March 21, 1944. G. E. ECKMAN 2,344,505

CONTAINER

Filed May 31, 1941

Fig 1

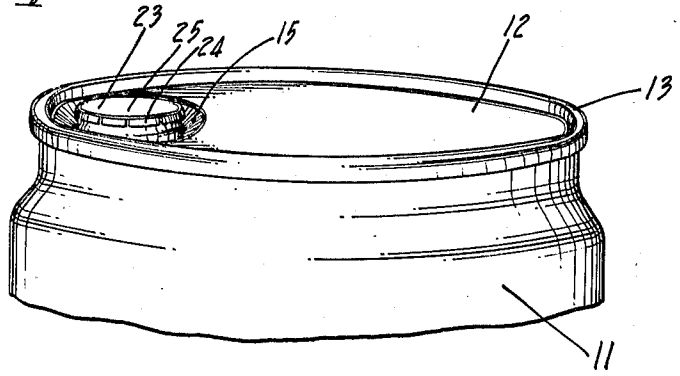


Fig 2

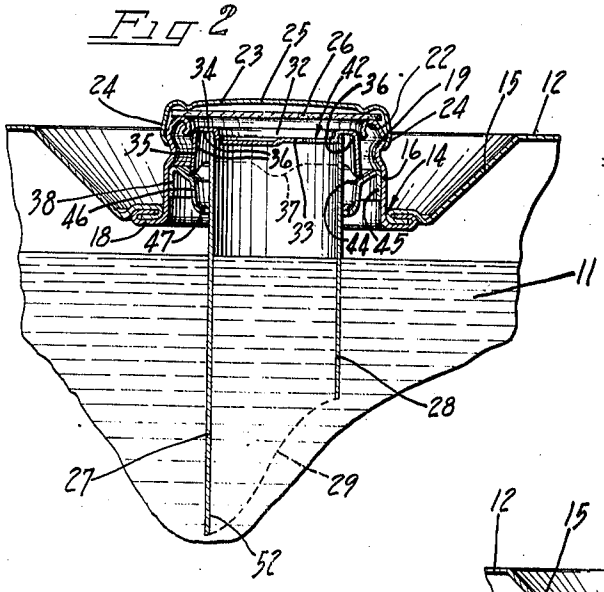


Fig 4

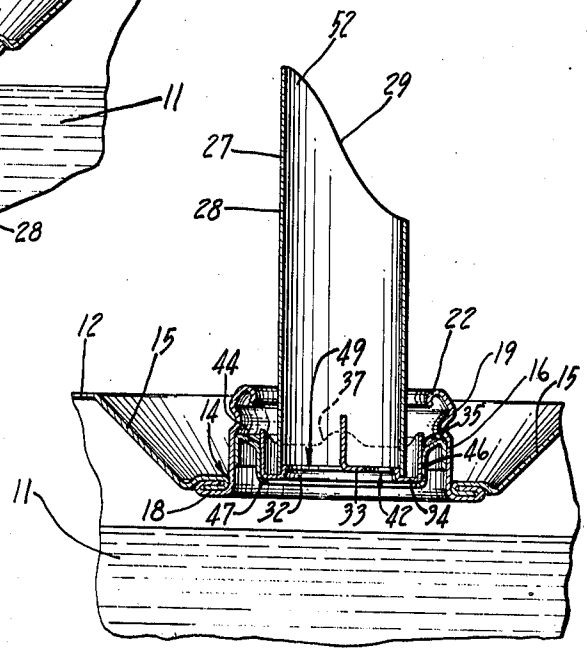
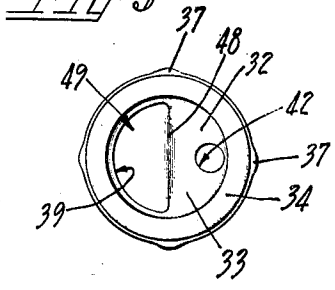


Fig 3



INVENTOR.
George E. Eckman
BY Ivan D. Thornburgh
Chas. A. Grine
ATTORNEYS

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2,344,505

CONTAINER

George E. Eckman, New Milford, N. J., assignor to American Can Company, New York, N. Y., a corporation of New Jersey

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4 Claims. (Cl. 221—24)

This invention relates to a pouring spout liquid can or container and has particular reference to a nozzle type can having a detachable and reversible pouring spout for dispensing liquid contents from the can when in an extended position, the spout having a splash guard at its upper end when it is in non-pouring position within the nozzle so as to relieve air pressures from within a sealed container when first it is opened thus preventing splashing out of the liquid contents preparatory to arranging the spout for dispensing.

In certain respects the present invention constitutes an improvement upon the dispensing container illustrated and described in the John M. Young United States Patent 2,010,048, issued August 6, 1935, and is especially directed to a non-splashing pouring spout.

An object of the invention is the provision of a can or container having a discharge nozzle or outlet in which a pouring spout is adapted to be inserted, the nozzle being sealed by a spring finger type of closure, the spout being formed with a splash guard at one end, a depending wall of which is undulated so that air or gas pressures in the contents of the can may be vented when the can first is opened, thus preventing splashing or upward surging of its contents prior to or while the spout is being withdrawn as when preparing it for a dispensing operation.

Another object of the invention is the provision of such a can for holding liquids wherein the splash guard is formed to frictionally engage inside the nozzle to hold the spout in a pouring position, the spout initially being carried in a non-pouring position inside the can and being supported within the nozzle, such a spout being removable and reversible to place it in pouring position.

A further object of the invention is the provision of a reversible spout of the character described having a vent opening in its head and having a semi-circular removable area which, after the container is opened, may be cut along a curved boundary line and the cut out metal may be hinged or bent along a straight uncut side to produce a semi-circular pouring opening in the spout as an incident to adapting the spout for dispensing of the can contents.

The invention also contemplates a can construction which includes a nozzle and an insertable tubular pouring spout, one end of which is provided with an outlined area adapted to be pressed inwardly to produce a pouring opening in the spout. This end of the spout also has a vented opening which is spaced opposite the pouring opening so that air can be admitted into the can after the can contents are vented to control the discharge of liquid in a steady even flow as such contents are dispensed through the pouring opening of the spout.

Numerous other objects and advantages of the invention will be apparent as it is better understood from the following description, which, taken in connection with the accompanying drawing, discloses a preferred embodiment thereof.

Referring to the drawing:

Figure 1 of the drawing is a fragmentary perspective view of a can embodying the present invention showing the nozzle of such a can completely sealed by a supplemental spring finger type of closure;

Fig. 2 is a fragmentary enlarged vertical sectional view showing the pouring spout as it appears initially as when carried inside the sealed can of Fig. 1;

Fig. 3 is an end view of the pouring spout before the pouring opening is formed in the end wall thereof; and

Fig. 4 is a view similar to Fig. 2 illustrating the pouring spout in reversed or pouring position and with the pouring opening formed and the spout ready for dispensing the can contents.

As a preferred embodiment of the invention, the drawing illustrates a can body 11 having a top end or cover 12 secured thereto in any suitable manner as by a double seam 13. The cover 12 is provided with an opening 14 (Figs. 2 and 4) which preferably is located in a sunken panel 15 adjacent an edge or the periphery of the can end.

A nozzle 16 is secured to the marginal edge surrounding the opening 14 in a suitable joint 18. This nozzle is formed at its upper end with an annular beaded shoulder 19, the upper edge of which is curled inwardly as at 22 to provide a smooth mouth for the nozzle.

A protective cap 23 having slit spring fingers 24 and a domed flexible depressible center portion 25 may be used for closing the open end of the nozzle. Such a cap carries a gasket 26 which is formed of cork or other suitable gasket material and is adapted to rest on the curled nozzle edge 22 when in closing position. The spring fingers 24 are pressed inwardly and engage under the shoulder 19 when the cap is in

sealing position. The domed center 25 of the cap being flexible, holds the fingers under the shoulder when it is in the raised position shown in Fig. 2. When pushed or pressed inwardly this center springs the fingers outwardly from the shoulder 19 of the nozzle. Such a closure cap is well known in the can closure art.

A reversible and detachable pouring spout 27 comprises a cylindrical or tubular body 28 (Figs. 2 and 3) which is cut away at its spout end as at 29. A head 32 is secured to the opposite end of the tubular body in any suitable manner. This head has a sunken panel section 33 and an outwardly extended flange 34, which merges into a tapered outer wall 35. The inner surfaces of the flange 34 and the wall 35 constitute a splash guard area 36 for the spout.

The edge of the flange wall 35 is of undulating configuration, as illustrated in Figs. 2, 3 and 4 of the drawing, and such formation is effected by extended lugs 37. These lugs as well as the flange wall are flared or tapered as shown in Fig. 2. The lower edge of the lugs 37, when the spout is being carried in the nozzle and is in non-pouring position, rests on an inserted ring 38 (Fig. 2) which is permanently held inside the nozzle.

The sunken panel 33 in the head of the spout is cut through in a semi-circular line 39 (Fig. 3) which sets off a removable area which occupies substantially one-half of the end wall area. The other half of the wall is perforated in a vent opening 42. The size of the opening area and the size of the vent opening are such as to provide for the best dispensing action, as hereinafter explained.

In the initial carrying or non-pouring position (Fig. 2) of the spout 27, it is enclosed fully within the can. Its tubular body 28 extends down into the liquid contents and at such a time its head 32 is located substantially on a horizontal plane with the beaded shoulder 19 of the nozzle 16.

Ring 38 is formed at the top with a substantially U-shaped section 44 having an outer annular wall 45 which may fit tightly within the nozzle wall to form a permanent joint. An inner wall 46 of the ring is tapered downwardly and terminates in a ledge 47. In its non-pouring position (Fig. 2) the spout lugs 37 rest on the curved wall of the ring section 44.

When the ultimate consumer desires to dispense the contents of the can through the pouring spout the protective cap 23 is removed by pressing down on its flexible domed center 25 so that the fingers 24 spring out of engagement from the nozzle shoulder 19. At such a time the spaces between the lugs 37 of the ring 38 serve for venting abnormal air or gas pressures which may exist in the head space of a filled container at the time. Any tendency of the liquid contents to surge or splash is confined within the splash guard 36 of the spout. With such a construction, a balanced atmospheric pressure is immediately set up in the can and further steps for dispensing the contents proceed.

The pouring spout 27 first is made ready for its withdrawal from the can. Incidental to such withdrawal a dispensing opening is made in the sunken panel section 33 of the spout. This is accomplished by bending the semi-circular removable area, which is set off by the curved line of cut 39, along a line of bend 48 (Fig. 3). Such an area is pushed into the spout body, as best illustrated in Fig. 4, and this produces a pouring opening 49 in the spout.

The pouring spout may be withdrawn from the can by inserting the finger in the pouring opening. Now the spout is reversed or turned around and its head end is inserted inside of the nozzle in its pouring position as shown in Fig. 4. During such insertion, the tapered wall 35 of the spout is forced inside of the tapered friction wall 46 of the ring member 38 until the extended flange 34 of the spout is fully seated against the ledge 47 of the ring. There is considerable spring in the spout wall 35 so that the fit is close enough to maintain the spout rigid. Such a spout preferably is positioned so that a pouring lip, designated by the numeral 52, is toward the nearest edge of the container.

With the spout in pouring position, the can may be tilted so that the liquid contents flows out through the pouring opening 49 in the spout. The wall 33 of the sunken panel above the line of bend 48 blocks off the stream of liquid, thus preventing the contents from completely filling the spout. At the same time air passing freely through the vent opening 42 and passing through the liquid contents, replaces the displaced liquid. This gives an even flow of liquid and controls the discharge.

After dispensing the desired amount of the contents, the can is righted and is prepared for reclosure. This is accomplished by merely removing the spout from its frictional engagement within the inserted ring of the nozzle, reversing it and again placing it in its non-pouring position as before. The can may be reclosed by the same protective cap 23.

It is thought that the invention and many of its attendant advantages will be understood from the foregoing description, and it will be apparent that various changes may be made in the form, construction and arrangement of the parts without departing from the spirit and scope of the invention or sacrificing all of its material advantages, the form hereinbefore described being merely a preferred embodiment thereof.

I claim:

1. A container for liquids, comprising a nozzle located in a wall of the container, a holding ring permanently secured in said nozzle, a tubular spout member having reversible non-pouring and pouring positions in said nozzle, said spout member including a tubular spout body having an open pouring end and a partially closed head end provided with a dispensing opening, said head end having an outwardly tapered flange wall terminating in a plurality of spaced flared lugs, said spout being insertable in said nozzle with its said lugs resting on said holding ring in its non-pouring position, the space between the lugs providing for venting the container when first opened, said flange wall with its head end constituting a splash guard for the liquid contents, said spout being reversible for insertion in pouring position into said nozzle with said flange wall seated in frictional engagement with said holding ring within said nozzle.

2. A detachable pouring spout for a liquid container having a pouring opening in a wall thereof, comprising a tubular spout body, a head secured to one end of the spout body and having an apertured end wall merging into a flange wall spaced outwardly from said spout body and terminating in an undulating peripheral edge, the inner surfaces of said end and flange walls

constituting a splash guard area for the spout and said undulating terminal flange edge permitting venting of the container interior therethrough when said spout is positioned within the pouring opening of the container with said flange wall in depending position with its said undulating edge resting upon said container wall surrounding the pouring opening.

3. A reversible pouring spout for a nozzle type liquid container having a pouring nozzle provided with an annular inwardly extending supporting wall portion, said spout comprising a tubular spout body having an open pouring end and a head secured to its opposite end, said head including a pouring opening and merging into an annular flange wall spaced outwardly from said spout body, the peripheral edge of said flange wall terminating in a plurality of outwardly flared undulations for engaging and resting upon said inwardly extending supporting wall portion of the container nozzle to provide spaced vent openings along the undulated flange wall area when the spout is inserted in depending non-pouring position within said nozzle, said spaced vent openings between adjacent undulations serving to vent the container interior when opened and the inner surfaces of said spout head and said annular spout flange wall constituting a splash guard area for the container contents.

4. A container for liquids, comprising a nozzle located in a wall of the container, said nozzle including an inwardly extending supporting wall surrounding a dispensing opening, a tubular spout having reversible positions within said nozzle, said spout including a tubular spout body having an open pouring end and a partially closed head end provided with an opening, said head end having an outwardly tapered flange wall spaced radially outwardly from said body to provide an annular channel, the peripheral edge of said flange wall terminating in a plurality of circumferentially spaced projecting lugs, said spout being insertable in non-pouring position into said nozzle with said flange wall depending and supported by engagement of its said lugs with said inwardly extending supporting wall of said nozzle, the spaces between the lugs providing for venting the container when first opened and the annular channel between said flange wall and the spout body constituting a closed splash guard area, said spout being reversible for insertion in pouring position into said nozzle with its outwardly tapered flange wall seated in frictional engagement with and against said inwardly extending nozzle wall.

GEORGE E. ECKMAN.