Jan. 25, 1966 F. C. GLEASON 3,230,661

CONTAINER WITH SOUND-GENERATING CLOSURE

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FIG.1.

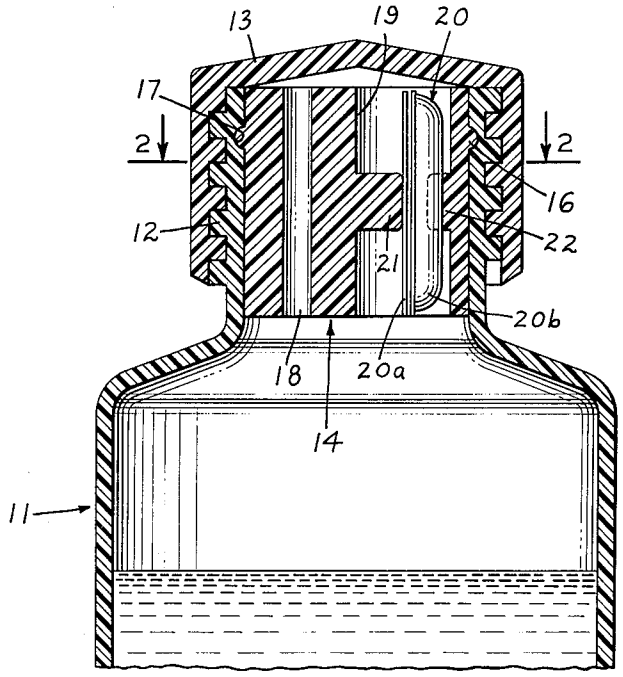
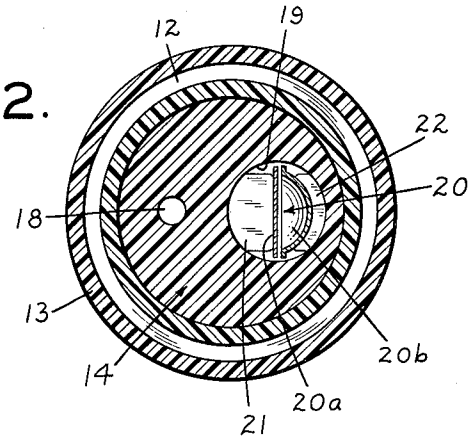


FIG.2.



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FIG.3.

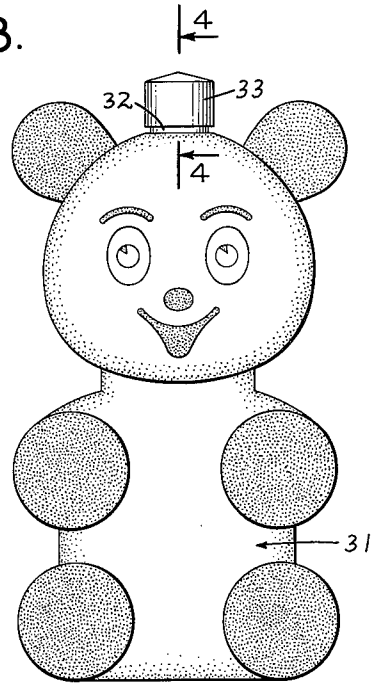


FIG.4.

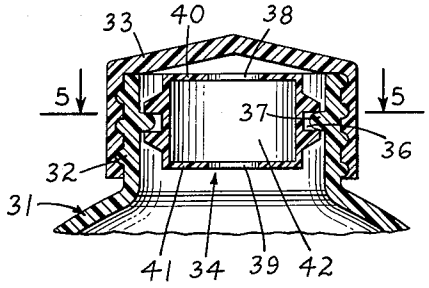
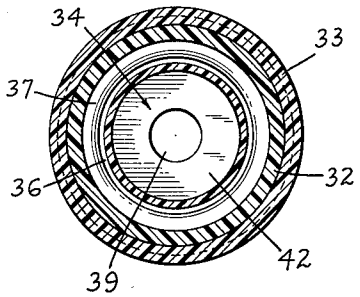


FIG.5.



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CONTAINER WITH SOUND-GENERATING CLOSURE

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4 Claims. (Cl. 46—11)

This invention relates to a dispenser-container for liquids which is also useful as a child's noise-making toy. The dispenser-container of this invention is suitable for packaging liquid products such as shampoo, bath detergent, hand lotions, or other liquids. After the product originally packaged in the container of this invention has been used or consumed, the container remains useful as an unusually satisfying toy. Accordingly, this invention provides an article well adapted to two distinct types of use, and is well suited for the marketing of children's specialty products such as shampoos, bath detergents, or the like, where the prospect of later utilization of the empty package as a toy makes the product initially packaged therein more acceptable and desirable to a child.

Generally stated, the invention comprises a resiliently distortionable plastic container provided with an opening in its upper region and provided with a separable and discardable sealing means therefor adapted to provide a seal capable of preventing leakage or evaporation of the container's liquid contents during shipment or storage, said container having associated with its said opening a removable closure means provided with an airflow responsive sound generating device, said sound generating device being provided with a passageway therethrough providing communication between the interior of said container and the exterior thereof and capable of permitting both passage of actuating air into or from the interior of said container through said air-flow responsive sound generating device and the dispensing of liquid from said container. Thus the passageway through the above-mentioned removable closure means serves a dual purpose of acting as a pouring spout and a passage for air to actuate the sound generating device. In some instances it may be desirable to provide one or more additional channels through the said closure means to facilitate pouring or ejection of liquid; such additional channels, if provided, should be sized so as not to permit passage of so much air therethrough as to reduce the flow of air through the sound generator to below the effective threshold level of flow effective for actuation of the sound generator.

Preferably, the removable cap above referred to is a screw cap having internal threads adapted to mate with corresponding external threads on the neck of the container. However, friction-fitted caps, stretchable snap-on caps, or caps adapted for quick connection and disconnection by engagement or disengagement of short segmented pitched circumferential ribs may also be used.

The air-flow responsive sound generator employed may be of any of the conventional types such as those employing resonant cavity whistles, warbling whistles, single reeds, or double reeds. It may be of a type operable by air-flow in either direction or by flow in only a single direction.

FIGURE 1 shows a vertical section through the upper portion of a container constituting one embodiment of this invention. FIGURE 2 shows a generally horizontal section along the line 2—2 of FIGURE 1. FIGURE 3 shows a front elevation of another container constituting a second embodiment of this invention. FIGURE 4 shows a vertical section along the line 4—4 of FIGURE 3, and FIGURE 5 shows a horizontal section along the line 5—5 of FIGURE 4.

FIGURE 1 shows a cylindrical bottle 11 of resiliently flexible plastic formed with a threaded neck 12, the threads of which are adapted to mate with the internal threads of screw cap 13. An insert 14 fits snugly into the neck of the bottle and is held in place by engagement of annular ring 16, formed integrally with insert 14, with annular groove 17 in neck 12. A liquid-flow channel 18 extends the full length of insert 14. Insert 14 is also provided with a second conduit 19 into which is placed an air-flow responsive sound generator 20, shown in FIGURES 1 and 2 as comprising a double-ended vibratable reed 20*a* held in spaced relationship to a boat-shaped structure 20*b*. Vibratable reed 20*a* is held in place by lug 21 which is formed integrally with insert 14, and boat-shaped structure 20*b*, against which reed 20*a* beats, is held in place by lug 22, also formed integrally with insert 14.

Bottle 11 is easily filled, for example with shampoo, before it is fitted with insert 14 and cap 13. After the filling operation, insert 14 is fitted into the bottle neck, taking care to see that annular ring 16 is seated in annular groove 17. Cap 13 is then affixed, and the package is ready for shipment, storage, and sale. The user may remove cap 13 and then dispense the contents in the desired amount by tipping the bottle. Liquid flow channel 18 serves as a pouring spout, and liquid may be dispensed simply by gravity. If the bottle is squeezed while it is in the tilted position, liquid is ejected under the increased pressure caused by the squeezing. When the squeezed bottle is released it quickly recovers its initial shape with attendant inrush of air, making a noise as the air passes through sound generator 20. If the bottle is held upright, alternate squeezing and release of the bottle will generate sound without expulsion of liquid.

While bottle 11 has been referred to in the foregoing as a cylindrical bottle, it will be obvious that it could as well be square, rectangular, rhomboidal, conical, or pyramidal; alternatively, it may be in the shape of a fanciful animal as in FIGURE 3, or may be in a form simulating or suggestive of a satellite, rocket, ship, submarine, or other shape glamorous to children.

While FIGURES 1 and 2 show the sound generating device as a double-ended vibratory reed, a single-ended reed or other sound generating devices may be used in its place. Resonant cavity whistles of types familiar to the squeeze-toy art may be employed.

Though the specific embodiment shown in FIGURES 1 and 2 and described above has two channels through bottle-throat insert 14, one primarily for liquid-flow and one housing the sound generator 20, it is to be understood that it is within the scope of this invention to provide a plurality of liquid-flow channels 18 or to mount the sound generator in a single channel having appropriate free space to serve as a liquid-flow conduit.

FIGURES 3, 4, and 5 illustrate a second embodiment of this invention. In FIGURE 3 a container 31 is shown in the form of a fanciful animal, having a threaded bottle neck 32 at the top, and a threaded cap 33. Bottle neck 32 is fitted with an insert 34, shown in FIGURES 4 and 5. Insert 34 is formed with an annular groove 36 cooperating with a ring 37 inside neck 31 to hold insert 34 in place. Insert 34 contains a resonance cavity 42 bounded by its vertical cylindrical walls and by flat upper and lower surfaces 40 and 41. Centered openings 38 and 39 in surfaces 40 and 41 serve as orifices through which liquid may be poured or ejected, and as air-flow passages for the whistle device constituted by insert 34 as a whole.

While the embodiments of this invention shown in the drawings and specifically described above all have the sound generator within a bottle neck insert, and employ a conventional threaded cap to seal the container against leakage of its contents, it will be recognized that equivalent results can be obtained by positioning the combined sound generator and pouring orifice in, for example, a modified screw-cap for a resiliently distortionable plastic bottle. In such case, a discardable and easily removable liner or insert in the modified screw-cap may be employed to seal the container during shipping and storage against leakage of its liquid contents; alternatively, after filling of the container, an adherent disc of plastic may be affixed to the container opening, thereby sealing it, prior to application of the modified screw-cap having therein the combined pouring orifice and sound generator. Prior to use, it is then only necessary to unscrew the cap, remove the said cap liner or adherent sealing member, and reattach the cap.

I claim:

1. A dispenser for liquids comprising a resiliently flexible container provided with a generally cylindrical necked opening, a removable and replaceable cap adapted to serve as a seal over said necked opening, and a tightly fitting insert completely filling said necked opening, said insert containing a liquid-flow conduit positioned to permit liquid to be ejected from said container and being provided with a separate air-flow responsive sound generator.

2. A dispenser for liquids reusable as a toy comprising a resiliently flexible container provided with a generally cylindrical necked opening, said necked opening being provided with external screw threads, a cap provided with internal screw threads adapted to mate with the screw threads of said necked opening, and a tightly fitting insert completely filling said necked opening, said insert containing a liquid flow conduit positioned to permit liquid to be ejected from said container and being provided with a separate air-flow responsive sound generator.

3. An article according to claim 1 in which the said insert is provided with an integrally formed annular ring mating with an annular groove in the inner surface of the necked opening.

4. An article according to claim 1 in which the sound generator is a vibratable reed.

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