CONTAINER WITH DIVIDED COMPARTMENTS

Inventor: Kenneth E. Holmes, Big Bear Lake, CA (US)

Correspondence Address:
KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614 (US)

Appl. No.: 10/638,074
Filed: Aug. 8, 2003

Related U.S. Application Data
Continuation-in-part of application No. 10/420,043, filed on Apr. 18, 2003.

Publication Classification
Int. Cl. 7 .................................................. B65D 35/22

U.S. Cl. ............................................... 222/94

ABSTRACT

The present teachings describe an improved dispensing container for a plurality of viscous liquids. In one aspect, the container includes a compressible housing that defines a plurality of chambers that contain a plurality of viscous materials, wherein the compressible housing has an opening at a first end and wherein the plurality of different chambers are in fluid communication with the opening such that compression of the compressible housing results in a mix of the plurality of viscous materials being urged out of the opening. In addition, the container further includes a cap assembly that is positioned over the opening, wherein the cap is movable between a closed and an open orientation wherein the cap has a flat surface having an area sufficient to support the dispensing container in an upright orientation when the cap is positioned in the closed orientation.
CONTAINER WITH DIVIDED COMPARTMENTS

RELATED APPLICATIONS

[0001] This application is a continuation-in-part application of U.S. patent application Ser. No. 10/420,643 filed Apr. 18, 2003, which is incorporated by reference in its entirety.

BACKGROUND OF THE INVENTION

[0002] 1. Field of the Invention

[0003] The present invention relates to bottle dispensers, and, in particular to a container with divided reservoirs.

[0004] 2. Description of the Related Art

[0005] In general, spray bottles are used for dispensing liquids, such as cleaning fluids, air fresheners, beauty products, perfumes, lubricators, etc. Some spray bottles have multiple reservoirs for simultaneously dispensing one or more liquids from a spray nozzle. One benefit to having multiple reservoirs in a spray bottle is that multiple liquids can remain separated until dispensed. This avoids premixing multiple liquids prior to use. Mixing multiple liquids to acquire a particular mix ratio can be cumbersome and inconvenient. In some situations, spillage and waste occurs trying to mix appropriate ratios, which can be costly. In addition, these types of spray bottles are useful for dispensing liquids having active ingredients that provide desirable results when mixed but lose these beneficial characteristics if stored for a period of time. Therefore, spray bottles with multiple reservoirs are less messy, enhance convenience, and can readily mix multiple liquids to desirable ratios during use.

[0006] Many prior art spray bottles that have multiple reservoirs lack an efficient mechanism for dispensing fluid contained therein. In one instance, U.S. Pat. No. 5,971,210 illustrates two separate pumping mechanisms that simultaneously operate to dispense fluid from common nozzle. Each pumping mechanism draws fluid from respective reservoirs and delivers the drawn fluid to the common nozzle. Unfortunately, this concept is inefficient in that two separate pumping mechanisms are needed, which increases the manufacturing costs associated with this particular spray bottle. Therefore, for many consumers, this particular design concept is inefficient and expensive to operate.

[0007] Another inefficient prior art spray bottle, U.S. Pat. No. 5,385,270, uses a common mixing chamber and a single pumping mechanism to draw in fluids from two separate reservoirs. In particular, the mixing chamber comprises an inverted conical section having a flat lower surface adjacent the reservoirs. The pointed section of the conical mixing chamber is attached to the pumping mechanism leaving gaps between the inclined outer surfaces of the conical mixing chamber and the straight edge pump housing. As illustrated, the pump housing loosely fits on top of the inverted conical section. Unfortunately, the seal formed therebetween can deteriorate over time with excessive use thereby adversely effecting the vacuum pressure needed to draw in fluid from the reservoirs. Therefore, this particular design concept is unreliable and undesirable for many consumers.

[0008] Furthermore, the conical section requires a specially designed mounting structure to attach the inverted conical mixing chamber to the bottle. As illustrated, this complex design requires an additional spacer that is threaded on inner and outer surfaces so that the inner surface can be screwed onto the bottle and the pump assembly can then be screwed onto the outer surface of the additional spacer. The additional spacer is needed to properly seal the flat lower surface to the bottle. Unfortunately, the complexity associated with this particular design concept increases production costs associated with manufacturing the spray bottle in that additional structures have to be separately formed and additional time is needed to assemble all the additional pieces thus resulting in an increase in labor costs.

[0009] Many conventional containers for dispensing various products, such as food products including peanut butter, jelly, ketchup, mustard, etc. and cosmetic products including lotions, conditioner, shampoo, toothpaste, etc., typically have a single compartment or reservoir for expression or extrusion of the product therefrom. Unfortunately, consumers have to use and handle a plurality of these conventional single reservoir containers for dispensing a plurality of products, which can be inefficient, inconvenient, and uneconomical. Additionally, storage inefficiencies can arise due to the large numbers of separate containers that need to be stored or put away in cabinets, drawers, etc. Therefore, from the foregoing, there currently exists a need for an improved container that reduces the inconveniences and inefficiencies of typical single reservoir containers.

SUMMARY OF THE INVENTION

[0010] The aforementioned needs may be satisfied by a dispensing container for a plurality of viscous liquids. In one embodiment, the container may comprise a compressible housing that defines a plurality of chambers that contain a plurality of viscous materials, wherein the compressible housing has an opening at a first end and wherein the plurality of different chambers are in fluid communication with the opening such that compression of the compressible housing results in a mix of the plurality of viscous materials being urged out of the opening. In addition, the container may further comprise a cap assembly that is positioned over the opening, wherein the cap is movable between a closed and an open orientation wherein the cap has a flat surface having an area sufficient to support the dispensing container in an upright orientation when the cap is positioned in the closed orientation.

[0011] In one aspect, the cap assembly may include a cap housing that mates onto the first end of the compressible housing and a cap that is pivotally connected to the housing wherein the housing includes an opening that is sized so as to be in fluid communication with each of the plurality of chambers. In addition, the opening in the cap housing may be sized so as to permit a pre-determined substantially constant ratio of the viscous liquids to be urged out of the opening when the compressible housing is compressed. Also, the plurality of chambers may comprise two chambers that are divided by a common wall, and wherein the opening in the cap housing is elongate so as to extend in a direction substantially perpendicular to the plane of the common wall and so that a substantially equal amount of viscous material from the two chambers emanate out of the opening when the compressible housing is compressed. Also, the chambers may respectively contain peanut butter and jelly.

[0012] In another aspect, the cap member of the housing may include a protrusion that matches the contour of the
opening in the cap housing such that when the cap is closed, the protrusion extends into the opening to thereby seal the opening. In addition, the protrusion may be sized so as to extend into the compressible housing a sufficient distance to inhibit viscous liquids from different containers from mixing.

[0013] The aforementioned needs may also be satisfied by an assembly for dispensing a plurality of viscous materials. In one embodiment, the assembly may comprise a container having a flexible housing with a partition formed therein so as to divide the interior of the housing into a plurality of reservoirs, the container having a neck portion with an opening formed in a first end, wherein the partition extends within the neck portion so as to define first and second apertures adjacent the opening, and wherein the flexible sidewall is compressible such that compressing the flexible sidewall produces a force that inwardly collapses the flexible housing to thereby extrude the viscous materials from the reservoirs through the opening via the first and second apertures. In addition, the assembly may further comprise a cap mounted to the neck portion so as to overlie the opening, wherein a third aperture is formed in the cap so as to communicate with the opening for extrusion of the viscous materials from the container.

[0014] The aforementioned needs may also be satisfied by a container for dispensing a plurality of viscous materials. In one embodiment, the container may comprise a housing having a compressible skin and an interior chamber and a neck portion with an opening formed therein. In addition, the container may further comprise a common wall that is joined to the compressible skin in a manner so as to divide the interior chamber of the housing into at least two reservoirs, wherein the common wall extends within the neck portion so as to define at least two apertures interposed between the at least two reservoirs and the opening, and wherein the compressible skin is compressible such that compressing the compressible skin produces a force that inwardly collapses the housing to thereby express the viscous materials from the reservoirs through the opening via the first and second apertures.

[0015] In one aspect, the container may still further comprise a manifold positioned within the neck portion in a manner so as to replace at least a portion of the common wall that extends within the neck portion, and wherein the manifold is positioned within the neck portion so as to be interposed between the opening and the common wall. In addition, the manifold may comprise a hollow interior region and a partition component that defines the at least two apertures, and wherein the partition component abuts the common wall, and the at least two apertures provide a communication path from the reservoirs to the opening. These and other objects and advantages of the present invention will become more fully apparent from the following description taken in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0016] FIG. 1 illustrates one embodiment of a spray bottle assembly.

[0017] FIGS. 2A, 2B illustrate expanded views of the spray bottle assembly of FIG. 1.

[0018] FIG. 3 illustrates a cut-away view of the spray bottle assembly of FIG. 1.

[0019] FIGS. 4A-4C illustrate one embodiment of a container assembly.

[0020] FIGS. 5A, 5B illustrate a bottom view of the container assembly.

[0021] FIGS. 6A, 6B illustrate a cross-sectional view of the container assembly.

[0022] FIG. 7A, 7B illustrate the container assembly with a manifold.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0023] These and other aspects, advantages, and novel features of the present teachings will become apparent upon reading the following detailed description. Reference will now be made to the drawings wherein like numerals refer to like parts throughout. An improved spray bottle assembly having discrete reservoirs for dispensing one or more fluids or lotions will be described in greater detail herein below with reference to the drawings.

[0024] FIG. 1 illustrates one embodiment of a spray bottle assembly 100 having a bottle 102 with a neck portion 104 and first and second reservoirs 110, 112 for dispensing a plurality of fluids contained therein. The bottle 102 comprises first and second outer walls 120, 122 that are adapted to join together at a central portion 124 in a manner so as to define the first and second reservoirs 110, 112. In one embodiment, the spray bottle assembly 100 comprises a liquid sprayer, and the first and second reservoirs 110, 112 comprise discrete containment sections that are separated by the central portion 124, wherein the reservoirs 110, 112 are each configured to hold a different product in each reservoir or compartment, such as fluids or lotions. Additionally, in various embodiments, the spray bottle assembly 100, including its components, may be translucent or opaque and formed of a semi-rigid or flexible material, such as polyethylene (PE), polypropylene (PP), polyvinyl-chloride (PVC), polyethylene-terephthalate (PET), etc.

[0025] Also, in various embodiments, differently sized manifold diameters can be used or incorporated to dispense various types of viscosity products depending, in one aspect, on the particular application. For example, it may be desirable to use a larger manifold diameter for a higher viscosity fluid product, such as a lotion, than for a lower viscosity fluid product, such as a liquid. In addition, each manifold may use or incorporate differently sized orifice pick-up tubes adapting to various types of generally available off-the-shelf components or stock components including mist sprayers, trigger sprayers, and pump dispensers. It should be appreciated that various types of mist sprayers that may be used include the Mark IV, V, VI, and the Sprayette IV manufactured by Calmer in Lee’s Summit, Mont. Also, various types of trigger sprayers that may be used include the TS-800 also manufactured by Calmer, and various types of dispensing pumps that may be used include the DS, SD100, and P2000 also manufactured by Calmer. Furthermore, it should also be appreciated that other various types of off-the-shelf or stock component mist sprayers, trigger sprayers, and dispensers manufactured by other generally known manufacturers may also be used without departing from the scope of the present invention.
In one aspect, the bottle 102 comprises a cylindrical shape at a lower end 108a with an elliptical cross-section that narrows to a circular cross-section at an upper end 108b adjacent the neck portion 104. In addition, the neck portion 104 comprises upper and lower sections 116a, 116b with a bulging section 118 interposed therebetween. The lower section 116b of the neck portion 104 provides access to the reservoirs 110, 112. Further scope and functionality of the neck portion will be described in greater detail herein below.

In addition, the spray bottle assembly 100 further comprises a manifold 128 positioned within the lower section 116b of the neck portion 104 of the bottle 102. In one embodiment, the manifold 128 is cylindrical in shape with a circular cross-section and the lower section 116a of the neck portion 104 comprises a similar shape that is preferably sized so as to correspondingly receive the manifold 128 in a secure manner. In addition, the manifold 128 further comprises first and second access tubes 130, 132 that are respectively positioned within the first and second reservoirs 110, 112. In one aspect, the access tubes 130, 132 comprise tubular conduits that extend from the manifold 128 to the lower regions of the reservoirs 110, 112. The access tubes 130, 132 are mounted to the manifold 128 so as to fluidly communicate therewith. The access tubes 130, 132 provide quick and easy access to the fluid for withdrawal from the reservoirs 110, 112.

In one embodiment, the central portion 124 includes a plurality of interior walls or partitions 126 that serve to divide the reservoirs 110, 112 from each other. Also, the manifold 128 is positioned within the neck portion 104 so as to be positioned adjacent to the interior walls 126 to thereby impede fluid contained within the reservoirs 110, 112 from traveling from the first reservoir 110 to the second reservoir 112 and vice versa. In one aspect, the interior walls 126 at least partially bisect the bottle 104 such that a first volume enclosed by the first reservoir 110 is substantially similar to a second volume enclosed by the second reservoir 112. In addition, the interior walls 126 may comprise a first interior 136a partition or wall adjacent to the first reservoir 110 that is spaced from the from a second interior partition or wall 136b that is adjacent to the second reservoir 112 by a joining member 138 that is adapted to join the first and second interior walls 136a, 136b. Advantageously, the manifold 128 is adapted to abut the joining member 138 and the interior walls 136a, 136b to thereby inhibit fluid leakage from the reservoirs 110, 112.

Moreover, the spray bottle assembly 100 further comprises a pump assembly 140 that threadably mounts to the neck portion 104 of the bottle 102. The pump assembly 140 includes a single intake tube 142 in fluid communication with the manifold 128 and a user actutable pump mechanism 144 that creates a vacuum force to thereby extract fluid from the reservoirs 110, 112 for expression out of the pump assembly 140. During operation of the pump assembly 140, fluid contained within the reservoirs 110, 112 is drawn upward from the lower regions of the reservoirs 110, 112 to the pump mechanism 144 via the fluid communication between the access tubes 130, 132, the manifold 128, and the intake tube 142. In one embodiment, the pump mechanism 144 comprises a housing 150 that is threadably mounted to the neck portion 104 and a plunger 152 having a spray port 154, wherein operation of the pump assembly 144 comprises pushing the plunger 152 into the housing 150 one or more times for expression of the fluid out of the spray port 154. Further scope and functionality of the pump assembly 140 including the pump mechanism 144 will be described in greater detail herein below.

FIGS. 2A, 2B illustrate an expanded view of the spray bottle assembly 100 of FIG. 1. In one embodiment, as illustrated in FIG. 2A, the bottle 102 further comprises an opening 160 at the upper section 116a of the neck portion 104 that provides access to the interior region of the bulging section 118 and the reservoirs 110, 112. The bulging section 118 of the neck portion allows easy user access to the lower section 116b of the neck portion 104 to thereby readily position the manifold 128 within the lower section 116b. The manifold 128 is positioned within the lower section 116b of the neck portion 104 such that the first access tube 130 is positioned within the first reservoir 110 and the second access tube 132 is positioned within the second reservoir 112. In one aspect, the diameter and volume of the manifold 128 is similar in proportion to the diameter and volume of the lower section 116b of the neck portion 104 to thereby allow a pressed fit between the manifold 128 and the lower section 116b when the manifold 128 is slideably positioned within the lower section 116b.

Additionally, an outer surface 162 of the upper section 116a adjacent the opening 160 of the neck portion 104 is threaded so as to function as a threaded male connector. The interior surface 164 of the housing 150 of the pump assembly 144 is threaded to function as a threaded female connector in a manner so as to mechanically communicate with the threaded outer surface 162 of the upper section 116a. Thus, the housing 150 of the pump assembly 144 can be securely and readily fastened to the neck portion 104 of the bottle 102.

In one aspect, the access tubes 130, 132 are pressed to fit within the input ports 170, 172 of the manifold 128 in a securely fastened manner. The opening 160 in the neck portion 104 is preferably sized so as to provide a path for the manifold 128 to pass through the upper and bulging sections 116a, 118 for mounting to the lower section 116b. During mounting of the manifold 128, the access tubes 130, 132 are positioned within their respective reservoirs 110, 112 via upper apertures 176a, 176b formed adjacent the lower section 116b of the neck portion 104. In one aspect, once the manifold 128 is securely mounted within the lower section 116b of the neck portion 104, the manifold 128 functionally forms a seal against the joining member 138 and the lower section 116a so as to inhibit mixing of fluids between the reservoirs 110, 112.

In one embodiment, the manifold 128 comprises upper and lower ends 148a, 148b having substantially flat surface features. The manifold 128 defines a common chamber 168 adjacent the upper end 148a having first and second input ports 170, 172 adjacent the lower end 148b to which the first and second access tubes 130, 132 are respectively attached so as to provide fluid communication thereto. In addition, the common chamber 168 may function as a mixing chamber, where fluid drawn from the reservoirs 110, 112 is mixed together during operation of the pump assembly 140. For example, prior to being expressed from the spray port 154, fluids from the reservoirs 110, 112 are mixed to an approximate ratio of 50:50. Advantageously, fluids or lotions may be separately contained in the reservoirs 110,
112 and then mixed in the common chamber 168 so as to provide a mixed spray, mist, or stream during operation of the pump assembly 140.

[0034] Moreover, the pump assembly 144 attaches to the manifold 128 via the intake tube 142 in a manner so as to fluidly communicate with the common chamber 168 of the manifold 128. As illustrated in FIG. 2, the intake tube 142 may comprise a protrusion 156 that extends within the common chamber 168 of the manifold 128 when the intake tube 142 is mounted to the manifold 128. In one embodiment, the diameter of the protrusion 156 is at least less than the diameter of the intake tube 142 so as to form a ledge 178, where the protrusion 156 joins the intake tube 142. In addition, the diameter of the common chamber 168 is similarly sized to the diameter of the protrusion 156 so as to receive the protrusion 156 until the upper surface 148a of the manifold 128 abuts the ledge 178. In one aspect, the protrusion 156 is pressed to fit within the common chamber 168 so as to provide a secure attachment and to form a tight seal therebetween.

[0035] Advantageously, the ledge 178 presses the manifold 128 against the central portion 124 and the joining member 138 during mounting of the housing 150 of the pump assembly 140 to the upper section 116a of the bottle 102. This allows the lower surface 148b of manifold 128 to firmly seal against the lower section 116b of the neck portion 104 so as to prevent fluid from intermixing between the reservoirs 110, 112. Therefore, as illustrated in FIG. 1, the manifold 128 rests securely within the lower section 116b of the neck portion 104 so as to firmly seal against the interior walls 126 of the central portion 124 and the joining member 138 when the pump assembly 140 is securely attached to the bottle 102 via the threaded outer surface 162 of the neck portion 104 and the threaded housing 150 of the pump assembly 140.

[0036] Additionally, the protrusion 156 may be adapted to comprise sidewall apertures 158a, 158b. In one embodiment, a first sidewall aperture 158a is adapted to communicate with the first input port 170 of the manifold 128, and a second sidewall aperture 158b is adapted to communicate with the second input port 172 of the manifold 128. Advantageously, the sidewall apertures 158a, 158b, allow fluid to flow through the manifold 128 from the input ports 170, 172 to the intake tube 142 via the common chamber 168.

[0037] Alternatively, as illustrated in FIG. 2B, the ledge 178 may be extended to form a washer structure having a lower surface 190 with a larger surface area. As illustrated the extended ledge 178 is substantially perpendicular to the intake tube 142 and the protrusion 156. In one aspect, when the protrusion 156 is inserted into the common chamber 168, the lower surface 190 of the expanded ledge 178 more evenly distributes the pressing force acting on the upper surface 148a of the manifold 128 during tightening of the pump assembly 140 onto the upper section 116a of the bottle 102. Advantageously, the expanded ledge 178 more firmly presses the manifold into the lower section 116b of the neck portion 104 so as to form a secure seal within the neck portion 104 therebetween. Also, the expanded ledge 178 also prevents movement of the manifold 128 within the neck portion 104 so that the secure seal therein remains intact to thereby increase the reliability of the seal.

[0038] FIG. 3 illustrates a cut-away view of the spray bottle assembly 100 of FIG. 1 so as to show the internal components of the pump assembly 140. In one embodiment, the pump assembly 140 is user actuated and is configured to create a vacuum force that extracts fluid from the reservoirs 110, 112 via the access tubes 130, 132 into the common chamber 168 and into the single intake tube 142 for expression out of the pump assembly 140 via the spray port 154. In one embodiment, the pump mechanism 144 of the pump assembly 140 comprises a piston 180, a spring 182 housed inside the intake tube 142, and a contoured trigger 184. The intake tube 142 is cylindrical in shape with a circular cross-section and is sized so as to receive the spring 182.

[0039] In one aspect, during operation, a user actuates the pump mechanism 144 by pushing down on the trigger 184 thereby plunging the piston 180 into the intake tube 142. The moving piston 180 compresses the spring 182, so when the user subsequently releases the trigger 184, the biasing force of the spring 182 pushes the piston 180 upward and back out of the intake tube 142. The plunging actuation of the piston 180, into and out of the intake tube 142, defines a pump cycle. The down-stroke of the piston 180 plunging inward compresses the volume within the intake tube 142 forcing fluid out of the spray port 154. The up-stroke of the piston 180 plunging outward from the intake tube 142 expands the volume of the intake tube 142, drawing fluid within the intake tube 142. In general, the fluid contained within the bottle 102 flows through the pump assembly 140 in one direction from the reservoirs 110, 112 through the access tubes 130, 132 into the common chamber 168 of the manifold 128 and further into the intake tube 142 of the pump assembly 140.

[0040] In addition, it should be appreciated that, in one embodiment as previously described with reference to FIG. 1, the pump assembly 140 may comprise at least one of the generally available off-the-shelf components or stock components manufactured by Calmar in Lee’s Summit, Mont. In one embodiment, one or more of these generally available off-the-shelf or stock components can be readily adapted to mount to the manifold 128 using friction-fit or generally known adhesives, such as epoxy or silicon based materials. Advantageously, off-the-shelf or stock components, such as the generally available spray nozzle, reduce manufacturing costs associated with the spray bottle assembly 100 of the present invention because a specially designed pump mechanism does not necessarily have to be constructed to gain the benefits of the spray bottle assembly 100 as described herein. Hence, from the foregoing, the spray bottle 100 of the present invention is an improvement over prior art spray bottles.

[0041] In another embodiment, the spray bottle assembly 100 may comprise an aerosol sprayer. In this particular embodiment, the reservoirs 110, 112 would comprise an active ingredient, such as a liquid, and a compressed gas called a propellant. The compressed gas propels the active ingredient out of the reservoirs 110, 112 pushing outward on the walls 120, 122, 126 and also down on the active ingredient. When the trigger 184 is depressed, the pressure differential between the interior and exterior of the bottle 102 forces the active ingredient out of the spray port 154. In general, gases are highly compressible and highly elastic, which makes them useful in storing and releasing energy similar in function to a spring. With reference to the aerosol
sprayer, the energy used to compress the gas propellant in the bottle 102 is used to propel the active ingredient out of the bottle 102.

[0042] FIGS. 4A-4C illustrate one embodiment of a container assembly 200 having a container 202 with a neck portion 204 and first and second reservoirs 210, 212 for dispensing a plurality of materials or products, such as highly viscous liquids or semi-solids, contained therein. As illustrated in FIGS. 4A-4C, the container 202 comprises at least one outer wall, sidewall, or skin 220 that is adapted to comprise at least one internal partition 224 in a manner so as to define the first and second reservoirs 210, 212. In one aspect, it should be appreciated that the container 202 may also be referred to as a housing, containment section, etc. and the reservoirs 210, 212 may also be referred to as compartments, sections, chambers, regions, etc. without departing from the scope of the present teachings.

[0043] In one embodiment, the first and second reservoirs 210, 212 of the container 202 comprise discrete containment compartments or sections that are separated or divided by the internal partition 224, which may also be referred to as a common wall defined between the first and second reservoirs 210, 212. Advantageously, the reservoirs 210, 212 are each configured to hold a different material, product, or viscous fluid in each section, reservoir, or compartment, such as food materials, products or viscous fluids, including peanut butter, jelly, jam, margarine, honey, cheese, refried beans, etc., or various other types of materials, products, or viscous fluids, such as shampoo, conditioner, toothpaste, lotion, etc.

[0044] In one embodiment, the internal partition 224 comprises at least one interior wall that is positioned within the container 202 and is adapted to divide the interior of the container 202 into at least two reservoirs 210, 212. The upper portion of the internal partition 224 is positioned within the neck portion 204 so as to impede material or products contained within the reservoirs 210, 212 from traveling from the first reservoir 210 to the second reservoir 212 and vice versa. In one aspect, as will be shown in greater detail herein below, the interior partition 224 at least partially bisects the container 202 such that a first volume enclosed by the first reservoir 210 is substantially similar to a second volume enclosed by the second reservoir 212. It should be appreciated by one skilled in the art that the interior partition 224 may comprise a plurality interior walls that are securely attached together or distally spaced apart as previously described with reference to the bottle 102 of FIG. 1.

[0045] Additionally, in one embodiment, the container assembly 200 comprises a squeezeable or compressible “tottle” bottle, wherein the outer wall 220 of the container 202 is readily flexible, bendable, or compressible in a manner so as to dispense, extrude, or express the contents of the reservoirs 210, 212. In addition, as further illustrated in FIG. 4A, a lower end 214 adjacent the neck portion 204 of the container 202 comprises a circular cross-section that narrows to a substantially flat cross-section at an upper end 216 of the container 102. Moreover, in one aspect, the at least one outer wall 220 may be joined to the internal partition 224 at the upper end 216 with a seam 222. The seam 222 may comprise a fused seal that substantially seals the upper end 216 of the container 202.

[0046] Moreover, in various embodiments, the container 202, including its components, may be translucent or opaque and formed of a semi-rigid, flexible, or compressible material, such as polyethylene (PE). However, it should be appreciated by one skilled in the art that the container assembly 200 including one or more of its components as described herein may comprise various other materials, such as various types of co-extrusion air barrier plastics, polypropylene (PP), polyvinyl-chloride (PVC), polyethylene-terephthalate (PET), etc., without departing from the scope of the present teachings.

[0047] As illustrated in FIG. 4A, the container assembly 200 further comprises a cap 230 mounted to the container 202 at the lower end 214 thereof. In one embodiment, the cap 230 comprises a lid portion 232 hinged to a base portion 234 with a hinge component 236. As further illustrated in FIG. 4A, the lid portion 232 of the cap 230 hingedly retracted in a closed position to the base portion 234 of the cap 230. In addition, the base portion 234 of the cap 230 comprises a threaded interior sidewall 248, as illustrated in FIGS. 6A, 6B, that is adapted to threadably communicate with an outer sidewall 228 of the neck portion 204 of the container 200 for mounting thereto. Moreover, it should be appreciated that the cap 230 may comprise various types of push-pull cap components, off-the-shelf cap components, or stock cap enclosures without departing from the scope of the present teachings. Advantageously, the cap 230 provides resistance to air contamination by gravity fed of the material or products contained with the reservoirs 210, 212 of the container 202.

[0048] In one embodiment, FIG. 4A further illustrates the container assembly 200 in a first position with the lower end 214 of the container 202 including the cap 230 positioned below the upper end 216 of the container 202. In addition, the lid portion 232 of the cap 230 further comprises an outer surface 237 that is substantially flat to thereby allow the container 202 to stand upright in the first position when the cap 230 is mounted to the container 202 and when the container assembly 200 is positioned on a substantially flat supporting surface, such as a shelf or table. In other words, the outer surface 237 of the cap 237 is substantially flat enough to communicate with a flat supporting surface, such that the container assembly 200 balances on the substantially flat supporting surface in the first position. Advantageously, the first position of the container assembly 200 allows gravity to settle the contents of the reservoirs 210, 212 towards the lower end 214 of the container 202 such that the contents contained within the reservoirs 210, 212 are readily dispensable via the cap 230 in a manner that will be described in greater detail herein below.

[0049] FIG. 4B illustrates the container assembly 100 with the cap 230 detached from the container 102. In one embodiment, the neck portion 204 of the container 202 comprises a cylindrical shape with a circular lower end 226 and the outer sidewall 228 that is threaded so as to receive the base portion 234 of the cap 230. Advantageously, the cap 230 is threadably mounted to the neck portion 204 of the container 202 such that the cap 230 can be readily attached and detached to and from the container 202. Additionally, as illustrated in FIG. 4B, the diameter or size of the neck portion 204 is at least less than the diameter or size of the container 202 at the lower end 214 thereof so as to define a ledge portion 268 interposed between the neck portion 204.
and the outer wall 220 of the container 202. In one embodiment, the ledge portion 268 joins the neck portion 204 to the outer sidewall 220 of the container 202 at an angle as illustrated in FIGS. 6A, 6B. It should be appreciated by one skilled in the art that the ledge portion 268 may be adapted to join the neck portion 204 to the outer sidewall 220 of the container 202 at various angles including offset angles without departing from the scope of the present teachings.

As further illustrated in FIG. 4B, the internal partition 224 of the container 202 substantially bisects the neck portion 204 so as to define first and second outtake apertures 240, 242 with the internal partition 124 positioned therebetween. In one embodiment, as illustrated in FIG. 4B, the first and second apertures 240, 242 of the neck portion 204 are semi-circular in shape and provide access to the first and second reservoirs 210, 212, of the container 202, respectively. Further scope and functionality of the neck portion 204 including the outtake apertures 240, 242 will be described in greater detail herein below.

FIG. 4C illustrates the container assembly 200 with lid portion 232 of the cap 230 hingedly deployed in an open position from the base portion 234 of the cap 230. In one embodiment, the cap 230 comprises an elongate aperture 250 having a raised profile that protrudes from a sidewall 238 of the base portion 234 of the cap 230 in a substantially perpendicular manner. In addition, the elongate aperture 250 is positioned substantially perpendicular to the internal partition 224 of the container 202 such that the elongate aperture 250 is in fluid communication with the outtake apertures 240, 242 of the neck portion 204 and provides access to the reservoirs 210, 212 of the container 202. Moreover, in one aspect, the threads on the outer sidewall 228 of the neck portion 204 are oriented such that the elongate aperture 250 of the cap 230 is positioned substantially perpendicular to the internal partition 224 of the container 202 when the cap 230 is securely fastened or mounted to the neck portion 204 of the container 202.

As further illustrated in FIG. 4C, the lid portion 232 of the cap 230 comprises a hollow interior region 260 and a stopper 262 that protrudes from a sidewall 264 of the lid portion 232 in a substantially perpendicular manner. In one embodiment, the stopper 262 is adapted to communicate with the elongate aperture 250 of the base portion 234 so as to plug therewith when the lid portion 232 is retracted to the closed position as illustrated in FIG. 6A. Advantageously, the stopper 262, when received by the elongate aperture 250 in the closed position, substantially prevents the contents of the reservoirs 210, 212 from dispending therefrom. Optionally, as further illustrated in FIG. 6A, the stopper 262 may be adapted to extend within the elongate aperture 250 so as plug therewith and abut the internal partition 224 to thereby form at least a partial seal therewith so as to substantially prevent the contents of the reservoirs 210, 212 from intermixing.

In one embodiment, the flexible or compressible sidewall 220 of the container 202 is user actutable such that “squeezing” or compressing the sidewall 220 produces a force that inwardly collapses the sidewall 220 to thereby extrude material, product, or viscous fluids from the reservoirs 210, 212 via the apertures 240, 242, 250 for expression out of the cap 230. In one aspect, a plane of “squeeze” direction is defined substantially perpendicular to the outer sidewall 220 of the container 202. As such, during “squeezing” or compressing of the container 202, materials, products, or viscous fluids contained within the reservoirs 210, 212 are forcefully pushed so as to extrude from the reservoirs 210, 212 through the elongate aperture 250 of the cap 230 via the first and second outtake apertures 240, 242 of the neck portion 204. Advantageously, in one aspect, a plurality of contained materials, products, or viscous materials that are separately held in the reservoirs 210, 212 can be simultaneously extruded or expressed from the container 202 via the apertures 240, 242 of the neck portion 204 and the aperture 250 of the cap 230.

Furthermore, as illustrated in FIG. 4C, the elongate aperture 250 is positioned, for example, towards the center of the base portion 234 of the cap 230. This positioning allows a first ratio of extrusion to comprise approximately a 50:50 extrusion ratio, wherein the extrusion ratio is defined by the amount of contents expressed from each of the reservoirs 210, 212 of the container 202. In one embodiment, the position of the elongate aperture 250 may vary along the sidewall 238 of the base portion 234 depending on the desired ratio of products extruded from the reservoirs 210, 212 of the container 202.

One example of this concept would be to orient the position of the elongate aperture 250 approximately 25% more towards the first reservoir 210 than the second reservoir 212 such that the extrusion ratio is approximately 75% of the contents of the first reservoir 210 and 25% of the contents of the second reservoir 212. Therefore, it should be appreciated by one skilled in the art that the position of the elongate aperture 250 on the base portion 234 of the cap 230 may be adapted to comprise a desired extrusion ratio without departing from the scope of the present teachings. Advantageously, the positional adaptability of the elongate aperture 250 along the base portion 234 of the cap 230 makes it easier to adjust the amount of contents expressed from each of the reservoirs 210, 212 of the container 202.

FIG. 5A illustrates a bottom view of the container assembly 200 with the cap 230 removed from the neck portion 204 of the container 202. As illustrated in FIG. 5A, the central partition 224 of the container 202 substantially bisects the neck portion 204 of the container 202 so as to define the outtake apertures 240, 242. Advantageously, the central partition 224 divides the interior of the container 202 into at least two discrete sections or compartments comprising the first and second reservoirs 210, 212 such that a plurality of materials or products can be separately contained within the reservoirs 210, 212. In addition, the outtake apertures 240, 242 provide access to the reservoirs 210, 212 for expression of material or products contained within the reservoirs 210, 212 of the container 202.

FIG. 5B illustrates a bottom view of the container assembly 200 with the cap 230 removed from the base portion 234 of the cap 230. As illustrated in FIG. 5B, the base portion 234 of the cap 230 is mounted to the neck portion 204 of the container 202 such that the sidewall 238 of the base portion 234 abuts the central partition 224 of the container 202 and the elongate aperture 250 is substantially perpendicular to the central partition 224. This advantageously allows the elongate aperture 250 of the cap 230 access to the reservoirs 210, 212 of the container 202 via the outtake apertures 240, 242 of the neck portion 204.
FIG. 6A illustrates a cross-sectional view of the container assembly 200 taken along lines 6A-6A of FIG. 4A. As illustrated in FIG. 6A, the at least one internal partition 224 divides the container 202 into at least two reservoirs 210, 212. An upper end 256 of the internal partition 224 is securely attached to the outer wall 220 of the container 202 at the upper end 216 thereof so as to form the seam 222 with a fastening means, such as a fused seal using heat induction, epoxy, glue, etc.

As further illustrated in FIG. 6A, the internal partition 224 runs along the height of the container 202 such that a lower end 258 of the internal partition 224 is positioned within the neck portion 204 of the container 202 and is substantially aligned with lower end 226 of the neck portion 204. Advantageously, the internal partition 224 substantially bisects the neck portion 204 so as to define the first and second outlet apertures 240, 242 above the first and second reservoirs 210, 212, respectively.

FIG. 6A further illustrates a cross-sectional view of the cap 230, which is attached to the container 202 via a threaded interconnection between the interior sidewall 248 of the base portion 234 and the outer sidewall 228 of the neck portion 204. As further illustrated in FIG. 6A, the cap 230 is attached to the lower end 214 of the container 202 so as to overlie the lower end 238 of the neck portion 204 such that the elongate aperture 250 of the base portion 234 of the cap 230 is positioned over the outlet apertures 240, 242.

In one embodiment, the hinge 236 is integrally formed as part of the lid and base portions 232, 234 such that the lid portion 232 is hinged at the base portion 234 to thereby readily allow the lid portion 232 to be deployed and retracted between the open and closed positions. In addition, the lid portion 232 of the cap 230 is retracted into the closed configuration, as illustrated in FIG. 6A, such that the stopper 262 at least partially extends with the elongate aperture 250. It should be appreciated by one skilled in the art that the stopper 262 may be adapted to extend within the elongate aperture 250 so as to abut the internal partition 224 without departing from the scope of the present teachings.

FIG. 6B illustrates a cross-sectional view of the container assembly 200 with the cap 230 detached from the neck portion 204 and the lid portion 232 deployed from the cap 230 in the open position. As illustrated in FIG. 6B, the cap 230 can be detached from the neck portion 204 of the container 202 by way of the threaded interconnection between the interior sidewall 248 of the base portion 234 and the outer sidewall 228 of the neck portion 204. The lid portion 232 of the cap 230 can be deployed into the open position, as illustrated in FIG. 6B, by pivoting the lid portion 232 about the hinge 236 with respect to the base portion 234. This advantageous configuration allows the cap 230 be readily detached from the container 202 and further allows the lid portion 232 of the cap 230 to be readily deployed and retracted into open and closed positions, respectively.

FIG. 7A illustrates a perspective view of the container assembly 200 with the neck portion 204 of the container 202 adapted to receive a manifold 270 having an integral partition 272. FIG. 7B illustrates an exploded view of the container assembly 200 with the manifold 270 and the cap 230 detached from the neck portion 204 of the container 202. In the following discussion, it should be appreciated that the scope of the previously described container assembly 200 including its components remain the same except for the indicated alternate components as described herein below with reference to FIGS. 7A, 7B.

In one embodiment, as illustrated in FIG. 7A, the container assembly 200 may optionally comprise a manifold 270 securely positioned within the neck portion 204 of the container 202. The manifold 270 is cylindrical in shape with a circular cross-section and the interior of the neck portion 204 comprises a similar shape that is sized so as to correspondingly receive the manifold 270 therein in a secure manner. The manifold 270 may be securely fastened or attached to the interior sidewalls of the neck portion 204 via a friction-fit, heat induction fuse, epoxy, glue, etc. In addition, the internal partition 224 of the container 202 is adapted to abut the manifold 270 when the manifold 270 is positioned in the neck portion 204 of the container 202.

In one embodiment, the manifold 270 further comprises an integral partition 272 that runs along the height and width of the manifold 270 in a manner so as to abut the internal partition 224 of the container 202 when the manifold 270 is positioned within the neck portion 204 of the container 202. The integral partition 272 is positioned within the manifold 270 so as to bisect the interior of the manifold 270 to thereby define first and second outlet apertures 280, 282 that are respectively positioned over the first and second reservoirs 210, 212. In one aspect, the outlet apertures 240, 242 as defined by the manifold 270 are adapted to fluidly communicate with the reservoirs 210, 212 of the container 202.

Further, as illustrated in FIG. 7A, the integral partition 272 is positioned, for example, towards the center of the manifold 270. In addition, the contour of the integral partition 272 is substantially rectangular in shape so as to define a first ratio of extrusion to comprise approximately a 50:50 extrusion ratio, wherein the extrusion ratio is defined by the amount of contents expressed from each of the reservoirs 210, 212 of the container 202. In one embodiment, the contour of the integral partition 272 may vary in width depending on the desired ratio of products extruded from the reservoirs 210, 212 of the container 202.

One example of this concept would be to form the contour of the integral partition 272 of the manifold 270 with approximately 25% more width above the first reservoir 210 than the second reservoir 212 such that the extrusion ratio is approximately 75% of the contents of the second reservoir 212 and 25% of the contents of the first reservoir 210. In this particular example, the cross-sectional area of the first outlet aperture 280 defined by the manifold 270 is at least less than the cross-sectional area of the second outlet aperture 282 defined by the manifold 270. Therefore, it should be appreciated by one skilled in the art that the contour of the integral partition 272 of the manifold 270 may be adapted to comprise a desired extrusion ratio without departing from the scope of the present teachings.

Advantageously, the manifold 270 including the outlet apertures 240, 242 allow ready access to the materials or products contained within the reservoirs 210, 212 of the container 202. Additionally, in one aspect, the adaptability of the contour of the integral partition 272 makes it easier to adjust the amount of material or products expressed from each of the reservoirs 210, 212 of the container 202. More-
over, in various embodiments, differently sized manifold diameters can be used or incorporated to dispense various types of viscosity products depending, in one aspect, on the particular application. For example, it may be desirable to use a larger manifold diameter for a higher viscosity fluid product, such as a lotion, than for a lower viscosity fluid product, such as a liquid. In addition, the manifold may be adapted to use or incorporate differently sized orifice pick-up tubes adapting to various types of generally available push-pull, off-the-shelf, or stock cap components. As such, it should also be appreciated that various types of push-pull, off-the-shelf, or stock cap components or enclosures manufactured by generally known manufacturers in the art may also be used without departing from the scope of the present teachings.

Although the above-disclosed embodiments of the present invention have shown, described, and pointed out the fundamental novel features of the invention as applied to the above-disclosed embodiments, it should be understood that various omissions, substitutions, and changes in the form of the detail of the devices, systems, and/or methods illustrated may be made by those skilled in the art without departing from the scope of the present invention. Consequently, the scope of the invention should not be limited to the foregoing description, but should be defined by the appended claims.

What is claimed is:

1. A dispensing container for a plurality of viscous liquids, the container comprising:

   a compressible housing that defines a plurality of chambers that contain the plurality of viscous materials, wherein the compressible housing has an opening at a first end, and wherein the plurality of chambers are in fluid communication with the opening; and

   a cap assembly that is positioned over the opening, wherein the cap is movable between a closed and an open orientation, wherein the cap has a flat surface having an area sufficient to support the dispensing container in an upright orientation when the cap is positioned in the closed orientation.

2. The container of claim 1, wherein the cap assembly includes a cap housing that mates onto the first end of the compressible housing and a cap that is pivotally connected to the housing, and wherein the housing includes an opening that is sized so as to be in fluid communication with each of the plurality of chambers.

3. The container of claim 2, wherein the opening in the cap housing is sized so as to permit a pre-determined substantially constant ratio of the viscous liquids to be urged out of the opening when the compressible housing is compressed.

4. The container of claim 3, wherein the plurality of chambers comprise two chambers that are divided by a common wall, and wherein the opening in the cap housing is elongate so as to extend in a direction substantially perpendicular to the plane of the common wall and so that a substantially equal amount of viscous material from the two chambers emanate out of the opening when the compressible housing is compressed.

5. The container of claim 4, wherein the chambers contain respectively peanut butter and jelly.

6. The container of claim 3, wherein the cap member of the housing includes a protrusion that matches the contour of the opening in the cap housing such that when the cap is closed, the protrusion extends into the opening to thereby seal the opening.

7. The container of claim 6, wherein the protrusion is sized so as to extend into the compressible housing a sufficient distance to inhibit viscous liquids from different containers from mixing.

8. An assembly for dispensing a plurality of viscous materials comprising:

   a container having a flexible housing with a partition formed therein so as to divide the interior of the housing into a plurality of reservoirs, the container having a neck portion with an opening formed in a first end, wherein the partition extends within the neck portion so as to define first and second apertures adjacent the opening, and wherein the flexible sidewall is compressible such that compressing the flexible sidewall produces a force that inwardly collapses the flexible housing to thereby extrude the viscous materials from the reservoirs through the opening via the first and second apertures; and a cap mounted to the neck portion so as to overlie the opening, wherein a third aperture is formed in the cap so as to communicate with the opening for extrusion of the viscous materials from the container.

9. The assembly of claim 8, wherein the plurality of reservoirs comprise first and second reservoirs that each comprise at least one viscous material, and wherein the first and second reservoirs are in communication with the opening such that compression of the flexible housing results in a mix of the viscous materials being extruded from the opening.

10. The assembly of claim 8, wherein the cap comprises a base portion and a lid portion attached to the base portion via a hinge such that the lid portion is movable between an open and closed position.

11. The assembly of claim 10, wherein the lid portion comprises a flat outer surface having an area sufficient to support the assembly in an upright orientation when the cap is positioned in the closed position.

12. The assembly of claim 10, wherein the base portion of the cap mates onto the neck portion via a threaded interconnection, and wherein the third aperture is formed in the base portion of the cap so as to overlie the opening in the neck portion when the cap is mated to the neck portion such that the third aperture is in communication with the reservoirs via the first and second apertures.

13. The assembly of claim 10, wherein the lid portion of the cap comprises a protrusion that matches the contour of the third aperture formed in the cap such that when the lid portion of the cap is in the closed position, the protrusion extends within the third aperture to thereby seal the third aperture.

14. The assembly of claim 13, wherein the protrusion is sized so as to extend into the flexible housing a sufficient distance to inhibit viscous materials from different reservoirs from mixing.

15. The assembly of claim 8, wherein the opening of the neck portion is sized so as to be in communication with each of the plurality of reservoirs.
16. The assembly of claim 8, wherein the third aperture formed in the cap is sized so as to permit a pre-determined substantially constant ratio of viscous materials to be extruded from the opening when the flexible housing is compressed.

17. The assembly of claim 8, wherein the partition defines a common wall between the plurality of reservoirs, and wherein the third aperture formed in the cap is elongate so as to extend in a direction substantially perpendicular to the common wall and so that a substantially equal amount of viscous material from the plurality of reservoirs extrudes from the opening when the flexible housing is compressed.

18. The assembly of claim 8, wherein a first end of the container adjacent the neck portion comprises a circular cross-section that narrows to a substantially flat cross-section at a second end of the container opposite the neck portion.

19. The assembly of claim 8, wherein the viscous materials comprise food products selected from the group consisting of peanut butter, jelly, margarine, honey, cheese, and refried beans.

20. The assembly of claim 8, wherein the viscous materials comprise cosmetic products selected from the group consisting of lotion, shampoo, conditioner, and toothpaste.

21. A container for dispensing a plurality of viscous materials comprising:

a housing having a compressible skin and an interior chamber;

a neck portion with an opening formed therein; and

a common wall that is joined to the compressible skin in a manner so as to divide the interior chamber of the housing into at least two reservoirs, wherein the common wall extends within the neck portion so as to define at least two apertures interposed between the at least two reservoirs and the opening, and wherein the compressible skin is compressible such that compressing the compressible skin produces a force that inwardly collapses the housing to thereby express the viscous materials from the reservoirs through the opening via the first and second apertures.

22. The container of claim 21, wherein the container further comprises a manifold positioned within the neck portion in a manner so as to replace at least a portion of the common wall that extends within the neck portion, and wherein the manifold is positioned within the neck portion so as to be interposed between the opening and the common wall.

23. The container of claim 22, wherein the manifold comprises a hollow interior region and a partition component that defines the at least two apertures, and wherein the partition component abuts the common wall, and the at least two apertures provide a communication path from the reservoirs to the opening.

24. The container of claim 21, wherein the at least two reservoirs comprise first and second reservoirs that each comprise at least one viscous material, and wherein the first and second reservoirs are in communication with the opening such that compression of the compressible skin of the housing results in a mix of the viscous materials being expressed from the opening via the at least two apertures.

25. The container of claim 24, wherein the at least two apertures comprise first and second apertures, and wherein the first aperture is defined between the first reservoir and the opening, and the second aperture is defined between the second reservoir and the opening such that compression of the compressible skin of the housing results in a mix of the viscous materials being expressed from the first and second reservoirs to the opening via the first and second apertures.

26. The container of claim 21, wherein the container further comprises a cap mounted to the neck portion so as to overlie the opening, wherein a third aperture is formed in the cap so as to communicate with the opening for expression of the viscous materials from the reservoirs.

27. The container of claim 26, wherein the third aperture formed in the cap is sized so as to permit a pre-determined substantially constant ratio of viscous materials to be expressed from the opening when the compressible skin of the housing is compressed.

28. The container of claim 26, wherein the cap comprises a base portion and a lid portion attached to the base portion via a hinge such that the lid portion is movable between an open and closed position.

29. The container of claim 28, wherein the lid portion comprises a flat outer surface having an area sufficient to support the container in an upright orientation when the cap is oriented in the closed position.

30. The container of claim 28, wherein the base portion of the cap mates onto the neck portion via a threaded interconnection, and wherein the third aperture is formed in the base portion of the cap so as to overlie the opening in the neck portion when the cap is mated to the neck portion such that the third aperture is in communication with the reservoirs via at least two apertures.

31. The container of claim 28, wherein the lid portion of the cap comprises a protrusion that matches the contour of the third aperture formed in the cap such that when the lid portion of the cap is in the closed position, the protrusion extends within the third aperture to thereby seal the third aperture.

32. The container of claim 31, wherein the protrusion is sized so as to extend into the flexible housing a sufficient distance to inhibit viscous materials from different reservoirs from mixing.

33. The container of claim 21, wherein the opening of the neck portion is sized so as to be in communication with each of the at least two reservoirs.

34. The container of claim 21, wherein the common wall defines a partition between the at least two reservoirs, and wherein the third aperture formed in the cap is elongate so as to extend in a direction substantially perpendicular to the common wall and so that a substantially equal amount of viscous material is expressed from the reservoirs and through the opening when the compressible skin of the housing is compressed.

35. The container of claim 21, wherein a first end of the housing adjacent the neck portion comprises a circular cross-section that narrows to a substantially flat cross-section at a second end of the housing opposite the neck portion.

36. The container of claim 21, wherein the viscous materials comprise food products selected from the group consisting of peanut butter, jelly, margarine, honey, cheese, and refried beans.

37. The container of claim 21, wherein the viscous materials comprise cosmetic products selected from the group consisting of lotion, shampoo, conditioner, and toothpaste.

* * * * *