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J. E. BORAH

2,804,242

CONTAINER SPOUT AND GASKET COMBINATION

Filed July 7, 1955

2 Sheets-Sheet 1

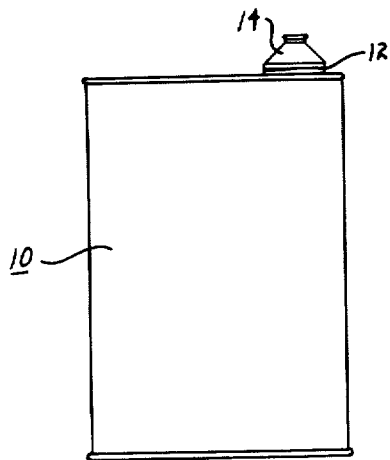


FIG. 1

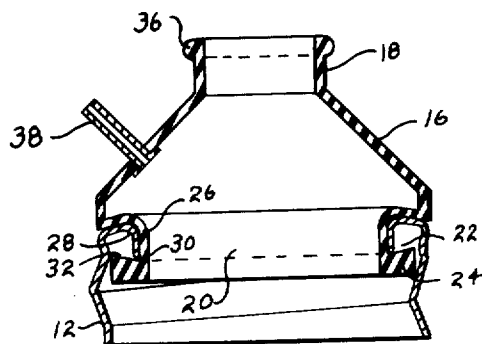


FIG. 2

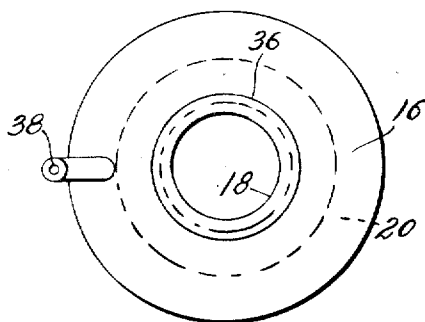


FIG. 4

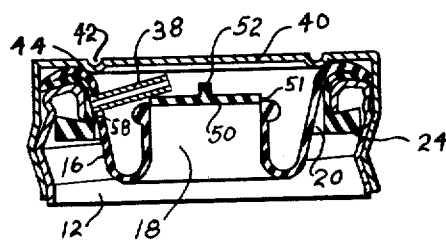


FIG. 3

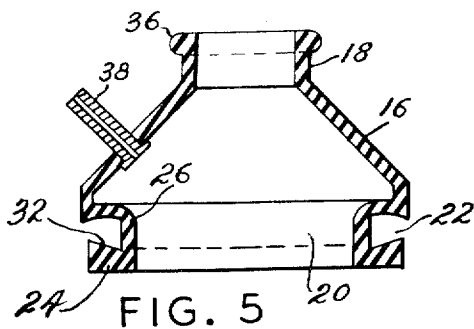


FIG. 5

INVENTOR.
JOHN E. BORAH
BY *m. a. Hobbs*
ATTORNEY

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J. E. BORAH

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2 Sheets-Sheet 2

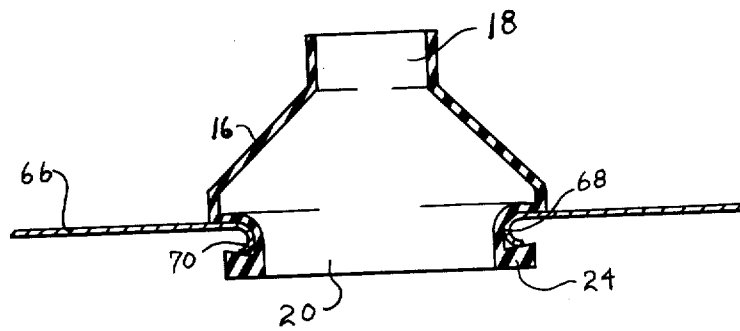


FIG. 6

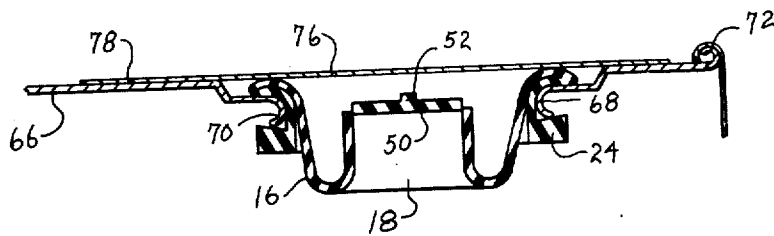


FIG. 7

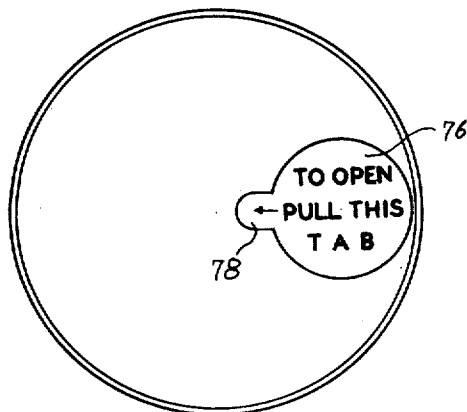


FIG. 8

INVENTOR.

BY JOHN E. BORAH

M. A. Hall
ATTORNEY

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2,804,242

CONTAINER SPOUT AND GASKET COMBINATION

John E. Borah, Mishawaka, Ind.

Application July 7, 1955, Serial No. 520,495

16 Claims. (Cl. 222—478)

The present invention relates to containers and more particularly to a spout and sealing means therefor.

Containers ranging in size from a quart to five gallons in which lubricating oils, anti freeze and the like are shipped and sold are either not provided with a spout or are provided with a protruding spout which interferes with stacking of the containers and which has an ineffective pour lip so that the fluid trickles back along the underside of the spout to the container. This latter condition is sometimes overcome by providing a nozzle or a flexible metal tube which screws onto the spout after the container has been opened, but these must either be left protruding, interfering with storage, or must be removed and the container again resealed. One of the principal objects of the present invention therefore is to provide a spout for containers of the aforesaid type which will be readily available for use when the container is opened and which can be left in place for future use without interfering with resealing the container.

Another object of the present invention is to provide a spout for metal containers having the conventional screw cap closure, which can readily be attached to the container spout after the cap has been removed and which will retract into said spout when the container is recapped.

Another object of the invention is to provide a flexible spout for a container, which is sealed in the container beneath the cap and which functions as an effective sealing gasket between the container and its cap.

Still another object is to provide a spout for a container which telescopes into the container leaving no part above the top rim of the container to interfere with stacking.

A further object of the invention is to provide a collapsible spout for a container which has a separate air vent to admit air into the container to replace the liquid being poured therefrom.

Another object is to provide a spout for containers of the aforesaid type which collapses into the container above the liquid when not in use and which provides an effective pour lip when it is extended for pouring.

It is another object of the invention to provide a collapsible spout of the aforesaid type which has a tamper proof seal to indicate whether the container has been opened prior to delivery to a customer.

Additional objects and advantages will become apparent from the following description and accompanying drawings, wherein:

Figure 1 is a side elevation of a conventional metal container showing my improved spout mounted thereon;

Figure 2 is a vertical cross-sectional view of the spout shown in its extended position on the neck of a container;

Figure 3 is a vertical cross-sectional view of the spout shown in its collapsed position in the neck of a container;

Figure 4 is a top plan view of the spout shown in Figure 2;

Figure 5 is a vertical cross sectional view of the spout shown in Figures 2 and 3, removed from the container;

Figures 6 and 7 show a further modified form of the

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spout in the extended and collapsed positions respectively; and

Figure 8 is a top plan view of a container having the type of spout shown in Figures 6 and 7 covered with a removable seal.

Referring more specifically to the drawings, numeral 10 designates a container, such as that used for oil or gasoline, 12 the container spout or neck and 14 my improved spout which is shown in detail in Figures 2 and 3. This spout is made of rubber flexible plastic, or other like material and, as shown in Figures 2 and 5, consists of a conical body portion 16 having a cylindrical outlet member 18 at the top and an annular grooved base 20 at the bottom. The groove 22 in the base, which is seen clearly in Figure 5, is defined by a relatively thick ring 24 and arcuate walls 26 joined integrally to the lower side of conical portion 16 and is adapted to receive the internal annular bead 28 on the neck 12 of the container. As shown in the drawings the bead 28 has a modified inverted U-shaped cross-section with the free edge 30 thereof facing downward. The inner face 32 of ring 24 is tapered down toward the inner side and is adapted to engage the free edge of the bead and resist removal of the spout when liquid is being poured from the container. Side walls 26 grip the bead and form an effective seal to prevent leakage between the spout and neck. Since the spout is made of rubber or other flexible material, it can readily be distorted to insert and remove it from the container neck. The base 20 however is sufficiently stiff to prevent it from being unintentionally displaced during use. The cylindrical outlet member 18 is provided with an annular flange or bead 36 to provide a suitable pour lip and to stiffen the edge of said member.

When the spout is being used to pour liquid from a container the left hand side as viewed in Figure 1 is the higher side. This side is provided with a small hollow stem 38, which may be a separate metal, plastic, or rubber insert, or formed integrally of the same material as the spout, and is adapted to admit air into the container during pouring to replace the liquid removed. This eliminates the back flow of air through outlet member and thereby produces an even flow of liquid from the container. When only a small quantity of liquid is desired, the container can be tilted in the direction of the stem sufficiently to cause the liquid to flow therethrough yet not sufficiently to cause it to flow through the main outlet.

The spout is so constructed that it will telescope or collapse into the container neck as shown in Figure 3. When the spout is pressed into that position the cylindrical outlet member and the annular base remain in their original shape but the conical side portion rolls downwardly over the upper surface of the base 20 to form an effective sealing gasket for cap 40 thus eliminating the necessity of a separate gasket in cap 40. The cap, which is shown as a conventional screw cap, is provided with an annular rib 42 which seats against the spout wall at numeral 44 to improve the effectiveness of the seal. When the spout is folded into the neck, as shown, stem 38 is below the top edge of the spout and does not interfere with the sealing of the container by the cap.

The container may be initially sealed by the cap and collapsed spout as shown in Figure 3, and then shipped and sold in that condition to the ultimate customer. If desired a double seal can be provided by a sealing disc 50 attached integrally by a thin section of material 51 between said disc and the upper edge of outlet member 18, the disc and outlet member separating along said thin section when the disc is removed in opening the container. A stem 52 is provided in the center of disc 50 to facilitate removal of the disc. This sealing means is described in detail and specifically claimed in my co-pending application Serial No. 542,867 filed October 26,

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1955. Stem 38 is also closed when the spout is in its collapsed position by the seating of its lower end on the side wall of base 20 as shown at numeral 58.

A special advantage of the present spout is illustrated in Figures 6, 7 and 8. The spout is the same in design as the one shown in Figure 2 except that stem 38 has been omitted. In this modification a special container 66 is employed in which no neck is provided and the internally beaded opening 68 is flush with the flat container top as shown in Figure 6, or slightly recessed as shown in Figure 7. The grooved base 20 of the spout engages and seals against an annular internal bead 70. When the spout is in its extended position, as shown in Figure 6, it forms an outlet from which liquid can easily be poured and when it is telescoped or collapsed, as shown in Figure 7, it does not protrude above the rim 72 on the upper edge of the container and hence does not interfere with stacking of the containers. While the stem having sealing disc 50 adequately seals the container for most uses, it may be desirable under certain conditions to further seal the container opening by using a substantially flat strip or disc 76 of suitable material cemented or otherwise secured to the container around the spout, as shown in Figure 8. A tab 78 may be provided to facilitate the removal of the strip or disc when the container is to be opened.

Additional modifications and changes in structure can be made without departing from the scope of the invention.

I claim:

1. In combination with a means defining a container outlet port with an annular internal bead surrounding the port, a spout including an annular means for engaging the upper external and lower internal sides of said bead and extending beneath and beyond the lowest part thereof, the lower engaging surface of said means sloping upwardly and outwardly, a hollow conical section of flexible material joined at its large end to said annular means and having an opening at its small end, and a hollow cylindrical member joined to said section around said opening, said cylindrical member being adapted to telescope into said annular means.

2. In combination with a container having an outlet port surrounded by an internal bead, a spout including an annular means having a peripheral groove facing outwardly for engaging said bead on the outlet and container sides thereof, the lower surface of said groove extending upwardly and outwardly beyond the point of initial inner contact with said bead, and the upper surface of said groove extending downwardly and outwardly, a hollow conical section of flexible material joined at its large end to said annular means and having an opening at its small end, and a hollow cylindrical member joined at one end to said opening, said cylindrical member being adapted to telescope into said annular means.

3. In combination with a container having an outlet port surrounded by an internal bead, a spout including an annular means having a peripheral groove facing outwardly for engaging said bead on the outlet and container sides and extending outwardly on the container side of the bead beyond the point of initial contact therewith, said groove being wider internally than at the outside edges thereof, a hollow conical section of flexible material joined at its large end to said annular means and having an opening at its small end, and a hollow member joined at one end to said opening, said member being adapted to telescope into said annular means.

4. A spout for a container having a means defining an outlet port comprising an annular means having a peripheral groove facing outwardly for engaging said outlet port means, the sides of said groove tapering generally toward each other from inside to outside and extending outwardly beyond the point of initial inner contact with said port means, a hollow conical section of flexible material joined at its large end to the outside edge of said annular means and having an opening at its

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small end, and a hollow cylindrical member joined at one end to said section at said opening and having an annular bead at the other end, said cylindrical member being adapted to collapse into said outlet port.

5. A spout for a container having a means defining an outlet port comprising an annular means having a peripheral groove facing outwardly for engaging said outlet port means and extending outwardly beyond the point of initial inner contact with said port means, said groove being wider internally than at the peripheral edges thereof, a hollow tapered section of flexible material joined at its large end to said second mentioned means and having an opening at its small end, and a member having a fluid passageway joined to said section at said opening, said member being adapted to collapse into said outlet port.

6. In combination with a container having a neck with an internal bead around the open end thereof, a spout including an annular means having a peripheral groove facing outwardly for engaging said bead on the outlet side thereof, the upper surface of said groove extending downwardly and outwardly beyond the point of initial inner contact with said bead, a hollow conical section of flexible material joined at its large end to the outside edge of said annular means and having an opening at its small end, a hollow cylindrical member joined to said section around said opening, and a cap adapted to be secured onto said neck, said section being adapted to telescope into said neck and to form a seal with said cap.

7. In combination with a container having a neck with external screw threads and an internal bead, a spout including an annular means having a peripheral groove facing outwardly for engaging said bead on the outlet and container sides and extending outwardly on the container side of the bead beyond the point of initial contact therewith, a hollow conical section of flexible material joined at its large end to said annular means and having an opening at its small end, and a cap adapted to be screwed onto said neck, said cylindrical member being adapted to telescope into said neck.

8. The structure defined in claim 1 in which a vent means having a stem is provided in the side wall of said conical section.

9. The structure defined in claim 2 in which a vent means having a stem is provided in the side wall of said conical section.

10. The structure defined in claim 4 in which a vent means is provided in the side wall of said conical section.

11. The structure defined in claim 5 in which a vent means is provided in the side wall of said tapered section.

12. The structure defined in claim 6 in which a vent means having a stem is provided in the side wall of said conical section.

13. In combination with a container having means defining a port flush with the surface of said container, a spout comprising a means having a peripheral groove facing outwardly for engaging said port means on the outlet and container sides and extending outwardly on the container side of said port means beyond the point of initial inner contact therewith, the upper surface of said groove extending downwardly and outwardly, a hollow tapered section of flexible material joined at its large end to the outside edge of said second mentioned means and having an opening at its small end, said section being adapted to collapse into said port, and a sheet-like disc secured to said container over said spout.

14. In combination with a container having a recessed port surrounded by a rolled internal bead thereon, a spout comprising an annular means having a peripheral groove facing outwardly for engaging said bead on the outlet and container sides thereof and extending outwardly on the container side of the bead beyond the point of initial contact therewith, a hollow conical section joined at its large end to said means and having an opening at its small end, and a member having a passage therethrough joined to said section at said opening, said section being

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adapted to collapse into said port, and a sheet-like disc secured to said container over said collapsed spout.

15. In combination with a container having means defining a port flush with the surface of said container, a spout comprising a means having a peripheral groove facing outwardly thereof for engaging said means around said port on the outlet and container sides thereof and extending outwardly on the container side of said port means beyond the point of initial inner contact therewith, a hollow tapered section of flexible material joined at its large end to said second mentioned means and having an opening adjacent its small end.

16. In combination with a container having a recessed port surrounded by a rolled internal bead thereon, a spout comprising an annular means having a peripheral groove facing outwardly for engaging said bead on the outlet and container sides thereof and extending outwardly on the container side of the bead beyond the point of initial contact therewith, a hollow conical section joined at its large end to said means and having an

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opening adjacent its small end, and a member having a passage therethrough joined to said section at said opening.

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