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METAL CONTAINER HAVING A METAL PLUG AND A PLASTIC
POURING SPOUT SURROUNDING SAID PLUG

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FIG. 1.

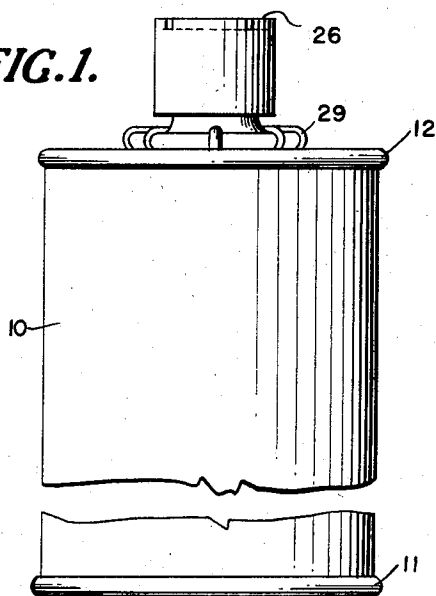


FIG. 2.

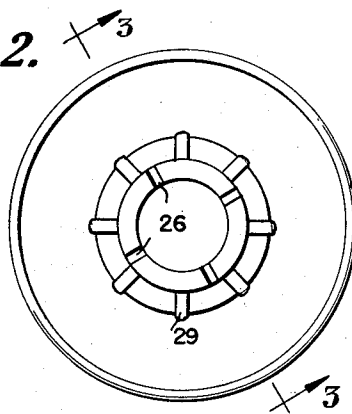
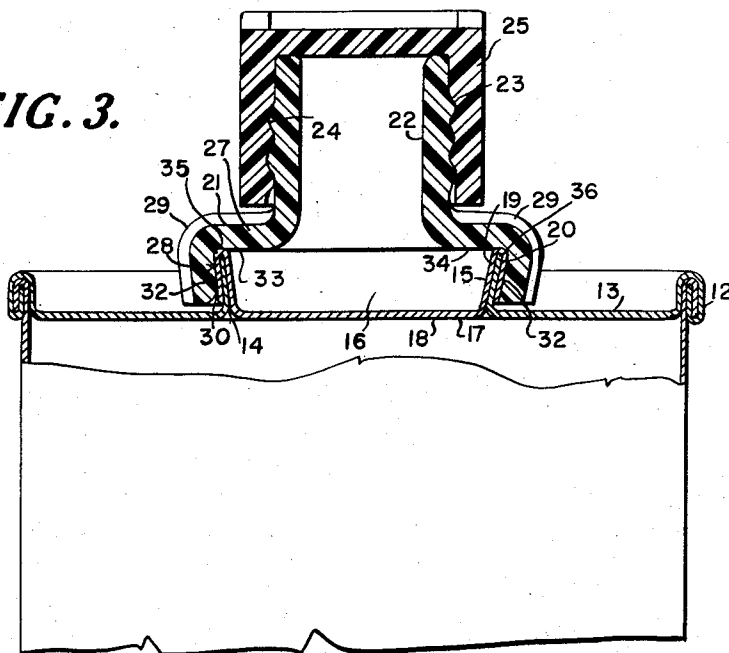


FIG. 3.



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METAL CONTAINER HAVING A METAL PLUG AND A PLASTIC POURING SPOUT SURROUNDING SAID PLUG

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6 Claims. (Cl. 222—567)

This invention relates to a low pressure metal container of one quart or less capacity with a reuseable pouring spout which may be merchandised separately or with the container. The container is particularly useful for storing and dispensing liquid detergents and other liquids and dry powders.

The metal containers of one quart or less capacity with a pouring spout, now available to the trade for low pressure liquid and dry powder storing and dispensing, consist of conventional side seam cans with tops and pouring spouts of either the types in which (1) a metal domed or cone top end of paint or lacquer coated and lithographed tin coated sheet steel with a clinched on, drawn aluminum pouring spout in the center, which has an opening of approximately $\frac{1}{2}$ " diameter for filling and pouring through, projects approximately $\frac{3}{4}$ " above the domed or cone end and is provided with a rolled or beaded thread to accommodate a plastic screw cap closure which may be used as a measuring cup, or (2) a domed or cone top end of drawn sheet aluminum with a pouring spout in the center projecting approximately $\frac{3}{4}$ " above the domed or cone top with an opening approximately $\frac{1}{2}$ " in diameter for filling and pouring through, the whole top end including the spout being in one piece and the projecting pouring spout being provided with a rolled or beaded thread to accommodate a plastic screw cap closure which may be used as a measuring cup.

Frequently the aluminum used for the top can end and pouring spout may have a detrimental effect on the contents of the container and, moreover, the cost and time required for tooling up for the all aluminum end and pouring spout, or the all aluminum clinched on pouring spout is oftentimes considered excessive in relation to the cost of the contents.

In the construction of this invention the pouring spout piece is made of polyethylene molded plastic or other suitable plastic rather than of drawn aluminum or other sheet metal and the screw cap or other cap is made of polystyrene molded plastic or other suitable plastic. The plastic spout is detachable and reuseable with various types of cans such as a conventional can with a Neuman seal in the top end.

The pouring spout being of polyethylene, which is an inert material, will not have a detrimental effect on the contents of the container, while the cost of tooling up for producing a plastic pouring spout piece of this type will be considerably less than for tooling up for various types of sheet metal pouring spouts. Moreover, the cost per container of this type will frequently be less than one with a sheet metal pouring spout.

In the drawings,

Figure 1 is a side elevation of a can showing the improved pouring spout attached thereto and provided with a cap;

Figure 2 is a top elevation of the can shown in Figure 1, and

Figure 3 is a section showing the pouring spout in position on a container and sealed by a suitable closure.

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Referring to Figure 1, the metal container is indicated as a whole at 10 and has the usual metal ends seamed thereto as shown at 11 and 12 and in detail in Figure 3. The top end 13 is provided with a central well 14 by bending up the metal and inclining it outwardly as shown at 15 to form a walled opening 16, the wall 15 of which in cross-section is frusto conical as viewed in Figure 3. Positioned in the opening 16 is a closure or plug 17 having a top 18 and a frusto conical skirt 19 conforming to the frusto conical wall 15 of the opening 16. The metal of the skirt 19 of the plug or closure is bent upon itself so as to enclose the wall 15 as shown at 20 and this wall makes a tight frictional engagement with the detachable reuseable closure and pouring spout 21 now to be described.

Referring to Figure 3, it will be observed that the upstanding pouring spout which is made of suitable plastic has a neck portion 22 provided with a cap receiving finish 23, here for purposes of illustration being a continuous thread 24 to receive a suitable internally threaded cap 25 of plastic material. The cap 25 has intersecting diametrical recesses or slots 26 whereby a device may be inserted to assist in turning the closure to apply or remove the same from the neck 22.

The resealable closure 21 is provided with an integral outwardly extending flange 27 at the base of the neck 22, which flange terminates in an integral downwardly depending integral inwardly extending frusto conical skirt 28. Referring to Figure 3, this skirt 28 is of a diameter and shape to frictionally receive the three layers of metal 19, 15 and 20 constituting the wall of the well when the plug 17 is in closed position as shown in Figure 3. The flange 27 and skirt 28 of the plastic pouring spout are provided with spaced outwardly extending continuous integral projections 29 to afford a gripping surface to enable the pouring spout to be readily applied and removed from the wall of the well.

In use, the pouring spout 21 may be supplied attached to the container as shown after the latter has been filled and the plug 18 sealed in the well or this package may be sold and the pouring spout 21 provided as a separate part of the package. In any event, to use the container the consumer merely punctures the plug 18 to form an opening and thereafter the pouring spout 21 will be applied to the upstanding continuous circular frusto conical projecting wall formed of the metal layers 19, 15 and 20 as a reseal. The pouring spout is uncovered by unscrewing the threaded closure 25 and, of course, closed by reapplying the same. When the contents have been exhausted, the pouring spout 21 may be removed and reused with other cans to which it may be supplied as described to form a tight resilient frictional joint constituting a seal. The top 18 may, of course, be punctured by removing the cap 23 and inserting a tool through the hollow neck 22.

In this connection, the cap receiving finish on the upstanding neck 22 may be of any desired type, for example, to receive a Crown cap, a lug cap, or a pressed-on type of closure. Regardless of the type of closure employed to seal the opening in the pouring spout, the connection afforded by the frictional engagement of the inner frusto conical wall surface 30 of the skirt 28 of the flange 27, with the adjacent surface 32 of the bent over layer of metal 20 of the skirt 19 of the plug 17, as shown in Figure 3, will be sufficiently secure to permit the closure 25 to be removed and reapplied without turning the pouring spout relative to the can and without disturbing the effectiveness of the seal.

From the foregoing, it will be observed that the opening 16 defined by having the metal of the end 13 turned upwardly into an upstanding wall 15 receives the plug 17

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to initially close the container by reason of the skirt 19 of the closure 17 with its bent over portion 20 receiving the upstanding wall 15 of the opening, the latter being positioned between the skirt 19 and its bent over portion 20 with the top edge of the wall disposed immediately beneath the joining portion of said metal layers 19 and 20 as shown. Also, the pouring spout is provided with a hollow neck 22 and the integral enlarged flange 27 at the base thereof which has the depending skirt 28. The plastic skirt 28 frictionally engages the outer surface of the bent over metal layer 20 of the closure or plug skirt in order to insure a tight seal. In the foregoing structure the centrally disposed upstanding wall composed of the metal layers 15, 19 and 20 are circular and continuous, and preferably centrally disposed relative to the end as shown. In this connection, it is preferable that the frusto-conical projection provided by the wall composed of the layers 15, 19 and 20 have its apex facing toward the can bottom 11. As previously explained, by having the pouring spout skirt 28 frusto conical, a secure engagement is provided with the frusto conical projection on the can end 13 which, however, is also detachable.

Referring to the pouring spout itself, it is to be noted that the base flange 27 extends outwardly at substantially right angles to the hollow neck 22 and that the depending skirt 28 which extends downwardly and inwardly to form a continuous, circular frusto conical skirt also provides an enlarged opening 33 and a shoulder 34 on the underside of the flange 27, the flat horizontally disposed shoulder extending to the inner surface of the skirt 28 as shown, and the skirt and shoulder forming the substantially frusto conical, enlarged recess to receive the upwardly projecting wall 15, 19 and 20. In use, the upper edge 35 of the plug 17 engages the shoulder 34 at the line of juncture of the latter with the skirt 28 as shown at 36 so that the shoulder acts as a guide and a stop when the skirt 28 is frictionally applied over the outside surface 32 of the projection formed by the upstanding wall structure 15, 19 and 20.

I claim:

1. A metal container having an end, the metal of said end being turned upwardly into an upstanding wall defining an opening, a closure in said opening having a skirt and a portion continuous with the skirt and bent over upon said skirt, the said upstanding wall being positioned between said skirt and its bent over portion, and a plastic pouring spout provided with a neck and an integral flange portion at the lower end of said neck having a depending skirt, the said last-mentioned skirt frictionally engaging the outer surface of said bent over portion of the closure

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skirt for the entire periphery of said bent over portion, to thereby provide a tight seal.

2. A container according to claim 1 wherein said upstanding wall is circular, continuous and centrally disposed relative to said end.

3. A container according to claim 2 wherein said wall and the skirt and bent over portion of said closure form a frusto-conical projection having its apex facing toward the can bottom, said pouring spout skirt being also correspondingly frusto-conical whereby the projection of the end will be engaged by said pouring spout skirt to form a tight seal and a detachable connection between the pouring spout and the container.

4. A metal container having an end, the metal of said end being turned upwardly into an upstanding wall defining an opening, said upstanding wall being circular, continuous and centrally disposed relative to said end, a closure plug in said opening having a skirt and a portion continuous with the skirt and bent over upon said upstanding wall, the said upstanding wall being positioned between said skirt and its bent over portion, and a polyethylene pouring spout provided with an upstanding hollow cylindrical neck, and an integral base flange of larger diameter than said neck at the lower end thereof and extending outwardly, said base flange having a depending skirt, the undersurface of said base flange providing a shoulder extending directly between the inner surface of said depending skirt and the inner surface of said neck, said depending skirt and said shoulder forming a substantially frusto-conical recess having its apex at the bottom, said depending skirt on the pouring spout frictionally engaging the outer surface of said bent over portion of the skirt of the closure plug for the entire periphery of said bent over portion, to thereby provide a tight seal.

5. A metal container according to claim 4 wherein the polyethylene pouring spout is provided with a plurality of continuous, integral projections extending from the outer surface of the flange portion to the outer surface of the depending skirt portion to afford a gripping surface.

6. A container as in claim 5 wherein said upstanding cylindrical neck has a closure therefor applied to the outer surface thereof.

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