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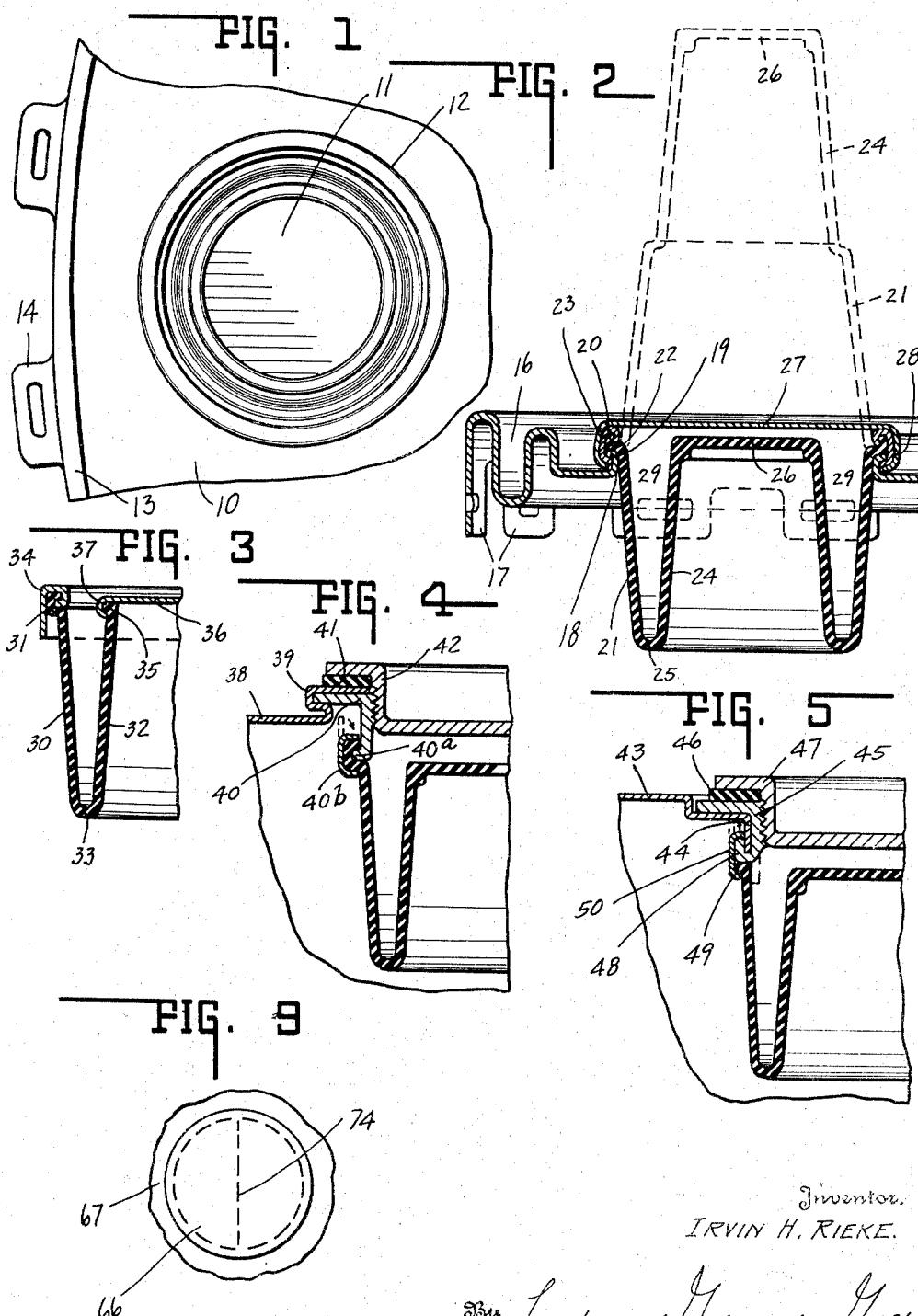
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2,561,596

CONTAINER NESTABLE AND CONTRACTIBLE POURING SPOUT

Filed June 5, 1947

2 Sheets-Sheet 1



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FIG. 6

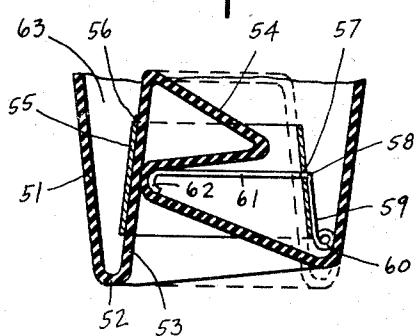


FIG. 7

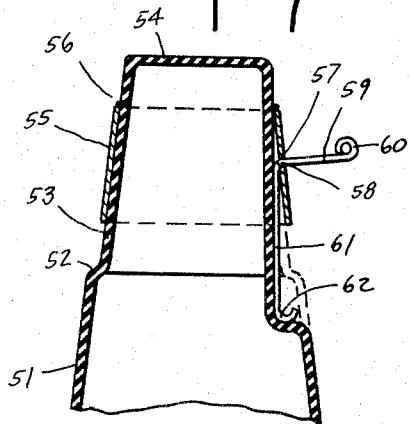


FIG. 10

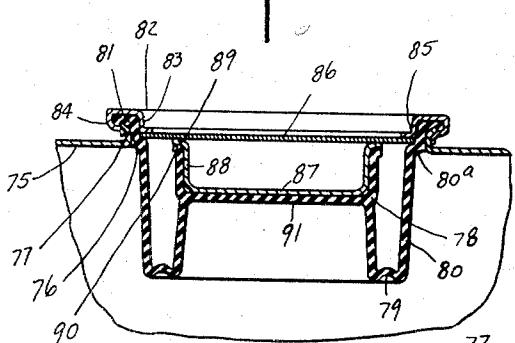


FIG. 11

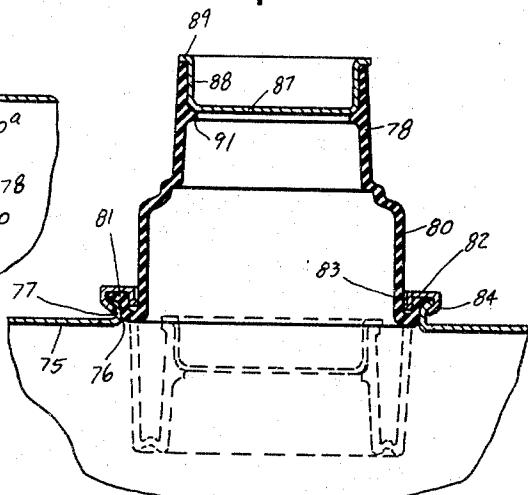
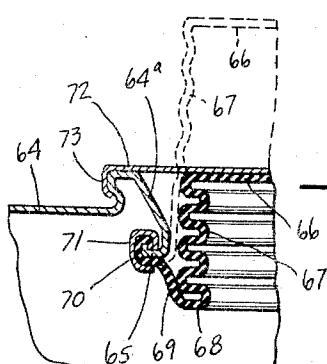


FIG. 8



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CONTAINER NESTABLE AND CONTRACTIBLE POURING SPOUT

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8 Claims. (Cl. 222—527)

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

The chief object of the present invention is to provide a spout of the aforesaid type and mountable within a container, or a portion thereof, by hand or machine as desired and at the time of container manufacture or subsequently, as for example, after a container is filled and the lid is to be applied thereto.

The chief feature of the present invention resides in peripherally anchoring in an opening in a container or a part thereof or in immediate proximity to that opening a flexible collapsed spout structure which is normally nested wholly within the container and is extensible therefrom for pouring purposes.

Another feature of the present invention is that such spout is of sealed, semi-self sealing or sealable type.

A further feature of the present invention is that one embodiment is capable of faucet replacement on a barrel for the dispensing of anti-freeze liquid or the like.

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 portion of a conventional cover or lid for a container and with one form of the invention applied thereto.

Fig. 2 is a central sectional view of the same form applied to a somewhat similar lid or cover, dotted lines indicating the extended position of the spout, the invention herein being shown associated with a cap seal.

Fig. 3 is a central sectional view through a portion of a modified form of the invention prior to mounting and having a cap sealing closure applied to the pouring end.

Fig. 4 is a central sectional view of a steel barrel application of the invention, the barrel fixtures being of the Rieke type.

Fig. 5 is a similar view of a steel barrel application of the invention, the barrel fixtures being of the American Flange type.

Fig. 6 is a central sectional view of a portion of a faucet replacing embodiment of the invention, the parts being shown in the collapsed position.

Fig. 7 is a similar view of the same embodiment in the extended position, dotted lines indicating the cut-off condition.

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Fig. 8 is a central sectional view of a modified form of the invention applied to a cap sealed opening in a container, dotted lines indicating the extended position.

5 Fig. 9 is a top plan view of a slitable closed end of a pouring spout embodying the invention, dotted lines indicating where the slit may be made.

In Figs. 6 and 7 the anchorable end of the spout 10 is intentionally omitted for it may be of the type shown in Figs. 2, 4, 5 or 8, as desired or required.

15 In Figs. 3, 4, 5 and 8 the central sections are not extended since Fig. 2 shows the opposite side to be a duplicate in reverse of that illustrated.

Fig. 10 is a central sectional view of a modified and the preferred form of the invention, parts being shown in the collapsed and shipping or storage position.

20 Fig. 11 is a similar view of the same form with the parts in extended position, certain parts being removed to permit subsequent dispensing, dotted lines indicating the non-dispensing position.

25 In Fig. 1 of the drawings 10 indicates the detachable lid or cover of a container having a pouring spout 11 applied to opening 12 therein, said lid having a peripheral groove formation 13 with radial, apertured tongues 14.

In Fig. 2, 15 indicates a detachable lid or cover defined by a reversely grooved peripheral portion 16 having radial, apertured tongues 17. The opening 18 in the lid is defined by outwardly and laterally directed portion 19. Seated in said

30 opening is the anchoring flange 20 of the outer portion 21 of the pouring spout. An internally grooved head 22 rests upon the outer edge of portion 19. A clamping ring 23 secures the same together in leak-proof relation. This ring is of light metal and is readily deformed by a hand operable crimping tool or a crimping tool supported and operated by a power operable press, depending upon whether the spout is applied in the field or at the factory at the time of container formation, respectively.

35 Herein the outer portion 21 is of tapered cup like form and disposed wholly within the same is the oppositely tapered inner portion 24, the two being connected at the closest adjacent ends by integral shoulder-like formation or portion 25. The smaller end of the inner portion is closed by integral portion 26.

40 Whenever desired or required a cap seal 27, having gripping flange 28 engaging and locking to anchor ring 23, may be applied. This prevents accidental extension of the spout should the container be disposed upside down in transit or

45 50 55

storage. Of course, when the container contents are to be used the cap seal aforesaid, which has been applied by a crimping tool, must be removed.

The inner portion of the spout is disposed as shown in spaced relation to the larger and anchored outer portion, the spout when nested forming an outwardly opening channel 29. The thumb and fingers are inserted therein and the smaller end gripped therebetween and pulled outwardly about the connecting intermediate shoulder portion or formation 25. In this operation, the latter portion is inverted. The parts, when the spout is extended, assume the position as shown by dotted lines in Fig. 2.

For pouring purposes the end 26 may be slit or the end may be cut out or cut off as desired. When pouring is completed, portion 24 is again gripped and forced inwardly, the portion 21 also being similarly forced inwardly accompanied by reversal.

Certain synthetic rubber materials are petroleum product resistant. Also certain plastic materials are resilient and flexible. Thus the invention may be comprised of any suitable material compatible with the purposes hereof and duly resistant to the contents of the container.

The present invention obviously provides a seal for a container which in the form so far disclosed is of tamper indicating type. It also provides a plug or closure. It furthermore provides an extensible and collapsible pouring spout.

In Fig. 3 there is illustrated a second embodiment of the invention and same, as the first form includes the outer portion 30, the flanged outer end 31, the inner portion 32, the connecting integral portion 33 and the clamping and anchoring light metal ring 34.

Herein the two portions 30 and 32 are oppositely tapered and the smaller end of portion 32 is externally beaded as at 35. Secured thereon is a suitable cap type seal of light metal or a material the same as that of which the spout is made. 36 indicates the closure portion and 37 indicates the anchoring rim or flange.

In this embodiment removal of the cap type seal immediately exposes the open end of the spout. This cap type seal may be of finger applied type or crimping tool applied type. In the latter event it and bead 35 may be severed from portion 32. In the former the seal can be applied and removed at will as often as desired. Extension and collapse of this spout is effected as previously described.

Reference will now be had to Fig. 4 wherein there is illustrated an example of a steel barrel or drum provided with conventional fixtures modified as required herein and as hereinafter pointed out.

In Fig. 4, 38 indicates the barrel portion having socket 39 formed therein to clampingly engage and seat the internally threaded flange 40. Gasket 41 and bung or plug 42 complete the standard structure.

Herein flange 40 includes on its inner end an outwardly directed lip 40^a. To this lip is anchored by a crimping tool the outer end of the outer portion of the spout structure by clamp ring 40^b. Dotted lines indicate the ring prior to tool deformation into anchoring portion. For purposes of illustration the spout structure is illustrated as that shown in Fig. 2 but it may partake of the form shown in Figs. 3, 6 and 7, or Fig. 8 as found most expedient or desirable, the purpose of illustrating Fig. 4 being solely to show steel barrel application for alcohol, gasoline or oil use.

A cap seal similar to that shown at 27—28 may be applied to the socket 39 and now standard barrel construction.

In Fig. 5 there is illustrated the invention applied to the conventional steel barrel or drum equipped with conventional fixtures of another type. Herein 43 indicates the barrel metal, 44 the socket thereof, 45 the flange (of drop in type), 46 the gasket, 47 the bung or plug, and 48 the reversed anchoring portion on the flange for socket mounting and gripping purposes.

Herein the tubular spout includes the outer beaded end 49 and the metal clamping ring 50 anchors the spout to the portion 48 as illustrated.

Dotted lines herein indicate the ring portion prior to crimping upon portion 48. As before the spout is like that shown in Fig. 2 but can be of the type shown in Figs. 3, 6 and 7, or Fig. 8 as desired or required.

When barrels are loaded with alcohol or anti-freeze solutions it is customary to remove the plug or bung 42 or 47 in Figs. 4 or 5 respectively and screw into the flange a faucet. The barrel thus equipped is mounted so the faucet is disposed at or near the lowest end so the contents can be drawn off intermittently by the service station attendant.

One form of the present invention readily lends itself to faucet use with this advantage that there is no projecting faucet to constitute a potential accident hazard. This form of the invention is shown in Figs. 6 and 7 and since it is equally applicable to the barrels shown in Figs. 4 and 5, the anchoring portions of the combination spout and faucet structure is intentionally omitted. Obviously this embodiment may be mounted on lids or covers as well, as shown in Fig. 2, but its greatest application is as previously stated.

In Figs. 6 and 7, 51 indicates an outer tapering portion connected by intermediate integral portion 52 to inner oppositely tapering portion 53. The smaller end of the latter preferably is closed as at 54 but same may be omitted or this end may be formed as shown at 35 in Fig. 3 and closed by a light metal seal.

The modification shown in Figs. 6 and 7, however, is intended to show the application of a cut-off device herein shown in the form of a tube 55 externally applied to the inner portion 53 intermediate its ends and suitably anchored or secured thereto, see bead 56.

This tube is slotted as at 57. Interposed in the slot is the pivotal portion 58 of a clamp member having finger piece 59 with curled free end 60 and arm 61 with curved clamping end 62. It will be remembered that the spout provides an externally opening channel 63. Arm 61 may be of linear type and clamping portion 62 arched shaped.

When this member 58 to 62 is not disposed in clamping position it is positioned as shown in dotted lines in Fig. 6 and full lines in Fig. 7. When disposed in clamping or cut-off position it is positioned as shown in full lines in Fig. 6 and dotted lines in Fig. 7.

Normally it is disposed in cut-off position so that opposite sides of inner portion 53 have interior contact, the same being crescent like in section. When the member 58—62 is so disposed the curled back edge of portion 63 does not cut the surface of the spout. Also finger piece 60 does not cut the spout. It may be of such size that the same contacts the outer wall defining channel 63 so that outer portion 51 holds the member in the 75 cut-off position as shown in Fig. 6.

When the barrel or drum is properly positioned and the screw plug aforesaid removed, the end 54 may be diametrically slit as indicated in Fig. 9, or cut off or a piece cut out or if terminated as shown in Fig. 3, cap 36—37 is removed. Then with member 54 still in cut-off position the spout is extended, as illustrated in Fig. 7, and as previously described, for dispensing purposes.

This is then effected by moving the cut-off member from the position shown in Fig. 6 to the position shown in Fig. 7, reference being had to the full lines only and the relative position of that member to the slotted tube. If desired the cut-off member may be permanently and positively pivoted to slotted sleeve 55.

When dispensing the required minor amount is attained, the cut-off member is returned to cut-off position. When the drum is positioned so that the spout, when extended, projects in a pathway, the spout can be renested or collapsed into the container, in which event the cut-off member is constrained to and held by the outer portion 51 in the said cut-off position. Thus the nested faucet type spout is not a potential accident hazard.

Reference will now be had to Figs. 8 and 9. Herein a further modified form of the basic embodiment of the collapsible and extensible spout is illustrated. This form, however, does not require inversion of a portion thereof for extension. Otherwise expressed, this form is not of telescopic type, that is, one part of the spout does not telescope appreciably into another part thereof.

In Fig. 8, 64 indicates a cover or lid or a portion of a drum or keg having opening defining portion 64^a with reversed flange 65. The spout herein includes closed end 66 at the outer end of bellows portion 67 connected at 68 to the inner end of the outermost portion 69 having portion 70 secured to flange 65 by clamp ring 71.

The full lines in Fig. 8 illustrate the container nestable spout in the collapsed position. It may be suitably retained therein by cap seal 72 having flange 73 crimped to the portion 64 as shown. Obviously the keg, etc., chime, not shown, preferably projects beyond the outer plane of portion 64^a so that the cap 72—73 does not project beyond the outermost plane of the adjacent chime.

When the cap is removed, the constraint is removed, and the spout automatically extends to the dotted line position in Fig. 8. End 66 may then be slit along dotted line 74, see Fig. 9. The outer end of the bellows portion 67 obviously may be cap sealed as shown in Fig. 3, if desired.

When the slit end is utilized, this constitutes a semi-sealed end. Compression of the junction between portions 67 and 69 will effect opening in end portion 66 at slit 74 for rapid discharge. Release of such compression will promptly result in the end closing because escape pressure on end 66 will tend to effect sealing between the adjacent walls formed by the slit 74.

Reference will now be had to Figs. 10 and 11 wherein the preferred form of the invention is illustrated. Therein 75 indicates the container shell or lid having opening 76 defined by flange 77. The flexible spout includes the inner frustoconical portion 78 united at 79 to the outer frustoconical portion 80 having the anchoring bead formation 81. The slopes are of opposite character.

A clamping ring 82 has its inner and outer flanges 83 and 84 disposed in clamping association to grip therebetween flange 77 and bead 75.

81. The inner flange has inner extension 85 while the junction between bead 81 and portion 80 provides shoulder 80^a. Disposed therebetween is a paraffined paper board cap 86.

5 This waxed paper cap bears upon a light metal dust cap having central portion 87, side wall 88 and outer flange 89. The dust cap is nested in the outlet end of the inner conical member 78. This dust cap has its flange 89 bearing on the discharge end 90 of member 78. A sealing membrane 91 is disposed across member 78 between the ends. As herein illustrated the dust cap bears on this membrane. Thus the collapsible spout can be held in nested relation under slight or greater pressure by the paraffined cap.

10 When dispensing is desired, if no exterior seal be employed, the paper cap is cut out, the dust cap removed and then the membrane cut out or lit as shown in Fig. 9. The spout is then extended 20 for pouring purposes, see Fig. 11 full lines. When further dispensing is not immediately desired, the dust cap is reapplied. To prevent accidental discharge the spout is then collapsed, see dotted lines in Fig. 11.

25 While the invention has been illustrated and described in great detail in the drawings and foregoing description, the same is to be considered as illustrative and not restrictive in character.

30 The several modifications described herein as well as others which will readily suggest themselves to persons skilled in this art, all are considered to be within the broad scope of the invention, reference being had to the appended claims.

35 The invention claimed is

1. In combination with a liquid container having a top portion provided with an annular filling opening surrounded by an upstanding flange, the combination therewith of a self-contained seal and pouring spout assembly for said opening adapted to be applied thereto after the container is filled with liquid, said assembly including a pouring spout structure comprising a tubular body of flexible and self-sustaining material having an enlarged cup-like base portion terminating in a reduced shoulder from which extends a tubular elongated spout portion of less diameter than said base portion and normally nested therein, the material forming said base portion being sufficiently flexible so that it can be rolled over upon itself axially to an inside out position carrying said spout portion from its inwardly nested position therein to a position extending outwardly therefrom, a removable closure for the free end of said spout portion, and a clamping and sealing ring secured in sealing relation with the open end of said cup-like base portion adapted to be applied to the flange of said container and fixedly secured thereto in sealing relation after filling of the container.

60 2. In combination with a liquid container having a top portion provided with an annular filling opening surrounded by an upstanding flange, the combination therewith of a self-contained seal and pouring spout assembly for said opening adapted to be applied thereto after the container is filled with liquid, said assembly including a pouring spout structure comprising a tubular body of flexible and self-sustaining material having an enlarged cup-like base portion terminating in a reduced shoulder from which extends a tubular elongated spout portion normally nested therein, said base portion being adapted to roll over upon itself to an inside out position carrying said spout portion from its inwardly nested position therein to a position extending outwardly

therefrom, a removable closure for the free end of said spout portion, a clamping and sealing ring secured in sealing relation with the open end of said cup-like base portion adapted to be applied to the flange of said container and fixedly secured thereto in sealing relation after filling of the container, and a removable metal cap secured over said pouring spout structure and removably locked to said clamping and sealing ring when said spout is in its nested position.

3. A sealing closure for a container having an opening therein defined by an upstanding exteriorly grooved flange, including a flexible self restoring and resilient tubular pouring spout having an intermediate annular shoulder which divides it into an inner and outer portion, the inner portion including an enlarged anchoring end comprising an outwardly extending gasket portion seatable over said flange, said spout being generally tapering from the anchoring end outward toward its other end and invertible about its gasket portion, the material forming the inner portion being flexible so that it can be rolled upon itself axially to a position wherein the outer portion is wholly disposed inwardly of said enlarged anchoring end with the outer portion nested within the inner portion, or, alternatively, to a position where said outer portion is wholly disposed outwardly of said inner portion with the spout extended, and a locking ring U-shaped in cross section having outer and inner walls carrying a bridging wall therebetween, the lower edge of said outer wall being inwardly turned into clamping engagement with the groove of said flange, said bridging and inner walls engaging and compressing said gasket portion into sealing engagement with said flange.

4. A pouring spout structure comprising an elongated tubular body of self-sustaining material diminishing in diameter from one end to the other, the larger end of said body being open and providing an inner attaching portion and an outer reduced end portion providing the spout, an intermediate annular shoulder dividing said inner attaching portion from said outer reduced portion, the material forming said inner portion being flexible so that it can be rolled upon itself axially to a position wherein the outer portion is wholly disposed inwardly of the inner portion with the outer portion of said spout nested within the inner portion and both of them being substantially wholly disposed on the inner side of said attaching portion, or, alternatively, to a position where said outer portion is wholly disposed outwardly of said inner portion with the spout extended and substantially wholly disposed on the opposite side of said attaching portion.

5. A pouring spout comprising a tubular body diminishing in diameter from one end to the other and adapted to have its larger end affixed in sealed engagement with a container, the material forming the portions adjacent the larger end being flexible so that it can be rolled upon itself axially to a position wherein the smaller end is wholly disposed inwardly of the larger end, with the smaller end of said spout nesting within the larger end, or, alternatively, to a position where said smaller end is wholly disposed outwardly of the larger end with the spout extended, an intermediate annular shoulder dividing the larger end portion from the smaller end portion, said larger end portion being of self-sustaining material to maintain itself in either of said positions, and

the smaller end portion being of substantially rigid non-flexible material.

6. A pouring spout comprising a tubular body diminishing in diameter from a larger end to a smaller end and open at its larger end, an intermediate formation dividing said larger end from said smaller end to provide inner and outer portions respectively, the material forming the wall of the larger end portion being sufficiently flexible to roll upon itself axially to a position wherein the smaller end portion is wholly disposed inwardly of the larger end and nested within said larger end portion, or, alternatively, to a position where the smaller end portion is wholly disposed outwardly of the larger end portion with the spout extended, said tubular body being sufficiently rigid to maintain itself in such alternative positions.

7. A self containing pouring spout assembly including a supporting ring, a pouring spout comprising a tubular body of flexible material diminishing in diameter from one end to the other and having an intermediate annular shoulder dividing said body into a larger inner portion and a smaller outer portion, the larger inner portion of said body being secured in sealed engagement with said ring, the said outer portion of said body being of less transverse diameter than the said inner portion thereof, the material forming the inner portion being flexible so that it can be rolled upon itself axially to a position wherein the outer portion is wholly disposed inwardly of the inner portion in nested relation, or, alternatively, to a position where said outer portion is wholly disposed outwardly of said inner portion with the spout extended, said tubular body being sufficiently rigid to maintain itself in said extended position beyond one side of said ring and to also maintain itself in extended position beyond the opposite side of said ring.

8. A self containing pouring spout assembly comprising a supporting ring, a tubular body having a wall of flexible material and diminishing in diameter from one end to the other, an intermediate annular shoulder formed in said body dividing said body into an inner portion of larger diameter and an outer portion of smaller diameter, the larger end of said inner portion being secured in sealed engagement with said ring, the wall of the inner portion of said body between said ring and shoulder being of flexible material to permit the same to be rolled upon itself axially to a retracted nested position yet sufficiently rigid to maintain the outer portion of said body substantially within the plane of said ring when in its said retracted nested position, and capable of being rolled upon itself axially to project and maintain said outer portion beyond said ring in spout extended position.

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