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Deans et al. (43) **Pub. Date: Mar. 2, 2006**(54) **SQUEEZABLE MULTI-COMPARTMENT  
CONTAINER****Publication Classification**(76) Inventors: **David M. Deans**, Chatsworth, CA  
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CA (US)(51) **Int. Cl.**  
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(52) **U.S. Cl.** ..... **401/126**Correspondence Address:  
**PETER S. LUCYSHYN**  
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**WILMETTE, IL 60091 (US)**(57) **ABSTRACT**

A single or multi-compartment container includes an inner container for a liquid or powder product surrounded in part by an outer container. The inner and outer containers are joined at a neck assembly which has an opening communicating with the inner container. The outer container is partially filled with a fluid, semi-fluid or gel material giving the container a soft, resilient "jelly-like" feel.

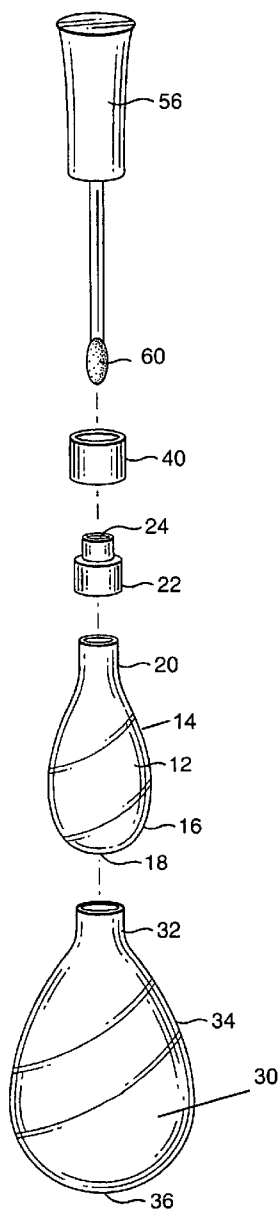
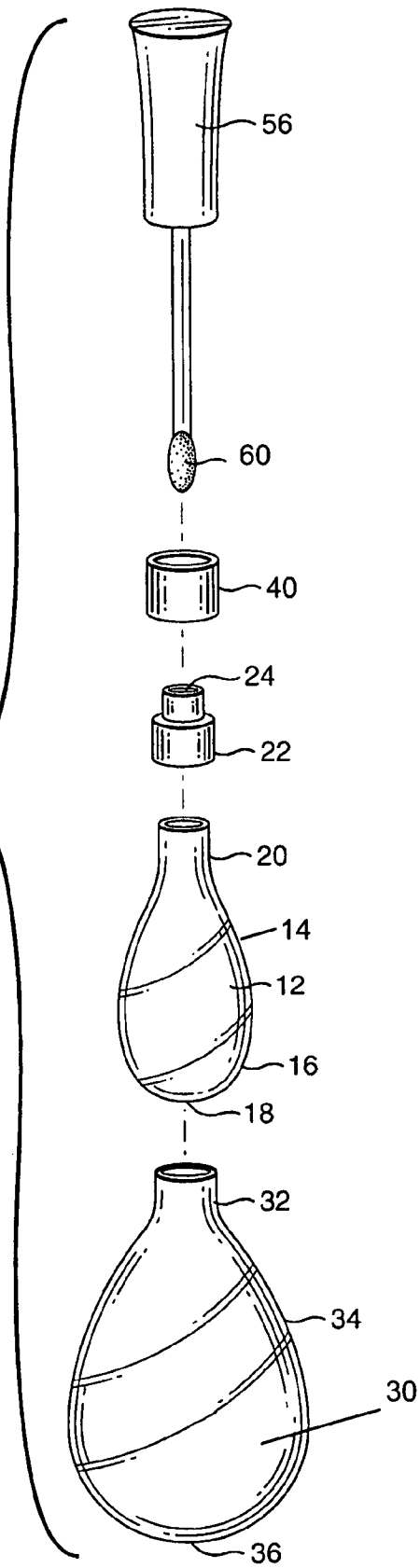
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FIG. 1



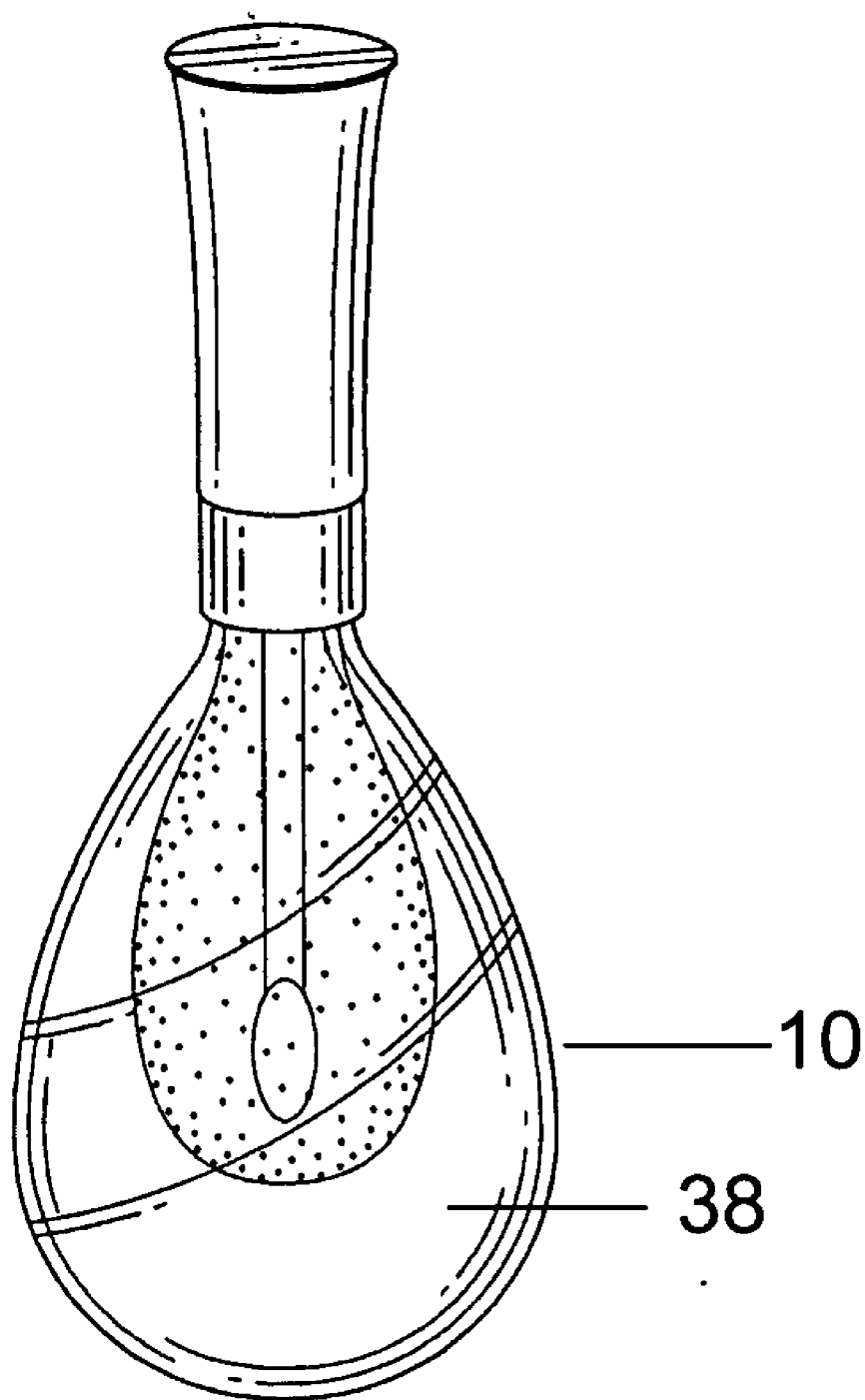


FIG. 2

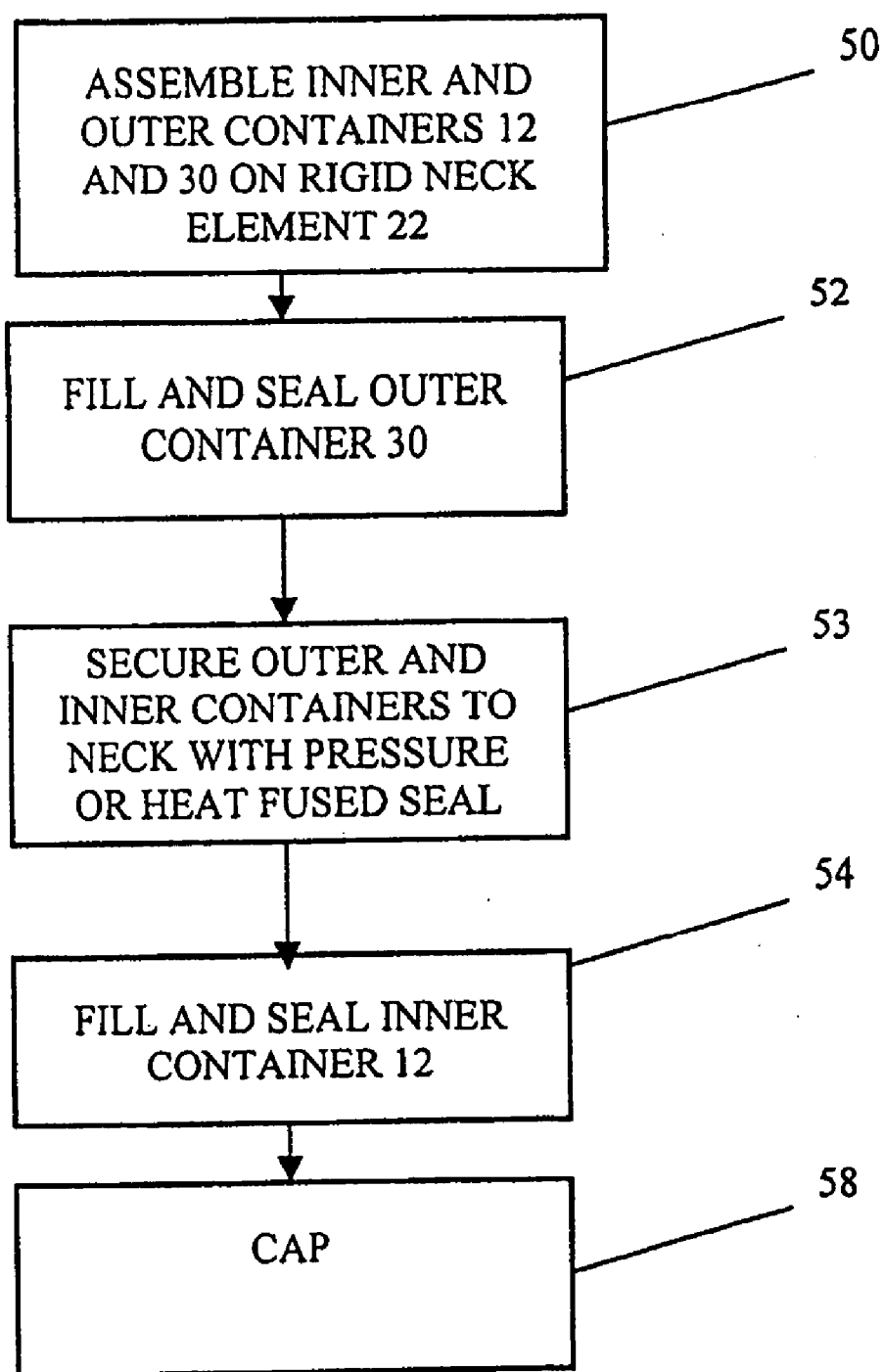


FIG. 3

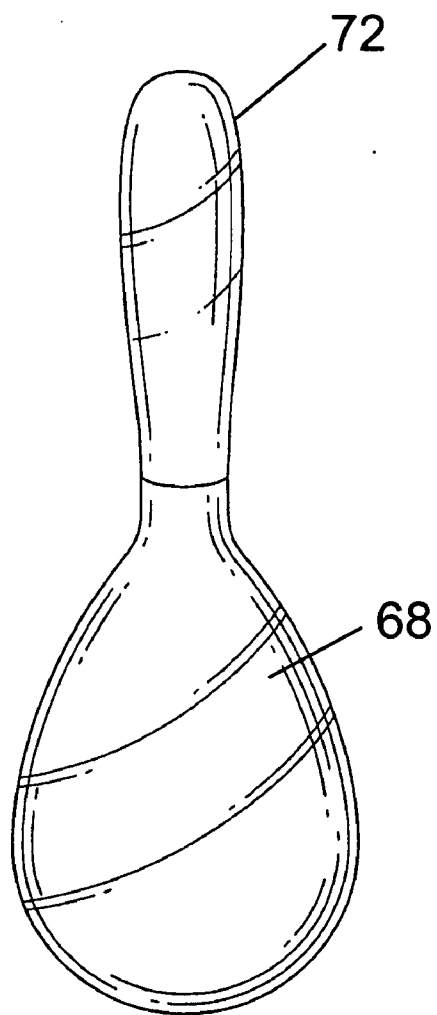


FIG. 4

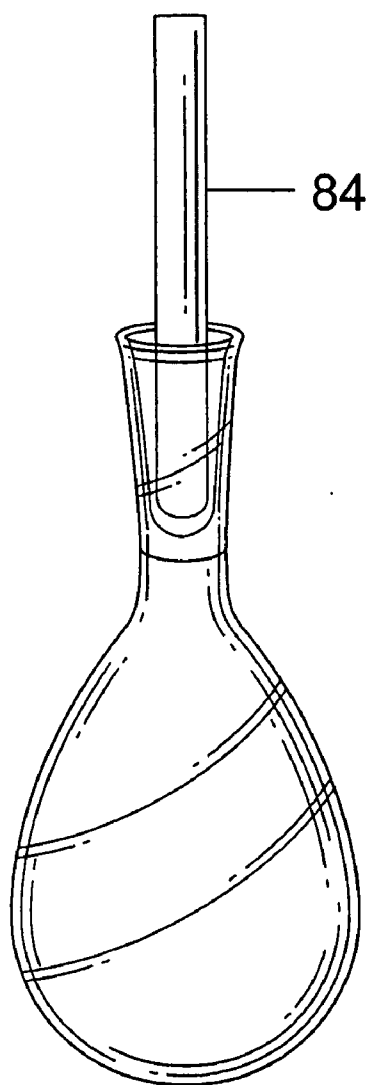
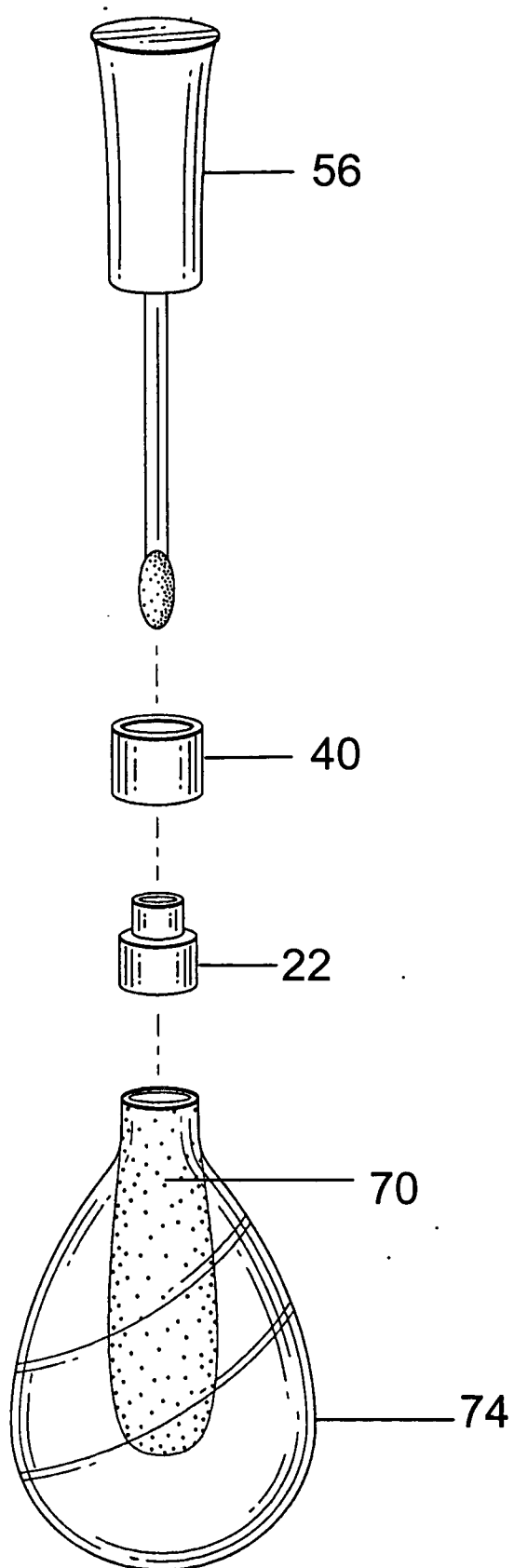


FIG. 5

FIG. 6



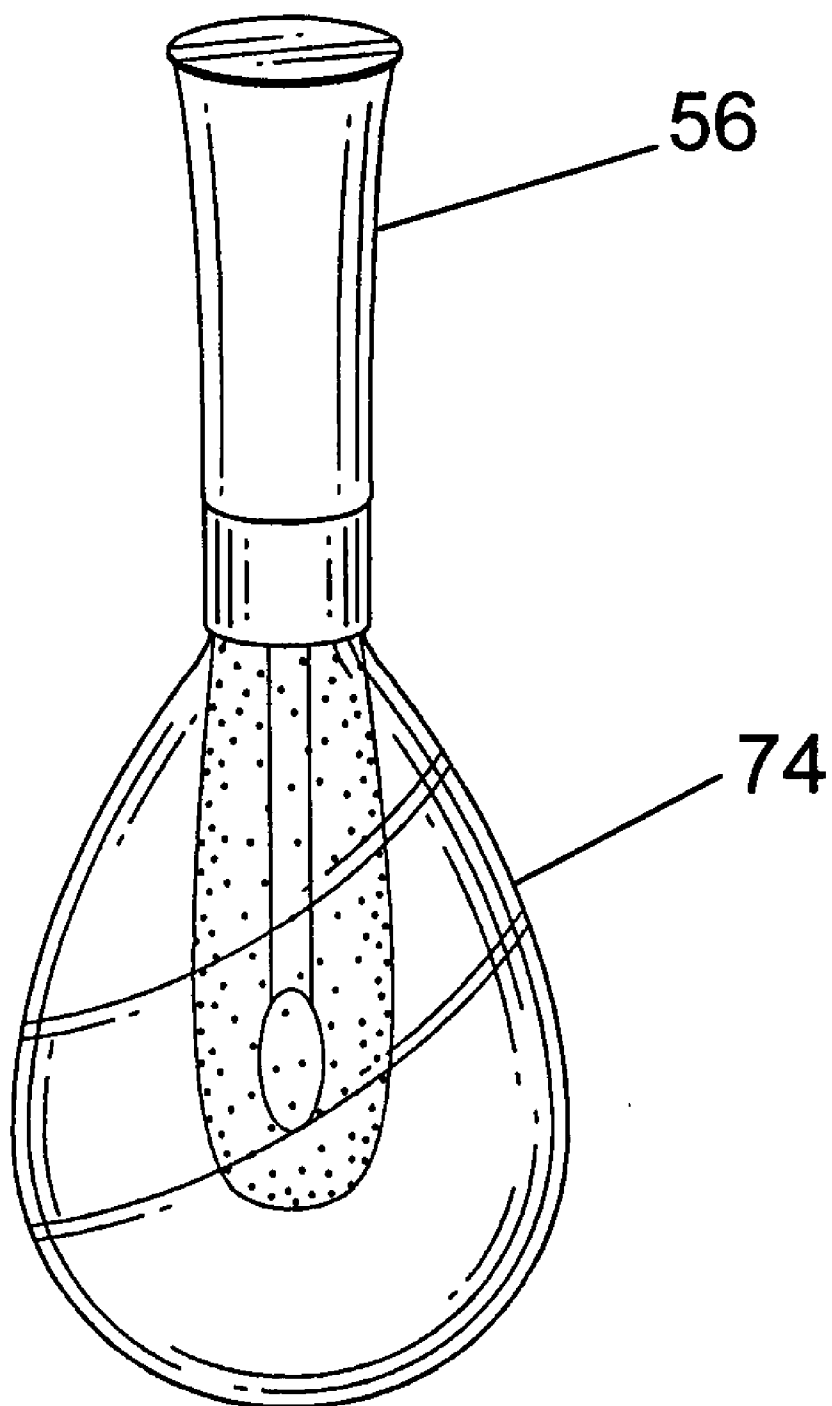


FIG. 7

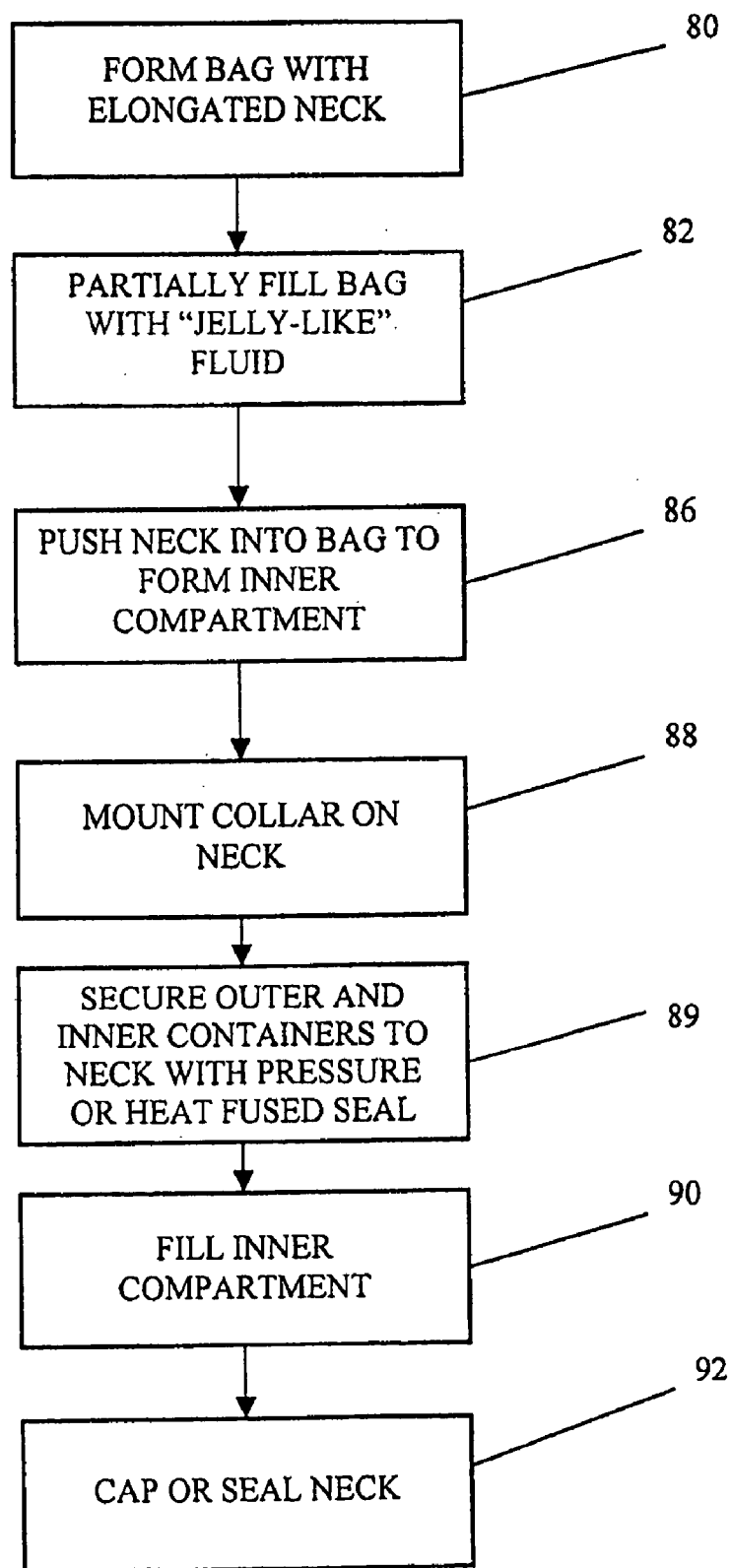
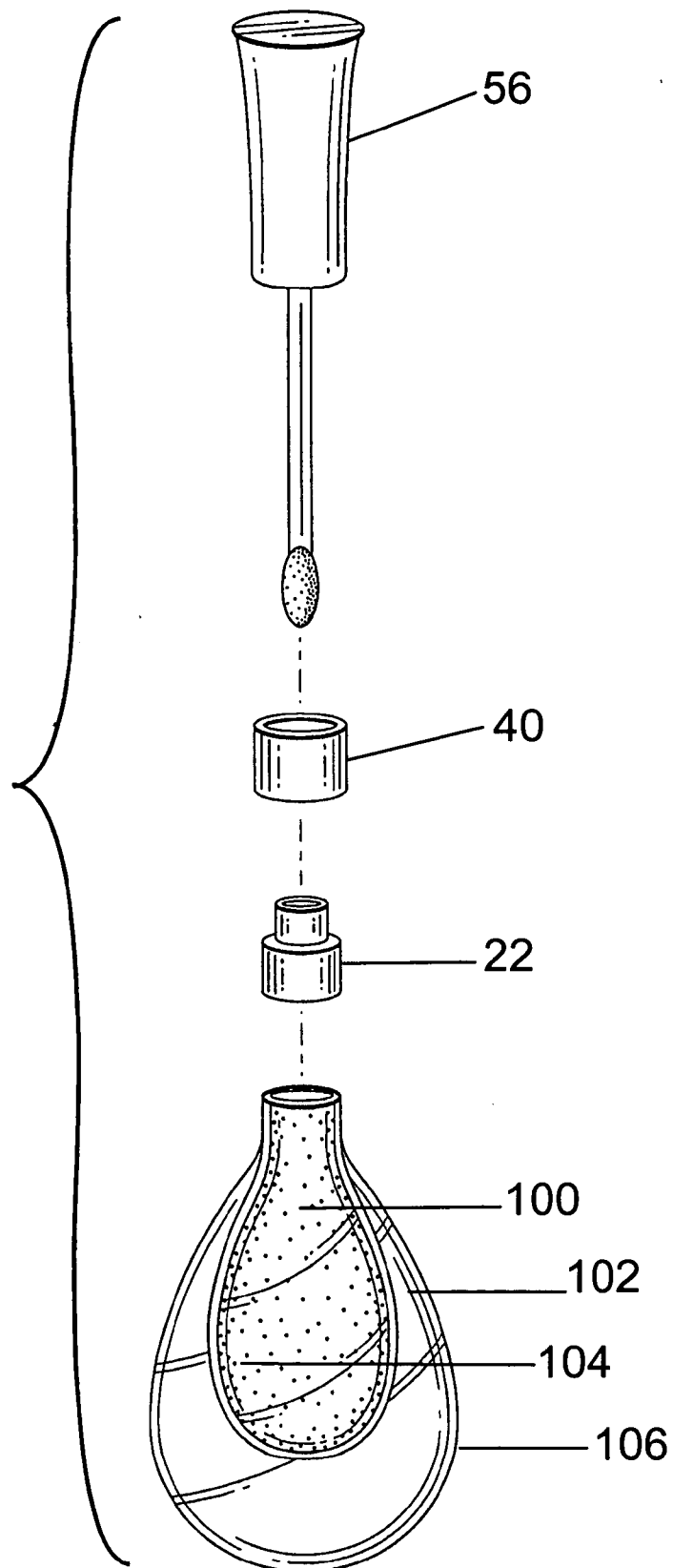


FIG. 8



FIG. 9



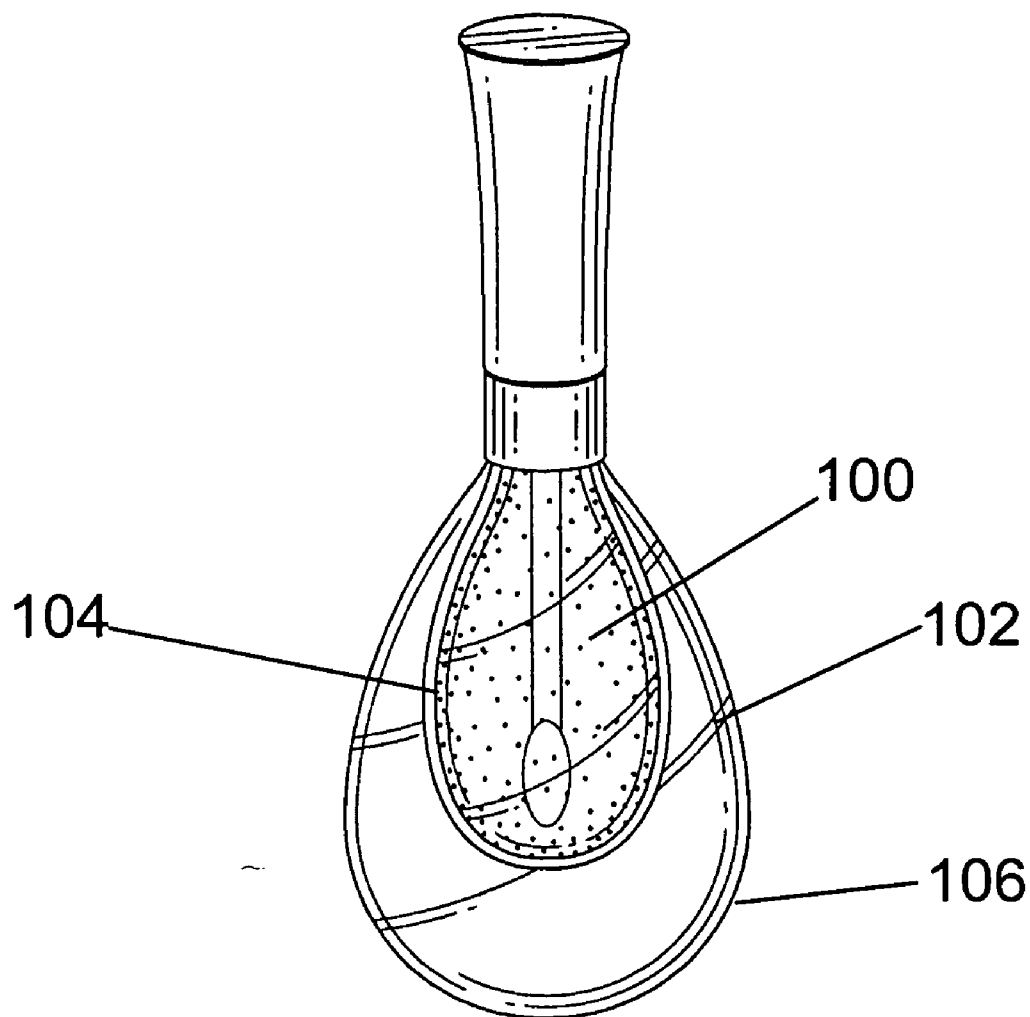
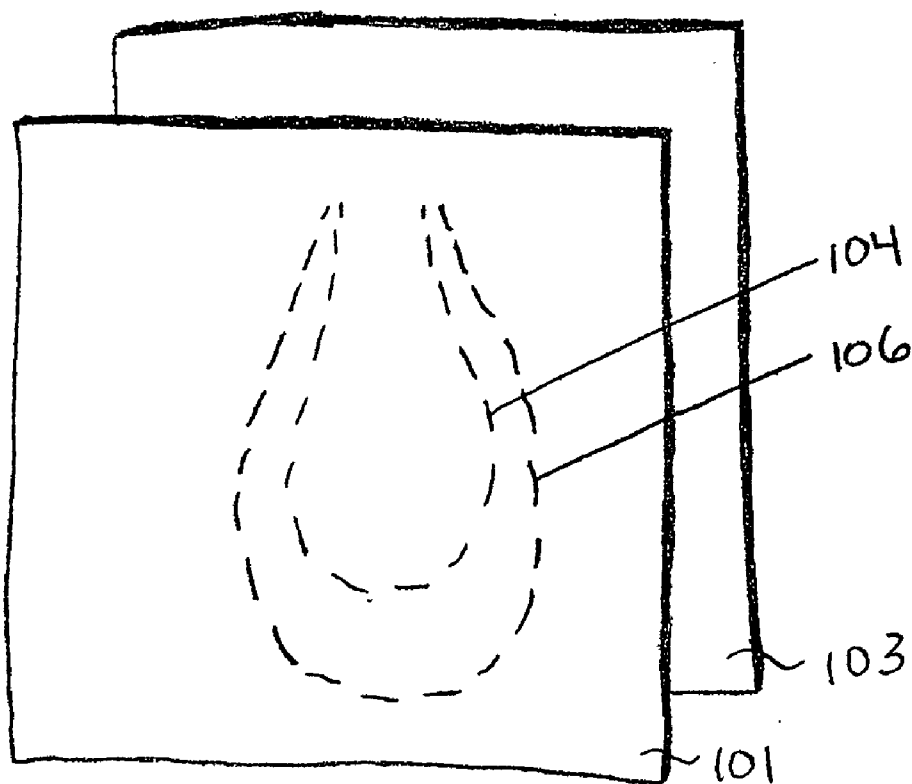
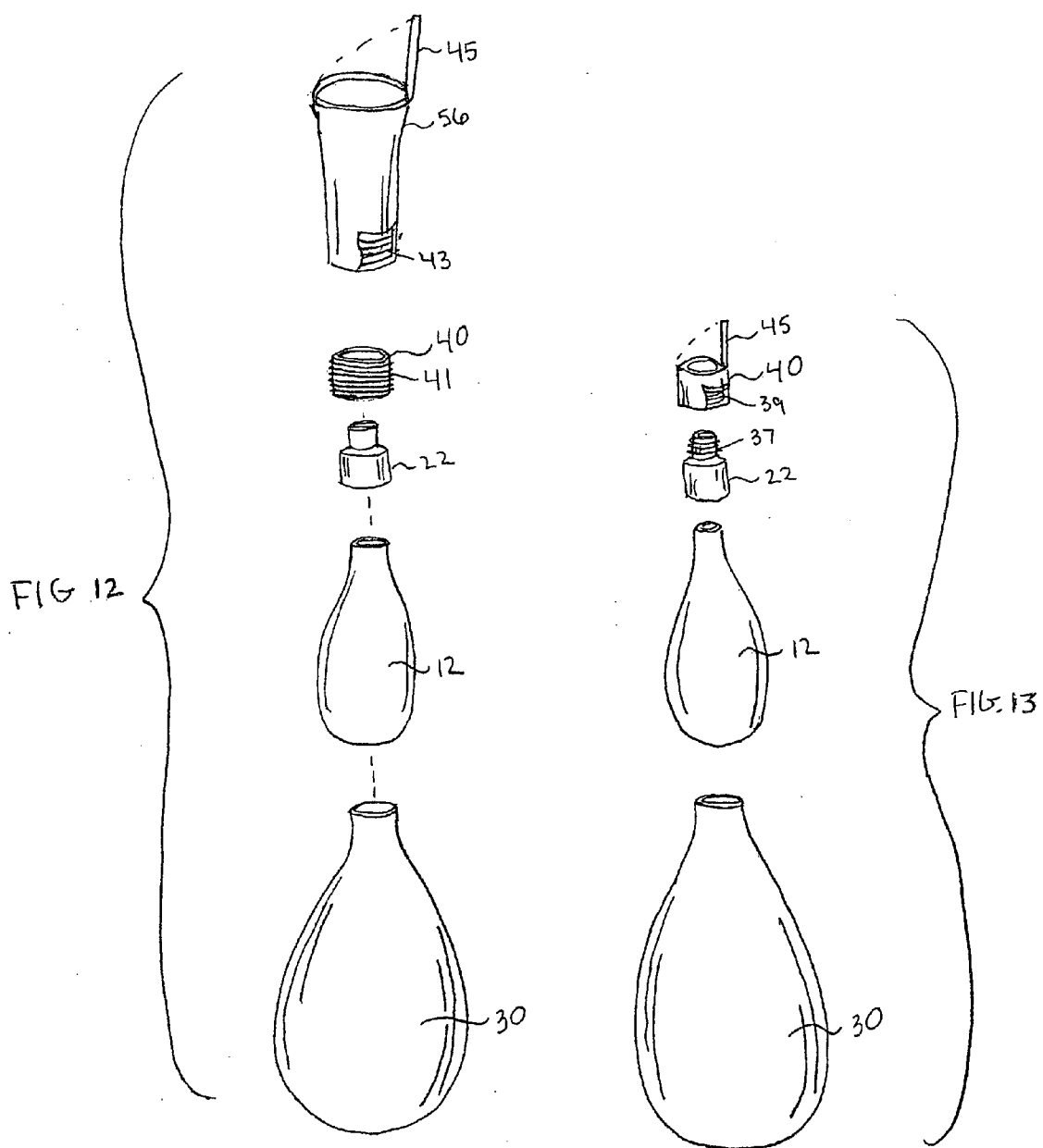


FIG. 10

FIG 11





## SQUEEZABLE MULTI-COMPARTMENT CONTAINER

[0001] The present invention relates generally to novel product containers, and more particularly to squeezable single or multi-compartment containers for liquid and paste materials. The invention has particular utility in providing containers having a unique squeezable soft touch or hand feel for high value products such as cosmetics, and will be described in connection with such utility, although other utilities are contemplated.

### BACKGROUND OF THE INVENTION

[0002] High value products such as cosmetics typically are packaged in small rigid walled or semi-rigid walled containers such as tubes, jars and bottles. Often the containers are made of various plastic resins, which are somewhat lighter in weight and more shatter resistant than glass, which also is used. Manufacturers often differentiate their products from those of other manufacturers by employing uniquely shaped containers, colors and sizes to create unique or distinctive product identification. It is thus an object of the present invention to provide unique containers, which can be manufactured from a wide variety of materials including but not limited to: vinyl, plastic, rubber, films, sheet material, etc which can contain a decorative "jelly-like" solution and a product solution in a separate chamber. Another object of the invention is to provide a multi channel or compartment squeezable containers that are simple and economical to manufacture in a variety of colors and shapes. Yet another object of the invention is to provide unique squeezable containers that provide superior impact-resistance and protection of the contents.

### SUMMARY OF THE INVENTION

[0003] The present invention provides a "fun to hold, fun to see and fun to use" flexible container which contains a decorative "jelly-like" liquid, which provides an aesthetically pleasing look and a squeezable feel. Within this container is a separate compartment, which holds the product, which can be a liquid, powder or semi liquid product. Often, but not always, the product is a cosmetic such as lip-gloss, eye shadow, blush, mascara, etc. Usually the "jelly-like" liquid is a bright vibrant color to complement or contrast the product color and provides a squeezable feel.

[0004] More particularly, the present invention provides novel multi-compartment containers comprising of a separate chamber or bag for containing a liquid or paste type product, surrounded at least in part by an outer chamber or bag. The inner and outer chambers or bags are separated and one chamber usually, but not always the outer, contains a "jelly-like" fluid which is provided for color and/or squeezability, but is not usually dispensed. The inner chamber is usually, but not always, used to contain the product. Depending on the design the separate chambers can be formed using a chamber within a chamber or two chambers formed by creating a sealed seam separating the product chamber from the "jelly-like" fluid containing chamber. The two chambers form a container with the "jelly-like" fluid containing chamber preferably sealed into itself and the product chamber sealed to a neck assembly, which is used to dispense the product. The chamber walls are generally formed of a flexible material. The outer chamber is at least partially filled

with a fluid, semi-fluid or gel material giving the outer chamber a soft, resilient "jelly-like" look and feel. Completing the container is a closure for closing the opening, which communicates with the inner chamber, which contains the product.

[0005] The containers of the present invention may be formed in a variety of shapes and sizes and may be used for holding a variety of products including high valued products such as cosmetics, creams lotions and the like. Also, if desired, solid particles having a density approximating that of the liquid, semi-liquid, gel or other "jelly-like" material filling the outer chambers may be included in the filling to provide aesthetic appeal. In another aspect, the invention provides a method of producing the novel containers, which involves sealing the inner and outer containers from each other and sealing the product container to the neck assembly. The outer container is partially filled with a liquid, semi-liquid, gel or other "jelly-like" material and sealed, and the inner container is filled with the desired product and sealed with a closure.

### BRIEF DESCRIPTION OF THE DRAWINGS

[0006] Further features and advantages of the present invention will be seen from the following detailed description taken in conjunction with the accompanying drawings wherein:

[0007] **FIG. 1** is an exploded view and **FIG. 2** an assembled view illustrating one embodiment of multi-compartment container made in accordance with the present invention;

[0008] **FIG. 3** is a schematic diagram of a process for forming the container of **FIG. 1**;

[0009] **FIGS. 4-7** show an alternative form and process of forming a multi-compartment container made in accordance with a second embodiment of the invention;

[0010] **FIG. 8** is a schematic diagram of a process for forming the container of **FIGS. 4-7**;

[0011] **FIG. 9** is a view similar to **FIG. 1** of yet another embodiment of a multi-compartment container made in accordance with the present invention; and

[0012] **FIG. 10** is a view similar to **FIG. 2** of the alternative embodiment of **FIG. 9**.

### DESCRIPTION OF PREFERRED EMBODIMENTS

[0013] Referring to **FIGS. 1 and 2**, there is shown a multi-compartment container **10** made in accordance with the present invention. Container **10** includes an inner chamber or bag **12** having a main body, which includes an upper portion **14**, a side wall portion **16** and a bottom portion **18**. Chamber **12** is primarily bulb-like in shape, and includes a neck portion **20** formed around a rigid neck element **22** having an opening **24** through which product may be dispensed. Inner container **12** is surrounded by an outer container **30** which also is bulb-like in shape, and includes a neck portion **32**, a side wall portion **34** and a base portion **36**. Outer container **30** preferably has the same general shape as inner container **12**, but is larger in size so that when the inner container **12** and outer container **30** are assembled together, a chamber or space **38** is formed between the inner and outer

containers **12** and **30**, respectively (see **FIG. 2**). Space or chamber **38** is partially filled with a “jelly-like” fluid such as mineral oil, and the inner and outer containers **12** and **30** are sealed together at neck **20** by a ring **40** that fits snugly over the upper ends of the inner and outer containers and rigid neck element **22**. The containers also may be sealed, to the neck assembly, by heat fusing the inner and outer containers to a rigid neck assembly.

[0014] Inner and outer containers **12** and **30** are formed of a thin resiliently flexible material such as polyvinyl sheet material or another material that is inert both to the material intended to be held in the inner container **12** and to the fluid in the chamber **38**. For example, where the material intended to be held in container **12** comprises an oil-based cosmetic, and the fluid in chamber **38** containers comprises a mineral oil, the inner and outer containers may be made of a polyvinyl chloride (PVC) sheet of appropriate thickness. However, the material used to form the inner and outer containers may comprise other plastic or rubber materials.

[0015] Referring also to **FIG. 3**, there will now be described the assembly of the multi-chamber container illustrated in **FIG. 1**. Pre-formed inner container **12** is loaded into outer container **30** and the two are assembled together on a rigid neck element **22** at a station **50**. The outer container **30** is then partly filled from the bottom with a mineral oil at a filling station **52**, and sealed. The inner container is then filled through the open top end with a product of choice at a filling station **54**, and a removable top or cap **56** which may include an applicator such as a brush **60** is affixed to the top end of the assembly at a capping station. Alternatively, the cap **56** may include a dropper, a rod, a brush, a sponge or a blade applicator or the like.

[0016] Referring now to **FIGS. 4-7**, there is shown an alternative embodiment soft-walled multi-compartment container made in accordance with the present invention. In this alternative embodiment the multi-compartment container is constructed from a single pre-formed long necked bag **68** in which the inner container **70** is formed by turning a neck portion **72** of the bag **68** which also forms the outer container **74** in on itself. As before, the inner and outer containers **70**, **74** are sealed to a rigid neck element **22** and ring **40**, and the inner container capped with a cap **56**. As in the case of the first embodiment, the outer container **74** may be partially filled with a mineral oil or the like, while the inner container **70** may then be filled with a high value product and sealed with the cap.

[0017] Referring also to **FIG. 8**, a method of forming a multi-compartment container of **FIGS. 4-7** will now be described. Referring again to **FIG. 4**, a bulb-shaped bag **68** having an elongate neck **72** is provided at a station **80**. The bag **68** is then partially filled with a “jelly-like” fluid at station **82**.

[0018] Referring to **FIG. 5**, the neck **72** is pushed into itself using a rod **84** at a station **86** whereby to create the inner container **70**. **FIG. 6** shows the neck **72** pushed into its final position.

[0019] A rigid neck element **22** is supplied and is inserted into the neck at a station **88** shown in **FIG. 6**. Thereafter, an outer sealing ring **40** is press fitted over the neck element **22**. The container neck also may be sealed, to the neck assembly, by heat fusing each to the other. The inner container **70** is

then filled through the top end with a product of choice at station **90** and the filled container is then capped or sealed with an applicator **56** or other form of cap at station **92**.

[0020] Yet another embodiment of the invention is shown in **FIGS. 9 and 10**. In this latter embodiment, the inner and outer containers **100**, **102** are formed by heat fusing two sheets of flexible film along pattern edges **104**, **106** to create the outer container and inner container separated by a barrier line. A rigid neck element **22** and sealing ring **40** supplied and sealed to the necks of the inner and out containers, as before. The inner and outer containers may then be filled, as before, and capped **56**.

[0021] The containers of the present invention can be made in a conventional shape such as an elongated tube or bulb. Usually, however, the containers may be made in unconventional shapes such as star or tear drop shapes to catch the eye of a consumer. Also, if desired, the inner and outer container walls may be made of transparent or translucent materials which may be the same or different color materials. If desired, patterns may be printed on the inner and/or outer container walls. In another embodiment of the invention, particles such as glitter or the like may be incorporated into the fluid in the outer container.

[0022] It is thus seen that the present invention provides highly unusual eye catching product packaging that satisfies the aforesaid and other objects above described. Additionally, the product has a soft “jelly-like” “squishy” hand feel. Moreover, by making the outer wall and filling material transparent, the user can see how much product is remaining. Also, by making the outer container flexible, the consumer can express essentially all of the contents from the inner container.

[0023] Various changes may be made in the foregoing without departing from the spirit and scope of the invention. For example, the inner compartment closure or cap may comprise a screw top, or a press-fitted or flip cap. Other changes may be made without departing from the spirit and scope of the invention.

1. A squeezable multi-compartment container comprising inner and outer chambers sealed together at a neck assembly by a pressure/compression seal or heat fusing which includes an opening communicating with the inner chamber, said outer chamber being at least partially filled with a fluid, and said inner and outer chambers being elastically deformable.

2. The squeezable container of claim 1, and further including a closure for closing the opening to the inner chamber.

3. The squeezable container of claim 2, wherein the closure comprises a screw top.

4. The squeezable container of claim 2, wherein the closure comprises a press-fitted cap.

5. The squeezable container of claim 2, wherein the closure comprises a flip cap.

6. The squeezable container of claim 2, wherein the closure includes a brush.

7. The squeezable container of claim 2, wherein the closure includes a dropper.

8. The squeezable container of claim 2, wherein the closure includes an applicator wand.

9. The squeezable container of claim 2, and further including a blade applicator under the closure.

10. The squeezable container of claim 1, wherein the outer chamber is filled with a fluid, semi-fluid or a gel material.

11. The squeezable container of claim 1, wherein the outer chamber is filled with a mineral oil or jelly-like fluid.

12. The squeezable container of claim 11, wherein the mineral oil includes suspended particles.

13. The squeezable container of claim 1, wherein the inner container is filled with a cosmetic.

14. The squeezable container of claim 1, wherein the inner and outer chambers are formed from a single bag or from two sheets of flexible material in which the inner and outer chambers are separated by a barrier line.

15. The squeezable container of claim 14, wherein the barrier line comprises a heat fused line.

16. The squeezable container of claim 14, wherein the inner and outer containers comprise separate bags.

17. The squeezable container of claim 14, wherein the inner and outer chambers are formed of a plastics material.

18. The squeezable container of claim 14, wherein the inner and outer chambers are formed of a transparent or translucent plastics material.

19. The squeezable container of claim 14, wherein the inner and outer chambers are formed of polyvinyl chloride (PVC) sheet.

20. A method of forming a squeezable multi-compartment container as claimed in claim 1, which comprises providing inner and outer chambers sealed together at their necks, and fitting the inner and outer chambers at least in part.

21. The method of claim 20, wherein the inner and outer containers are formed from separate containers.

22. The method of claim 20, wherein the inner container is formed by pushing a portion of the outer container back into itself.

23. The method of claim 20, wherein the inner chamber is formed by heat sealing a barrier line which separates the inner chamber from the outer chamber.

24. The method of claim 20, including the step of filling the inner chamber, at least in part, with a deliverable product.

25. The method of claim 20, including the step of partially filling the outer chamber with a mineral oil or jelly-like fluid.

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