

[54] **COVER FOR DECANTER OR LIKE LIQUID DISPENSING CONTAINER**

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Related U.S. Application Data

[63] Continuation of Ser. No. 342,232, March 16, 1973, abandoned, which is a continuation-in-part of Ser. No. 189,454, Oct. 14, 1971, Pat. No. 3,739,957.

[52] U.S. Cl. 222/475, 222/570

[51] Int. Cl. A47g 19/14

[58] Field of Search 222/191, 40, 465, 470, 222/475, 546, 570; 215/13 R, 13 A, 73, 74, 78, 96, 100 A

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[57]

ABSTRACT

Removable cap, having a pouring spout thereon, fits, snugly over straight-necked decanters or like fluid dispensing containers, has integral skirt or tubular side wall of sufficient length to serve as unobtrusive handle to be gripped in the hand of user for pouring purposes without direct contact with neck of container. Skirt has integral inner lip at an intermediate level between an upper portion and a lower portion forming peripheral recess for yielding reception of top edge of container neck, thereby to hold cap in place for such pouring. The cap may be provided, if desired, with closure means normally closing spout opening which has no springs or other bulky protruding parts, and is operable by finger pressure of the hand used for gripping skirt to support container for said pouring purposes.

14 Claims, 9 Drawing Figures

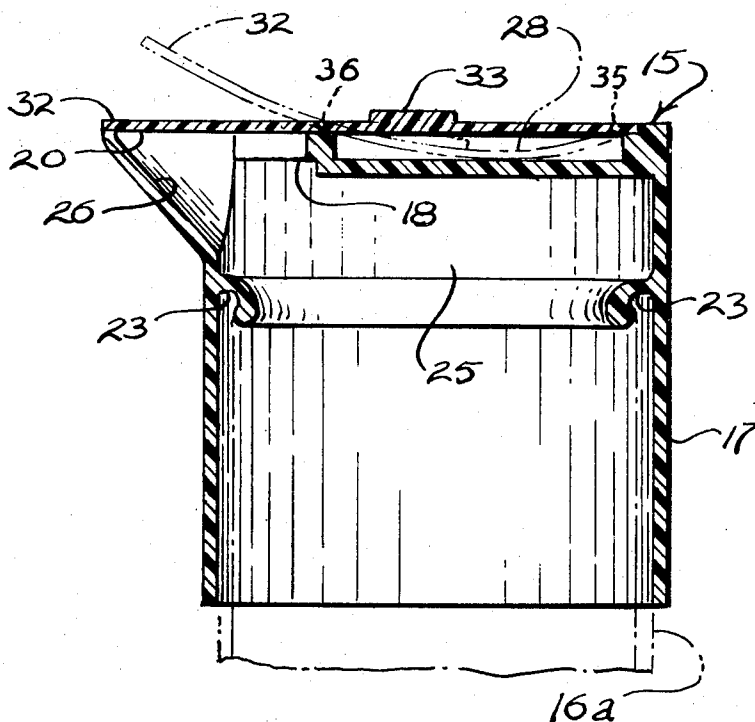


Fig. 2

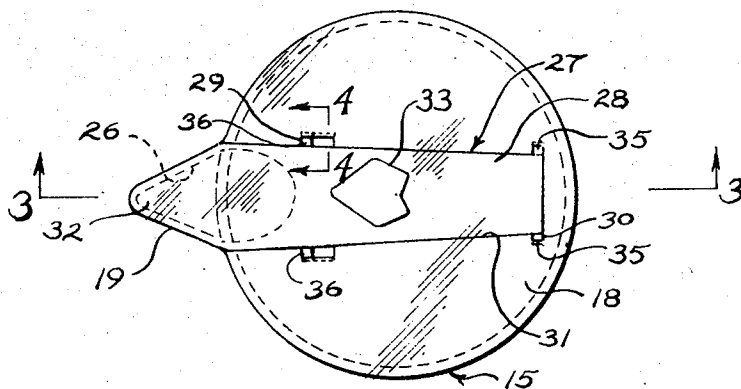


Fig. 1

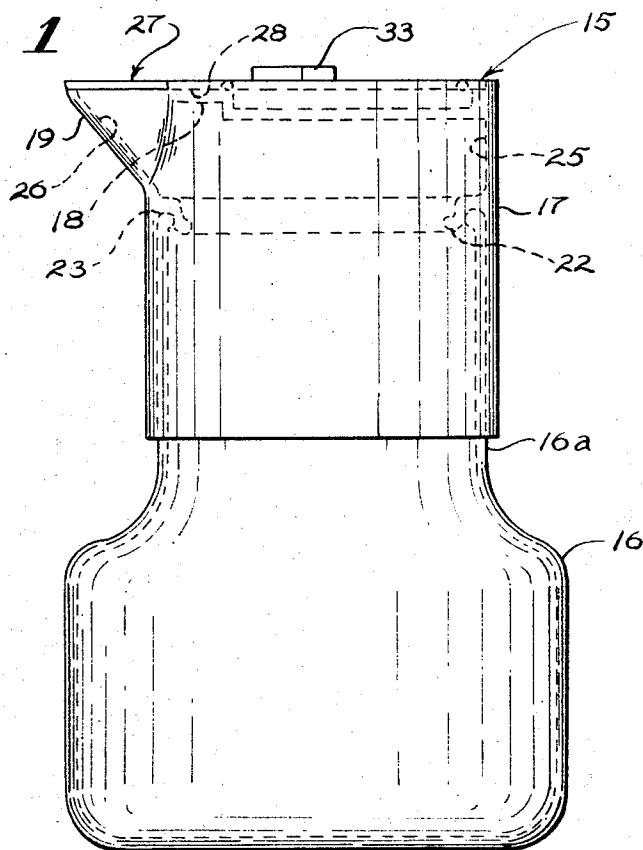


Fig. 5

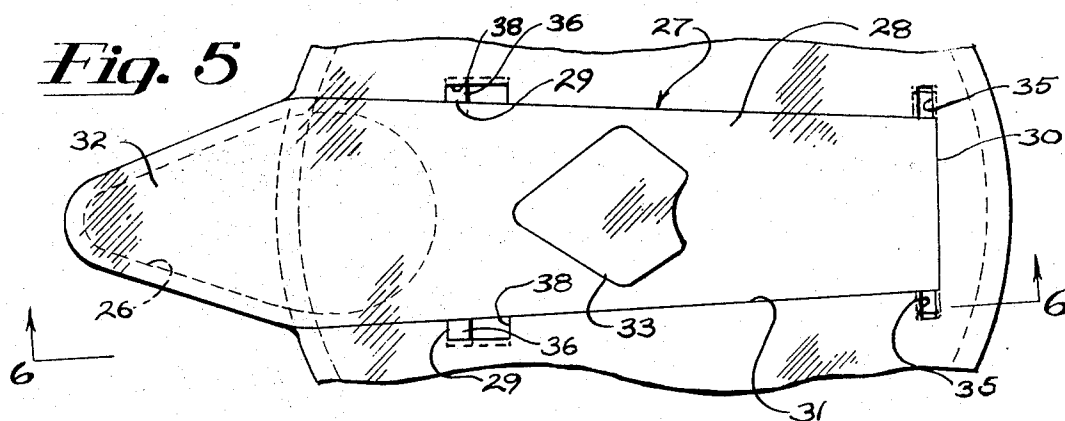


Fig. 6

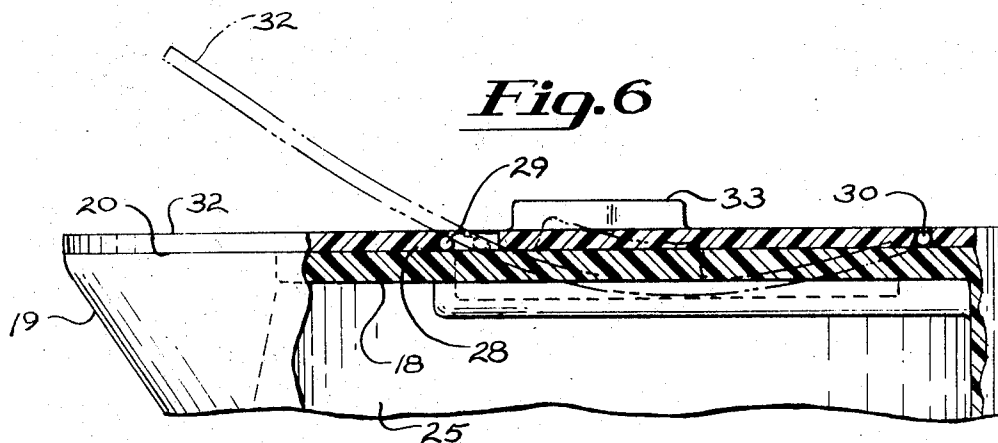


Fig. 3

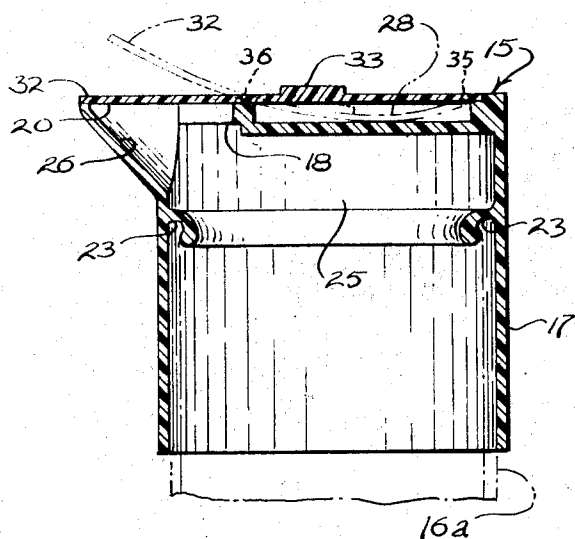


Fig. 4

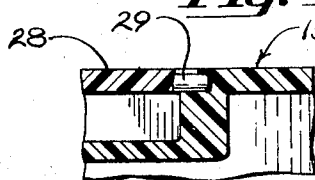


Fig. 7

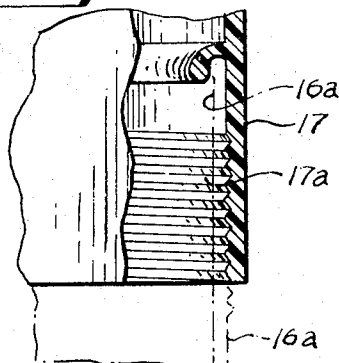


Fig. 8

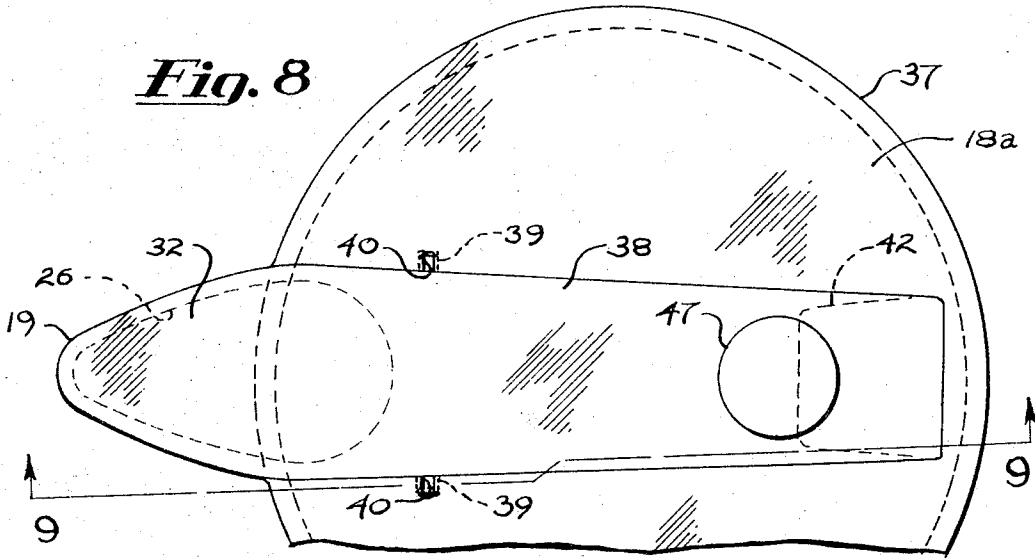
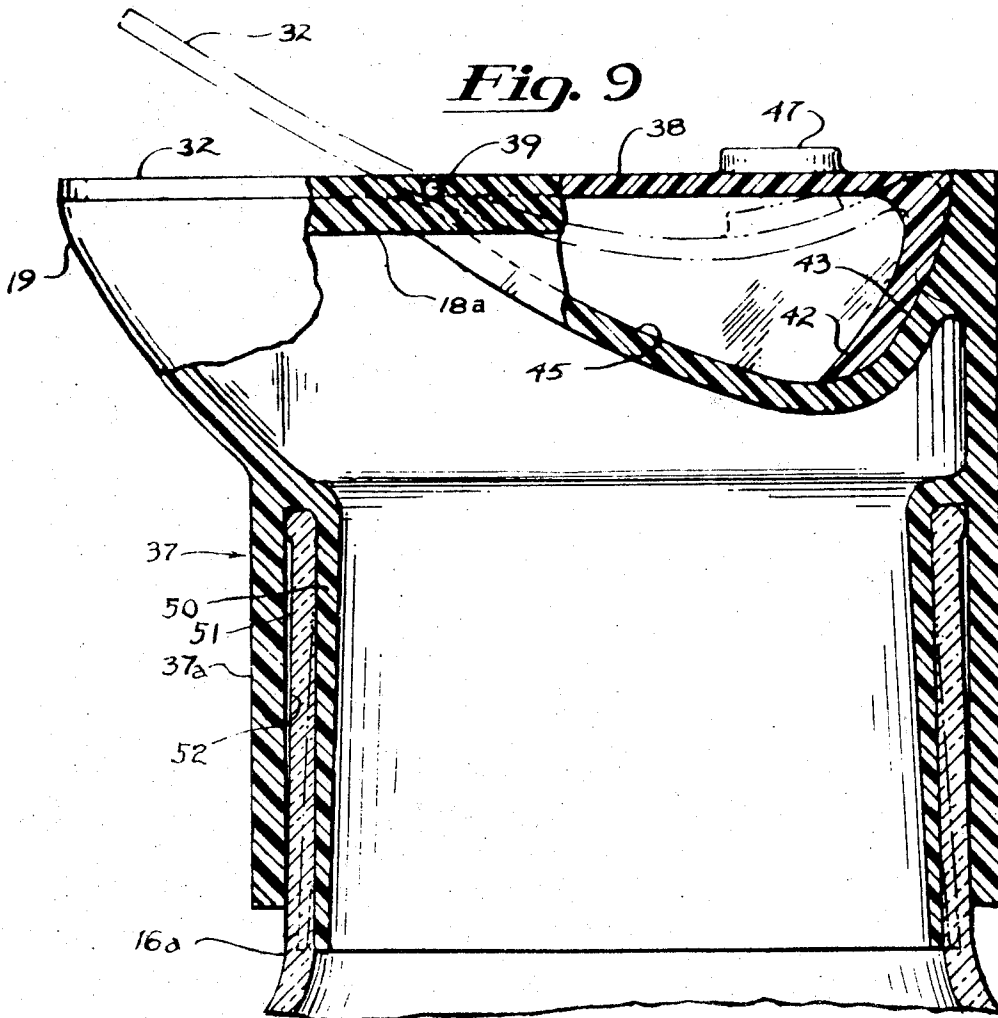


Fig. 9



COVER FOR DECANter OR LIKE LIQUID DISPENSING CONTAINER

This application is a continuation of application Ser. No. 342,232, filed Mar. 16, 1973, now abandoned, which was a continuation-in-part of application Ser. No. 189,454, filed Oct. 14, 1971, now U.S. Pat. No. 3,739,957, issued June 19, 1973.

The present invention relates to a cover or dispensing cap adapted for use with decanters and like liquid containers to which it may be removably attached in fluid tight relation for dispensing the liquid contents by pouring from the container through the cap.

BACKGROUND OF INVENTION

While there are numerous prior patents which show pouring spout caps for containers, the best known prior art on the subject fails to disclose the spout cap of the present invention.

Pierrio et al., U.S. Pat. No. 3,212,686, as a typical example, discloses a plastic, screw-top closure cap having a pouring spout and a large integral handle on the same, and a hinged closure strip for the pouring spout. The closure strip, however, is opened by having a long protruding, integral lever for manipulation thereof, and also requires provision of an elongated, integral attaching lug which is snapped into spaced edges on the cap portions, whereby in use of the device the closure strip is subject to breakage at the pivot point of the same.

The removable cover or dispensing cap of the present invention, on the other hand, has a tubular side wall or skirt which is handle free and the cap has no substantial protrusions of any kind other than an optional small button on a closure plate to show where to press to open a pouring spout. The cap is made of a suitable plastic material, e.g., molded, of grasping length, i.e., the side wall is long enough to be supportively grasped as by the thumb and fingers of a hand of the user without coming into contact with the wall of the container to which it is attached in fluid tight relation. In other words, there are no protruding parts on the container cap of the present invention such as handles, levers, spring-actuated mechanisms and/or housings for the same, and there are no metal or other sliding closure parts to be gummed up by the dispensed liquids.

SUMMARY OF INVENTION

The present invention relates to an improved pouring spout or dispensing cap, as for containers such as decanters having elongated tubular necks that are generally straight at least at the end over which the cap fits in fluid tight relation. Caps made in accordance with the invention are relatively inexpensive to produce by known plastic molding methods. The cap may be of molded plastic having an elongated tubular skirt or side wall having upper and lower ends, an upper portion extending upwardly from an intermediate level to the upper end provided with an upwardly opening pouring spout protruding radially of the side wall and a lower portion extending downwardly from the intermediate level to the lower end constructed and proportioned for relatively tight application, i.e., with at most an annular air space of relatively short radial length between the wall and neck, over a substantial extent of the neck of the container with the upper end of the neck yieldingly received in an annular groove, defined by an integral lip having a wall extending inwardly of the skirt at the

intermediate level and then downwardly to form a fluid seal therewith. The skirt or side wall serves as a protective handle for the container, without having protuberances of the objectionable character described in the prior art.

A closure device for the opening in the pouring spout may be provided with a cover plate mounted in the upper end of the side wall for movement around an intermediate axis to open the spout against yielding means normally biasing it to spout closing position by pressing on the cover behind the axis of movement. One embodiment of cover may include an elongated closure plate of thin, semi-hard, but somewhat flexible plastic material of well known types, seated in a recess formed or molded in a top wall. The closure plate may have aligned pins or stems at the end of the same opposite from the spout, i.e., at the back or rear end, which have been snapped into transversely undercut aligned pivot recesses in the top wall at opposite sides of a plate, and within which recesses the plate is complementally received to pivot as necessary. Intermediate the spout opening and said aligned pivot recesses, i.e., at an intermediate axis of movement, the top wall similarly may have a pair of transversely elongated notches provided therein to define laterally undercut, transversely extending guide edges, under which another pair of laterally aligned, integral stems are snapped to hold the closure plate locked flatwise in the plane of the top wall. The upper portion has a space into which the rear portion of the cover plate may be depressed within the side wall to lift the front end, e.g., in the embodiment disclosed the top wall also may have formed therein a shallow chamber which is normally closed at the top by the elongated strip overlying the same.

By yieldingly depressing the rear portion of the cover plate into the space within the side wall, e.g., the flexible strip into said shallow chamber, to an extent determined by the movement of the pivot pins in the aforesaid elongated notches, the forward free end of the cover plate is tilted upwardly. This operation is accomplished by pressing the index finger of one hand against the back end of the cover plate behind the axis of movement while grasping the cap sleeve in the same hand, as for pouring fluid from the spout of the decanter.

A general object of the invention is to provide an improved cap, as for fluid containers of the character described, utilizing inexpensive parts, and which includes novel means for attaching the cap to the neck of the container in fluid tight relation so that liquid contents in the container to which a cap is removably applied can be poured from a pouring spout on said cap which does not require provision of bulky mechanisms and/or protruding handles.

Other objects of the invention will be manifest from the following brief description and the accompanying drawings:

Of the accompanying drawings:

FIG. 1 is a side elevation illustrating one form of improved pouring spout cap of the invention, applied over the tubular neck of a glass or like fluid container or decanter.

FIG. 2 is a top plan view of the cap shown in FIG. 1, on the same scale, to illustrate an optional form of a manually operable valvular plate for a pouring spout on the cap.

FIG. 3 is a vertical cross-section through the cap, taken substantially on the line 3—3 of FIG. 2, and on the same scale.

FIG. 4 is a fragmentary vertical cross-section, taken substantially on the line 4—4 of FIG. 2, on a larger scale, to illustrate a relatively fixed, but selectively releasable, hinge pin connection between the valvular plate and the cap.

FIG. 5 is a fragmentary top plan view corresponding in part to FIG. 2, but on a larger scale.

FIG. 6 is a vertical section starting at the side walls on the line 6—6 of FIG. 5, then deviating (a) at the upper part to pass through the cover plate except that the pins and slots are on line 6—6 and (b) at the lower part to pass through the top wall away from a depressed area, and on the same scale, to illustrate the manner of releasably mounting the valvular plate for manual operation thereof to open and close the pouring spout.

FIG. 7 is a fragmentary cross-section, corresponding to the lower right-hand portion of FIG. 3, but on a larger scale, illustrating provision of an internal screw thread means on the cap skirt for threaded connection of the cap on the neck of a decanter having corresponding external thread means.

FIG. 8 is a top plan view, corresponding to FIG. 5, on the same scale, and illustrating a modified form of spout valving means for the container cap.

FIG. 9, is a vertical section, in the area as viewed along the line 9—9 of FIG. 8, and also on the same scale as FIG. 8 with a portion of the spout wall broken away to show its structure.

Referring to FIGS. 1 to 6, of the drawings, there is illustrated a cup-shaped cap 15 for removably fitting over a tubular neck 16, of a glass or like decanter 16. The cap 15 may comprise a molded axially elongated tubular skirt or side wall 17, molded of hard or semi-hard plastic material, having spaced upper and lower ends, an integral closure wall 18 for the upper end, and an integral upwardly and outwardly diverging pouring spout 19 which protrudes radially of the skirt 17, starting at a point near an intermediate level between an upper portion and a lower portion of tubular wall 17, to have an upper edge that may lie in a plane generally parallel with the closure wall 18, and adapted, if desired, for serving as a valving seat 20. The side wall or skirt 17 between the spaced upper and lower ends is of grasping length, i.e., it is of sufficient length to be gripped in one hand and thereby serve as an insulating handle for the decanter but is itself handle free. Means for removably attaching the cap over the neck of the container includes an annular lip 22 integrally molded on the inner surface of the skirt, at an intermediate level below closure wall 18 and approximately at the point where the spout starts, to define an annular groove 23 between the lip and said inner surface of the tubular wall for tight fluid-sealing reception of the upper edge of the decanter neck in the groove, against the yielding resiliency of the lip. The space between the lip 22 and closure wall 18 serves as a relatively unobstructed chamber 25 in the upper portion communicating directly with the pouring spout aperture 26.

Referring to FIGS. 1 and 3, it will be seen that the groove 23 is formed by a transverse wall integral with and extending inwardly from side wall 17 which forms the bottom of the groove and an integral sleeve extending downwardly from the transverse wall which forms the lip 22. The lower end of the interior wall of lip 22

is flared away from wall 17 to provide a somewhat funnel shaped opening into groove 23 so that the cap can be forced down onto the neck of a container to seat the upper end within the groove with the part of the inner wall of lip 22 having minimum clearance from wall 17 tightly engaging the inner wall of the neck and forming therewith a liquid tight seal.

The removable cover or handle free dispensing cap as thus described is one embodiment of the invention, whether or not a cover plate is used for selectively closing and opening the spout. The wall 18 serves as a closure wall for the upper portion of the cap so that liquid in a container to which the cap is attached as described is directed toward the pouring spout when the user grasps the side wall 17 and tilts the container to pouring position. The liquid flows over the inner surface of the lip 22 into chamber 25 but not between the lip and the neck of the container because of the fluid tight contact of the inner surface of lip 22 against the inner surface of the neck. The wall 18 is so contoured adjacent to the spout, e.g., as shown in the arcuate dotted line in FIGS. 1 and 5, as to leave an opening of desired size near the spout through which to pour the liquid from the container.

In the event a spout closure means is desired for the dispensing cap, a satisfactory structure for one type is illustrated in FIGS. 1, 2, 5 and 6 in general and to FIGS. 5 and 6 in particular, showing a simple and yet very efficient and economical valvular means 27 for manually opening and closing the spout aperture 26. For this purpose a plate 28 of resilient material, such as molded semi-hard, synthetic elastic plastic, is hingedly mounted on hinge axes at an intermediate point 29 and at the rear end 30 to and within a recess 31 in the closure wall 18, with an integral closure extension 32 normally engaging said valving seat 20 for closing the spout aperture 26. Plate 28 is thus yieldingly supported flatwise and complementally fitted within recess 31.

For manually opening and closing the valvular plate 28, one said hinged mounting may be provided with means to permit relative movement toward the other, whereby upon manual pressure of a finger against a button 33 on the plate 28, intermediate the spaced hinge axes, the portion of the plate behind the intermediate axis and in front of the rear axis is bowed inwardly to move the closure extension 32 in front of the intermediate axis outwardly of the spout opening 20 for pouring purposes, as shown in chain-dotted lines in FIGS. 3 and 6.

In the form of the invention as best shown in FIGS. 5 and 6, the fixed hinge connection is at the right hand end 30 of the plate 28 and includes laterally spaced pivot pins integral with the plate 28, and which are yieldingly pressed past undercut spaced edges of slots 35, 35 provided in the closure wall 18, at the opposite edges defining the plate-receiving recess 31. The intermediate hinge connection at point 29 comprises similar pivot pins 36, 36 which are yieldingly pressed past spaced undercut edges of transversely elongated slots 38 at opposite sides of the plate. By manually depressing a button 33 on the plate, at a point intermediate the spaced hinge axes, resultant movement of the movable pins, in direction toward the fixed hinge point pins, causes the closure plate between the axes to be bowed downwardly, thereby to elevate the valving end 32 to open position, as shown in chain-dotted lines in FIGS. 3 and 6.

The top wall 18 may have a depressed wall portion formed thereon, to provide a closed recess into which the valvular plate 28 can be bowed without exposure to fluid being poured from the container. The bottom wall portion may also serve to limit the extent to which the portion of plate 28 between the hinge axes can be depressed.

Thus, with the cap 15 affixed on the neck of 16_a of the decanter 16, the skirt portion 17 can be grasped in one hand at various points for pouring purposes, because there are no handles or other protruding parts obstructing use of the thumb and at least a finger other than the index finger to grasp the side wall 17 and to use the index finger to press the button 33 for operating the valvular plate 28.

Referring to FIG. 7, there is illustrated a modification of the closure cap 17 shown in FIG. 3, in which an internal thread 17_a is provided for use on containers having necks 16_a provided with complementally externally threaded portions.

Referring now to FIGS. 8 and 9, there is illustrated a cap 37 having a modified closure plate for attachment to a decanter having a neck 16_a generally as shown in FIGS. 1 to 3 and 7. Like parts, therefore will be designated by like numbers unless otherwise noted. In this embodiment there is provided a thin yieldingly flexible valvular plate 38 having the same general shape and location as the plate 28 shown in FIG. 5 with axially aligned pivot pins 39, 39 releasably received in undercut slots 40, 40 in the top wall 18_a in the manner that the fixed hinge pins at end 30 are received in undercut slots 35 in FIG. 5. The end of the plate 38 opposite the spout end thereof, however, has an integral lug or flange 42, which curves downwardly and inwardly, and nestles snugly in a complementally shaped portion 43 of a wall 44 defining a curvate recess 45 in the top wall 18_a of the closure cap 37.

A suitably positioned button 47 on the closure plate 38 is manually yieldingly depressible as before, to bow the closure plate inwardly between the relatively fixed intermediate axis formed by the axially aligned pivot pins 39 and the top of the lug 42 which acts as a movable rear hinge axis. The yieldingly flexible area between these axes determines the extent of the downward bowing movement of the plate and, therefore, the amount of upward pivotal opening movement of the closure end 32 of the valvular plate in front of the intermediate axis, as shown in chain-dotted lines in FIG. 9. In other words, the lug 42, while serving as an anchoring but movable pivot for the rear end of plate 38, cooperates with the resiliency of the device for holding the valvular plate 38 in its closed, horizontal position as shown and to determine the degree of spout opening movement of the plate by the amount of bowing movement thereof, as described above.

Referring further to FIG. 9 in particular, there is illustrated another embodiment of snap-on means which serves a function similar to lip 22 and annular groove 23 in providing for tight fluid-sealing reception of the decanter neck 16_a therein as previously described in conjunction with FIGS. 1, 3 and 7. In the embodiment of FIG. 9 the cap 37 is formed or molded with an integral, resilient, annular sleeve 50, extending downwardly from the transverse wall within the side wall 37_a of the lower portion of the cap 37 to define an annular groove 51 of substantial axial extent, for tight yielding reception of a corresponding substantial extent of the

tubular bottle neck 16_a. The inner, groove-defining sleeve 50 may be extended beyond the lower end of the side wall 37_a, thereby to serve as guide means for inserting the cap onto the bottle neck, against the resiliency of the sleeve 50. This function of the resilient sleeve 50 will be facilitated by tapering the same downwardly, and making it radially and axially outwardly flared, as shown in the dotted lines in FIG. 9, to seal tightly against the inner surface of the neck 16_a. It is readily apparent, however, that the inner sleeve 50 can be relied upon to grip and fluid-seal the cap on the bottle neck 16_a, independently of the side wall or skirt 37_a of the lower portion of the cap. In some instances it would also be advantageous to enlarge the inside diameter of the skirt 37_a with relation to the outside diameter of the neck to make the annular space between the inside surface of the skirt and the outside surface 52 of the bottle neck 16_a of greater radial length than described above so as to provide a larger insulating air space and thereby prevent said skirt from becoming too hot for holding the same between the fingers when, for example, the container is utilized for dispensing hot coffee, and, as seen in FIG. 9, this radial length need not be uniform over the length of the skirt. Also, the sleeve 50 can be made axially curvate, at least on the surface facing groove 51, to provide a zone of line or relatively narrow band contact between the skirt and the neck at some level, e.g., at the outer end thereof so that the pressure at this zone against the interior of the bottle neck will assure a tight, fluid-sealing engagement.

It should be particularly noted that, as compared with the known related prior art pouring spout caps for decanters, each of the several forms of closure caps of the present invention need only to be composed of one part, and optionally two parts, each of which can be economically produced, by plastic molding methods, in multiple cavity molds. The improved closure caps, moreover, in which two parts are used can be easily assembled, with a minimum of labor and other costs, because the valvular plates can be quickly snapped into the above described hinging connections in the cap body, ready for immediate attachment of the assembled caps to decanters.

Further in reference to FIGS. 1, 3 and 7, it should be noted that the strong yielding contact between the upper end of the container neck 16_a and lip 22 serves effectively to seal against outward passage of liquid from the bottle 16 between the lip and the neck. In the related FIG. 9 structure is readily apparent that the tubular sealing sleeve 50 is adapted yieldingly to engage the inside surface of the container neck 51 likewise to seal against outward passage of liquid between the sleeve 50 and neck 16_a. Accordingly, it is self-evident that the annular groove 23 as shown in FIGS. 1, 3 and 7, and the groove 51 in FIG. 9, can be of greater radial widths than the thickness of the container neck 16_a as for providing a skirt of larger girth or diameter to avoid heat conducting contact of the skirt with the container neck, as for example when the container is used for dispensing coffee or other hot liquids.

Other modifications of the invention may be resorted to without departing from the spirit thereof or the scope of the appended claims.

What is claimed is:

1. A removable cover of plastic material, as for a decanter or like liquid dispensing container having a neck terminating in an upper portion having a peripheral upper edge, said cover comprising: a handle free cap having a tubular outer skirt of grasping length adapted to be supportively gripped between the upper and lower ends thereof by a user's fingers; an integral closure wall at the upper end of said skirt; an annular lip integrally connected to said skirt at an intermediate level having a portion extending radially inwardly and a portion extending axially downwardly of the same inwardly of said closure wall, thereby defining an annular groove adapted to receive and make fluid-sealing engagement of said annular lip with the upper portion of the neck of a container; and a pouring spout provided on the upper portion of said skirt above said annular lip having a passage therethrough for dispensing liquid from the container past said lip, said closure wall leaving said passage in the pouring spout open for discharging liquid therethrough.

2. A removable cover as in claim 1 wherein the downwardly extending portion of said lip defines an annular groove of substantial depth.

3. A removable cover as in claim 1 wherein said downwardly extending portion is axially curved on the surface facing the groove to provide a relatively narrow zone adapted to make fluid sealing contact with a corresponding extent of the inner surface of the neck of the container when the upper portion of the neck is inserted in said annular groove.

4. A removable cover as in claim 3, wherein said downwardly extending portion extends beyond the lower end of the said skirt to facilitate initial yielding reception of the container neck within said annular groove.

5. A removable cover as in claim 1, wherein said downwardly extending portion is generally tubular and defines a said annular groove of substantial depth for reception of a corresponding extent of the neck of the container and extends beyond the lower end of the said skirt to facilitate initial yielding reception of the container neck in said annular groove.

6. A handle free molded plastic dispensing cap adapted to snap on the neck of a decanter or like liquid dispensing container comprising:

a. a tubular side wall of grasping length having spaced lower and upper ends including:

1. a lower portion extending downwardly from an intermediate level to said lower end adapted to fit along a neck of such container a substantial distance, and

2. an upper portion extending upwardly from said intermediate level to said upper end having an upwardly opening pouring spout;

b. means for making fluid tight snap on engagement of said cap with the neck of such container comprising an integral wall having a portion extending inwardly from said side wall at said intermediate level and a portion extending downwardly forming with said side wall a groove adapted to receive a neck of such container in fluid tight relationship; and

c. an integral transverse wall in said upper portion connected with said tubular side wall having a dispensing opening therethrough adjacent to said pouring spout.

7. A handle free molded plastic dispensing cap as set forth in claim 6 in which said downwardly extending portion of the integral wall has a shorter length than said lower portion of said side wall and is shaped to provide a funnel shaped entrance into said groove.

8. A handle free molded plastic dispensing cap as set forth in claim 6 in which said downwardly extending portion of the integral wall extends below the lower end of said tubular wall to facilitate entrance of the neck of such a container into said groove.

9. A handle free molded plastic dispensing cap as set forth in claim 6 in which said downwardly extending portion of the integral wall is curved axially on the surface facing the groove to provide a relatively narrow zone adapted to make yielding fluid tight engagement with the inner wall of the neck of such container when snapped thereon.

10. A handle free molded plastic dispensing cap as set forth in claim 9 in which said downwardly extending portion has a shorter length than said lower portion of said side wall and is shaped to provide a funnel shaped entrance into said groove.

11. A handle free molded plastic dispensing cap as set forth in claim 9 in which said downwardly extending portion extends below the lower end of said tubular wall to facilitate entrance of the neck of such container into said groove.

12. A handle free molded plastic dispensing cap as set forth in claim 11 in which said axial curve is at the lower end of said downwardly extending portion.

13. A handle free dispensing cap adapted for use on a container having a neck of circular cross section comprising a one piece molded plastic body adapted to be removably affixed to a neck of such container comprising a side wall of grasping length having:

a. a lower portion below an intermediate level large enough in cross section to fit over the neck of such container and long enough to extend a substantial distance along such neck with an annular air space between said wall and neck,

b. an upper portion above said intermediate level including a pouring spout diverging upwardly and outwardly from a lower point to an upper end,

c. an integral transverse wall in said upper portion connected with said tubular side wall having a dispensing opening therethrough adjacent to said pouring spout, and

d. means adapted to make fluid tight engagement of said lower portion with said neck comprising a wall extending inwardly from said side wall at said intermediate level and a wall extending downwardly from said inwardly extending wall forming with said side wall a groove adapted to receive a long portion of the neck of such container in fluid tight relationship.

14. A handle free molded plastic dispensing cap adapted to snap on a container having a neck comprising:

a. a side wall of grasping length having upper and lower ends and a pouring spout having an opening adjacent to said upper end,

1. said side wall, except for the pouring spout, having a uniform cross section of the same shape as, but larger than, the neck of such container over which it is adapted to fit with a relatively small air space between them, and

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3. said pouring spout diverging upwardly and outwardly from its lower end to its upper end,
b. means integral with said side wall extending inwardly at approximately the level of the lower end of said pouring spout and then downwardly a substantial distance forming with said side wall a

groove to receive a long portion of such neck for making fluid tight engagement therewith, and
c. an integral transverse wall connected with said side wall above said groove having a dispensing opening therethrough adjacent to said pouring spout.

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