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B. ROBINSON

2,380,871

POURING SPOUT

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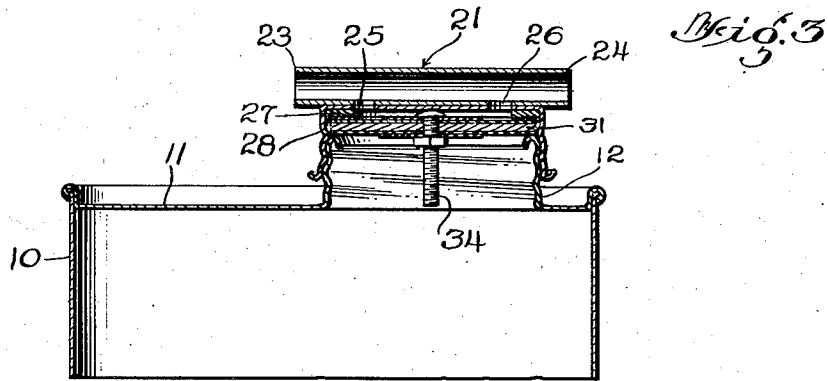


Fig. 1

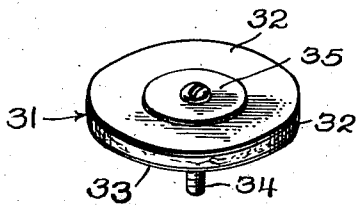
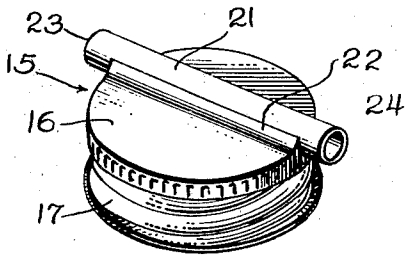
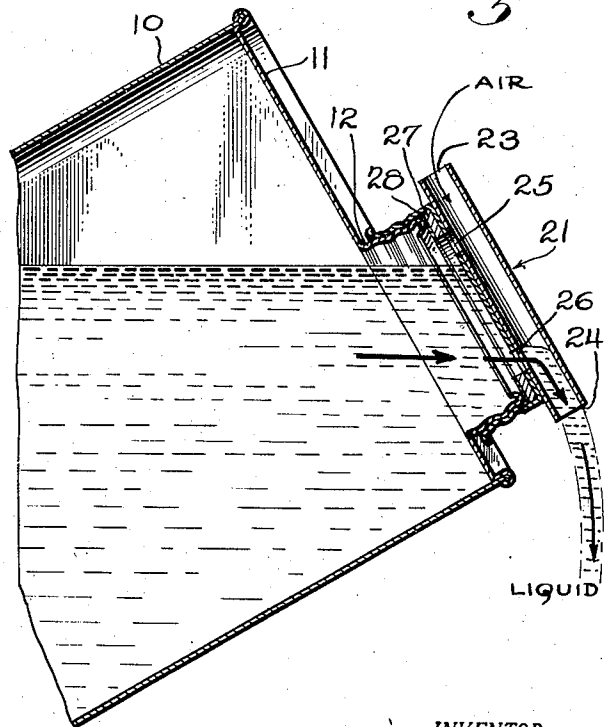


Fig. 2

Fig. 4



INVENTOR.
Bertor Robinson
BY
L. F. Hammond
ATTORNEY

UNITED STATES PATENT OFFICE

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POURING SPOUT

Bestor Robinson, United States Army,
Oakland, Calif.

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1 Claim. (Cl. 222-482)

(Granted under the act of March 3, 1883, as
amended April 30, 1928; 370 O. G. 757)

The invention described herein, if patented, may be manufactured and used by or for the Government for governmental purposes, without the payment to me of any royalty thereon.

The present invention relates to dispensing means for liquids. More specifically, it relates to a novel and simplified pouring spout whereby small necked containers may be easily and conveniently filled from a relatively large liquid dispensing can.

It is recognized that numerous prior art devices have been designed to accomplish this purpose. The applicant submits, however, that all of these now known or in common use are deficient in certain respects, particularly in that they are unnecessarily complicated, delicate, expensive, or objectionable by failure to function properly.

It is therefore one of the principal objects of the present invention to provide a pouring spout for a liquid container so designed and constructed that a small, slender, uniform stream of liquid may be dispensed from a relatively large container.

A further object of the invention resides in the provision of a pouring spout adapted to be incorporated into the structure of a conventional type of screw threaded closure cap so that any one of the several sizes and types of liquid containers now in common use may be easily and conveniently fitted with a pouring spout constructed according to the teachings of this disclosure.

A further object of the invention resides in the provision of a reversible pouring spout including a discharge spout and a vent opening of identical and opposite construction so that either may be used for the discharge of liquid.

A further object of the invention resides in the provision of a pouring spout having discharge and vent means, comprising a slender, uniform, straight, thin-walled tube secured in transverse position across the top surface of a conventional type of screw threaded can closure cap, so that the structure of the pouring spout may also serve as a handle to assist in tightening or loosening the cap.

Another important object of the invention resides in provision of a dispensing means for a container including a pouring spout permanently secured to a closure cap, and sealing means in said cap, so that the sealing means and cap may be arranged to establish a perfect seal for the container when the pouring spout is not in use.

Further objects will appear hereinafter.

The foregoing objects of the invention are accomplished in the preferred embodiment of the

present invention by providing a slender cylindrical tube permanently secured to a conventional type of closure cap, preferably in transverse position across the flat top surface of the cap. The tube is arranged to project slightly beyond the opposite edges of the cap, and the cap and tube are perforated with a pair of openings, one near each end of the tube. Thus the cap, when screwed on a liquid container, will furnish as a double pouring spout. That is, either end of the tube may be used as the pouring spout by merely tilting the container in that direction and irrespective of the direction the container is tilted, the opposite end of the tube will function as a vent orifice to admit air to the container. The arrangement provides an unobstructed air opening for the container and thus facilitates pouring a uniform, controlled, non-bubbling stream of liquid from the tube. To provide for permanently sealing the container against egress of liquid when the pouring spout is not in use, a flat sealing disk is arranged to be clamped inside of the cap to close off the discharge and vent openings.

Referring now more particularly to the drawing attached to and forming a part of the present specification:

Fig. 1 is a perspective view of a closure cap for a liquid container constructed in accordance with the teachings of this disclosure.

Fig. 2 is a perspective view of the sealing disk associated with the cap.

Fig. 3 is a central sectional view of the pouring spout and sealing disk in sealing engagement, and

Fig. 4 is a fragmental sectional view through a liquid container provided with a pouring spout as illustrated in Fig. 1, the several parts being illustrated in operating position.

This invention, while not specifically limited thereto, is particularly applicable to association with a sheet metal liquid container 10 having a top portion 11 and some form of relatively wide mouth or filler opening, such as the screw threaded neck 12 illustrated in the drawing. Such containers are common in the prior art and are usually closed by a screw threaded cap and gasket. They are, however, highly unsatisfactory for certain purposes, since the wide mouth of the neck 12 is so large as to make it practically impossible to fill narrow necked bottles or small filling openings such as found on various miniature gasoline stoves, oil cans, ink reservoirs, etc. On the other hand, if a small container mouth is used, the container is unsatisfactory in that it is difficult to fill and because the liquid being poured therefrom will emerge in an irregular, uncontrolled, gurgling

or bubbling stream, due to the entrance of air.

These shortcomings of the prior art have been overcome in the present invention by providing a sealing cap 15 including an improved pouring spout and vent. The cap 15 includes a flat top surface 16 with a threaded skirt 17 depending therefrom, the threads being of a diameter and pitch to fit the threads on the neck of the container. The sealing cap 15 is provided with a relatively long slender transverse tube 21 extending directly across the center of the cap and secured to the cap in any suitable manner as, for example, by soldering as indicated at 22. The tube 21 includes two projecting end portions 23 and 24 respectively, each of which projects slightly beyond the edge of the cap, so that they may be inserted into the neck of a vessel to be filled. The projecting ends of the tube will also act as handles to assist in tightening or loosening the cap on the container.

Communication between the transverse tube 21 and the interior of the liquid container is provided by a pair of openings 25 and 26, spaced apart from each other and positioned near the ends 23 and 24 of the tube 21. Each of these openings 25 and 26 extend through the lower wall of the tube 21 and through the top surface of a sealing cap 15 so that unrestricted communication is established between the inside of the tube and the interior of the container 10. The sealing cap 15 is also provided with a sealing gasket 27 which, if desired, may include a metal foil facing 28. It is to be noted, however, that the gasket is of annular formation and does not obstruct the ports 25 or 26 (see Fig. 4). Thus when the parts are in the position illustrated in Fig. 4, a small slender steady stream of liquid will be discharged through the port 26 and from the end 24 of the tube 21, while air from the atmosphere will be admitted through the end 23 of the tube and thence through the port 25 to the interior of the container.

Since both ends of the tube 21 are identical, however, it will be apparent that liquid may be discharged from the opposite end of the tube (that is, the end 23) by merely tipping the container in the opposite direction. This is of some importance, not only because it permits the liquid to be discharged from either side of the container, but also by reason of the fact that it makes it unnecessary to maintain a definite relationship between the position of the tube and the screw threads of the container cap. Thus one end of the tube will always be in satisfactory pouring position, no matter what position the cap assumes when tightened.

As thus far described, the structure furnishes a complete, efficient and extremely simple pouring device, capable of discharging a controlled, uniform and slender stream of liquid and thus admirably adapted to the purpose of filling small necked containers. It is to be understood, however, that it is desirable to provide means to close off the pouring spout of the container so that the liquid will be completely sealed when the can is to be shipped or stored. To this end this in-

vention provides a sealing disk 31 which, in the form illustrated in the drawing, includes a thin metal reinforcing plate 32, a central gasket portion, and a lower facing 33 of metal foil. The sealing disk is provided with a central machine screw 34 having upper and lower washers 35 and a nut. This serves as a handle to facilitate removal of the sealing disk from the inside of the closure cap 15. The outer diameter of the sealing disk 31 is such that it will fit snugly, but not tightly, into the closure cap 15. Thus the edge of the sealing disk will frictionally engage the inside of the cap so that the cap, when removed or replaced, will normally carry the sealing disk with it (see Fig. 3). This permits the entire cap to be unscrewed for filling or pouring liquid therefrom in the same manner as the conventional cap now in use.

To use the pouring spout, it is only necessary to remove the cap 15, remove the sealing disk 31 and replace the cap; clamping it in the position shown in Fig. 4.

From the foregoing it will be apparent that the teachings of the present invention provide a highly satisfactory pouring spout whereby a large mouthed container may be readily adapted to filling small necked bottles, oil cans, miniature stove reservoirs, etc., and that the structure is particularly advantageous by virtue of its extreme simplicity, its rugged mechanical design and low cost. The structure illustrated is believed to be the most satisfactory embodiment of the invention, but it is subject to numerous minor variations and modifications without departing from the inventive thoughts. It is therefore requested that the scope of the invention be regarded as limited only by the terms of the appended claim.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

A portable container cap and spout comprising a screw threaded, cup-shaped body adapted to close the neck of a container, a straight tube of uniform diameter and open at both ends secured diametrically across the upper surface of said cap body and having communication ports between the interior of the tube and the interior of the cap body and a sealing disc frictionally seated within said cap body and adapted to be clamped between the neck of the container and the cap body to seal the communication ports when the container is closed, said sealing disc being composed of a plurality of layers, means comprising an elongated member having a part projecting from the disc for securing said layers together, whereby when the disc is in position within the cap and the cap is removed from the container, the projecting part of the elongated member forms a handle extending towards the open side of the cap for removing the sealing disc from the cap so that the cap body and spout may be replaced on the container with the communication ports open for pouring.

BESTOR ROBINSON.