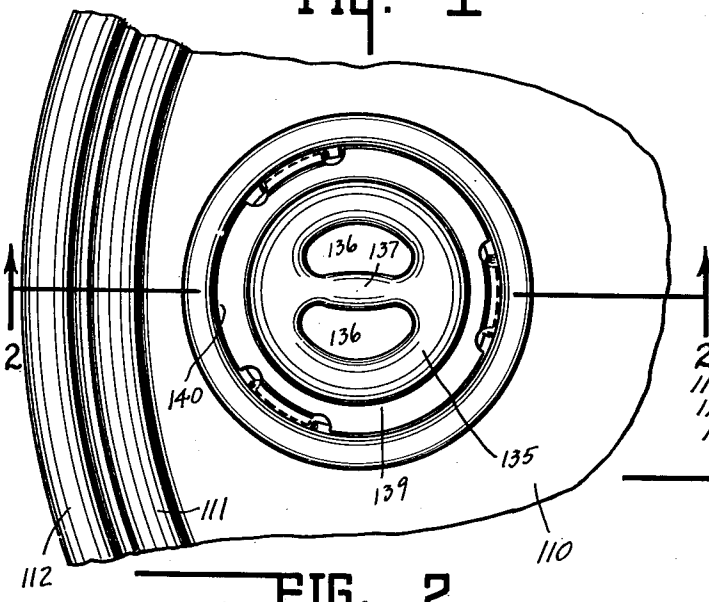
Aug. 28, 1951 I. H. RIEKE 2,565,699

FLEXIBLE, RETRACTABLE DISPENSING SPOUT

Filed May 13, 1948

FIG. 1



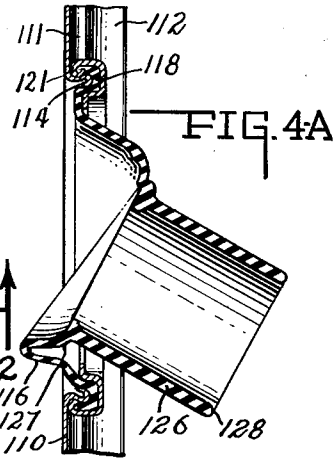


FIG. 4A

FIG. 4

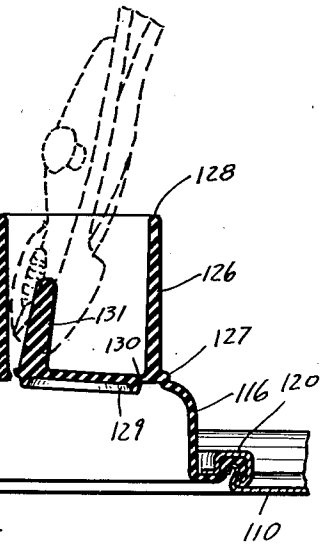


FIG. 2

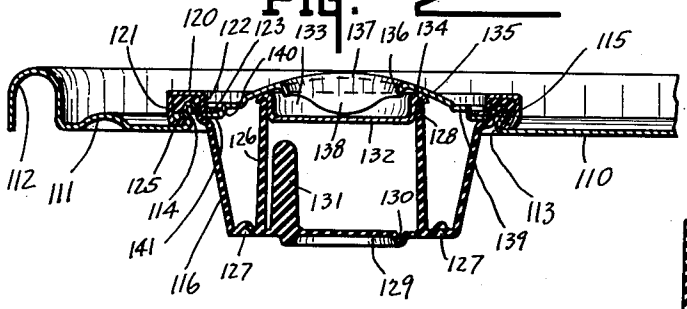
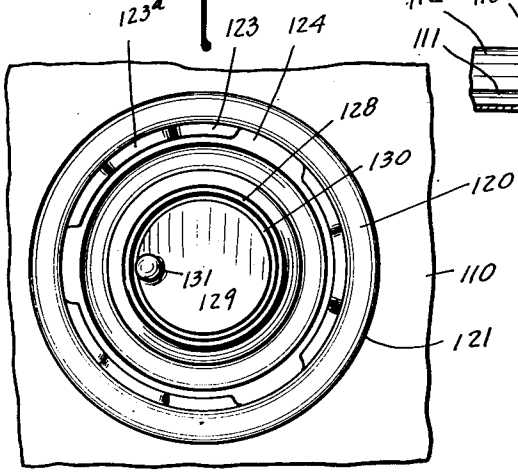


FIG. 3



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FLEXIBLE, RETRACTABLE DISPENSING SPOUT

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7 Claims. (Cl. 222—529)

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This invention relates to an extensible and contractible pouring spout structure normally nestable in a container and mounted in an opening therein and which spout is of sealing or sealable type.

This invention is an improvement upon the invention disclosed and claimed in copending application, Serial No. 752,707, filed June 5, 1947, and entitled Container Nestable, Extensible and Contractible Pouring Spout, now Patent No. 2,561,596.

One object of the present invention is to improve the outer protective seal mechanism whereby it may be readily detached and attached.

Another object of the present invention is to dispose the spout seal remote from the pouring edge thereof so that the latter will not affect the pouring action.

A feature of the present invention, in addition to the structure whereby the aforesaid objects are accomplished, resides in a rupture pull member carried by the spout seal.

A further feature of the invention resides in a spout structure formed of a flexible plastic material, rubber or the like, comprising a highly flexible cup-like member with sufficient flexibility to roll over itself from spout nesting position to spout-extending position, and with a spout portion of heavier cross section to render it more rigid and self-sustaining to prevent collapse thereof. By reason of the relatively greater flexibility of the cup member having its large end or base secured to the container, the spout is additionally capable of angular adjustment relative to the container so that the contents may be poured downwardly at an angle to the horizontal. This is accomplished by forming the conical base portion of the spout of a substantially lighter gauge material than the gauge of the more rigid pouring portion of the spout, but of such character that it will hold and maintain its position when set at an angle to the container, as well as permit rolling over upon itself as it is moved from its inner nested position to its extended pouring position.

Other objects and features of the invention will be set forth more fully hereinafter.

The full nature of the invention will be understood from the accompanying drawings and the following description and claims:

In the drawings,

Fig. 1 is a top plan view of a conventional cover, such as a lid for a container and with one form of the invention applied thereto.

Fig. 2 is a central sectional view of the same

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taken on line 2—2 of Fig. 1 and in the direction of the arrows.

Fig. 3 is a top plan view of the spout portion of the invention, the detachable protective cap being removed therefrom, the spout being illustrated in sealed condition prior to rupturing.

Fig. 4 is sectional view of a somewhat modified form of the spout shown in Fig. 2 with the spout protective cap removed, the spout seal partially severed therefrom, dotted lines illustrating a convenient tool for effecting spout seal rupturing.

Fig. 4A is illustrative of the spout as shown in Fig. 4, when flexed upon its supporting base to extend at an acute angle to its mounting.

In the drawings 110 indicates a can cover proper having, if desired, reenforcing flange 111 and chime anchoring outer portion 112. Said cover includes an aperture 113 defined by outwardly and reversely directed flange portion 114 in turn terminating in an inwardly and reversely directed bead 115.

A frusto-conical flexible cup member 116 includes at its outer and larger end a tubular portion 117 which terminates in an outwardly directed flange 118 that is grooved as at 119 upon its rear face. An anchor ring includes flat portion 120 and tubular portion 121. The former includes a concentric inwardly directed portion 122 and projecting inwardly therefrom are the flange members 123 spaced apart as at 124 and having central offset raised portions 123a. These flanges are inclined for breech lock purposes. The tubular portion 121 includes a curled bead 125 bearing upon cover 110 immediately contiguous to neck 114 about the opening 113 therein. The aforesaid ring structure clampingly and sealably secures the spout to the cover in and at the opening.

Disposed within the flexible frusto-conical cup member 116 is a reversely extending frusto-conical pouring spout portion 126, the same being integral and united by annular ridged junction portion 127 to provide a telescopic and extensible pouring spout structure. The free end 128 of portion 126 terminates in or contiguous to a plane including flange 120.

Herein immediately contiguous to the junction portion 127, the cup member 116 is sealed by a closure portion comprising a seal as shown at 129. Such seal is ridge connected thereto as at 130. The seal includes the integral pull member 131. The entire telescopic spout structure is of rubber, or rubber like or flexible plastic material so that it can be turned and extended as shown in Fig. 4

and ruptured and fully opened as partially indicated in said figure.

The open outer end 128 of the spout portion 126 may be closed by a closure comprising a disc member 132 including a tubular portion 133 seating in the spout. Said tubular portion terminates in channel portion 134 that nests upon the seat at the end 128 of spout portion 126.

Bearing on channel portion 134 is a retainer comprising a protective cap 135 having a pair of elongated openings 136 formed therein and providing therebetween the finger portion 137. The adjacent stock 138, provided when the openings are formed, is disposed to form finger portions in close proximity so that both extensions thereof nest in the disc member 132.

As illustrated, the protective cap is arched and its periphery is formed in an outwardly directed flange 139 terminating with a downturned portion 140 which then projects outwardly as the spaced tongues 141.

After the spout structure, in nested relation, is permanently attached to the cover 110 by the anchor ring aforesaid, the spout end seal 132 having a slight friction fit is applied to the small end of the spout. Then the retainer or cap 135 is applied by presenting tongues 141 to matching spaces 124 and pressing inwardly on the retainer disposes tongues 141 below the plane of flange portions 123. Retainer rotation then registers the tongues with offset portions 123*a* of said flanges. To extend the spout, the reverse operation of the retainer is effected and then the spout seal 132, etc. is removed. The portion 126 may then be extended as shown in Fig. 4. Resealing is effected by pushing inwardly upon end 128 after seal 132 is applied. Then the retainer is applied.

Note that the first time the spout is extended for pouring, the spout integral seal 129 must be ruptured as described and usually said seal is completely detached and discarded.

Observe further that it is preferred that when the parts are disposed as shown in Fig. 2, the cup member 116 is under slight tension and the spout portion 126 is under slight compression. This means that seal 132 is held in place by the retainer bearing thereon, and the retainer is held in place by this yielding formation, that is, tongues 141 are yieldingly trapped as it were in pockets 123*a* and vibration will not accidently result in retainer rotation sufficient to release the retainer.

As more clearly illustrated in Fig. 4, the flexible cup member 116 is of substantially lighter gauge than the same material forming the more rigid and self-supporting spout portion 126. A relatively greater flexibility of the cup member permits it to readily roll over itself from its inwardly-extending nesting position to its outwardly-extending pouring position. But in addition thereto it has the great advantage of flexing about its supported base so that the pouring spout 126 may extend at an angle to the container which is highly advantageous in directing the liquid contents therefrom during the pouring operation.

While the invention herein has been described in great detail in the foregoing specification, the same is to be by way of example, only for that form so described, as well as others which will readily suggest themselves to persons skilled in the barrel seal and pouring spout art, all are considered to be within the scope of the present invention as defined by the appended claims.

The invention claimed is:

1. In combination a container portion having an opening therein, a telescopic type collapsible and expansible spout of flexible material disposed in the opening, means securing one end of the spout to said portion at the opening thereof, the spout being normally disposed such that the major and intermediate portions thereof are nested within the container, a closure portion integral with the spout and disposed inwardly thereof, and a pull member rigid therewith and arranged wholly within the spout for closure portion rupture from the spout upon sufficient outward pull thereon.

2. In combination a container portion having an opening therein, a telescopic type collapsible and expansible spout of flexible material disposed in the opening, means securing one end of the spout to said portion at the opening thereof, the spout being normally disposed such that the major and intermediate portions thereof are nested within the container, a closure for the other end of the spout, a retainer for said closure, and a breech-lock connection between said retainer and said means, said breech-lock connection being of the pocket-tongue seating type, the retainer normally bearing upon the closure for retention thereof and the spout yieldingly constraining the retainer to pocket seating.

3. Structure as defined by claim 2 wherein there is provided a closure portion integral with the spout and disposed inwardly thereof, and a pull member rigid therewith and arranged for closure portion rupture for spout opening.

4. Structure as defined by claim 2 wherein the said closure is dished and includes a portion seatable in the spout, said retainer having a centrally disposed diametral finger engageable portion registering with the closure dished portion.

5. Structure as defined by claim 4 wherein there is provided a closure portion integral with the spout and disposed inwardly thereof, and a pull member rigid therewith and arranged for closure portion rupture for spout opening.

6. In combination a container portion having an opening therein, a telescopic type collapsible and expansible spout disposed in the opening, a portion thereof being of flexible material, means securing one end of the spout to said container portion at the opening thereof, a closure for the other end of said spout, said spout and closure being normally disposed such that the major and intermediate portions thereof are nested within the container, a second closure portion integral with the spout and disposed inwardly thereof, and a pull member rigid therewith and arranged wholly within the spout intermediate said first and second closures for effecting rupture of said second closure from the spout upon sufficient outward pull thereon after said first mentioned closure is removed.

7. In combination, a liquid container having an opening therein, and a self-contained pouring spout assembly including a supporting ring secured over and about said opening, a pouring spout comprising a tubular body of flexible material having a frusto-conical flexible cupped portion secured at the larger end thereof to said container by said supporting ring, and a spout portion of less diameter than and integral with said cupped portion extending from the smaller end thereof, said pouring spout being characterized by the material of said cupped portion being of less gauge than that of said spout portion and sufficiently flexible to permit it to roll

over itself from a spout nesting position within the cupped portion and container to a spout extended position without the container, and to permit flexing thereof to an angular position relative to its supporting ring while self-sustaining in both its nested and angular extended positions, said spout portion being of relatively heavier gauge than said cupped portion to resist collapsing and to maintain its tubular form in both said nested position and extended pouring position when said cupped portion is flexed at an angle.

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