Sept. 21, 1954 L. J. HEXEL 2,689,668

SPRAY DISPENSING BOTTLE

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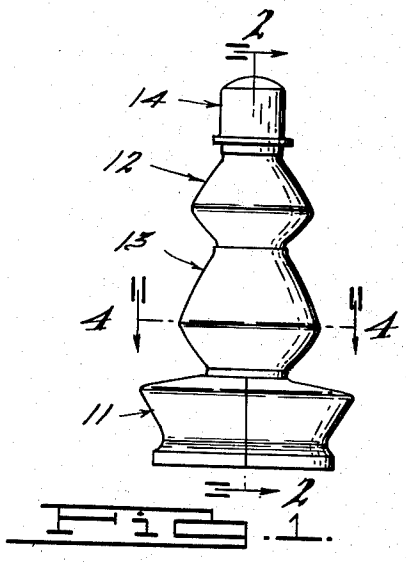


Fig. 1.

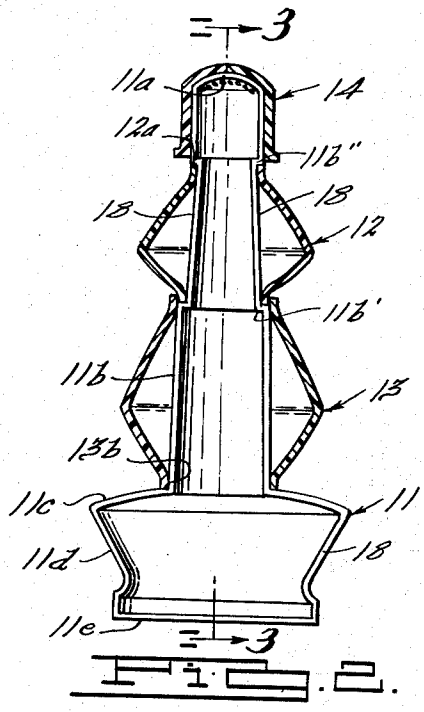


Fig. 2.

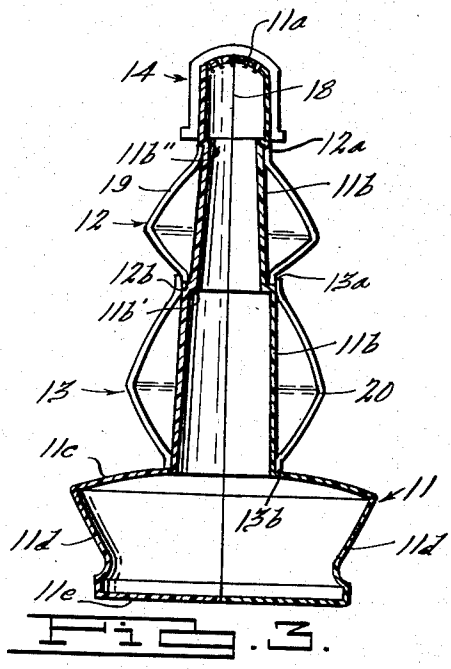


Fig. 3.

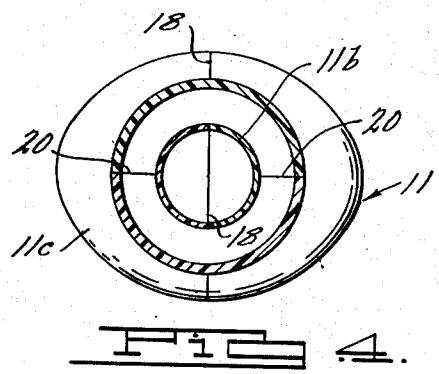


Fig. 4.

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SPRAY DISPENSING BOTTLE

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2 Claims. (Cl. 222—131)

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This invention relates to spray dispensing bottles of the type used for perfumes, toilet powders, deodorants and the like. In particular this invention relates to bottles of the aforementioned type that are formed of flexible materials, or bottles that have flexible portions at least, that can be readily squeezed to develop a pressure within the bottle that will force a spray of the bottle contents to be emitted from the perforated upper end portion of the bottle.

It is a primary object of this invention to provide a flexible spray dispensing bottle of elongated shape that has reinforced intermediate portions that prevent deformation or collapse of the bottle intermediate portions during the spray emitting operation.

It is another object of this invention to provide a spray dispensing bottle of elongated shape that has a flexible lower end portion that may be compressed to develop the spray emitting pressure within the bottle, a relatively rigid, attractively shaped intermediate portion of the bottle that permits the bottle to be firmly grasped without deformation of the flexible portions of the bottle, and a perforated upper end portion on the bottle that provides the spray emitting head, said spray emitting head being so shaped that it will receive a cup-type cap or cover.

It is still another object of this invention to provide a spray dispensing bottle that is formed with a relatively flexible or deformable material containing portion of substantially inverted T-shaped cross-sectional configuration and a relatively rigid, sleeve-like, portion of sinuously shaped cross-sectional configuration that is arranged to surround and reinforce the upstanding leg or neck portion of the flexible material containing portion.

It is still a further object of this invention to provide a spray dispensing bottle or the like formed from a plurality of sections of different materials so arranged that certain sections of the bottle may be deformable or flexible and certain other sections rigid, said rigid sections being so arranged that they reinforce certain of the flexible portions and prevent their deformation or collapse.

It is still another object of this invention to provide a spray dispensing bottle that is formed from a plurality of rearrangeable, differently shaped sections of colored plastic materials that may be assembled in a plurality of ways to provide a bottle of attractive appearance and improved construction.

It is a still further object of this invention to

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provide a sleeve reinforced flexible bottle having certain portions that may be readily deformed and other decorative portions that are substantially rigid so as to provide firm handling portions for the flexible bottle.

It is still another object of this invention to provide a novel manner of mounting skirts or sleeve elements on elongated, stepped, tube-like bottle.

Other objects and advantages of this invention will become readily apparent from a consideration of the following description and the related drawings wherein:

Fig. 1 is a front elevational view of a spray dispensing bottle embodying this invention;

Fig. 2 is an elarged sectional elevational view of the bottle shown in Fig. 1, the view being taken along the line 2—2 of Fig. 1 looking in the direction of the arrows;

Fig. 3 is another enlarged sectional elevational view of the bottle shown in Fig. 1, this view being taken along the line 3—3 of Fig. 2; and

Fig. 4 is an enlarged sectional elevational view of the bottle shown in Fig. 1, the view being taken along the line 4—4 of Fig. 1 looking in the direction of the arrows.

The spray dispensing bottle disclosed in the drawings is particularly designed for use as a container and dispenser of deodorants, perfumes, powders and the like. Such bottles are frequently formed from various types of plastic that are relatively flexible. The relatively flexible plastics are cheap, easy to form into attractive shapes, unbreakable and light in weight. Furthermore, they can be obtained in practically all colors and thus they lend themselves to attractive color patterns.

One of the disadvantages heretofore in the use of flexible plastics for spray dispensing bottles has been the fact that certain bottle shapes were precluded from use due to the inability of certain portions of the bottle to retain their shape when subjected to an internal pressure during the spray emitting process. For instance if the bottle was of an elongated design and was squeezed at one end the middle or intermediate portion of the bottle might expand to a bulbous formation and distort the shape of the other end of the bottle. Also, if the bottle was formed solely of a relatively flexible plastic, it was difficult to grasp any portion of the bottle without causing a spray to be emitted from the perforated end portion of the bottle. Likewise, if the bottle was of elongated shape and formed of relatively flexible material it might droop, or tilt or lean in one

direction instead of remaining erect. These several disadvantages are overcome by the particular bottle construction herein disclosed and claimed.

From Figs. 2 and 3 particularly it will be noted that this spray dispensing bottle comprises a decanter-shaped material container 11 that has a pair of sleeve-like rigidifying skirt elements 12 and 13 encircling the neck portion of the container 11, and a cup-shaped cap or cover 14 for the perforated upper end 11*a* of the material container 11.

The material container 11 is formed from a relatively flexible material, preferably plastic, that can be readily deformed by squeezing yet one that will quickly return to its original shape when the squeezing pressure is removed. In plan elevation (see Fig. 4) the base portion 11*c* of the container 11 is substantially elliptical. The base portion 11*c* has converging side wall portions 11*d* that diverge from the flat base plate portion 11*e*. The base plate portion 11*e* provides a relatively large bottle supporting area so that the bottle will be stable and not easily overturned. Projecting upwardly from the top of the bottle base portion 11*c* is a tube-like neck portion 11*b*. The tube-like neck portion 11*b* of the material container 11 tapers or converges upwardly and it may be of a stepped construction as shown at 11*b'*, 11*b''*. As aforementioned the upper end 11*a* of the tube-like neck portion 11*b* of the material container 11 is perforated with a plurality of holes to provide the spray head through which the container material is to be dispensed. For ease of manufacture and to permit the use of several different colored plastics in the container 11, it is preferable to form the container in sections that are thereafter bonded together rather than forming the container 11 as a single integral unit. In the drawings the container 11 is shown as formed of two identical half portions with the parting line 18 representing the engaged portions of the two parts of the container 11 that are bonded together. It is thought to be obvious that the container 11 may be formed of as many bonded-together portions as is desired. With the disclosed construction, the right half of the container 11, as seen in Fig. 3, could be of one colored material while the left half of the container 11 could be of a different colored material.

The upstanding, elongated, tapered neck portion 11*b* of the container 11 is encircled by a plurality of sleeve-like skirt elements 12 and 13. Obviously any number of skirt elements can be used depending on the length of the container neck portion 11*b* and the length of the skirt elements 12, 13, etc. The skirt elements 12, 13 are each preferably formed of a material that is stiffer or more rigid than the flexible material used to form the container 11. The skirt elements 12, 13 are each designed so that they fit snugly about the container neck portion 11*b* and provide a stiffening or rigidifying outer sleeve for the container neck 11*b*. It has been found advantageous to shape the skirts 12, 13 such that each resembles a lantern globe in cross sectional configuration. With such a skirt construction the upper and lower edge portions 12*a*, 12*b* and 13*a*, 13*b* exert pressures against the tube-like neck portion 11*b* of the container 11 that rigidifies the neck portion 11*b*. Furthermore, because of the overlapped arrangement of the skirt edges 12*b*, 13*a* and the stepped construction 11*b'*, 11*b''* of the neck portion 11*b* of the container 11, the skirts 12, 13 may be snapped on the container neck portion 11*b* and they will thereafter remain in their predetermined positions. As was the case with the container 11, the several sleeve-like skirt elements 12, 13 may each be formed of bonded together segments so that a plurality of different colored materials may be attractively arranged in each skirt element. From the drawings, (Figs. 2–4), it will be noted that each of the sleeves 12, 13 are formed of two substantially semi-cylindrical segments that are bonded together along the parting lines 19, 20 respectively. Because the skirt elements 12, 13 are formed of a relatively stiff or rigid material, these skirt elements provide a firm portion for grasping the bottle and the flexible material container 11 thus will not be compressed accidentally during handling of the bottle. The skirt elements 12, 13 thus give the flexible container 11 a stability that is usually lacking in spray dispensing bottles of the disclosed type.

The upper perforated end 11*a* of the container neck portion 11*b* is provided with a cup-shaped cap or cover 14. This cap or cover 14 fits snugly about the perforated upper end of the container neck portion 11*b* and prevents accidental loss of the material from within the container 11 by spilling, evaporation or the like. The cup-shaped cap 14 may be formed of two bonded together substantially semi-cylindrical parts so as to permit the use of at least two different colored materials.

From a consideration of the foregoing description it will be obvious that the disclosed bottle provides a relatively small, easily grasped, flexible section 11*c* that can be readily squeezed to force a spray of material to be emitted from the perforated upper end portion 11*a* of the container 11. Furthermore, the stiffening skirts 12, 13 provide a stable bottle that can be of elongated formation and one that is also quite attractive. By forming each of the bottle components 11, 12, 13 and 14 of bonded-together half portions it is possible to use at least eight different colored materials so as to provide an attractive checkerboard appearance.

I claim:

1. A bottle comprising a container formed from relatively flexible, plastic-like material and of substantially decanter shape having a bulbous base portion and an elongated, upstanding, tube-like neck portion projecting from the upper side thereof, said neck portion including a pair of spaced apart step-like formations and having a closed perforated upper end portion, a pair of globe-shaped, sleeve-like skirt elements formed of relatively rigid, plastic-like material arranged in superimposed relationship with respect to one another and encircling the tube-like container neck portion, the opposite end portions of the skirt elements being anchored to the step-like formations of the container neck portion, and the adjacent end edges of said skirt elements being arranged in overlapped relationship.

2. A bottle comprising a container formed from relatively flexible material and of substantially decanter shape having a bulbous base portion and an elongated, upstanding, tapered tube-like neck portion projecting from the upper side thereof, said neck portion having a closed perforated upper end portion and including a stepped formation at each end thereof and at a point intermediate the ends, and a pair of globe-shaped, sleeve-like skirt elements formed of relatively rigid material, said skirt elements being

arranged in superimposed relationship and encircling the tube-like container neck portion, the opposite ends of the skirt elements being anchored in the stepped formations at the opposite ends of the container neck portion and the adjacent edge portions of the skirt elements being anchored in the stepped formation intermediate the ends of the container neck portion having their upper and lower end edges engaged in the step-like formations in the tube-like container neck portion.

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