 9. This can be accomplished by gripping the flange 48 and pulling axially outwardly on the sleeve 45 to overcome friction at the ring 49 and move the sleeve outwardly until the ring 51 of the guide sleeve 40 snaps into the locking groove 47b of the sleeve 45, as shown in FIGURE 6. However, before the sleeve 45 can be moved axially outwardly, the seal strip 65 must be broken or cut. At this time, the flange 48 will be outwardly beyond the edge of the shelf but the dispensing opening 58 will still be covered by the sleeve 45 since the valve sleeve member 50 will still be in its inner position retracted into the sleeve 45 and no liquid can escape since the opening 58 is closed and there is a tight seal outwardly beyond the opening produced by the sealing rings 53 within the outer portion of the sleeve 45 on the outer portion of the sleeve 50. At this time, the edge or lip 60 of the sleeve 45 is enclosed and protected by the shroud chamber 61. To dispense the liquid, the pull tab 55 is now grasped with the fingers and the valve sleeve 50 is pulled axially outwardly, as indicated in FIGURE 10, to overcome the frictional action between it and the surrounding sleeve 45, which is also a guide sleeve for the valve sleeve, and the downwardly directed opening 58 will be moved to a dispensing position which will be well beyond the outer edge of the shelf S. This will facilitate positioning of a receiving cup or tumbler T therebelow to receive the gravity flow of liquid discharging through the outlet opening 58. As the valve sleeve member 50 is pulled outwardly and the opening 58 moves over the lip

61, liquid will flow over the lip but this lip has been previously covered and protected from contamination. At this time, there will be a seal behind the opening 58 provided by the rings 53 (FIGURE 6) so that there will be no leakage between the two sleeves 45 and 50. The broken or cut strip 65 will now indicate clearly that the valve has been disturbed either by moving the positioning sleeve 45 or the dispensing valve sleeve 50.

When it is desired to again close the valve, the fingers of one hand can straddle the projecting sleeve 45 behind the flange 48 and the thumb can push inwardly on the tab 55 to move the valve sleeve 50 back into the sleeve 45 in a closed and sealed position. At this time, the edge 61 will again be shrouded and protected by the chamber 61.

Although the valve assembly 30 may be made inexpensively of plastic so that it is economic to discard it with the container 25, it could be made of different material and be reusable. In that case, it would be removed from the container when the container is discarded and be used over-and-over again on other full containers.

It will be apparent from the above that this invention provides an axially slidable valve assembly on a container normally sealed with a tamper-proof seal associated therewith to readily indicate whenever the valve is opened. The valve can be opened readily for dispensing the liquid but all surfaces with which the liquid contacts during dispensing are protected from contamination. Also, the container is preferably so formed that the valve assembly is angularly in a recessed corner for protection but it can be extended outwardly for the dispensing operation.

Having thus described this invention, what is claimed is:

1. A dispensing package comprising a container and a dispensing valve assembly mounted thereon, said container being of a semi-rigid material and a selected contour surface and having a recess formed in the surface thereof within said surface, an outlet for the container at said recess through which it may be filled and through which the contents of the container may discharge having a connecting axially fixed guide-sleeve portion extending outwardly from said outlet but disposed within said recess so as not to project beyond the adjacent contour surface of the container, said valve assembly comprising a valve member in the form of a hollow valve sleeve having a closed outer end and an open inner end, with a dispensing opening leading radially outwardly therefrom adjacent the outer end of said sleeve, a positioning sleeve open at both its inner and outer ends in which said valve sleeve is slidably disposed for axial telescopic movement between a retracted position where said dispensing opening thereof is within and closed by the positioning sleeve and an extended position where the opening is outwardly beyond the outer end of the positioning sleeve in opened position, said positioning sleeve being mounted for axial sliding telescopic movement within said guide-sleeve portion for movement between a retracted and an extended position so that when the valve sleeve is in retracted condition within the positioning sleeve and the positioning sleeve is in retracted position within said guide-sleeve portion so that when the valve sleeve will be disposed within said recess and the associated contour surface of the container but when the positioning sleeve is extended outwardly of the guide sleeve portion, the outer end of it will be outwardly positioned out of said recess and outwardly of said contour surface to facilitate telescopic sliding movement of the valve sleeve in the positioning sleeve and so that when the valve sleeve is extended outwardly of said positioning sleeve into dispensing position, the dispensing opening thereof will also be located outwardly of said recess and the associated contour surface to facilitate positioning of a receiving receptacle relative thereto, said positioning sleeve and said guide sleeve portion having interfitting portions to hold the positioning sleeve in its extended outermost axial position relative to said guide sleeve por-

tion, said contour surface of the container including a vertical wall and a horizontal bottom wall with the recess being located between said walls to include as a portion thereof an angular transversely extending inner connecting wall joining said walls, said outlet being located along said angular connecting wall portion intermediate the extent thereof with the connected guide sleeve portion having its axis substantially parallel to the horizontal plane of the said container bottom wall, and a tamper-proof seal for indicating when said hollow valve sleeve is moved outwardly, said seal comprising a seal member connected between said axially movable valve sleeve and a portion axially fixed relatively on the container which must be disturbed to move said valve sleeve axially outwardly, said seal comprising a seal strip connected between said fixed portion on the container and the outer end of the valve sleeve so that it must be disturbed upon movement of either the positioning sleeve or the valve sleeve axially outwardly relative to said guide sleeve, said container being provided with an outwardly projecting neck surrounding said outlet on said angled wall having its axis normal to said angled wall and having an outer open end which is inwardly within said vertical plane of said vertical wall, and means for mounting the guide sleeve portion on said neck, said means comprising a flanged cap sealingly engaging the outer end of said neck and carrying said guide sleeve portion with its axis at an angle to said cap so that the guide sleeve portion will have its axis parallel to the horizontal plane of the said container bottom wall and normal to the plane of the said container vertical wall, said seal strip being connected between the outer end of said valve sleeve and said flanged cap.

2. A dispensing package comprising a container and a dispensing valve mounted thereon, said container being of a semi-rigid material and a selected contour surface and having a recess formed in the surface thereof within said surface, an outlet for the container at said recess through which it may be filled and through which the contents of the container may discharge having a connecting axially fixed guide-sleeve portion extending outwardly from said outlet but disposed within said recess so as not to project beyond the adjacent contour surface of the container, said valve assembly comprising a valve member in the form of a hollow valve sleeve having a closed outer end and an open inner end, with a dispensing opening leading radially outwardly therefrom adjacent the outer end of said sleeve, a positioning sleeve open at both its inner and outer ends in which said valve sleeve is slidably disposed for axial telescopic movement between a retracted position where said dispensing opening thereof is within and closed by the positioning sleeve and an extended position where the opening is outwardly beyond the outer end of the positioning sleeve in opened position, said positioning sleeve being mounted for axial sliding telescopic movement within said guide-sleeve portion for movement between a retracted and an extended position so that when the valve sleeve is in retracted condition within the positioning sleeve and the positioning sleeve is in retracted position within the guide sleeve portion, the outer end of the valve sleeve will be disposed within said recess and the associated contour surface of the container but when the positioning sleeve is extended outwardly of the guide sleeve portion, the outer end of it will be outwardly positioned out of said recess and outwardly of said contour surface to facilitate telescopic sliding movement of the valve sleeve in the positioning sleeve and so that when the valve sleeve is extended outwardly of said positioning sleeve into dispensing position, the dispensing opening thereof will also be located outwardly of said recess and the associated contour surface to facilitate positioning of a receiving receptacle relative thereto, said positioning sleeve and said guide sleeve portion having interfitting portions to hold the positioning sleeve in its extended outermost axial

position relative to said guide sleeve portion, said contour surface of the container including a vertical wall and a horizontal bottom wall with the recess being located between said walls to include as a portion thereof an angular transversely extending inner connecting wall joining said walls, said outlet being located along said angular connecting wall portion intermediate the extent thereof with the connected guide sleeve portion having its axis substantially parallel to the horizontal plane of the said container bottom wall, said positioning sleeve having a lip at its outer end over which the contents from the container may flow during axial sliding movement of the valve sleeve, and a shroud chamber at the outer end of the valve sleeve for enclosing said lip when the valve sleeve is in its inward position within said positioning sleeve, said valve sleeve has an outwardly extending cap and pull flange on its outer end which has the shroud chamber formed therein in the form of an axially inwardly opening annular groove surrounding the valve sleeve for enclosing said lip, said positioning sleeve having an outwardly projecting flange serving as a finger grip spaced axially inwardly from said lip so that when the valve sleeve is in its retracted position within the positioning sleeve, the respective flanges thereof will be axially spaced.

3. A dispensing package comprising a container and a dispensing valve assembly mounted thereon, said container being of a semi-rigid material and a selected contour surface and having a recess formed in the surface thereof within said surface, an outlet for the container at said recess through which it may be filled and through which the contents of the container may discharge having a connecting axially fixed guide-sleeve portion extending outwardly from said outlet but disposed within said recess so as not to project beyond the adjacent contour surface of the container, said valve assembly comprising a valve member in the form of a hollow valve sleeve having a closed outer end and an open inner end, with a dispensing opening leading radially outwardly therefrom adjacent the outer end of said sleeve, a positioning sleeve open at both its inner and outer ends in which said valve sleeve is slidably disposed for axial telescopic movement between a retracted position where said dispensing opening thereof is within and closed by the positioning sleeve and an extended position where the opening is outwardly beyond the outer end of the positioning sleeve in opened position, said positioning sleeve being mounted for axial sliding telescopic movement within said guide-sleeve portion for movement between a retracted and an extended position so that when the valve sleeve is in retracted condition within the positioning sleeve and the positioning sleeve is in retracted position within the guide sleeve portion, the outer end of the valve sleeve will be disposed within said recess and the associated contour surface of the container but when the positioning sleeve is extended outwardly of the guide sleeve portion, the outer end of it will be outwardly positioned out of said recess and outwardly of said contour surface to facilitate telescopic sliding movement of the valve sleeve in the positioning sleeve and so that when the valve sleeve is extended outwardly of said positioning sleeve into dispensing position, the dispensing opening thereof will also be located outwardly of said recess and the associated contour surface to facilitate positioning of a receiving receptacle relative thereto, said positioning sleeve and said guide sleeve portion having interfitting portions to hold the positioning sleeve in its extended outermost axial position relative to said guide sleeve portion, said contour surface of the container including a vertical wall and a horizontal bottom wall with the recess being located between said walls to include as a portion thereof an angular transversely extending inner connecting wall joining said walls, said outlet being located along said angular connecting wall portion intermediate the extent thereof with the connected guide

sleeve portion having its axis substantially parallel to the horizontal plane of the said container bottom wall, a tamper-proof seal for indicating when said hollow valve sleeve is moved outwardly, said seal comprising a seal member connected between said axially movable valve sleeve and a portion axially fixed relatively on the container which must be disturbed to move said valve sleeve axially outwardly, said positioning sleeve having a lip at its outer end over which the contents from the container may flow during axial sliding movement of the valve sleeve, and a shroud chamber at the outer end of the valve sleeve for enclosing said lip when the valve sleeve is in its inward position within said positioning sleeve, said seal comprising a seal strip connected between said fixed portion on the container and the outer end of the valve sleeve so that it must be disturbed upon movement of either the positioning sleeve or the valve sleeve axially outwardly relative to said guide sleeve, said container being provided with an outwardly projecting neck surrounding said outlet on said angled wall having its axis normal to said angled wall and having an outer open end which is inwardly within said vertical plane of said vertical wall, and means for mounting the guide sleeve portion on said neck, said means comprising a flanged cap sealingly engaging the outer end of said neck and carrying said guide sleeve portion with its axis at an angle to said cap so that the guide sleeve portion will have its axis parallel to the horizontal plane of the said container bottom wall and normal to the plane of the said container vertical wall, said seal strip being connected between the outer end of said valve sleeve and said flanged cap.

4. A dispensing package according to claim 3 in which said valve sleeve has an outwardly extending cap and pull flange on its outer end which has the shroud chamber formed therein in the form of an axially inwardly opening annular groove surrounding the valve sleeve for enclosing said lip, said positioning sleeve having an outwardly projecting flange serving as a finger grip spaced axially inwardly from said lip so that when the valve sleeve is in its retracted position within the positioning sleeve the respective flanges thereof will be axially spaced.

5. A dispensing valve assembly comprising a flanged cap portion adapted to be mounted on a container from which liquid is to be dispensed, said cap portion having a guide sleeve portion thereon which is open at both its inner and outer ends, a positioning sleeve slidably mounted in said guide sleeve portion for axial movement between an inner retracted position and an outer extended position, said positioning sleeve having an outer open end with an annular lip thereto and a radially outwardly projecting pull flange which is spaced axially inwardly from said lip and which contacts with the outer end of said guide sleeve portion to limit axial inward telescopic movement thereinto, interengaging portions between said positioning sleeve and said guide sleeve tending to hold the positioning sleeve in its extended position relative to the guide sleeve, a valve sleeve slidably mounted in said positioning sleeve for axial movement having an open inner end and a closed outer end and having a radially directed dispensing opening in its side toward its outer end, said outer end having a radially outwardly projecting pull flange which has an axially inwardly opening annular groove formed therein surrounding the valve sleeve and adapted to receive the lip on the positioning sleeve when the valve sleeve is in closed retracted position within the positioning sleeve where the valve sleeve dispensing opening is covered, interengaging stop means between the positioning sleeve and the valve sleeve for limiting the axial outward movement of the valve sleeve relative to the positioning sleeve to expose said dispensing opening, and a tamper-proof seal member comprising a seal strip connected between the outer end of said valve member and said cap portion

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which must be disturbed whenever the positioning sleeve or valve sleeve or both are moved axially outwardly relative to the cap portion.

6. A dispensing valve assembly according to claim 5 in which the cap portion is of disc-like form and is adapted to fit over an annular neck on the container, said guide sleeve portion being of annular form and angularly displaced on the cap so that the axis of the cap and the axis of the guide sleeve portion are angularly displaced relatively.

References Cited

UNITED STATES PATENTS

1,006,078	10/1911	Fulford	222—523
1,296,341	3/1919	Towle	222—541 X
1,912,304	5/1933	Phillips	222—523 X
2,066,889	1/1937	Kay	22—553 X

12

2,772,037	11/1956	Rieke	222—48
2,790,582	4/1957	Halpern	222—484 X
3,089,622	5/1963	Westlake	222—541 X
3,117,701	1/1964	Stull	222—153 X
3,173,579	3/1965	Curie et al.	222—105
3,220,657	11/1965	Nyden	222—522 X
3,315,850	4/1967	Gran	222—540 X

FOREIGN PATENTS

10 617,479 2/1961 Italy.

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15 222—523, 540, 566