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Garcia et al.

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[54] **SET OF COMPONENTS FOR ASSEMBLY AS A DISPENSING PACKAGE OF THE NON-VENTED TYPE HAVING AN INTERNAL, COLLAPSIBLE BAG**

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[22] Filed: **Apr. 14, 1997**

[51] **Int. Cl.**[6] **B65D 35/28**

[52] **U.S. Cl.** **222/95**; 222/321.7

[58] **Field of Search** 222/95, 153.09, 222/183, 321.7, 321.9

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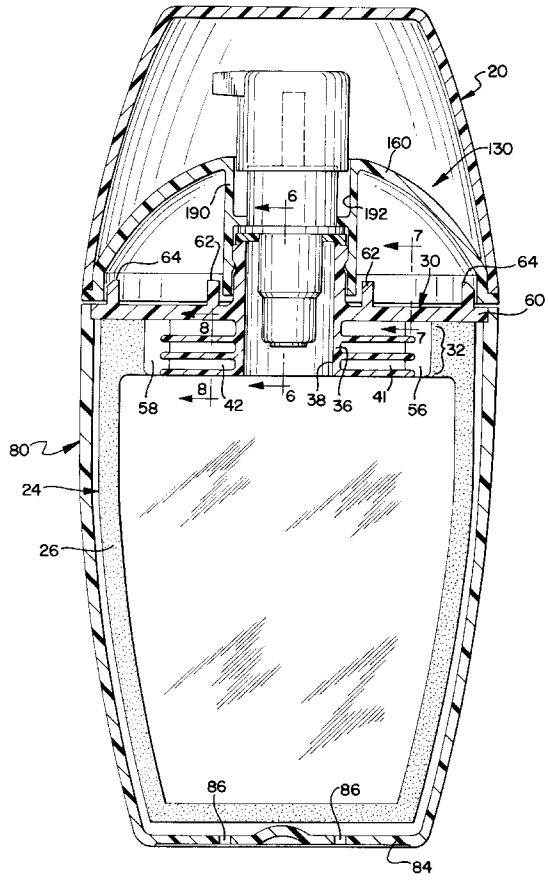
[57] **ABSTRACT**

A set of components is provided for assembly as a dispensing package for a fluid product. A collapsible bag is provided for holding the fluid product. The collapsible bag is attached to a support which in turn is mounted within a hollow body. A retention member holds a finger-operable pump to the support for communication with the interior of the bag.

11 Claims, 4 Drawing Sheets



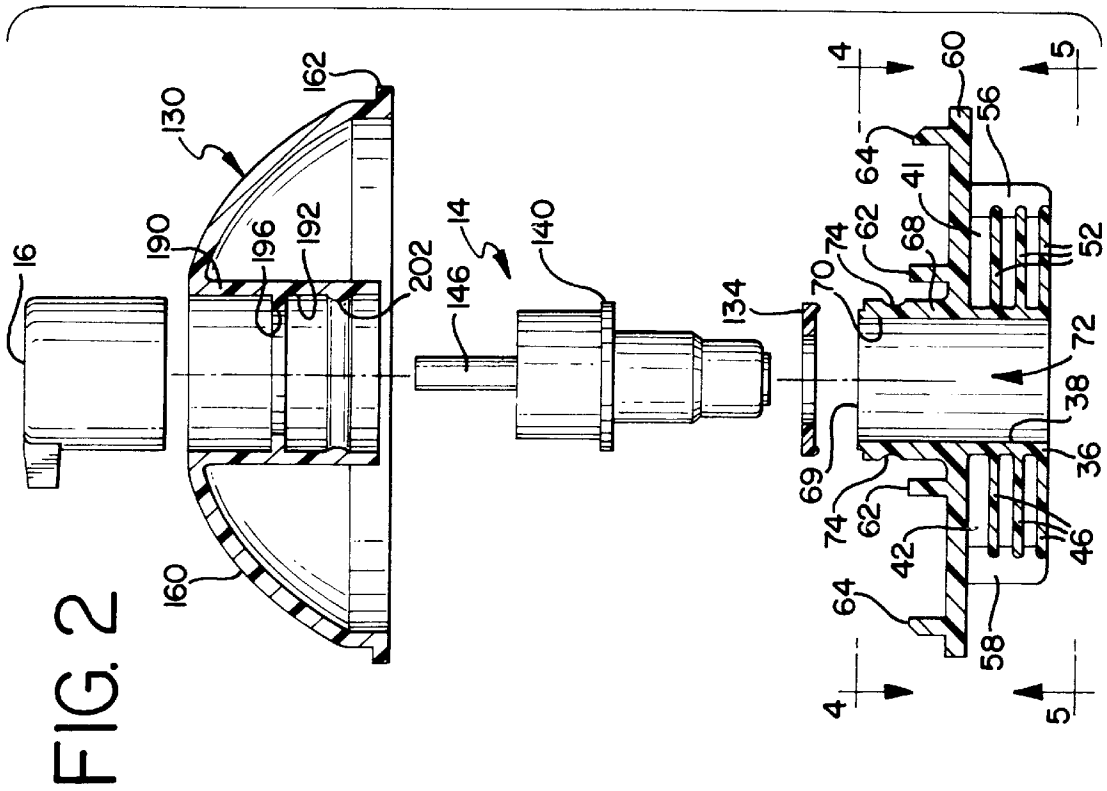

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FIG. 2

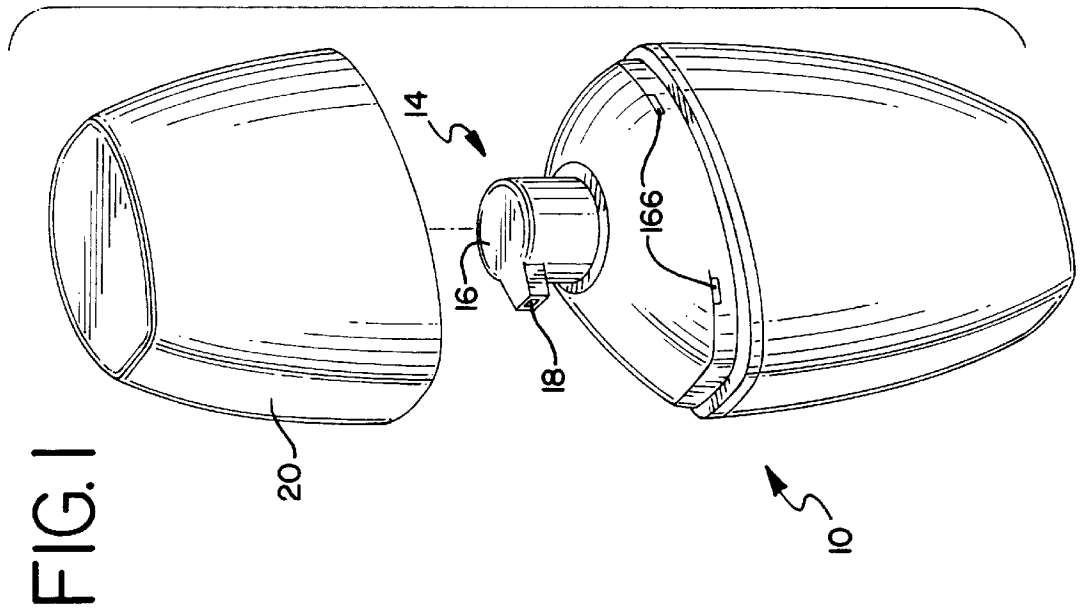
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FIG. 1

FIG. 3

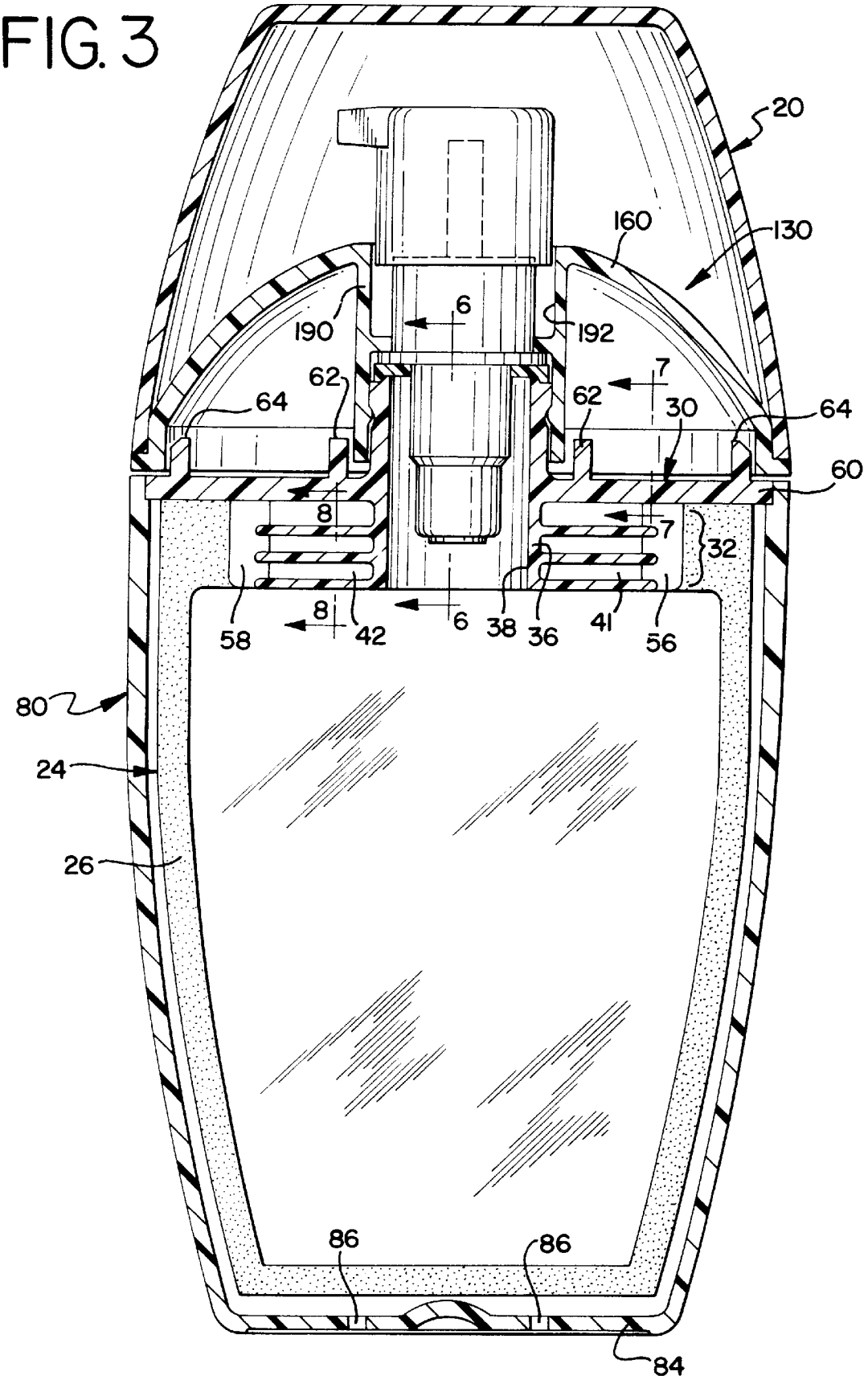
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FIG. 4

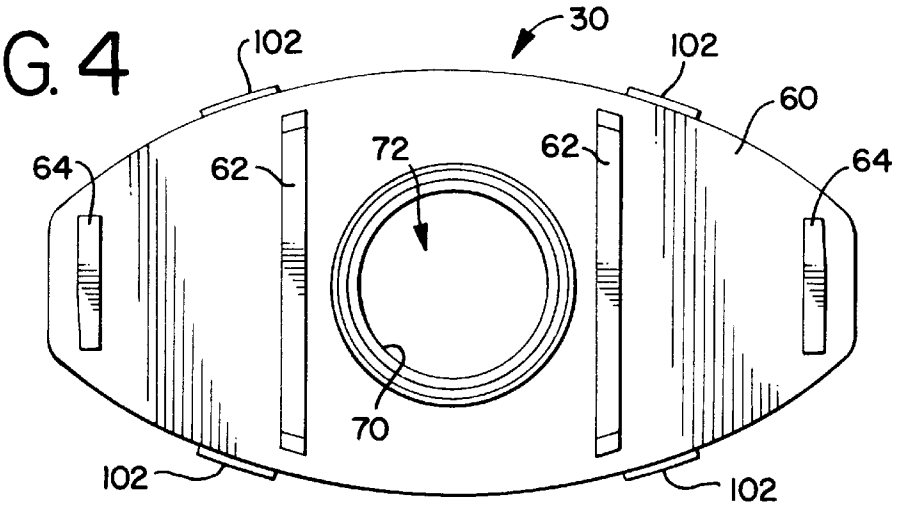


FIG. 5

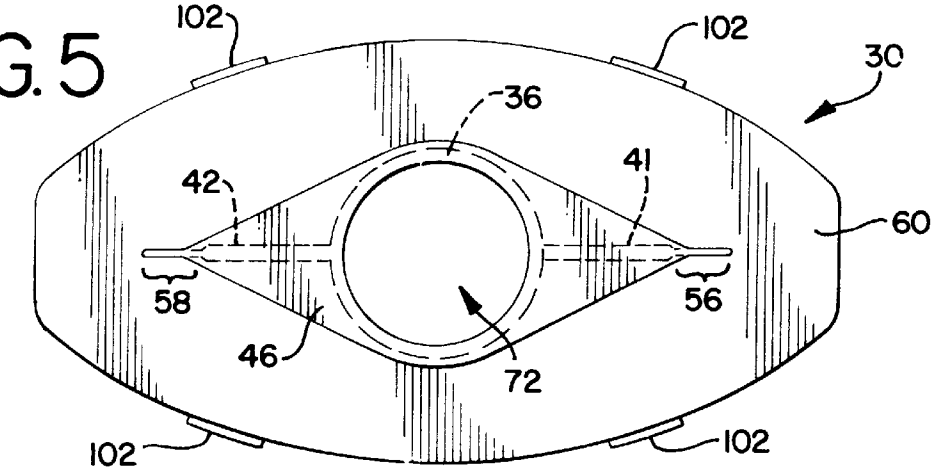


FIG. 6

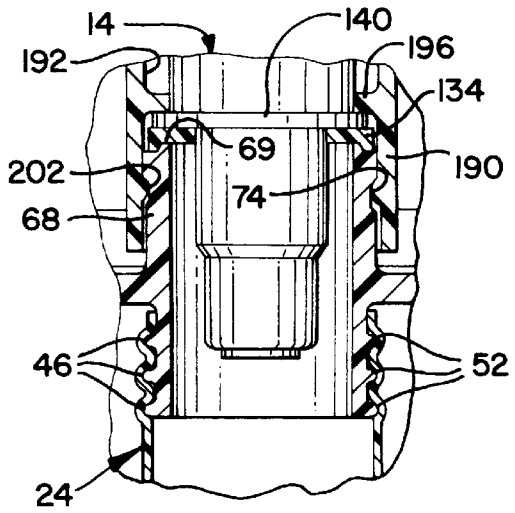


FIG. 7

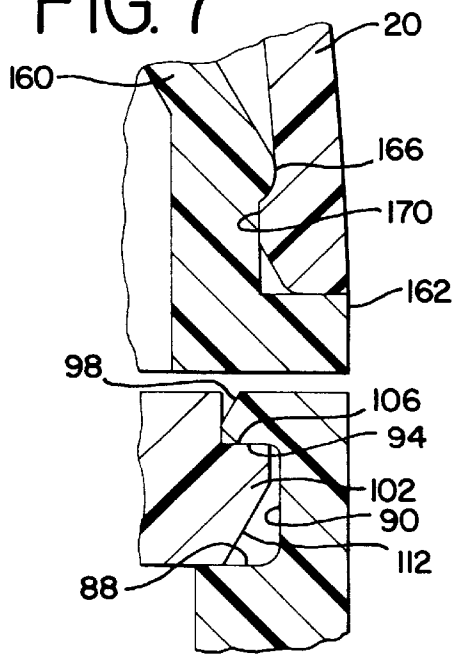
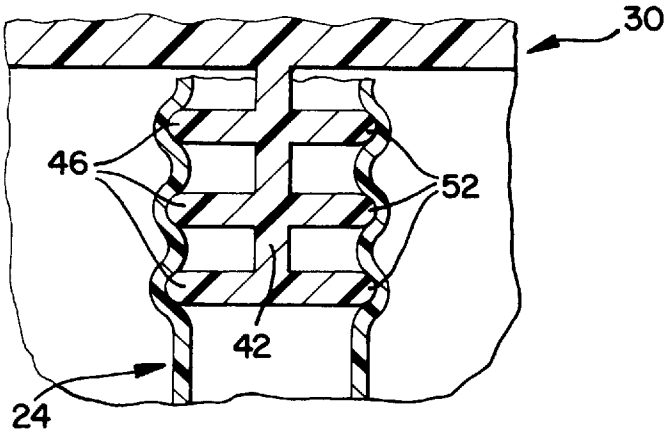


FIG. 8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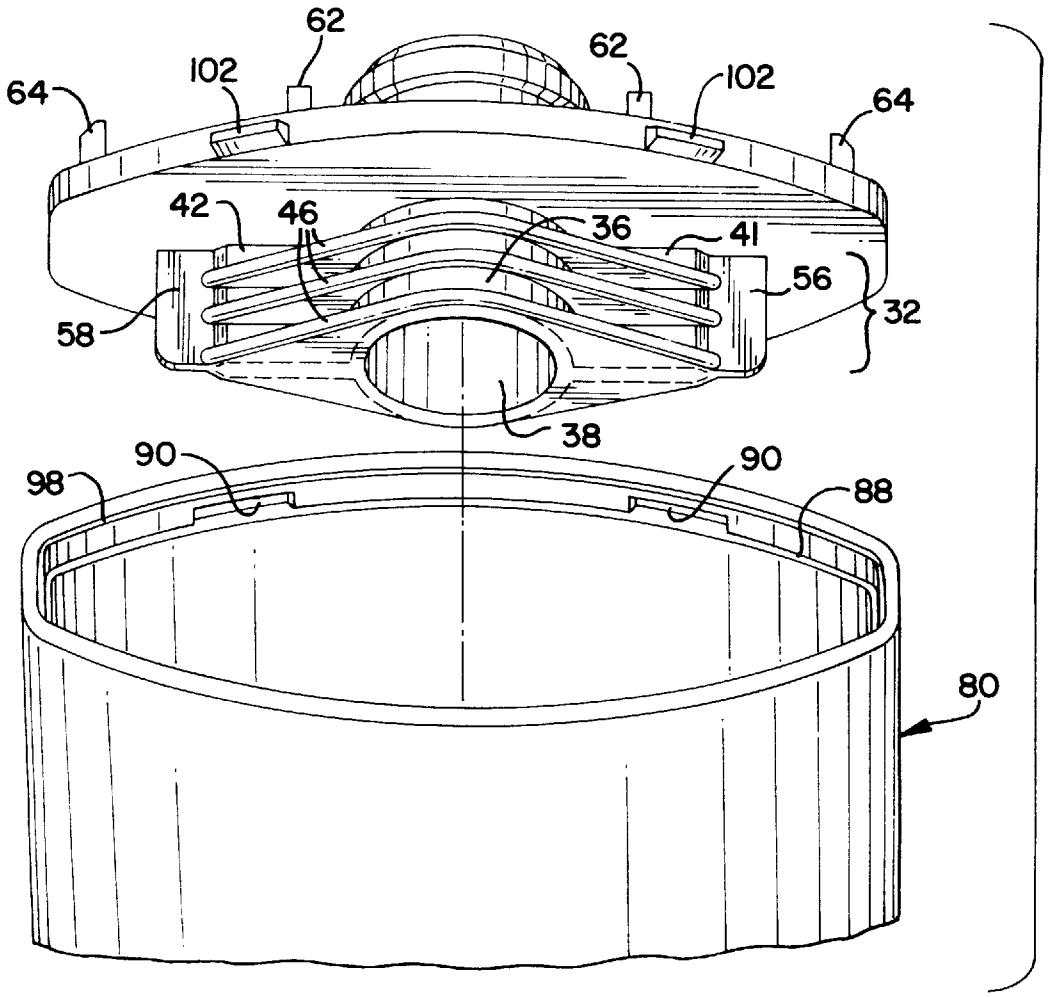
24

FIG. 9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SET OF COMPONENTS FOR ASSEMBLY AS A DISPENSING PACKAGE OF THE NON-VENTED TYPE HAVING AN INTERNAL, COLLAPSIBLE BAG

CROSS REFERENCE TO RELATED APPLICATION(S)

Not applicable.

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

Not applicable.

REFERENCE TO A MICROFICHE APPENDIX

Not applicable.

TECHNICAL FIELD

The present invention relates to a dispensing package for containing and dispensing a fluid product. More particularly, the invention relates to an improved set of components which can be assembled to form the package of the type that includes a finger-operable pump and a flexible, collapsible bag containing the fluid product.

BACKGROUND OF THE INVENTION AND TECHNICAL PROBLEMS POSED BY THE PRIOR ART

Manufacturers of various fluid products have found that in some cases it is desirable to provide such products to a user in a package that readily accommodates dispensing of the product and yet protects the product from oxidation or other external contaminants during storage. It may also be desirable to provide such a product in a package that can be operated in any orientation to dispense the product.

A type of package that has been employed to accommodate these requirements includes a flexible, collapsible bag filled with the product under vacuum and attached to a finger-operable pump. The bag is disposed in a protective, but vented, housing which admits atmospheric pressure air into the housing so as to surround the exterior of the bag. The pump has an actuator projecting from one end of the housing where the pump can be operated by the user pressing down on the pump actuator.

Various designs for such collapsible bag packages are disclosed in the patent literature. While such designs may function generally satisfactorily, it would be desirable to provide an improved design for a package that could be more readily manufactured.

In particular, it would be advantageous to provide an improved design which could incorporate a conventional finger-operable pump. Such an improved design should also preferably facilitate the filling of the collapsible bag with the fluid product, attachment of the pump, and assembly of the other package components with a minimum number of manufacturing steps or special manufacturing operations.

In addition, it would be beneficial to provide such an improved dispensing package design that does not require an excessive number of components, that can be assembled relatively rapidly at low cost and without requiring excessively small manufacturing tolerances and assembly tolerances.

It would also be advantageous if various portions of the package components could be relatively easily modified so as to provide various external configurations which may be desired for utilitarian or aesthetic purposes.

The present invention provides an improved set of components for assembly as a dispensing package which can accommodate designs having the above-discussed benefits and features.

SUMMARY OF THE INVENTION

In accordance with the present invention, a dispensing package can be readily assembled from a set of components which accommodate the filling of the package with a fluid product. The product filling is preferably effected under vacuum. In the preferred embodiment, this is facilitated by arranging the components in two subassemblies. A first subassembly can be filled with the fluid product under vacuum, and then the second subassembly can be mounted to the first subassembly to form a complete package.

Three components can be connected together to form the first subassembly. One of the components is a collapsible bag for containing the fluid product. The bag comprises a flexible material having an open end defined by a peripheral portion of the material.

The second component of the first subassembly is a support which is attached to the bag. The support has an engaging structure received in the bag open end. The engaging structure of the support is sealingly secured to the bag material. The support defines a passage communicating with the interior of the bag.

The third component of the first subassembly is an enclosure or hollow body which can receive the bag and be attached to the support—preferably by a snap-fit engagement. In the preferred embodiment, the enclosure or hollow body is substantially rigid over most of its length and has a bottom end which can serve as a base for supporting the package in a generally upright orientation. The base preferably includes one or more vent holes for admitting ambient atmosphere into the interior of the body around the exterior of the bag.

The second subassembly is assembled from two main components and preferably includes one or two additional components. The first component is a retention member which can be attached to the support of the first subassembly, preferably by a snap-fit engagement. The retention member defines (1) an opening which can be located adjacent the support passage, and (2) at least one clamping surface around the opening.

A second component of the second subassembly is a finger-operable pump which can be mounted between the support and the retention member clamping surface. When properly mounted, the finger-operable pump extends within the passage of the support and within the opening of the retention member. The pump has an inlet for communicating with the interior of the collapsible bag, and the pump has an outlet for projecting beyond the retention member opening.

The second subassembly preferably includes a third component which is a separate gasket designed to insure a leak-tight seal between the pump and the support on which the pump is mounted and retained by the retention member.

Further, the second subassembly may optionally include a fourth component in the form of a cover or cap which is adapted to be mounted over the upwardly projecting, outlet end of the pump and which is intended to be removed by the user when the user desires to dispense fluid product from the package.

Typically, the first subassembly is assembled by sealingly securing the collapsible bag to the support and by attaching the enclosure or body to the support. Thereafter, the bag can

be filled with fluid product in a vacuum-assisted filling process through the support passage.

Subsequently, the second subassembly pump and retention member can be mounted on the first subassembly so that the retention member is attached to the support. This is also accomplished under vacuum, and preferably the above-described gasket is disposed on the pump prior to mounting the pump and retention member in place on the support.

If the package is to also include a cap, then the cap may be initially attached to the retention member over the pump prior to mounting the second subassembly components together on the first subassembly.

According to one aspect of the present invention, means are provided for attaching the support to the hollow body around the bag, and such means facilitate manufacture of the components and facilitate subsequent assembly of the components in a relatively high-speed process. Specifically, the support includes at least one outwardly projecting rib. The hollow body includes at least one inwardly extending ledge. Either the support or the body, or both, are resiliently deflectable, at least in the region of the rib and/or ledge, so as to accommodate relative movement of the rib and ledge into a confronting relationship and establish a snap-fit engagement.

According to another aspect of the invention, means are provided for attaching the support to the retention member in a way that facilitates manufacture of the components and facilitates high-speed assembly. In particular, either the support or the retention member defines a bead, and the other of the support and retention member defines a groove for receiving the bead in mating relationship. Either the support or the retention member, or both, are resiliently deflectable, at least in the region of the bead or groove, so as to accommodate relative movement of the bead and groove into the mating relationship establishing a snap-fit engagement.

According to yet another aspect of the invention, means are provided for sealingly securing the collapsible bag to the support. In particular, in a preferred embodiment, the flexible bag material is a heat-sealable thermoplastic material. The support is molded from a heat-sealable thermoplastic material. The engaging structure of the support is heat-sealed to the bag. In the preferred arrangement, the engaging structure of the support includes (1) a first set of three, laterally extending, spaced-apart, parallel nerves or flanges, and (2) a second set of three, oppositely extending, spaced-apart, parallel nerves or flanges. The bag material is heat-sealed to the peripheral edges of the flanges.

Numerous other advantages and features of the present invention will become readily apparent from the following detailed description of the invention, from the claims, and from the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

In the accompanying drawings that form part of the specification, and in which like numerals are employed to designate like parts throughout the same,

FIG. **1** is a perspective view of a preferred embodiment of a completed dispensing package assembled from the set of components according to one form of the present invention, and FIG. **1** shows a cover or cap spaced above, and off of, the package to reveal the actuating button of the finger-operable pump;

FIG. **2** is an enlarged, exploded, cross-sectional view of some of the components of the package;

FIG. **3** is an enlarged, cross-sectional view of the package shown in FIG. **1** with the cap in place;

FIG. **4** is a top plan view of the support taken along the plane **4**—**4** of FIG. **2**;

FIG. **5** is a bottom plan view of the support taken along the plane **5**—**5** in FIG. **2**;

FIG. **6** is a fragmentary, cross-sectional view taken generally along the plane **6**—**6** in FIG. **3**;

FIG. **7** is an enlarged, fragmentary, cross-sectional view taken generally along the plane **7**—**7** in FIG. **3**;

FIG. **8** is an enlarged cross-sectional view taken generally along the plane **8**—**8** in FIG. **3**; and;

FIG. **9** is an exploded, fragmentary, perspective view of the body and bag support.

DESCRIPTION OF THE PREFERRED EMBODIMENT

While this invention is susceptible of embodiment in many different forms, this specification and the accompanying drawings disclose only one specific form as an example of the invention. The invention is not intended to be limited to the embodiment so described, however. The scope of the invention is pointed out in the appended claims.

For ease of description, the components of this invention are described in an upright operating position, and terms such as upper, lower, horizontal, etc., are used with reference to this position. It will be understood, however, that the components of this invention may be manufactured, stored, transported, used, and sold in an orientation other than the position described.

Figures illustrating the components show some mechanical elements that are known and that will be recognized by one skilled in the art. The detailed descriptions of such elements are not necessary to an understanding of the invention, and accordingly, are herein presented only to the degree necessary to facilitate an understanding of the novel features of the present invention.

A dispensing package **10** is designated generally by the reference numeral **10** in FIG. **1**. The package **10** is adapted to dispense a fluid product, typically a liquid, cream, paste, or the like. Such products may include personal care products such as shampoos, lotions, and the like. Such products may also include household cleaners, industrial preparations, and other substances.

The package **10** includes a container assembly which includes a projecting, finger-operable pump **14**. The pump **14** may be a suitable conventional type having a pump chamber in which is disposed a pressurizing piston that can be actuated by pressing down on an external actuator button or plunger **16** to dispense a quantity of the fluid product from a dispensing orifice **18**. An optional cover or cap **20** may be releasably mounted over the pump **14** (FIGS. **1** and **3**).

The package **10** includes a collapsible bag **24** for containing the fluid product. The bag **24** comprises a flexible material. The material may be a thermoplastic material, preferably one which is heat-sealable, such as a film of polyvinylchloride, polypropylene, or the like. The bag **24** may be conveniently fabricated from two of webs or sheets of such material which are heat-sealed around three edges, as at **26** in FIG. **3**, to define a bag having a major closed portion with an open end.

The open end of the bag **24** is sealingly secured to a support **30** (FIG. **3**). The support **30** includes an engaging structure **32** (FIG. **3**) which is received in the open end of the bag **24**. The engaging structure **32** includes a downwardly

projecting, hollow structure **36** defining a generally cylindrical bore **38** which communicates with the interior of the collapsible bag **24**.

As shown in FIG. **3**, the engaging structure **32** also includes two, coplanar walls **41** and **42** which extend radially outwardly form the hollow structure **36**. As shown in FIG. **5**, in the preferred embodiment, the wall **41** includes a reduced thickness, distal end portion **56**. Similarly, the wall **42** has a reduced thickness, distal end portion **58**.

A first set of three, spaced-apart, parallel nerves, ridges, or flanges **46** extend laterally outwardly on one side from the walls **41** and **42** and from the hollow structure **36**.

As illustrated in FIG. **8**, a second set of three, spaced-apart, parallel flanges **52** extend laterally in the opposite direction from the other side of the walls **41** and **42** and from the hollow structure **36**.

Preferably, the flanges become narrower as they extend further from the bore **38**. That is, the width of the flanges decreases with increasing distance from the bore **38**. As shown in FIG. **5**, the bottom of the engaging structure **32** has a configuration which is somewhat like the front elevational view of an open, human eye wherein the bore **38** may be thought of as the pupil and the surrounding structure may be thought of as the white part of the eye.

As shown in FIGS. **6** and **7**, the collapsible bag **24** is preferably heat-sealed or otherwise sealingly secured to the elongate, peripheral edges of the engaging structure flanges **46** and **52**. Additionally, the collapsible bag **24** is heat-sealed to the reduced thickness distal end portions **56** and **58** of the walls **41** and **42**, respectively. Thus, the open end of the bag **24** is sealingly secured around its periphery to the support engaging structure **32**, but communication with the interior of the bag **24** is established through the bore **38** in the hollow structure **36**.

The support **30** includes a deck **60** above, and parallel to, the flanges **46** and **52**. The deck **60** extends along, and is connected to, the central walls **41** and **42**, and to the thinner end portions **56** and **58**.

Projecting upwardly from the deck **60** are a pair of rigidifying ribs **62** and a pair of shorter rigidifying ribs **64**. Also projecting upwardly from the deck **60** is an annular wall **68** which has an upper end **69** (FIG. **2**). The exterior of the surface of the annular wall **68** defines an outwardly open, annular groove **74**.

The annular wall **68** defines a bore **70** that extends from, and that is co-axial with, the bore **38** in the lower, hollow structure **36**. The bore **38** and bore **70** together define a passage **72** (FIGS. **2**, **4**, and **5**) through the support **30** which communicates with the interior of the bag **24**. The passage **72** is large enough to receive the lower end of the pump **14**.

The support deck **60** includes a means or structure for connecting the support **30** to an enclosure or hollow body **80** which surrounds and protects the collapsible bag **24**. The hollow body **80** has an open upper end for receiving the support deck **60** and has a closed bottom end defining a generally flat base **84** for supporting the package in the generally upright orientation. The base **84** preferably includes one or more vent holes **86** for admitting ambient atmosphere into the interior of the body around the exterior of the bag **24**.

At the upper, open end of the body **80**, the body **80** defines an interior, peripheral shoulder **88** (FIG. **9**). The body **80** also defines four, spaced-apart recesses **90** adjacent the ledge **88**. The bottom of each recess **90** is defined by the shoulder **88**. The top of each recess **90** is defined by an overhanging ledge **94** (FIG. **7**). The upper edge of the body **80** above each ledge **94** is angled or chamfered to define a camming surface **98** (FIG. **7**).

The support **30** has four engaging members or ribs **102** for each being received in one of the hollow body recesses **90**. Each rib **102** projects laterally from the side of the support deck **60**. Each rib **102** includes an upwardly facing shoulder **106** and an inwardly angled camming surface **112** (FIG. **7**).

Either the support **30** or the body **80**, or both, are resiliently deflectable, at least in the region of the deck ribs **102** and/or in the region of the body ledges **94**, so as to accommodate relative movement of the deck ribs **102** and the upper body ledges **94** into a confronting relationship so as to establish a snap-fit engagement. This is facilitated by the body camming surfaces **98** which initially engage the deck rib camming surfaces **112**. When sufficiently large, opposed, axial forces are applied to the support **30** and body **80**, there is temporary deflection or deformation of one or both of the components in the radial direction so that the deck ribs **102** can be moved past the inner ends of the body upper ledges **94**. The deck ribs **102** become lodged between the body upper ledges **94** and the body inner shoulder **88** as shown in FIG. **7** to establish the snap-fit engagement.

After the collapsible bag **24** is sealingly secured to the support **30** and after the support **30** is attached to the hollow body **80** as described above, the resulting assembly may be characterized as a lower subassembly or first subassembly. This subassembly may be provided to a fluid product manufacturer for filling the collapsible bag **24** with a fluid product. Subsequently, the additional package components, comprising an upper subassembly or second subassembly as described below, are installed on the filled, first subassembly.

The second subassembly or upper subassembly for being mounted to the lower subassembly comprises at least two components. One of the components of the upper or second subassembly is the pump **14**, and another component is a retention member **130** (FIG. **2**). The actuator button **16** may be regarded as part of the pump **14**. Additional components are also preferably included in the upper subassembly, and such additional components may include a gasket **134** (FIG. **2**) and the cap or cover **20** (FIGS. **2** and **3**). The pump **14** is initially mounted within the retention member **130**, along with the gasket **134** if the gasket is employed.

The pump **14** has a radially extending mounting flange **140** (FIGS. **2** and **3**) for being positioned on or over the upper end **69** of the annular wall **68** of the support **30**. Preferably, in order to ensure a leak-tight seal, the gasket **134** is disposed between the pump flange **140** and the upper end **69** of the support **30**. However, depending upon the materials employed in the construction of the pump **14** and/or support **30**, the gasket **134** could be omitted. Alternatively, the gasket **134** may be provided as an integral or unitary part of either the pump flange **140** or the upper end **69** of the support **30**.

The pump **14** may be any suitable non-venting pump of any appropriate conventional or special design. Typically, a conventional, non-venting pump, such as the pump **14** illustrated in the figures, has an interior chamber (not visible) which has a check valve at the lower end and in which is disposed a pressurizing piston (not visible). The pressurizing piston is arranged to cooperate with a hollow stem **146** which extends out through the top of the body of the pump **14** and which is received within the pump actuator button **16**. The stem **146** and the piston within the pump body can move downwardly together in the pump chamber,

but the hollow stem **146** can also move for some distance separately relative to the piston so as to establish communication through the hollow stem **146** between the pump chamber and the actuator button **16**. One or more springs (not visible in the figures) act against the piston and/or stem **146** inside the pump body to bias the piston, stem **146**, and actuator button **16** upwardly to an elevated rest position when finger pressure is released. When the actuator button **16** is pressed, product is dispensed from the pump **14**.

One conventional pump that may be employed is the pump designated VP36 and sold by Valois S. A., 50 Avenue de L'Europe, 78160 Marly le roi, France. Such a pump is described in the brochure entitled "Valois Cosmetic" as published by Valois S. A. bearing a printing date of "03/93." The description of the VP36 pump in the brochure is incorporated herein by reference thereto to the extent that the description is not inconsistent with the present disclosures. Other non-venting pumps that may be employed are those sold by Valois S. A. under the designation VP39 and VP89. It will be appreciated, however, that the detailed design and operation of the internal components of such pumps, which may be employed for the pump **14** described herein, form no part of the present invention.

The retention member **130** includes a convex shroud **160** providing a pleasing, external configuration. The bottom of the shroud **160** has a laterally projecting flange **162**. At four locations around the shroud **160** above the flange **162**, there are small, outwardly projecting protuberances **166** (FIGS. **1** and **7**). Each of the protuberances **166** is adapted to establish a snap-fit engagement with a radially inwardly extending protuberance or bead **170** at the bottom of the cap or cover **20**. The cap or cover **20** and/or the lower portion of the retention member shroud **160** are resiliently deflectable so as to accommodate relative movement between the cap **20** and shroud **160** as the cap **20** is installed on the package. The cap and/or shroud components deflect sufficiently to permit the cap bead **170** to be located below, and adjacent, the protuberances **166** of the retention member shroud **160**. This confronting relationship establishes the snap-fit engagement.

Projecting downwardly from the shroud **160** in the retention member **130** is an annular sleeve **190** (FIG. **2**). The sleeve **190** defines an opening, bore, or passage **192** for accommodating the annular wall **68** of the support **30** and for accommodating the upwardly projecting portion of the pump **14** (FIG. **3**).

An annular flange **196** extends radially inwardly from the retention member annular sleeve **190** for engaging the upper surface of the pump flange **140** (FIG. **6**). The sleeve **190** also includes an inwardly extending bead **202** for being received in the annular groove **74** defined in the support annular wall **68**. Either the support annular wall **68** or the retention member sleeve **190**, or both, are resiliently deflectable, at least in the region of the bead **202** and/or groove **74**, so as to accommodate relative movement of the bead **202** and groove **74** into a mating relationship establishing a snap-fit engagement.

Typically, the pump **14** is initially disposed in the retention member **130**, along with the gasket **134** if employed. If desired, the cap **20** can also be initially mounted with a snap-fit engagement to the retention member **130** over the pump **14**. This upper subassembly is then ready to be mounted to the support **30** of the lower subassembly. When the two subassemblies are properly mounted together as shown in FIGS. **3** and **6**, the pump flange **140** is clamped between the retention member flange **196** and the upper end **69** of the support annular wall **68**. The gasket **134** is preferably employed between the pump flange **140** and support wall upper end **69** to insure a leak-tight seal.

Prior to mounting the two subassemblies together, the lower subassembly is filled with a fluid product. This can be conveniently done pursuant to a conventional or special filling process which is typically performed under vacuum. Preferably, vacuum (i.e., a reduced pressure) is created by a suitable vacuum system around the enclosure or body **80**. The air within the body **80** is evacuated through the vent holes **86** in the base of the body. Then the fluid product is discharged from a filling machine into the bag **24** through the central passage **72** in the support **30**. Next, with vacuum still enveloping the components, the upper subassembly (comprising the pump **14**, retention member **130**, gasket **134** if employed, and cap **20** if employed) is moved into position on the lower subassembly support **30** so as to establish the snap-fit engagement between the support **30** and retention member **130**. The particular process and detailed operation of filling the bag **24** and mounting the upper subassembly on the lower subassembly form no part of the present invention.

The set of components provided according to the present invention can be readily manufactured from. thermoplastic materials at relatively low cost. Thus, packages made from the set of components may be regarded as disposable packages or throw-away packages.

The set of components can be readily assembled to provide a package which can be easily used. Except for the removable cap **20**, the components are not readily disassembled, and the completed package protects the fluid product from oxidation or other external contaminants.

It will be readily apparent from the foregoing detailed description of the invention and from the illustrations thereof that numerous variations and modifications may be effected without departing from the true spirit and scope of the novel concepts or principles of this invention.

What is claimed is:

1. A set of components for assembly as a dispensing package for containing and dispensing a fluid product, said set comprising:

a collapsible bag for containing said fluid product and comprising a flexible material having an open end defined by a peripheral portion of said material;

a support attached to said bag, said support having an engaging structure received in said bag open end and sealingly secured to said bag material, said support defining a passage communicating with the interior of said bag;

a hollow body which can receive said bag and be attached to said support;

a retention member which can be attached to said support, said retention member defining (1) an opening which can be located adjacent said support passage, and (2) at least one clamping surface around said opening;

a finger-operable pump which can be mounted between said support and said retention member clamping surface for extending within said support passage and said retention member opening, said pump having an inlet for communicating with the interior of said bag and having an outlet for projecting beyond said retention member opening; and

said support including at least one outwardly projecting rib, said body including at least one inwardly extending ledge, and at least one of said support and said body being resiliently deflectable to accommodate relative

movement of said rib and ledge into confronting relationship establishing a snap-fit engagement.

2. The set of components in accordance with claim **1** in which

said support includes a plurality of said ribs and said body includes a plurality of said ledges; and

each said ledge confronts one of said ribs in a snap-fit engagement.

3. The set of components in accordance with claim **1** in which said rib has an angled camming surface.

4. The set of components in accordance with claim **1** in which said body defines an angled camming surface above said ledge.

5. The set of components in accordance with claim **1** in which said body defines a recess below said ledge for receiving said rib.

6. A set of components for assembly as a dispensing package for containing and dispensing a fluid product, said set comprising:

a collapsible bag for containing said fluid product and comprising a flexible material having an open end defined by a peripheral portion of said material;

a support attached to said bag, said support having an engaging structure received in said bag open end and sealingly secured to said bag material, said support defining a passage communicating with the interior of said bag;

a hollow body which can receive said bag and be attached to said support;

a retention member which can be attached to said support, said retention member defining (1) an opening which can be located adjacent said support passage, and (2) at least one clamping surface around said opening;

a finger-operable pump which can be mounted between said support and said retention member clamping surface for extending within said support passage and said retention member opening, said pump having an inlet for communicating with the interior of said bag and having an outlet for projecting beyond said retention member opening; and

one of said support and said retention member defining a bead, the other of said support and retention member defining a groove for receiving said bead in mating relationship, and at least one of said support and said retention member being resiliently deflectable to accommodate relative movement of said bead and groove into said mating relationship establishing a snap-fit engagement.

7. The set of components in accordance with claim **6** in which

said support includes an annular wall which defines said passage and which terminates in an upper end, said annular wall having an exterior surface defining said groove as an outwardly open, annular groove;

said retention member has an annular sleeve for receiving said annular wall of said support; and

said bead is an inwardly extending bead on said sleeve.

8. A set of components for assembly as a dispensing package for containing and dispensing a fluid product, said set comprising:

a collapsible bag for containing said fluid product and comprising a flexible material having an open end defined by a peripheral portion of said material;

a support attached to said bag, said support having an engaging structure received in said bag open end and sealingly secured to said bag material, said support defining a passage communicating with the interior of said bag;

a hollow body which can receive said bag and be attached to said support;

a retention member which can be attached to said support, said retention member defining (1) an opening which can be located adjacent said support passage, and (2) at least one clamping surface around said opening;

a finger-operable pump which can be mounted between said support and said retention member clamping surface for extending within said support passage and said retention member opening, said pump having an inlet for communicating with the interior of said bag and having an outlet for projecting beyond said retention member opening; and

said bag material being a heat-sealable thermoplastic material, said support being molded from a heat-sealable thermoplastic material, and said engaging structure of said support being heat-sealed to said bag.

9. The set of components in accordance with claim **8** in which

said engaging structure of said support includes a first set of three, spaced-apart, parallel flanges and a second set of three, oppositely extending, spaced-apart, parallel flanges; and

said bag material is heat-sealed to said flanges.

10. The set of components in accordance with claim **9** in which

said support engaging structure includes a downwardly projecting hollow structure having a cylindrical bore defining a portion of said support passage;

two, coplanar walls extend radially outwardly from said hollow structure; and

each said flange of said first and second sets of flanges extends from said hollow structure and from said walls in a direction generally perpendicular to said walls.

11. The set of components in accordance with claim **10** in which said width of said flanges decreases with increasing distance from said bore.

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