

UNITED STATES PATENT OFFICE

2,295,967

RETRACTABLE POURING NOZZLE

Walter G. Plumb, Ridgewood, N. J.

Application November 13, 1940, Serial No. 365,497

2 Claims. (Cl. 221-27)

This invention relates to nozzles for metal, fibre and the like containers, and more particularly to pouring nozzles therefor having a spout extending from the container when in use and retractable to a position within the nozzle opening and container during shipment, or while not in use.

An object of the present invention is to provide a container for liquids and other materials, with a nozzle having a dispensing spout which may be withdrawn from a nozzle opening into pouring position or retracted to a position within the nozzle opening to permit sealing and closing the opening by means of a conventional closure cap.

Another object of the invention is to provide a retaining ring for the pouring spout and through which ring the spout is freely slidable but is prevented from removal therefrom by suitable flanges at the opposite ends of the spout, the ring being insertable within the nozzle opening and frictionally or otherwise retained therein.

With the above and other objects in view the invention includes the features of construction and operation set forth in the following specification and illustrated in the accompanying drawing.

In the accompanying drawing annexed hereto and forming a part of this specification, I have shown the invention embodied in a metal container of medium size particularly for liquids but it will be understood that the invention can be otherwise embodied and that the drawing is not to be construed as defining or limiting the scope of the invention, the claims appended to this specification being relied upon for that purpose.

In the drawing—

Fig. 1 is an elevation partly in section of a complete nozzle showing the pouring spout in its extended position in full lines and in its retracted position in broken lines;

Fig. 2 is an enlarged cross sectional view of a portion of the nozzle showing the pouring spout retracted and a closure cap in position to close the nozzle opening;

Fig. 3 is a plan view of a retaining ring for a pouring spout having a non-circular section;

Fig. 4 is an elevation of a non-circular pouring spout showing a nozzle having a retaining ring therein;

Figs. 5, 6 and 7 are sections of non-circular pouring spouts that may be used in connection with the present invention, and

Fig. 8 is a section similar to Fig. 2 but showing a slight modification.

In the above mentioned drawing there have been shown several embodiments of the inven-

tion which are now deemed preferable, but it is to be understood that changes and modifications may be made within the scope of the appended claims without departing from the spirit of the invention.

Briefly, and in its preferred aspect, the invention may include the following principal parts: First, a nozzle having an opening therethrough and suitably attached by crimping, soldering or otherwise to a surface of a container through which an opening has been provided; second, a retaining ring or disk having a periphery adapted to fit firmly within a portion of the nozzle opening; third, a pouring spout slidable within an aperture provided in the retaining ring; fourth, flanges at the opposite ends of the pouring spout to prevent removal of the retaining ring therefrom; and fifth, a flexible member in the form of a washer housed within the retaining ring and firmly contacting the outside surface of the pouring spout.

Referring more in detail to the figures of the drawing there is shown at 10 a portion of a container in the form of a metal can or drum adapted for liquids or any other material that may be poured. Within the top wall of this container is a nozzle 11 preferably of standard form which may be crimped or otherwise secured in this top wall, adjacent side walls of the container in the usual manner. This nozzle 11 has a vertically extending opening, the upper portion of which is slightly enlarged to form an annular ledge 12. Also the nozzle 11 may be provided on its outside surface with sections having spaced projections over which the threaded portion of a closure cap 13 may be mounted and screwed into contact with the upper edge of the nozzle.

Insertable within the nozzle opening is a retaining ring 14 which preferably may be made of sheet metal doubled upon itself as seen in Figs. 1 and 2. The outer periphery of this ring 14 closely engages the inner surface of the nozzle 11 at its larger diameter and rests upon the narrow peripheral ledge 12. Preferably this ring 14 may be pressed firmly into the position shown in Figs. 1 and 2 so that it may be frictionally retained therein. When secured in this manner the ring 14 may be removed from the nozzle if desired and reinserted without difficulty and without requiring any special holding means.

The ring 14 as shown in Figs. 1 and 2 is centrally apertured and at the periphery of this opening is provided a felt or other form of flexible washer 15 housed within the metal portion of the ring. Slidable through the aperture with-

in the retainer ring 14 and the felt washer 15 is the retractable pouring spout 16. This spout 16 is curved at one end upon a convenient radius so that when withdrawn from the container 10 its free end may extend beyond the side walls of the container to facilitate pouring. The spout 16 at its outer end may be straight or substantially straight and as long as desired. In retracted position the spout assumes the position shown in broken lines in Fig. 1 and the straight portion of the spout extends vertically downward from the nozzle 11 and the curved inner end of the spout may extend substantially to the side wall of the container 10.

At the opposite ends of the spout 16 are flanges 17 which may be formed by rolling the end of the metal forming the spout 16 or by any other preferred means. By means of these flanges 17, the spout 16 may not be separated from the retainer ring 14 but may slide freely through the ring and the felt washer 15. In its extended position one of the end flanges 17 bears against the surface of the retainer ring 14, which contact, aided by the felt washer 15, forms a substantially closed joint and prevents liquid from running down the outside of the spout during pouring. When retracted within the container 10 the opposite end flange 17 bears against the upper surface of the ring 14 and lies below the upper edge of the nozzle 11. In this position of the spout ample room exists for the cap 13 to be screwed down upon the nozzle and the spout is prevented from rattling.

In Figs. 3 and 4 is shown a non-circular form of pouring nozzle 18 the section of which is triangular to provide a narrow pouring lip. This form of spout 18 may be bent along its length as desired or similarly to the form shown in Figs. 1 and 2. The retaining ring 19 for this non-circular form of spout 18 may be formed conveniently as shown in Fig. 3 by suitable bending operations to form folded portions, the periphery of which is circular. Between the folds of this disk 19 may be placed a felt washer 20 apertured to closely fit the sides of the spout 18. Preferably and as shown in Fig. 3 the disk 19 is apertured to permit the spout 18 freely to slide from end to end. Flanges 21 at opposite ends may be provided similar to flanges 17 to prevent the spout 18 from being withdrawn completely through the disk 19.

Alternate forms of spouts are shown in Figs. 5, 6, and 7, and it will be understood that retainer rings apertured to correspond to these forms will be employed and having a periphery fitting tightly within the nozzle opening.

In Fig. 8 there is shown a modified form of nozzle 21 in which the height above the annular ledge 22 is increased to permit the introduction of a tamper proof disk or plug 23. The disk 23 may be forced frictionally into the position shown in this figure after the retaining ring 24 and spout 25 have been inserted. Also the inner wall of the nozzle 21 just above the retainer ring 24 may be provided with lugs 26, one only being shown in the figure, to permanently and positively retain the ring 24 in position. A closure cap 27 similar to that shown in Fig. 2 is also provided.

I claim as my invention:

1. A retractable pouring spout for metal containers comprising a tubular nozzle secured to a wall of said container, an annular ledge formed within the inner wall of said nozzle, a metal retainer ring removably secured within said opening and bearing against said ledge, said ring having a flexible washer housed therein between upper and lower surfaces of said ring, and a tubular pouring spout flanged at its opposite ends and slidably disposed within said retainer ring while in engagement with the inner surface of said washer, whereby said spout may be maintained against removal from said ring and slidably thereon throughout its entire length.

2. A retractable pouring spout for metal containers comprising a nozzle having an opening therein secured to a wall of said container, an annular ledge formed within the inner wall of said nozzle at an intermediate point thereof, a retainer ring secured within said nozzle and bearing against said ledge so that the ring will be disposed below the open end of said nozzle, said ring having an aperture therethrough, a tubular spout having flanges at its opposite ends slidably fitting said aperture between said flanges, and an annulus of flexible material housed within said ring and contacting said spout, whereby said ring and spout may be removed from said nozzle and said spout is prevented from being removed from said ring.

WALTER G. PLUMB.