Aug. 18, 1953 J. L. LAY 2,649,226

SPOUT CAP

Filed April 7, 1949

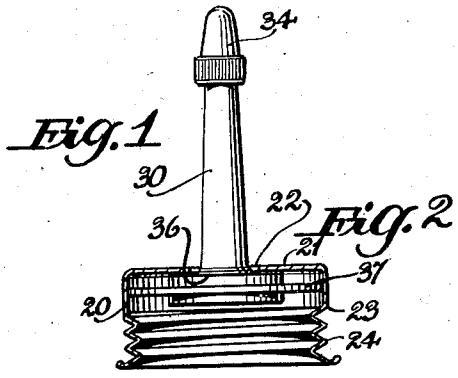


Fig. 1

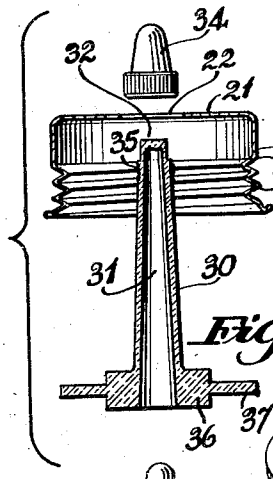


Fig. 2

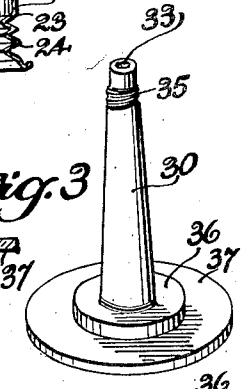


Fig. 3

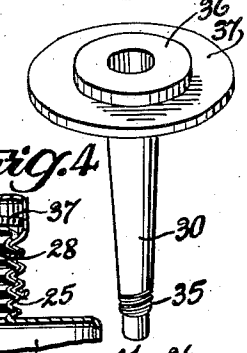


Fig. 4

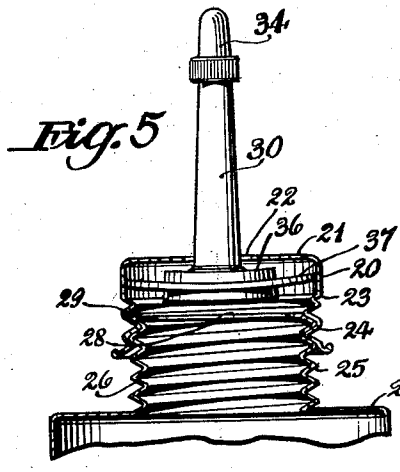


Fig. 5

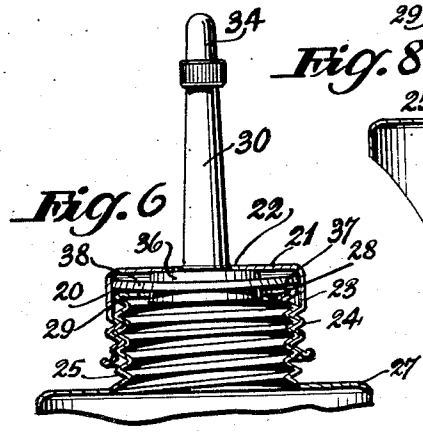


Fig. 6

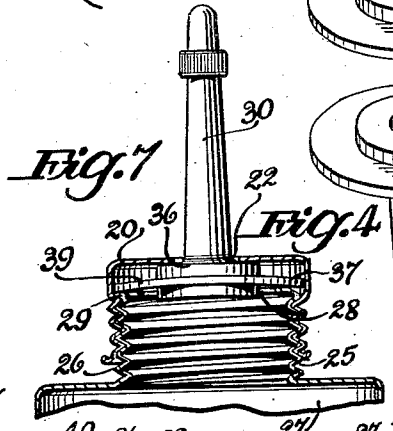


Fig. 7

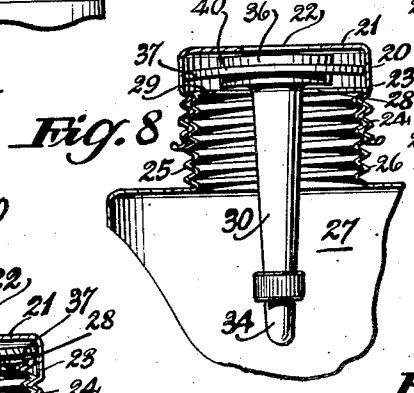


Fig. 8

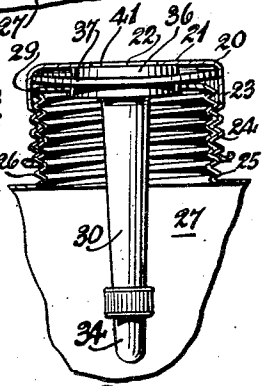


Fig. 9

INVENTOR

John L. Lay

BY

ATTORNEYS

Patented Aug. 18, 1953

2,649,226

UNITED STATES PATENT OFFICE

2,649,226

SPOUT CAP

John L. Lay, Ogden, Pa., assignor to A. H. Wirz, Inc., Chester, Pa., a corporation of Pennsylvania

Application April 7, 1949, Serial No. 85,972

1 Claim. (Cl. 222—539)

1

The present invention relates to dispensing spout closures for containers.

A purpose of the invention is to obtain better sealing between the spout and the cap.

A further purpose is to make the spout more adaptable to different cans and caps.

A further purpose is to provide a pliable sealing flange at the base of the spout for engagement with the cap and/or with the neck of the container.

A further purpose is to provide a sealing disc on the spout body to make engagement with the cap and/or the neck and to support the flange.

A further purpose is to obtain spring action to urge a plastic disc on the spout in sealing engagement with the cap.

Further purposes appear in the specification and in the claim.

In the drawings I have chosen to illustrate one only of the numerous embodiments in which my invention may appear, choosing the form shown from the standpoints of convenience in illustration, satisfactory operation and clear demonstration of the principles involved.

Figure 1 is an axial section of a cap, spout and spout cap in dispensing position, embodying the features of the invention.

Figure 2 is an exploded axial section of the cap, spout and spout cap illustrated in Figure 1. The end of the spout is closed.

Figure 3 is a top perspective of the spout alone. The end of the spout is open.

Figure 4 is a bottom perspective of the spout alone.

Figure 5 is an axial section of the spout, cap and spout cap in process of application to a container neck, the spout being in dispensing position.

Figure 6 illustrates in axial section the spout and cap of Figure 5 in seating position.

Figure 7 is a view corresponding to Figure 6, showing the flange bent to a different position from that of Figure 6.

Figure 8 illustrates in axial section the spout, cap and spout cap in shipping position, partially applied to the container.

Figure 9 is an axial section showing the spout, cap and spout cap in shipping position fully seated on the container.

In the drawings like numerals refer to like parts.

Describing in illustration but not in limitation and referring to the drawings:

Separate spout cap combinations made of metal have been provided in the prior art, the spout consisting of a metallic element which extends through an opening in the cap. Closures of this kind have been extensively applied for dispensing liquids; for example, on oil cans and similar containers. Spouts of this character have been of limited utility due to the tendency to leak at the base of the spout.

2

The present invention comprises a very simple spout and cap combination which is more effective in sealing, and more positive against leakage.

Referring to the drawings the closure comprises a cap **20**, suitably of metal, having a forward face or shoulder **21** provided with a spout opening **22** and having an annular skirt **23** provided with interlocking projections such as female threads **24** for connection with the similar interlocking projections such as external threads **25** on the neck **26** of a container **27** such as a metallic oil can or the like.

The neck has a center forward opening **28** inside a shoulder **29**.

The spout itself is suitably of a resilient or pliable plastic such as polyethylene, polyvinyl chloride, polyvinyl chloride-acetate, or the copolymer of butadiene and acrylonitrile or butadiene and styrene. It has a tubular spout body **30** having a center axial bore **31** and initially closed at the dispensing end **32**. The spout is subject to piercing or cutting to open the end, resulting in formation of an end opening **33** which is closed by a spout cap **34** of plastic or other suitable material which is threaded onto suitable threads **35** on the spout.

At the opposite end of the spout from the normal dispensing end, the spout body connects to a disc **36** integral with the spout, and the disc supports an outwardly extending resilient flange **37**. The flange is substantially thinner than the disc and preferably less than one-third of the thickness of the disc, and preferably extends from the center of the disc with respect to thickness, so that a portion of the disc lies on either side of the flange as shown. The thickness of the flange is preferably between 0.010 and 0.050 inch.

The flange extends outwardly and jams against the interior of the skirt of the cap so that as the cap tightens on the neck of the container through the position of Figure 5 (partially tightened) to the position of Figure 6 or the position of Figure 7. The flange will remain bowed upwardly concavely as shown at **38** in Figure 6 or upwardly convexly as shown at **39** in Figure 7, tending to push the disc into seating engagement with the neck of the container or the transverse end of the cap, as the case may be, to insure firm sealing

around the base of the spout. The opening 28 in the neck of the container is preferably large enough to receive the disc as shown, thus insuring a better sealing with the neck of the container.

The spout is made so that for shipment purposes it can be reversed as shown in Figures 8 and 9, the tendency being in this case to distort or bow the flange 37 in either the upwardly convex direction as shown at 40 in Figure 8 or the upwardly concave direction as shown at 41 in Figure 9. Here again the same advantage exists in seating at one or the other end of the disc.

It will be evident that the resilient flange performs the dual function of sealing at the radial outer portion where it engages the cap and also of providing resilient urging on the disc, to make the disc or the portion of the flange adjoining the disc seal with the neck of the can or the upper end of the cap as the case may be.

In view of my invention and disclosure variations and modifications to meet individual whim or particular need will doubtless become evident to others skilled in the art, to obtain all or part of the benefits of my invention without copying the structure shown, and I, therefore, claim all such insofar as they fall within the reasonable spirit and scope of my claim.

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

A spout closure comprising a cap having an end wall provided with a central opening and having an annular skirt provided with projections adapted to interlock with the threaded neck of a container, and a spout of polyethylene having a tubular spout body provided with an interior bore, said body having an integral disc at one end thereof making sealing engagement with the end wall of the cap in a position in which the spout extends inside the cap and also in a position in which the spout extends through the central opening outside the cap and having a resilient sealing flange extending radially outwardly from the disc around the circumference and making sealing engagement with the interior of the skirt of the cap.

JOHN L. LAY.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
211,783	Quigley	Jan. 28, 1879
245,047	Banker	Aug. 2, 1881
579,626	Wilson	Mar. 30, 1897
881,550	Cole	Mar. 10, 1908
927,617	Weber	July 13, 1909
2,177,754	Tainish	Oct. 31, 1939
2,207,176	Phillips	July 9, 1940
2,559,168	Numbers	July 3, 1951