May 31, 1966 J. J. DE PUTRON 3,253,728

EXTENSIBLE SPOUTS FOR CONTAINERS

Filed May 21, 1964

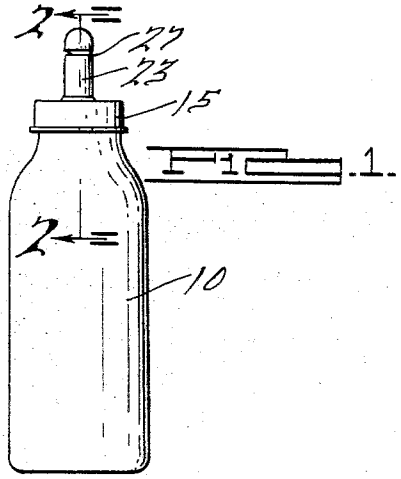


FIG. 1.

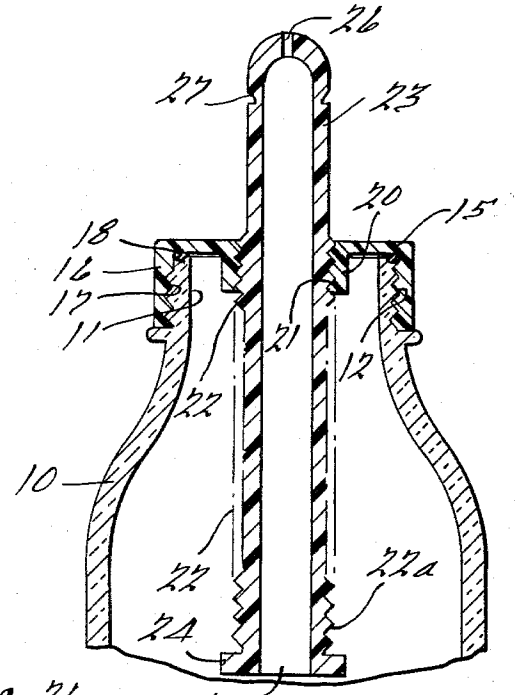


FIG. 2.

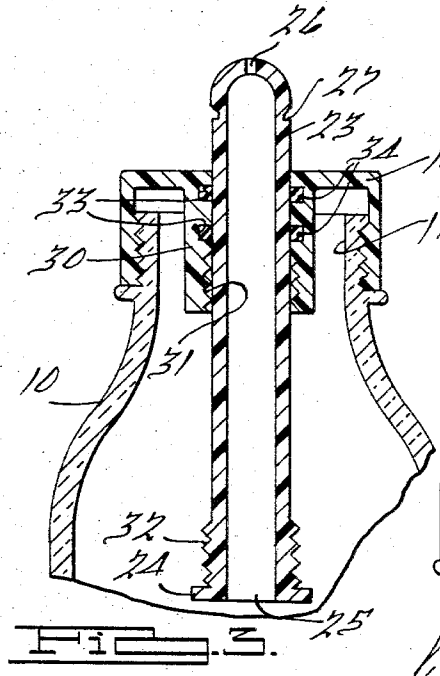


FIG. 3.

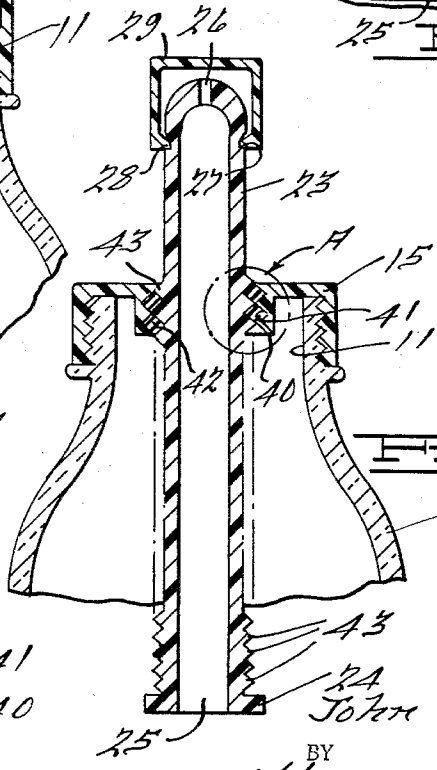


FIG. 4.

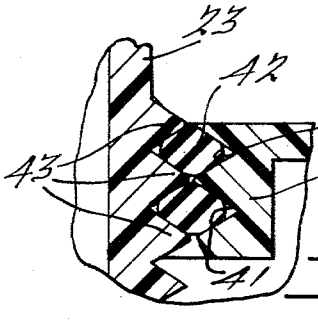


FIG. 5.

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United States Patent Office 3,253,728 Patented May 31, 1966

3,253,728

EXTENSIBLE SPOUTS FOR CONTAINERS

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Filed May 21, 1964, Ser. No. 369,272
4 Claims. (Cl. 215—73)

This invention relates to extensible spouts or spout-like applicators and, particularly, to a spout or applicator which is extensible through a cap on a container for extending the discharge end therefrom.

The present invention pertains to an adjustable spout or spout-like applicator in a cap which is attachable to a container. The spout is usually disposed within the container with only a small portion extending from the cap when in normal use and the liquid within the container may be dispensed from the end of the spout when so disposed. When it is desired to have the end extend a substantial distance from the cap, then it is withdrawn therefrom with the inner end secured to the cap so as to be in fixed relation thereto. In this position of the spout, it is possible to reach otherwise inaccessible places with the discharge end of the spout. It is within the purview of the invention to not only seal the spout with the cap, but the seal may be so disposed as to retain the spout in any position of extension from the cap while at the same time sealing the spout in all positions with the cap.

Accordingly, the main objects of the invention are: to provide a cap for a container having a spout thereon which is in sealed relation to the cap in its inner and outer position; to provide a screw cap for a container having a spout thereon which is extendable therefrom and which has threads thereon which secure the stem to the cap in retracted and extended positions; to provide a cap for a container having an extensible spout thereon which is sealed thereto by O-rings and retained in extended position by threads on the cap and spout; to provide a cap for a container having an extensible spout extending therethrough and sealed thereto by a resilient thread which seals the spout in any of its extended positions from said cap, and in general to provide an extensible spout for a cap which is simple in construction and economical of manufacture.

Other objects and features of novelty of the invention will be specifically pointed out or will become apparent when referring, for a better understanding of the invention, to the following description taken in conjunction with the accompanying drawing, wherein:

FIGURE 1 is an elevational view of a container provided with an extensible spout in accordance with this invention;

FIGURE 2 is an enlarged fragmentary view of FIGURE 1 taken substantially on the plane indicated by line 2—2 in FIGURE 1;

FIGURE 3 is a view similar to FIGURE 2 showing a slightly modified form of construction;

FIGURE 4 is a similar view showing another modified form of construction; and

FIGURE 5 is an enlarged fragmentary sectional view of the portion enclosed by circle A in FIGURE 4.

Several forms of construction by which the objects and advantages of this invention may be attained are shown in the drawing. The invention relates to an extensible spout or spout-like applicator; and, as shown in FIGURES 1 and 2, is adapted to be associated with a container **10** which may be made of glass, plastic, or any other suitable material. The container **10** is provided with an open end **11** formed with exterior screw threads **12**.

The open end of the container **10** is adapted to be closed by a cap or cap-like member **15** formed of any suitable material, but preferably of a plastic material. At its outer periphery, the cap **15** is provided with a flange **16** formed with interiorly arranged threads **17**

adaped to engage with the threads **12** on the open end of the container **10**. When screwed in place, the cap **12** has a sealing engagement with the container and to insure such a seal, a sealing washer **18** may be provided between the cap and container.

The cap **15** is formed with a preferably integral inner annular flange or sleeve **20** provided with exteriorly arranged threads **21** adapted to engage the threads **22** on an extensible spout or spout-like container **23**. In the form of construction illustrated in FIGURE 2, the threads **22** extend throughout the greater portion of the length of the spout **23** so that the spout or applicator **23** may be extended from the position illustrated in FIGURE 2 to a position in which it extends substantially entirely beyond the cap **15**. The inner end of the spout or applicator **23** is provided with a preferably annular shoulder **24** adapted to act as a stop and to engage the inner end of the flange or sleeve **20** when the applicator has been extended to its outermost position.

From the foregoing description, it will be clearly apparent that the spout or applicator may be readily adjusted with respect to the container so as to extend the desired distance therefrom and that in any position the contents of the container may flow into the spout or applicator through its inner open end **25** and out through a dispensing opening **26** formed in the end or tip of the spout or applicator.

The threaded connection **21–22** is such as to seal the joint between the cap **15** and the spout or applicator **23** while at the same time this threaded connection holds the spout at any of its adjusted positions.

If desired, the discharge end of the spout may be provided with an annular groove or recess **27** with which the end **28** of a closure cap or cover **29** has a snap-on engagement. This closure cap or cover **29** may be applied to the spout when it is desired to prevent the entrance of foreign material into the spout through the discharge opening **26**.

It will be understood that the spout or applicator **23** may be adjusted to its outermost position when it is desired to reach otherwise inaccessible places with the discharge end of the spout. Also, while the screw threads **22** are shown as extending the entire length of the spout, so that the spout may be adjusted to any one of a number of positions, if desired, the intermediate threads may be omitted so that the spout is held in two positions; i.e., either its innermost adjusted position, as shown in FIGURE 1, or its outermost position in which the lowermost group of threads **22***a* engage the threads **21**.

In FIGURE 3, a slightly modified form of construction is illustrated in which the cap **15** is formed with a somewhat longer inner annular flange or sleeve **30**. The lowermost end of this flange **30** is provided with threads **31** adapted to be engaged by a series of threads **32** when the spout or applicator **23** is in its outermost or extended position.

In this form of construction, the cap **15** is formed with one or more annular recesses **33** adapted to receive O-ring type sealing elements **34**. These O-rings frictionally engage the spout or applicator **23** to hold the same in any of its intermediate adjusted positions, but when the spout or applicator **23** is in its outermost or extended position, the threads **32** will be engaged with the threads **31** to securely hold the applicator or spout in its outermost position. The O-rings not only serve to frictionally hold the spout in any one of its adjusted positions, but also serve to seal the connection between the spout **23** and the annular flange or sleeve **30**.

In FIGURES 4 and 5, another slightly modified form of construction is illustrated. In this form of construction, the cap **15** has an annular flange or collar **40** pro-

vided on its inner face with a helical recess or groove **41** which extends from adjacent the top side of the cap to the inner end of the collar or sleeve **40**. Adhered within the helical groove or recess **41** is a helical strip **42** which is preferably made of neoprene or some other similar type material. This helical strip **42** engages threads **43** formed on the spout or applicator **23**. This helical strip **42** engaging the threads **43** on the spout or applicator **23** provides a resilient threaded connection between the cap and spout and also serves to seal the joint between these parts. In this embodiment of the invention, the threads **43** extend substantially throughout the entire length of the spout or applicator so that by rotating the applicator, it may be adjusted to project the desired distance beyond the cap. Thus, the helical strip **42** in the form of construction shown in FIGURES 4 and 5 not only provides a threaded connection between the cap and spout, but also serves to seal the connection between these parts.

From the foregoing, it will be apparent that there is provided a simple but effective means for mounting an adjustable spout or spout-like applicator to a container wherein the spout may be used to discharge the contents of the container, either from an inner position or from an extended position. With the spout in the extended position, it is possible to reach otherwise inaccessible places with the discharge end of the spout. In all forms of construction, the spout is firmly held in any of its adjusted positions and the joint between the spout and cap is effectively sealed.

While several commercially practical embodiments of the invention have been described and illustrated herein somewhat in detail, it will be understood that various changes may be made as may come within the purview of the accompanying claims.

What is claimed is:

1. In a spout and cap combination for a container, a cap having a circular body portion containing a central aperture with an annular flange about said aperture and an annular flange outwardly thereof about the edge of said body, both flanges extending from the same side of the body, internal threads on said flanges, and a spout of elongated tubular shape having an end portion of reduced diameter and a portion therebelow of larger diameter containing a thread which mates with the thread of the flange about the aperture, whereby the unthreaded projecting end of the spout may be inserted through said flanged aperture to a degree to permit the threads on the spout to be threaded into the threads thereof, said projecting end of said spout being closed by a semispherical end having

an aperture extending therethrough on the axis of the spout and having an annular notch in proximity of the juncture between the projecting end and the semispherical portion for supporting a closure element for the spherical end.

2. A device as described in claim **1** in which sealing means is carried by the flange about the aperture in engagement with the spout.

3. A device as described in claim **1** in which a seal is formed between the threads of the spout and those of the flange about the aperture by a resilient sealing element.

4. In a spout and cap combination for a container, a cap having a circular body portion containing a central aperture with an annular flange about said aperture and an annular flange outwardly thereof about the edge of said body, both flanges extending from the same side of the body, internal threads on said flanges, and a spout of elongated tubular shape having an end portion of reduced diameter and a portion therebelow of larger diameter containing a thread which mates with the thread of the flange about the aperture, whereby the unthreaded projecting end of the spout may be inserted through said flanged aperture to a degree to permit the threads on the spout to be threaded into the threads thereof, the bottom end of the spout having a flange extending beyond the threads thereof to act as a stop for limiting the extension of the spout from the cap, said spout and cap being made from a hard plastic material, said projecting end of said spout being closed by a semispherical end having an aperture extending therethrough on the axis of the spout and having an annular notch in proximity of the juncture between the projecting end and the semispherical portion for supporting a closure element for the spherical end.

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