

- [54] **PLASTIC DISPENSING NOZZLE WITH POURING SPOUT WITH REMOVABLE SEAL**
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Related U.S. Application Data

- [63] Continuation of Ser. No. 165,674, July 23, 1971, abandoned.

- [52] U.S. Cl. **239/309, 220/27**
- [51] Int. Cl. **B65d 17/24**
- [58] Field of Search **239/302, 327, 309; 220/27, 220/38.5**

[56] **References Cited**

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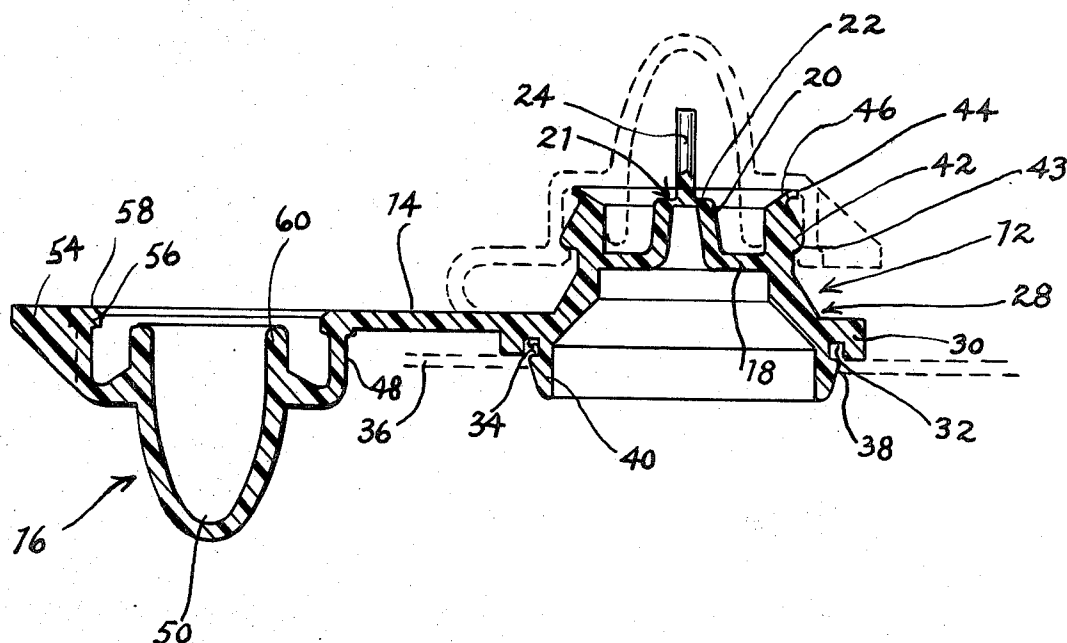
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[57] **ABSTRACT**

A plastic nozzle in combination with a closure cap in which the mouth of the nozzle has a central pouring spout and removable sealing means therefor, which when removed opens the pouring spout.

2 Claims, 4 Drawing Figures



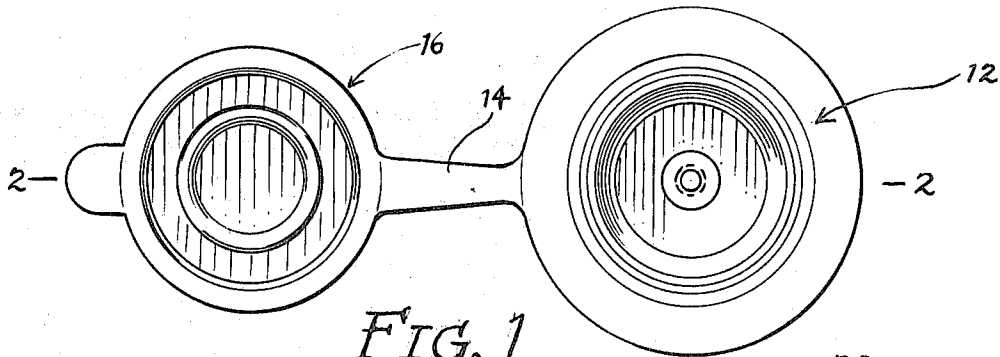


FIG. 1

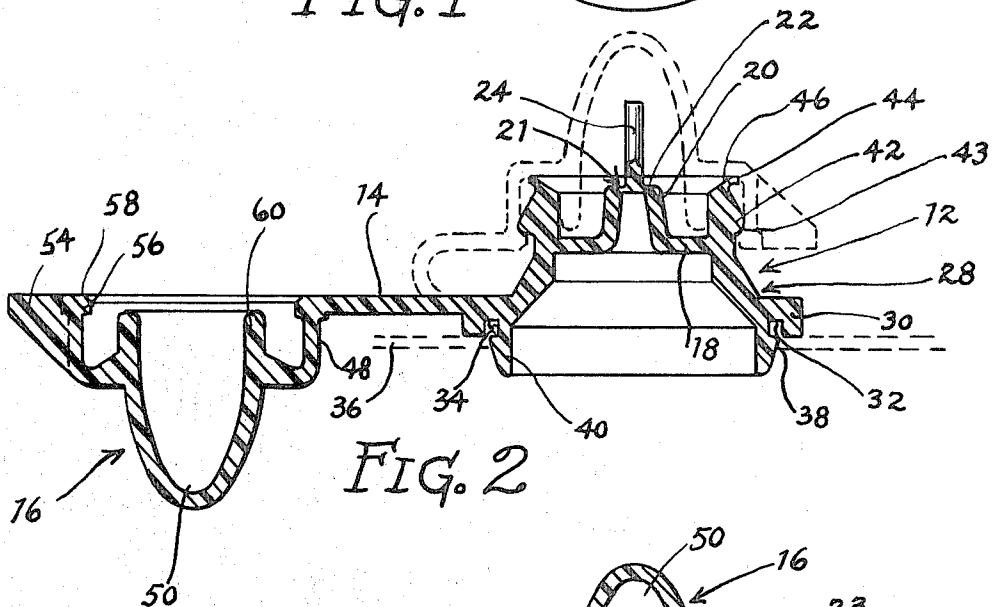


FIG. 2

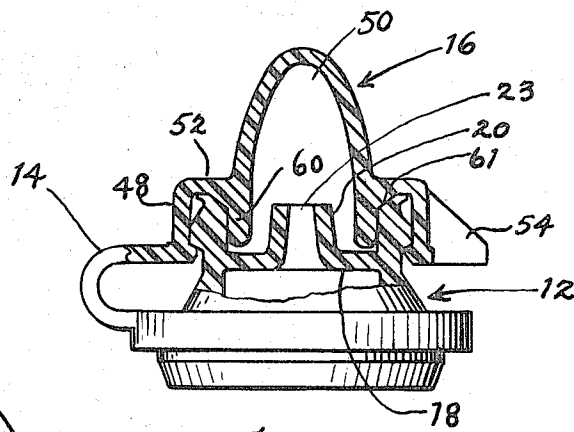


FIG. 3

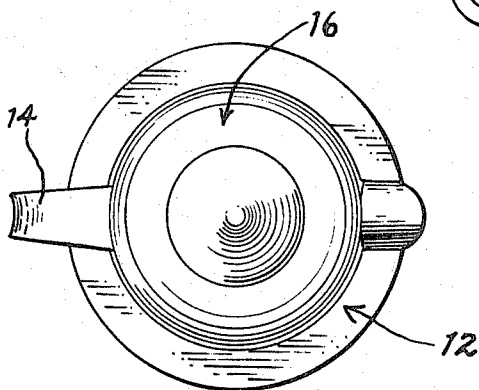


FIG. 4

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PLASTIC DISPENSING NOZZLE WITH POURING SPOUT WITH REMOVABLE SEAL

This application is a continuation of my copending application Ser. No. 165,674, filed July 23, 1971 now abandoned.

BRIEF SUMMARY OF THE INVENTION

In the merchandising of certain products, such as brake fluid and the like, although it is equally applicable to other products, it is imperative that the nozzle be sealed so that even when the cap for the nozzle is lifted to expose the mouth of the nozzle nothing can enter the container through the nozzle, for if any foreign matter found its way into the container it would contaminate the contents thereof, and in the case of brake fluids, when any contaminated brake fluid is introduced into the braking system of an automobile serious consequences could result, such as failure of the braking system to operate effectively. It is also important in connection with all products that the consumer know that the contents of the container has not been tampered with, or reduced, prior to the time the consumer is ready to use the product. An object of this invention therefore is to provide a dispensing nozzle with a pouring spout and removable sealing means for sealing the pouring spout and whereby the ultimate consumer is the one who breaks the sealing means.

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings:

FIG. 1 is a plan view of the closure with the cap in open position.

FIG. 2 is a sectional view taken on line 2—2 of FIG. 1 and showing in dotted lines the cap in closed position with respect to the closure.

FIG. 3 is a view partly in section with the stem of the sealing means removed from the pouring spout to provide a spout opening and with the cap in closed position, and

FIG. 4 is a top plan view of FIG. 3.

The closure unit generally indicated at 10 comprises a nozzle indicated at 12, a flexible hinge 14 extending therefrom and a cap or closure generally indicated at 16 connected thereto. The nozzle 12 is formed to provide therewithin an annular horizontally extending flat portion 18 extending transversely of the interior of the nozzle below the top thereof, with a centrally upwardly extending tubular portion which forms the pouring spout 20, with the top of the spout closed by sealing means generally indicated at 21 which comprises an annular horizontal frangible thin wall 22 with an upwardly extending stem 24 extending upwardly of the frangible wall 22. The spout 20 has a taper or draft. The top of the spout is below the top plane of the nozzle, however, the stem 24 extends above the plane of the nozzle. The entire closure unit 10 is integrally molded of a plastic material, such as polyethylene or similar material so that there is a combined strength and substantial stiffness with resiliency. The cap 16 can be readily snapped on or off the nozzle 12 repeatedly and the parts resume their original molded shape after temporary distortion.

The nozzle 12 comprises a tubular body 28 which tapers or inclines downwardly and then extends outwardly to form an annular enlargement 30. The annular enlargement is provided with an annular groove or recess 32 which is open at the bottom to receive the an-

nular upturned or flanged portion 34 of the top wall 36 of the container surrounding the opening 38 of the top wall 36. The flanged portion 34 of the container is permanently interlocked with the groove or recess 32 of the nozzle to permanently secure the nozzle 12 to the container. The tubular body 28 has a short annular portion 40 at the lower end which extends into the interior of the container. The internal diameter of the nozzle is greater at the lower end than at the upper or outlet end.

The upper or mouth portion of the nozzle has an annular peripheral bead or lip 42 and the lower portion of the bead tapers inwardly as at 43. Upwardly of the bead 42 the nozzle tapers inwardly and then slightly outwardly to terminate in an annular upper edge 44. The inside wall adjacent the upper edge 44 is beveled as at 46.

The cap or closure 16 is connected to the nozzle 12 by the flexible connecting strip or hinge 14 and the hinge extends from the enlargement 30 of the nozzle outwardly to the bottom of the outer cylindrical side wall or skirt 48 of the cap. The cap has a dome-shaped hollow central portion 50 which merges with an annular horizontal portion 52 which merges with the skirt 48. A forward extension 54 is provided at the front thereof and same projects from the cap for manual engagement for the purpose of lifting the cap from the nozzle. The lower end of the outer skirt 48 of the cap has an inwardly extending annular lip 56 which is tapered as at 58, for detachable engagement with the bead 42 of the spout, as best shown in dotted lines in FIG. 2, or full lines in FIG. 3, so that the cap may be readily secured in a closed position over the nozzle and may be readily lifted therefrom for repeated closure of the cap with respect to the nozzle.

Extending downwardly from the central dome portion of the cap is an inner annular wall 60 which is a continuation of the central dome-shaped portion of the cap and same is adapted to be tightly received within the upper or mouth portion of the nozzle to engage the inner wall of the nozzle, as best seen in FIGS. 2 and 3. The annular wall 60 inclines outwardly as at 61 for engagement with the bevel 46 of the upper edge 44 of the nozzle. Thus, the upper portion of the nozzle is positioned between the inner annular wall 60 and the skirt 48 of the cap.

As best shown in dotted lines in FIG. 2, when the cap 16 is secured to the nozzle, which is the closed position of the cap, the stem 24 is positioned within the hollow body of the cap. The container and its contents may thus be shipped with the cap in its closed position, with the absolute assurance that nothing can get into the container and nothing can be poured from the container until the sealing stem 24 has been removed. If someone tampers with the sealing member 21 and detaches the sealing stem 24 prior to the time the ultimate consumer receives the container then the consumer is put on guard that the contents and/or container has been tampered with. The sealing means 21 thus serves to protect the contents until such time that it reaches the consumer.

The stem 24 of the sealing means is adapted to be detached, removed or ripped away from the spout 20 when the product is to be used by the ultimate consumer and a discharge opening 23 is formed in the pouring spout 20, as clearly shown in FIG. 3. The horizontal wall 22 connecting the stem 24 to the top of the

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spout 20 has a reduced wall thickness so that by tilting the stem 24 back and forth several times it will become detached from the spout 20 and provide a clean and smooth surface at the outlet end of the pouring spout and the contents of the container may be dispensed through the spout opening 23.

What is claimed is:

1. A closure, said closure entirely molded of plastic material and comprising a generally annular tubular nozzle with an annular wall and having a bore, said nozzle having means for attachment to a container, a centrally positioned annular tubular pouring spout centrally positioned and equally spaced from said annular wall and extending within the bore of said nozzle and with the top of the pouring spout within the top plane of the top of the annular wall of the nozzle, the interior of said pouring spout having a diameter substantially less than the diameter of the interior of the bore of the nozzle, with the tubular pouring spout connected to the nozzle by a horizontal wall below the top plane of the nozzle, removable sealing means closing the outlet end

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of said pouring spout, said removable sealing means comprising a horizontal frangible wall positioned below the top plane of the annular wall and with an upwardly extending centrally positioned stem integrally formed with the spout and of a length so as to be capable of being manually grasped and with the diameter of the stem being less than the internal diameter of the spout and with the top of the stem extending above the top plane of the annular wall and so constructed that the stem may be manually engaged and by manipulation of the stem as by tilting the stem back and forth will detach said frangible wall and stem and provide the outlet opening for the spout with a clean and smooth surface, a cap secured to said nozzle to normally extend over the sealing means and said stem to enclose and cover said spout and sealing means and stem when the container with the closure is shipped.

2. A structure as set forth in claim 1 in which the cap is dome-shaped.

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