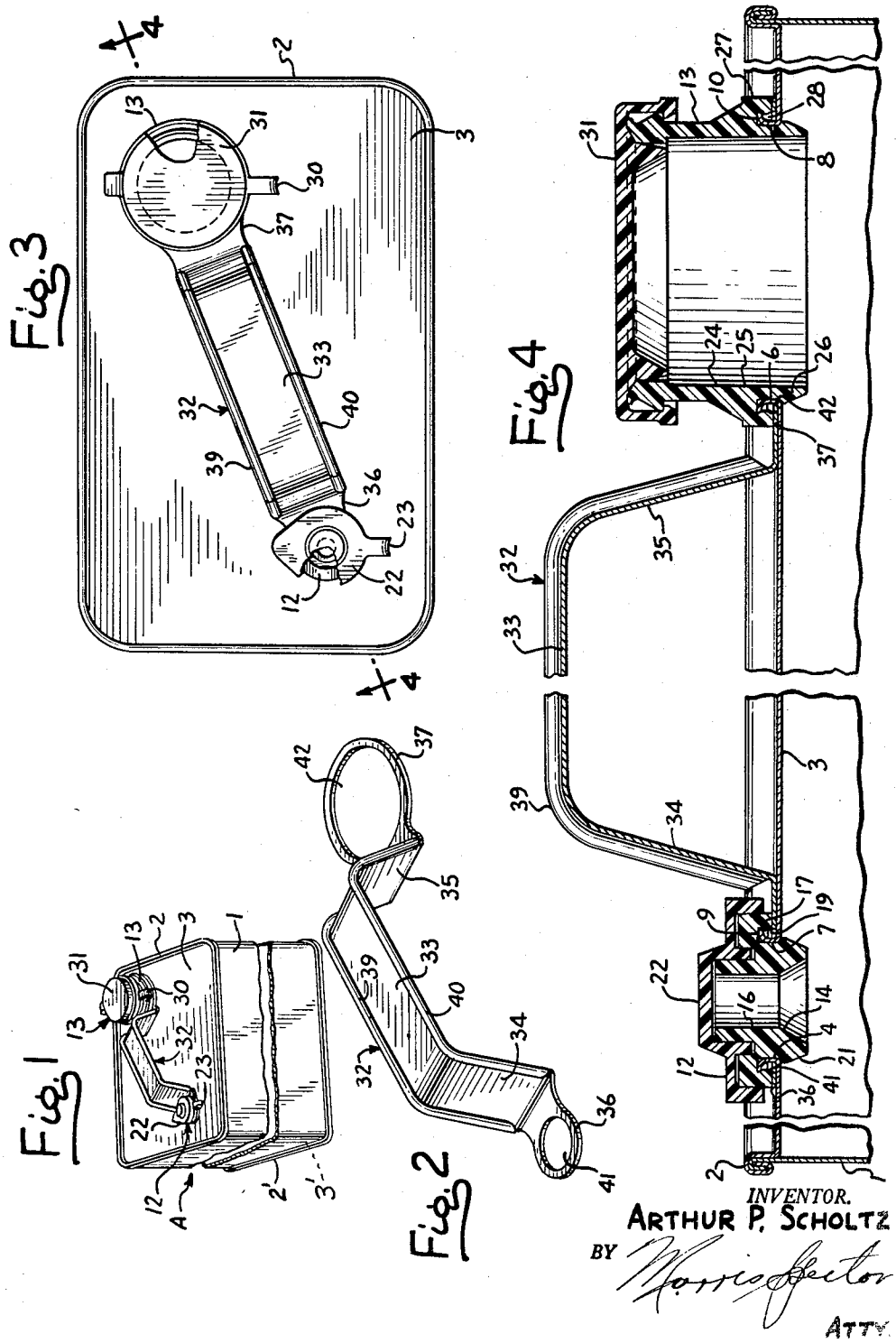
Dec. 1, 1964 A. P. SCHOLTZ 3,159,320

CONTAINER WITH OPENINGS AND HANDLE ATTACHED AT OPENINGS

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CONTAINER WITH OPENINGS AND HANDLE ATTACHED AT OPENINGS

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Fig. 6

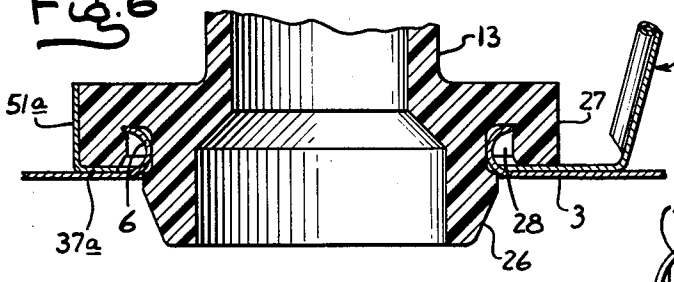


Fig. 5

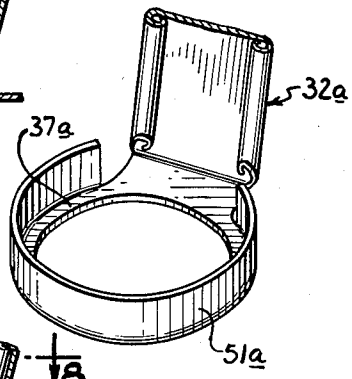


Fig. 7

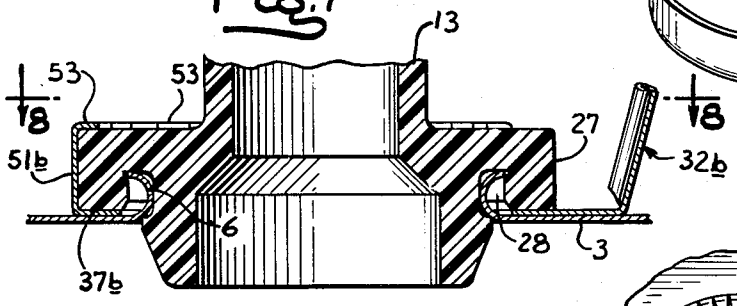


Fig. 8

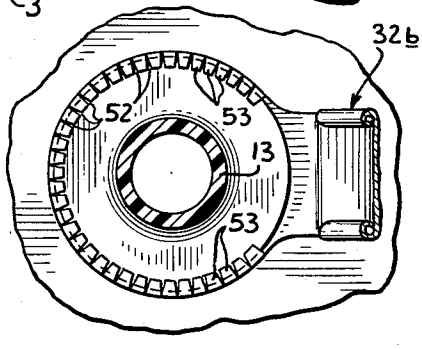
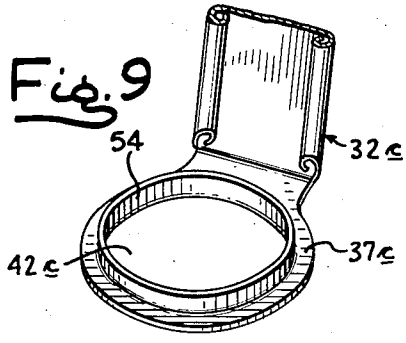


Fig. 9



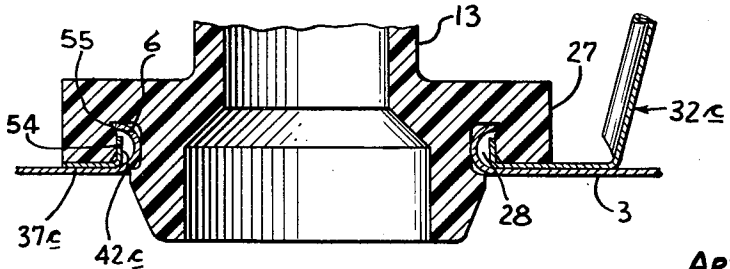


Fig. 10

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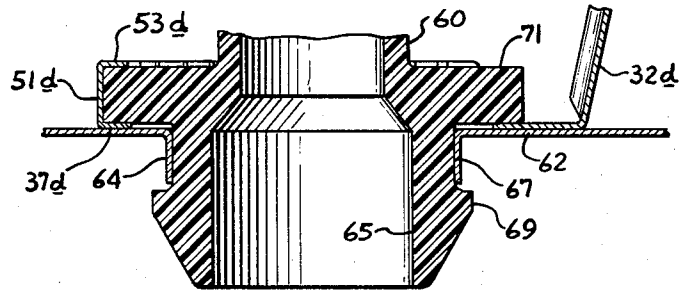


Fig. 11

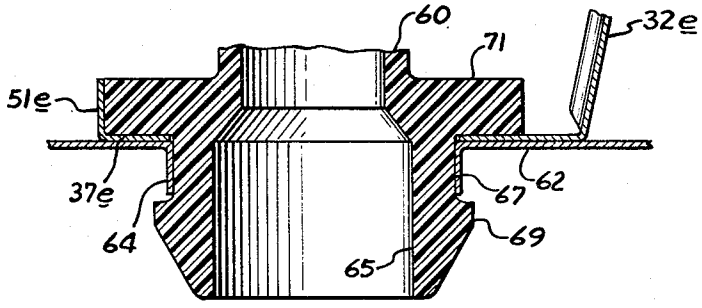


Fig. 12

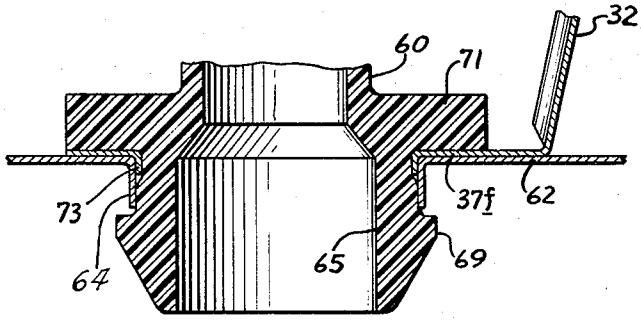


Fig. 13

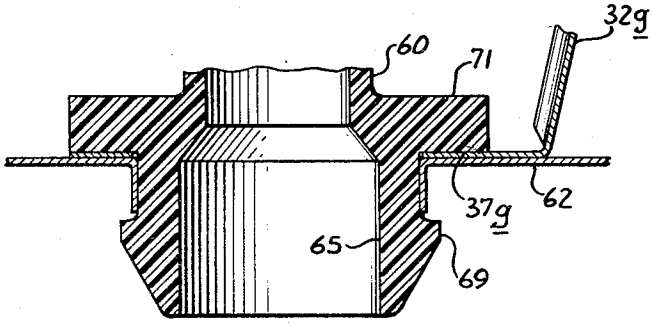


Fig. 14

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United States Patent Office 3,159,320 Patented Dec. 1, 1964

3,159,320

CONTAINER WITH OPENINGS AND HANDLE ATTACHED AT OPENINGS

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Filed Aug. 1, 1961, Ser. No. 128,527
8 Claims. (Cl. 222—468)

This invention relates generally to containers and, more particularly, to an improved manner of securing a handle to a container.

It is an object of the present invention to provide a container having a plurality of plugs, as, for example, a vent plug and pour spout, projecting through a wall of the container and used to secure firmly a handle to the container.

It is a further and more specific object of the present invention to provide a container of the type stated in which the plugs are mounted on a wall of the container with a handle spanning the space therebetween, the opposite ends of the handle being clamped, respectively, between the plugs and the top wall; and the handle ends are prevented from lateral shifting when the container is lifted by the handle.

It is another object of the present invention to provide a container of the type stated in which the plugs are of plastic material while the handle is constructed of sheet metal, and wherein sharp edges of the handle are prevented from cutting into the plastic plug and spout.

It is an additional object of the present invention to provide a container of the type stated wherein the handle is easily secured to the container at the time the vent plug and pour spout are assembled therewith, thereby eliminating the need for a separate handle-attaching operation during manufacture of the container.

The attainment of the above and further objects of the present invention will be apparent from the following specification taken in conjunction with the accompanying drawing forming a part thereof.

FIG. 1 is a fragmentary perspective view of a container constructed in accordance with and embodying the present invention;

FIG. 2 is a perspective view of the container handle which forms part of the present invention;

FIG. 3 is a top plan view partly broken away and on an enlarged scale, of the container;

FIG. 4 is a sectional view taken on an enlarged scale, taken along line 4—4 of FIG. 3;

FIG. 5 is a fragmentary perspective view of a modified form of can handle which forms part of the present invention;

FIG. 6 is a fragmentary sectional view showing the handle of FIG. 5 secured in place by a plug;

FIG. 7 is a fragmentary sectional view showing another form of can handle secured in place by a plug;

FIG. 8 is a fragmentary sectional view taken along line 8—8 of FIG. 7;

FIG. 9 is a fragmentary perspective view of another form of can handle which forms part of the present invention;

FIG. 10 is a fragmentary sectional view showing the handle of FIG. 9 secured in place by a plug; and

FIGS. 11, 12, 13, and 14 are fragmentary sectional views each showing a further modification of the present invention.

Like reference numerals indicate like parts throughout the drawing.

Referring now in more detail to the drawing which illustrates a preferred embodiment of the present invention, A designates a can comprising a flat rectangular sheet of metal, such as tin plate, black plate, or the like, which is shaped into an enveloping side wall 1 with the

overlapping margins of the sheet secured together in any conventional manner as, for instance, by being solder-sealed together. Marginally secured to the opposite ends of the side wall 1 by conventional double seams 2, 2', respectively, are sheet metal top and bottom walls 3, 3'.

Adjacent to diagonally opposite corners thereof, the metal of the top wall 3 is struck upwardly to form annular flanges 4, 6 which define spaced top wall openings 7, 8, the opening 7 being of smaller diameter than the opening 8. The uppermost parts 9, 10 of the flanges 4, 6 are curled laterally away from the openings 7, 8.

Mounted over the flanges 4, 6 are plugs 12, 13 which, in the present embodiment of the invention, constitute a vent plug and pour-spout, respectively. These plugs 12, 13 may be formed of a suitable plastic such as polyethylene or polyvinyl chloride. The vent plug 12 has a central neck 14 with a bore 16 extending axially therethrough, and the neck 14 projects through the opening 7 and into the interior of the can. Radially outwardly of the neck 14 the vent plug 12 has a depending rim 17. Between the rim 17 and neck 14 the vent plug 12 is molded with a downwardly opening annular groove 19 which tightly receives the flange 4. A fluid-tight seal is formed at regions of contact of the flange 7 with the vent plug 12. Furthermore, the lower part 21 of the central neck 14 locks under the flange 7 and resists retraction of the vent plug 12 from the position shown once it has been assembled with the top wall 3. A reclosable captive cap 22 is provided for the vent plug 12, the two being joined by a narrow flexible hinge 23 integrally molded with the vent plug 12 and the cap.

Similarly, the pour-out spout 13 has a neck 24 with an axial bore 25, the neck 24 projecting through the opening 8 and having an enlarged part 26 underlying the flange 8 to resist retraction of the spout 13 from the top wall 3. Also formed on the spout 13 radially outwardly of the neck portion 24 is a depending rim 27 provided with an annular, downwardly opening groove 28 which tightly receives the flange 6 and forms a fluid-tight seal therewith. A hinge-forming strip 30 integrally joins a reclosure cap 31 to the remainder of the spout 13.

Mounted on the top wall 3 is a sheet metal handle 32 having a U-shaped central grip portion 33 spaced above the top wall 3 and including legs 34, 35 which diverge downwardly toward the top wall 3, terminating in opposite ends 36, 37. The longitudinal margins 39, 40 of the grip portion 33 may be rolled inwardly so that the raw edges of metal do not cut the hand of the person grasping the handle. Punched through the ends 36, 37 are holes 41, 42 which are preferably of a diameter just large enough to receive the flanges 4, 6. The ends 36, 37 lie flush against the top wall in surrounding relation to the flanges 4, 6 with the ends 36, 37 being clamped firmly against the top wall by the rims 17, 27. The clamping forces prevent removal of the handle and also prevent lateral shifting of the ends 36, 37 relative to the flanges 4, 6 when the can is lifted by the handle.

The vent plug 12 and spout 13 are generally retained firmly in position by the interfit of the flanges 4, 6 with the grooves 19, 28. However, should there be any lateral shifting of the handle ends 36, 37 as, for example, when the can is lifted by the handle 32, the flanges 4, 6 will prevent the raw edges of the metal at the holes 41, 42 from cutting into the plug 12 or spout 13.

The handle 32 is prefabricated prior to assembly with the top wall 3 of the can. Prior to mounting the vent plug 12 and spout 13 onto the flanges 4, 6, the handle 32 is placed on the top wall 3 with the flanges 4, 6 projecting through the holes 41, 42 respectively. Thereafter, the vent plug 12 and spout 13 are placed over the openings 7, 8 and shifted downwardly until the flanges 4, 6 snap into the grooves 19, 28. When this is done, the rims 17,

27 will bear against the handle ends 36, 37 holding them tightly against the top wall 3. The rims 17, 27, being of plastic, may yield slightly as they come in contact with the ends 36, 37, thus imposing resilient or spring-like pressure against the ends 36, 37.

FIGURES 5–14 illustrate modified forms of the present invention and show one end of the handle attached to the can wall by a pour spout. It will, however, be understood that the other end of the handle (not shown) is of a similar construction, though smaller in size, and may be secured by a vent plug similar in all material respects to the pour-out spout.

In FIGS. 5 and 6 the handle 32*a* has a perforated end 37*a* integrally formed with a marginal upstanding flange 51*a* which extends throughout an arc in the order of 240°, although the extent of the arc is not critical. As shown in FIG. 6 the inside diameter of the upstanding flange 51*a* is sized for a snug telescopic fit with the rim 27 of the pour spout 13. The end 37*a* underlies the rim 27. The upstanding flange 51*a* assists in preventing the end 37*a* from shifting laterally as the can is lifted by the handle 32*a*. In mounting the handle 32*a* onto the can wall 3, the pour spout 13 is telescoped within the flange 51*a*, the same procedure being carried out with respect to the vent plug at the other end of the handle 32*a*. With the handle assembled with the plugs, the latter are then secured to the top wall 3.

In the form of the invention shown in FIGS. 7 and 8 the handle 32*b* is similar to the handle 32*a* and includes a perforated end 37*b* and an upstanding flange 51*b*. The upper end of the flange 51*b* has a plurality of slits 52, thereby to form tabs 53 which are bent over to crimp the spout rim 27 between the tabs 53 and end 37*b*. The tabs 53*b* may be turned over before or after the plug 13 has been snapped onto the flange 6.

In the form of the invention shown in FIGS. 9 and 10 the handle 32*c* has a perforated end 37*c* integrally formed with an annular upstanding flange 54 which surrounds the opening 42*c*. The spout rim 27 is telescoped over the upstanding projection or flange 54 to surround the latter. Thus, the flange 54 lies in the groove 28 and is of a height somewhat less than that of the groove 28. The pour spout 13 is first assembled with the handle 32*c* by telescoping the rim 27 over the flange 54 whereupon the spout 13 is snapped into the groove 28. The diameter of the flange 54*c* may be slightly less than the diameter of the flange 6 at 55, but the flange 54 will yield, as will the plastic of the spout 13, to permit the flange 54 to ride over the flange 6.

In FIGS. 11–14 the plastic pour spout 60 is somewhat different than that described and is in fluid tight relationship with a can wall 62 having an axially inwardly extending flange 64. The pour spout 60 has an axial bore 65 and an annular groove 67 which snugly receives the flange 64. The spout 60 is formed with an annular bead 69 underlying the flange 64 to prevent retraction of the pour spout 60 from the can wall 62. In FIG. 11, a can handle 32*d*, similar to the can handle 32*b*, has an end 37*d* which is overlaid by a rim 71 on the spout 60. An upstanding flange 51*d* is integrally formed on the end 37*d*, and at its end the flange 51*d* is slit to provide tabs 53*d* whereby the rim 71 is crimped between the tabs 53*d* and the end 37*d*.

In FIG. 12 the handle 32*e* includes an end 37*e* which underlies the rim 71 and an upstanding flange 51*e* which surrounds the rim 71. The end 37*e* and flange 51*e* are similar to the end 37*a* and flange 51*a*, previously described.

In the form of the invention shown in FIG. 13 the handle 32*f* has an end 37*f* which is similar to the end 37, previously described, except that the end 37*f* includes an axially inwardly extending annular projection 73 which is telescoped within the flange 64 and lies within the groove 67. The projection 73 is somewhat shorter than the flange 67, the former serving to prevent lateral shifting of the handle end 37*f*. The pour spout 60 may be first assembled with the end 32*f* by inserting the spout 60 into the end so that the projection 73 fits into the groove 67. Then the spout 60 is mounted on the flange 67.

In FIG. 14 the handle 32*g* is similar to the handle 32 and includes a flat end 37*g* clamped between the rim 71 and cam wall 62. The clamping force serves to prevent the handle end 37*g* from shifting laterally.

In compliance with the requirements of the patent statutes I have herein shown and described a preferred embodiment of the invention. It is, however, to be understood that the invention is not limited to the precise construction herein shown, the same being merely illustrative of the principles of the invention. What is considered new and sought to be secured by Letters Patent is:

1. A container comprising a container wall having two spaced openings, a handle having two spaced parts thereof respectively surrounding the openings, and means for securing the handle to the wall comprising a hollow resilient plug at each opening overlying the two spaced parts and pressing said parts towards said wall for securing said parts between said plugs and the wall, said plugs being each secured to the wall by snap fitting through the wall with parts of each thereof on both sides of the wall and in fluid tight relationship therewith and forming respectively a pour-out spout and a vent.

2. A can comprising a wall of sheet material having a pair of spaced openings, the material of the wall being turned to form flanges surrounding the openings, a handle spanning the space between the two openings and having a central grip-forming portion between the openings and outwardly from said wall, said handle having two perforated opposite ends which surround the openings respectively, and a pair of plugs secured to said flanges and clamping said ends between the plugs and wall to clamp said ends to the wall, said plugs having openings therethrough communicating from the inside to the outside of the container, and said flanges being in telescoping relationship with the respective openings in the handle.

3. A can according to claim 2 wherein at least one of the handle ends is crimped to the plug associated therewith.

4. A container comprising a container wall having two spaced openings with flanges surrounding the openings, a handle having two spaced ends thereof on the wall and each surrounding one of the openings respectively, resilient hollow plugs secured in fluid tight relation to the wall one at each opening and projecting through the ends and wall and into the interior of the container and confining the ends between the plugs and wall to prevent retraction of the ends from the wall, said ends including means cooperating with means on the plug for preventing shifting of ends along the wall.

5. A container comprising a container wall having a pair of spaced openings, the material of the wall at the openings being turned from the adjacent surface of the wall to form flanges surrounding the openings, a unitary handle spanning the space between the two openings and having a central grip-forming portion spaced from said wall, said handle having two perforated opposite ends overlying the wall and with the two perforations centered with respect to the openings and in telescoping relationship with the flanges respectively, a plastic member projecting into each opening and snap fitting onto said flanges, said plastic members imposing pressure on said ends and securing them to said container wall, the plastic members having bores in communication with the interior of the container and constituting at said openings a pour-out spout and a vent plug, respectively, and the spout and vent plug each having a reclosable captive cap attached thereto.

6. A container comprising a container wall having a pair of spaced openings, the material of the wall at the openings being turned outwardly of the container to form outwardly extending flanges surrounding the openings, a

plastic member projecting into each opening and snap-fitting onto said flanges, the plastic members having bores therethrough from the exterior to the interior of the container and constituting a pour-out spout and a vent plug respectively, and a handle spanning the space between the plugs and being secured to each and held by each against turning about the other as a center.

7. A container having a wall which has a pour out opening and a venting opening, a handle spanning the openings and secured to the can at the two openings by means comprising a plastic spout plug member for one opening and a plastic venting plug member for the other opening, both members having fluid passageways therethrough, said members being plugged into the respective openings and having means for interlocking with said container to prevent retraction thereof from said openings, parts of said handle extending upwardly from said wall adjacent to said openings, said parts being adjacent to and spaced laterally from the respective plug members.

8. A container having a wall which has a pour out opening and a venting opening, each of which is defined by a rim, a handle and means for securing the handle to the container, said securing means comprising a spout member and a vent member, said members being positioned one in each of said openings and each member including a base of plastic material extending through one opening and each base including as an integral part thereof an outer bearing flange on the outside of the container and an inner bearing flange on the inside of the container,

the inner flange being of a diameter greater than that of the opening through which the base extends and the plastic material being sufficiently resilient to permit sufficient distortion thereof, within its elastic limits, for insertion thereof through the opening from the top of the opening and the inner flange being backed on its underside by the plastic material of the base to inhibit distortion required for retraction of the base from the opening through which the base has been inserted.

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