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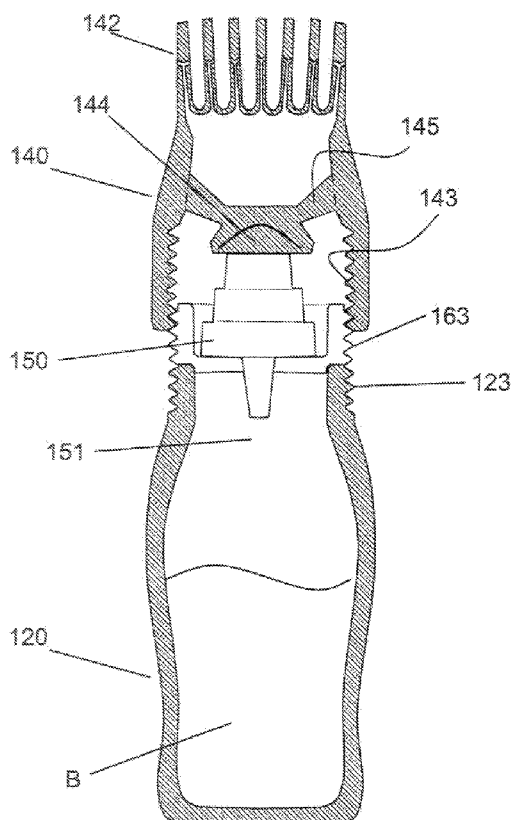
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[Continued on next page]

(54) Title: HAIR COLORATION DYE DISPENSING KIT

FIGURE 5



(57) Abstract: A hair coloration dye dispersing kit is disclosed having containers adapted for easy mixing of ingredients. The disclosed hair color kit includes a container comprising an upper opening; an applicator comprising a lower opening sized to fit in sealing relationship with said upper opening; and a fluid-containing pouch being sized to fit between the container and the applicator, whereby moving the applicator toward the container forces the fluid from the pouch and into the container.



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5 International Patent Application For

HAIR COLORATION DYE DISPENSING KIT

10 This non-provisional application relies on the filing date of provisional U.S.
Application Serial Nos. 61/110794 filed on November 3, 2008, and 61/147597 filed
on January 27, 2009 having been filed within twelve (12) months thereof, which is
incorporated herein by reference, and priority thereto is claimed under 35 USC §
1.19(e).

15 **BACKGROUND OF THE DISCLOSURE**

[0001] The present application is directed to multi-container packages and, more
particularly, to a package or kit for cosmetic products such as hair coloring that
require mixing of several ingredients.

20 [0002] Manufacturers and retailers of consumer goods, such as cosmetics and
particularly hair coloring products, may package these products in several
containers that are to be mixed by the consumer just prior to use. The mixing
process may become messy and hence it is desirable to have a packaging system
that is simpler to use.

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SUMMARY OF THE DISCLOSURE

[0003] In one aspect, a packaging structure is disclosed comprising a container
comprising an upper opening, an applicator comprising a lower opening sized to fit
in sealing relationship with said upper opening, and a pouch containing a fluid, the
30 pouch sized to fit between the container and the applicator, whereby moving the
applicator toward the container forces the fluid from the pouch and into the
container.

[0004] In another aspect, a packaging structure is disclosed comprising a container comprising an upper opening, a cap sized to fit in sealing relationship with the upper opening, and a pouch containing a fluid, the pouch sized to fit between the container and the cap, whereby moving the cap toward the container
5 forces the fluid from the pouch and into the container.

[0005] In another aspect, a packaging structure is disclosed comprising a container comprising an first upper opening with a first external threaded portion, a cup or flange adapted to fit at least partly in or upon the first upper opening, the
10 cup or flange supporting or comprising a pouch, and an applicator comprising an internal threaded portion adapted to fit upon the first upper opening, wherein the applicator comprises an internal foot and wherein the action of screwing the applicator onto the container causes the foot to press upon the pouch and force contents of the pouch into the container.

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[0006] Other aspects of the disclosed packaging will become apparent from the following description and the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

20 [0007] FIG. 1 shows a kit of containers and accessories for hair coloring;
[0008] FIG. 2 shows a cross section of containers from FIG. 1, at an early step in a mixing process;
[0009] FIG. 3 shows a cross section of containers from FIG. 1, at a later step in the mixing process;
25 [0010] FIG. 4 shows cross sections of certain parts of another kit of containers and accessories for hair coloring, in a disassembled state;
[0011] FIG. 5 shows a cross section of the parts from FIG. 4, in an assembled state;
[0012] FIG. 6 shows a cross section of the parts from FIG. 5, during an early step
30 of a mixing process;
[0013] FIG. 7 shows a cross section of the parts from FIG. 6, during a later step in the mixing process;

[0014] FIG. 8 shows a cross section of the parts from FIG. 7, with mixing nearly completed;

[0015] FIG. 9 shows a cross section of the parts from FIG. 8, with certain parts removed from the assembly and the other parts ready for use;

5 [0016] FIG. 10 shows cross sections of certain parts of another kit of containers and accessories for hair coloring, in a disassembled state;

[0017] FIG. 11 shows a cross section of the parts from FIG. 10, in an assembled state;

10 [0018] FIG. 12 shows a cross section of the parts from FIG. 11, during an early step of a mixing process;

[0019] FIG. 13 shows a cross section of the parts from FIG. 12, during a later step in the mixing process;

[0020] FIG. 14 shows a cross section of the parts from FIG. 13, with mixing nearly completed;

15 [0021] FIG. 15 shows a cross section of the parts from FIG. 14, with certain parts removed from the assembly and the other parts ready for use;

[0022] FIG. 16 shows cross sections of certain parts of another kit of containers and accessories for hair coloring, in a disassembled state;

20 [0023] FIG. 17 shows cross sections of certain parts of another kit of containers and accessories for hair coloring, in a disassembled state; and

[0024] FIGs. 18, 19 and 20 show other embodiments of pouches for containing a hair coloring.

DESCRIPTION OF THE DISCLOSURE

25 [0025] As various embodiments of packaging kits are described, reference will be made to FIGURES 1- 20. Certain parts of the packaging kits are denoted by reference numerals. Where there is more than one of the same feature, generally only one will be denoted by a reference numeral. If different packages or different Figures have a common feature, it may only be described one time.

30 Where assembly steps are described, these steps are exemplary and are not to be limiting as to the sequence of operations used to arrive at the final package. Also, directions such as up, down, top, bottom, front, back, etc. are used for convenience in describing the package and are not meant to be limiting.

[0026] Packaging kits, such as may be used to sell hair coloring products, are known by those skilled in the art. FIG. 1 shows a kit such as that made by Clairol, a division of Procter and Gamble. The kit comprises a tube 10 of dye A, a bottle 20 of activator cream B, and a tube 30 of conditioner C. Dye A and activator cream B may be used to dye the hair, then their respective tube and bottle may be discarded. Afterwards, conditioner C may be used periodically over a period of several weeks. This disclosure is primarily concerned with the packaging for dye A and activator cream B.

[0027] Tubes 10 and 30 may be shipped and stored with their outlets covered by caps 12 and 32, and optionally by a metal, foil, or other membrane under the cap that may be pierced open prior to use. Bottle 20 may be shipped with cap 22 covering its threaded opening 23, and optionally by a foil, plastic, or other membrane seal under the cap. When a membrane seal is used for any of the three containers, the cap could be considered optional but is usually used as it protects the seal and provides reclosability after the seal is opened. An applicator 40 may be provided which attaches to bottle 20. For example, applicator 40 may have a comb-like form and one or more of the comb teeth may be provided with holes through which to dispense the activated hair dying mixture.

[0028] To use the hair coloring kit, a customer may first wish to test for allergic reactions, and also gauge how long the hair coloring should remain in their hair in order to give the desired color shade. These tests are optional, and for example may not be undertaken if the customer has used the same product before. If testing is done, the customer may remove cap 12 from tube 10, pierce the seal, and remove a small amount of dye A. This must be mixed with an equal amount of activator cream b from bottle 20. The customer may then apply a small amount of the mixture to their skin, and also to a small amount of hair clipping. The progress of the hair coloration is observed for 10 to 15 minutes to determine how long is required to achieve the desired hair color. If the customer is conducting an allergy test, they may wait a longer period, for example 48 hours.

[0029] FIG. 2 shows a step in mixing the dye A and activator cream B supplied in the packages of FIG. 1. The cap 22 (and any underlying seal) may be removed from bottle 20. The cap 12 may be removed from tube 10, and any underlying seal removed or pierced. The dye A contents of tube 10 may then be squeezed from
5 tube 10, through tube opening 11, and into the activator cream B in bottle 20.

[0030] FIG. 3 shows a further step in mixing the dye A and activator cream B. Cap 22 is replaced onto bottle 20, and the contents are shaken a short time (for example as denoted by the "Z" arrow) to mix the dye A and activator cream B to
10 form the activated mixture AB. The cap 22 may then be removed, and replaced by applicator 40 (shown in FIG. 1).

[0031] Certain parts from an alternative kit for hair color formulations or other products are shown in FIG. 4. Compared with the prior art kit of FIG. 1, this
15 alternative kit may use the conditioner C in the same manner as before. Hence conditioner C and its tube 30 are not described again. Bottle 120 may contain activator cream B. Bottle 120 may be similar to bottle 20 previously described, although it need not be. Bottle 120 may have an open neck portion with bottle threads 123. Inside the neck portion, there may be a keyway 125 (or a notch, rib,
20 detent, or other feature) to engage a cooperating part on cup 160 as described below. Bottle 120 may comprise a membrane or foil seal closure (not shown) across the open neck portion. During shipping and handling, applicator 140 may be partially attached to the bottle to provide additional physical protection for the membrane or foil seal closure.

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[0032] The dye portion of the hair color may be contained in a pouch 150, for example a container with flexible walls. The pouch may be made by a thermoforming process or other process capable of forming a thin wall, flexible pouch. The walls may be formed so as to facilitate collapse of the pouch 150 as its
30 dye contents are removed. For example, pouch 150 may have an upper portion 154 with stepped, collapsible side walls. Pouch 150 may be joined at its lower surface or perimeter 155 to cup 160. Pouch 150 communicates with spout 151, which may be formed as part of cup 160 or part of pouch 150. The pouch 150 and

cup 160 may form a unitary piece. Pouch 150, spout 151, and cup 160 may be formed from the same material, or from different materials joined together for example by plastic welding or adhesive. Spout 151 may for example be formed in a tube-like form such as a cylindrical or conical tube. The spout 151 may be adapted such that upon manufacture it is sealed at its end, but the seal may be broken by pinching or flexing the spout. Such a spout is for example manufactured by Belcap Switzerland AG under the name SIMPLYCAP. The spout 151 may be adapted to allow fluid to flow when the spout is pinched, for example to allow a user to take a small sample of the dye for test purposes. This sample may be mixed with an appropriate amount of activator cream from bottle 120, or with an appropriate amount of activator cream otherwise packaged with the kit, for example in a small foil container or other suitable package. Spout 151 may also be adapted to allow fluid to flow when pressure is applied to pouch 150, but to resist dripping when such pressure is released. Spout 151 may have a one-way action, allowing fluid to exit from pouch 150, but not return back into pouch 150.

[0033] Cup 160 may fit over or into the open end of bottle 120. For example the lower end of cup 160 may have a slight protrusion 168 that extends a short distance into inside of the open end of the bottle. One or more keys 165 (or other features to interact with cooperating features with the bottle opening) may be provided on the cup to mate with keyway 125 and hold cup 160 against rotating within the bottle opening. Cup 160 may have at its upper end threads 163 sized alike to threads 123 on bottle 120 and positioned so that when key 165 is within keyway 125, threads 163 and 123 form a continuous path of thread or threads on which applicator threads 143 may fit. It is understood that the thread design may be a single thread, or more than one threads. There may be gaps in the circumference of the threads, or the threads may be substantially continuous. However, it may be preferred that threads 123 and 163 together form a smooth thread path upon which threads 143 may be rotated. It should be understood that instead of providing a key 165 on cup 160 to mate with a keyway 125 on bottle 120, the opposite may be practiced, that is, a keyway on the cup and a key on the bottle opening. Various combinations of keys and keyways, or other types of mating features, may be used to facilitate alignment of the cup and bottle.

Instead of such alignment features being formed on the cylindrical surfaces of the cup and bottle, they may be formed for example on the circular or annular surfaces of the cup and bottle.

5 [0034] Applicator 140 may appear and function somewhat alike to applicator 40, for example having an applicator comb 142 similar to applicator comb 42. Threads 143 may be somewhat longer than threads 43. Applicator 140 may comprise an internal foot 144 that may bear a force upon pouch 150 as described below. The foot may have a circular cross section, although other shapes may be used as well.
10 The foot may have a flat bottom, or a shaped or textured bottom. The foot may have a continuous or discontinuous bottom. More than one foot may be used. The foot 144 (or feet) may be supported by one or more legs 145. The legs 145 may have any shape suitable to support the foot 144. The legs may be a rigid or stiff material, or may be somewhat flexible yet sturdy enough to apply pressure to the
15 foot 144 when the applicator 140 is screwed down upon the assembled parts. Instead of having a separate foot 144 per se, the leg or legs 145 themselves may bear a force upon pouch 150. There is space between the legs to allow fluid to pass upward into the applicator comb 142. Alternately instead of legs 145, a perforated disk or other support (not shown) may be provided to support foot 144.

20 [0035] To mix the dye and activator cream, any foil or membrane seal on bottle 120 may be removed. Cup 160 with attached pouch 150 may be placed upon or into the open end of the bottle, so that key 165 may fit in keyway 125. Spout 151 may be opened by pinching, flexing, cutting, or other method and then may be
25 inserted through opening 161 as the pouch 150 may be placed into cup 160. Applicator 140 may then be placed on top of cup 160 so that threads 143 may start to engage threads 163. This stage of the assembly is shown in FIG. 5.

[0036] FIG. 6 shows an early stage in the mixing of dye A with activator cream B.
30 Applicator 140 may be rotated to screw it down upon the cup and bottle. Applicator threads 143 first may engage cup threads 163, then also engage bottle threads 123. Meanwhile foot 144 may be upon pouch 150 and apply pressure, which squeezes dye A out of pouch 150 and into the activator cream B inside bottle 120.

[0037] FIG. 7 shows how applicator 140 may be fully threaded onto the cup 160 and bottle 120. The threads 143 of applicator 140 being screwed onto the threads 123 of bottle 120 may provide a leak-proof seal of the applicator/bottle assembly. Foot 144, which moves downward with applicator 140, thus may empty pouch 150, for example by substantially flattening the pouch.

[0038] FIG. 8 shows a further step in mixing the dye and activator cream as the assembly may be shaken a short time (for example as denoted by the “Z” arrow) to mix the dye A and activator cream B to form the activated mixture AB.

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[0039] Mixing the dye A and activator cream B may cause pressure to build up with bottle 120. If the user does not open the bottle within a certain time, it could rupture. However, cup 160 and /or pouch 150 may be designed with a flap valve, hole, or similar aperture (not shown) to allow gas to escape from bottle 120 and out through openings in the applicator comb 142. To assist in venting gas, foot 144 and or legs 145 may be designed to yield slightly in overpressure occur. Pouch 150 may be fabricated with a lower surface at least partially yieldable to act as a check valve (not shown) over a hole (not shown) in the lower surface of cup 160.

[0040] FIG. 9 shows the activated mixture AB ready to be applied from inverted bottle 120, through applicator 140 and its applicator comb 142. Before inverting the assembly, the applicator 140 may be removed temporarily, and pouch 150 and cup 160 (which may be a unitary component) removed and discarded. Applicator 140 may then be replaced onto the assembly and used to apply the activated mixture AB onto the hair.

[0041] Instead of removing pouch 150 and cup 160, a flow path may be provided through which activated mixture AB may travel from bottle 120 and into applicator 140. Such a flow path, for example, may be provided through a check valve in the cup (which might also act as a relief vent). Legs 145 may be designed with sufficient flex or “give” to bear against pouch 150 so that the pouch may be utilized as a part of such a check valve. Then, gentle squeezing pressure on bottle 120 may force activated mixture AB through hole 161, and optionally through

additional holes in the cup (not shown). The activated mixture AB may then flow past pouch 150 and into applicator 140. This may provide better flow control than application by gravity alone. The cup and pouch may be designed to permit airflow back into bottle 120 to replace the liquid that is being dispensed.

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[0042] If pouch 150 and cup 160 may be left inside the assembly after mixing and during application of the hair dye, then it may not be necessary to remove applicator 140 from bottle 120. In that case, a different closure forms, other than threads 123, 143, 163 may be used. For example, snap-on or bayonet closure forms may be used to join the cup to the bottle and the applicator to the cup. Although snap-on or bayonet closures may be more difficult to disassemble than a threaded closure, it may not be necessary to disassemble the parts if the activated mixture AB can be squeezed out through the cup and into the applicator as just described.

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[0043] FIGS. 10 - 15 show an alternative kit for hair color formulations or other products, corresponding substantially in a one-to-one relationship with FIGS. 4 - 9 that have already been described. Not all parts will be described again. Similar parts are usually numbered alike, with numbers in the 100's for FIGS. 4-9, and in the 200's for FIGS. 10-15. As shown in FIG. 10, pouch 250 and cup 260 may be separate parts. Cup 260 may comprise an opening 261 through which spout 251 may pass. A somewhat longer keyway 225 may be used on bottle 220.

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[0044] The dye portion of the hair color may be contained in a pouch 250, for example a container with flexible walls. The pouch may be made by a thermoforming process or other process capable of forming a thin-wall, flexible pouch. The walls may be formed so as to facilitate collapse of the pouch 250 as its dye contents are removed. For example, pouch 250 may have bellows-like side walls, or may have a shape similar to pouch 150. Pouch 250 may have a relatively flat base 255 from which is attached spout 251. Spout 251 may be formed from the same material as pouch 250, or from a separate material, with the spout and pouch then joined together, for example by plastic welding or adhesive.

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[0045] Cup 260 may fit within the open end of bottle 220, for example extending partway into the opening. The lower end of cup 260 may have a form or shape 268 that closely fits the inside of the open end of the bottle. One or more keys 265 (or other features to interact with cooperating features with the bottle opening) may be provided on the cup to mate with keyway 225 and hold cup 260 against rotating within the bottle opening.

[0046] Since the design shown in FIG. 10 allows the pouch to be lower and even at least partway inside bottle 220, applicator 240 may have at its lower end an internal foot 244 that is placed somewhat lower so as to contact the lower location of pouch 250.

[0047] To mix the dye and activator cream, any foil or membrane seal on bottle 220 may be removed. Cup 260 may be placed into the open end of the bottle, so that key 265 may fit in keyway 225. Spout 251 may be opened by pinching, flexing, cutting, or other method and then may be inserted through opening 261 as the pouch 250 may be placed into cup 260. Applicator 240 may then be placed on top of cup 260 so that threads 243 may start to engage threads 263. This stage of the assembly is shown in FIG. 11.

[0048] The steps and features shown in FIGS. 12 - 15 are similar to those already described for FIGS. 6 - 9, and need not be repeated entirely.

[0049] Mixing the dye A and activator cream B may cause pressure to build up with bottle 220. If the user does not open the bottle within a certain time, it could rupture. However, pouch 250 even what flattened may allow gas to escape through hole 161 and out through openings in the applicator comb 242. Foot 244 and or legs 245 may be designed to yield slightly relief of overpressure. A relief device such as a flap valve (not shown) may also be incorporated into cup 260 that will allow gas to escape out through the cup 260 and into applicator 240 from which it may exit through holes in comb 242.

[0050] After mixing the dye and cream activator, the pouch 250 and cup 260 may be removed from the assembly before applying the activated dye. However,

instead of removing pouch 250 and cup 260, one or both of these parts may be provided with a flow path through which activated mixture AB may travel from bottle 220 and into applicator 240. For example legs 245 may be designed with sufficient flex or “give” to allow gentle squeezing pressure on bottle 220 to force activated mixture AB through hole 261, and optionally through additional holes in the cup (not shown). The activated mixture AB may then flow past pouch 250 and into applicator 240. This may provide better flow control than application by gravity alone. The cup and pouch may be designed to permit airflow back into bottle 220 to replace the liquid that is being dispensed.

[0051] If pouch 250 and cup 260 may be left inside the assembly after mixing and during application of the hair dye, then it may not be necessary to remove applicator 240 from bottle 220. In that case, a different closure forms, other than threads 223, 243, 263 may be used. For example, snap-on or bayonet closure forms may be used to join the cup to the bottle and the applicator to the cup. Although snap-on or bayonet closures may be more difficult to disassemble than a threaded closure, it may not be necessary to disassemble the parts if the activated mixture AB can be squeezed out through the cup and into the applicator as just described.

[0052] FIG. 16 shows an alternative kit for hair color formulations or other products. Not all parts will be described again. Similar parts are usually numbered alike, with numbers in the 300’s corresponding to like numbers in the 100’s and 200’s for the previously described kits. As shown in FIG. 16, pouch 350 and cup 360 may be a unitary part, although they may also be provided as separate parts. Compared with cup 160 and cup 260, cup 360 may have a relatively flattened aspect and may have a slight lip or flange 361 to fit just inside the opening of bottle 320. In fact, the cup 360 may be essentially a flange. Alternately cup 360 may descend partially into bottle 320 (as did cup 260 in FIG. 10). However, cup 360 as shown may have no threads or very few threads. Bottle 320 may have a relatively long thread 323 to fit on the corresponding threads 343 of applicator 340. Although a keyway may be provided, it may be omitted since cup 360 has no threads to align with threads 323.

[0053] Since the design shown in FIG. 16 allows the pouch to be higher than the previous designs, applicator 340 may have an internal foot 344 that is placed somewhat higher so as to contact the higher location of pouch 350.

5 [0054] Steps in use of the kit shown in FIG. 16 are otherwise similar to the steps already described. To aid in removing pouch 350 and cup 360 after mixing, a tab 365 may be attached to cup 360 or pouch 350. Even after pouch 350 has been flattened during the mixing, tab 365 may still provide a location by which to grasp and remove the pouch and cup.

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[0055] FIG. 17 shows an alternative kit for hair color formulations or other products. Not all parts will be described again. Similar parts are usually numbered alike, with numbers in the 400's corresponding to like numbers in the 100's, 200's and 300's for the previously described kits. As shown in FIG. 17, pouch 450 and
15 cup 460 may be a unitary part, although they may also be provided as separate parts. Cup 460 may have a threaded portion 463A that may screw onto threads 423 of bottle 420, and a threaded portion 463B that will screw into threads 443 on applicator 440.

20 [0056] Since the design shown in FIG. 17 may position pouch 450 at a different elevation than previous designs, applicator 440 may have an internal foot 444 that is placed at an appropriate elevation so as to suitably contact pouch 450.

[0057] Steps in use of the kit shown in FIG. 17 are otherwise similar to the steps
25 already described.

[0058] Various pouches 150, 250, 350, 450 have been disclosed for holding dye A. Such a pouch may, for example, be formed of a material like polyethylene or polypropylene. These materials by themselves may not provide desired oxygen
30 and light barrier properties. Dye A may be sensitive to oxygen or light. Therefore, other materials, or combinations or layers of materials may be used that provide oxygen and/or light barrier properties in pouches 150, 250, 350, 450.

[0059] FIGs. 18, 19, and 20 show other embodiments of a pouch for holding dye. FIG. 18A shows pouch 550 which may comprise a cup 560, membrane 570, and spout 580. These parts may be made of appropriate materials, for example cup 560 may provide oxygen and/or light barrier properties, and suitable flexibility so that it may be collapsed without tearing. Membrane 570 may provide oxygen and/or light barrier properties, but may not require flexibility as it will not be collapsed. However, it may be made of a frangible material so that it will be easily punctured by tooth or teeth 584 provided on the upper surface of spout 580.

[0060] FIG. 18B shows a cross section of pouch 550 before use. Tooth or teeth 584 may be proximate to membrane 570. FIG. 18C shows a cross section as pouch 550 is initially compressed, for example in a manner similar to that described previously for pouch 150. Compressing the pouch causes tooth or teeth 584 to press against membrane 570, perforating the membrane with one or more openings 572 (FIG. 18D) through which the dye contents may be released via spout nozzle 586.

[0061] The parts of pouch 550 may be attached to one another for example by sealing together the cup flange 562, the periphery of membrane 570, and the spout periphery 582. Such sealing may be by adhesive, heat sealing, welding, or other appropriate method.

[0062] FIG. 19A shows pouch 650 which may comprise a cup 660, spike 667, membrane 670, and spout 680. These parts may be made of appropriate materials, for example cup 660 may provide oxygen and/or light barrier properties, and suitable flexibility so that it may be collapsed without tearing. Membrane 670 may provide oxygen and/or light barrier properties, but may not require flexibility as it will not be collapsed. However, it may be made of a frangible material so that it will be easily punctured by spike 667.

[0063] FIG. 19B shows a cross-section of pouch 650 before use. The point of spike 667 may be located proximate to membrane 670. FIG. 19C shows a cross section as pouch 650 is initially compressed. Compressing the pouch causes spike

667 to press against membrane 670, perforating the membrane with one or more openings 672 through which the dye contents may be released via spout nozzle 686. FIG. 19D shows how spike 667 may at least partially occupy the volume within spout nozzle 686, so that upon complete collapse of the pouch, little
5 wasted dye is left within the volume of spout nozzle 686. To facilitate emptying the pouch, one or more channels 668 may be provided on the exterior of spike 667. Alternately internal channels (not show) may be provided inside spike 667 for the same purpose.

10 [0064] The parts of pouch 650 may be attached to one another for example by sealing together the cup flange 662, the periphery of membrane 670, and the spout periphery 682. Such sealing may be by adhesive, heat sealing, welding, or other appropriate method.

15 [0065] FIG. 20A shows pouch 651 which may comprise a cup 661 with integral spike 669, membrane 670, and spout 680. These parts may be made of appropriate materials, for example cup 661 may provide oxygen and/or light barrier properties, and suitable flexibility so that the outer walls of cup 661 may be collapsed without tearing, while the integral spike 669 may be formed with
20 sufficient rigidity to pierce the membrane 670. Membrane 670 may provide oxygen and/or light barrier properties, but may not require flexibility as it will not be collapsed. However, it may be made of a frangible material so that it will be easily punctured by integral spike 669.

25 [0066] FIG. 20B shows a cross section of pouch 651 before use. The point of integral spike 669 may be proximate to membrane 670. FIG. 20C shows a cross section as pouch 651 is initially compressed. Compressing the pouch causes integral spike 669 to press against membrane 670, perforating the membrane with one or more openings 672 through which the dye contents may be released via spout
30 nozzle 686. FIG. 20D shows how integral spike 669 may at least partially occupy the volume within spout nozzle 686, so that upon complete collapse of the pouch, little wasted dye is left within the volume of spout nozzle 686. To facilitate

emptying the pouch, one or more channels (not shown) may be provided on integral spike 669.

5 [0067] The parts of pouch 651 may be attached to one another for example by sealing together the cup flange 662, the periphery of membrane 670, and the spout periphery 682. Such sealing may be by adhesive, heat sealing, welding, or other appropriate method.

10 [0068] It should be understood that various sizes and shapes of bottle, pouch, cup, and applicator may be combined and still achieve the same advantages described for the exemplary sizes and shapes described here. Likewise various thread lengths may be used singly or in combination, along with different elevations for the pouch, and different elevations for the foot. These dimensions may be selected so combining the parts of the kit as described herein will result in
15 the dye pouch being easily and cleanly emptied completely into the bottle. It should also be understood that instead of emptying the pouch solely force from the foot, the user may partially squeeze the dye into the bottle by pressing a thumb or finger onto the pouch. Complete emptying of the pouch may still be achieved by use of the kit itself (for example, screwing the applicator onto the bottle) as
20 described herein.

[0069] Although various aspects of the disclosed packaging structures have been shown and described, modifications may occur to those skilled in the art upon reading the specification.

We claim:

1. A packaging structure comprising:
 - (a) a container comprising an upper opening;
 - 5 (b) an applicator comprising a lower opening, sized to fit in sealing relationship with said upper opening;
 - (c) a pouch containing a fluid, said pouch sized to fit between said container and said applicator, whereby moving said applicator toward said container forces said fluid from said pouch and into said
10 container.
2. The packaging structure of claim 1, wherein said sealing relationship is a threaded connection or a bayonet connection.
- 15 3. The packaging structure of claim 1, wherein said pouch comprises a spout through which said fluid exits from said pouch.
4. The packaging structure of claim 1, wherein said pouch further comprises a flange or cup.
20
5. The packaging structure of claim 4, wherein said flange or cup rests upon, sits within, or is attached externally to said upper opening.
6. The packaging structure of claim 1, wherein said applicator comprises a foot
25 and said foot applies pressure to said pouch.
7. A packaging structure comprising:
 - (a) a container comprising an upper opening;
 - (b) a cap sized to fit in sealing relationship with said upper opening;
 - 30 (c) a pouch containing a fluid, said pouch sized to fit between said container and said cap, whereby moving said cap toward said container forces said fluid from said pouch and into said container.

8. A packaging structure comprising:

(a) a container comprising an first upper opening with a first external threaded portion;

(b) a cup or flange adapted to fit at least partly in or upon said first upper opening, said cup or flange supporting or comprising a pouch;

(c) an applicator comprising an internal threaded portion adapted to fit upon said first upper opening,

wherein said applicator comprises an internal foot and wherein the action of screwing said applicator onto said container causes said foot to press upon said pouch and force contents of said pouch into said container.

9. The packaging structure of claim 8, wherein said cup comprises a lower opening.

10. The packaging structure of claim 9, wherein said pouch comprises a spout and said spout fits through said lower opening.

11. The packaging structure of any one of claims 1, 7, or 8, wherein said pouch comprises a sealing membrane and a puncturing device to puncture said sealing membrane.

12. The packaging structure of claim 11, wherein said puncturing device is a tooth contained within or formed as a portion of said pouch.

13. The packaging structure of claim 11, wherein said puncturing device is a spike contained within or formed as a portion of said pouch.

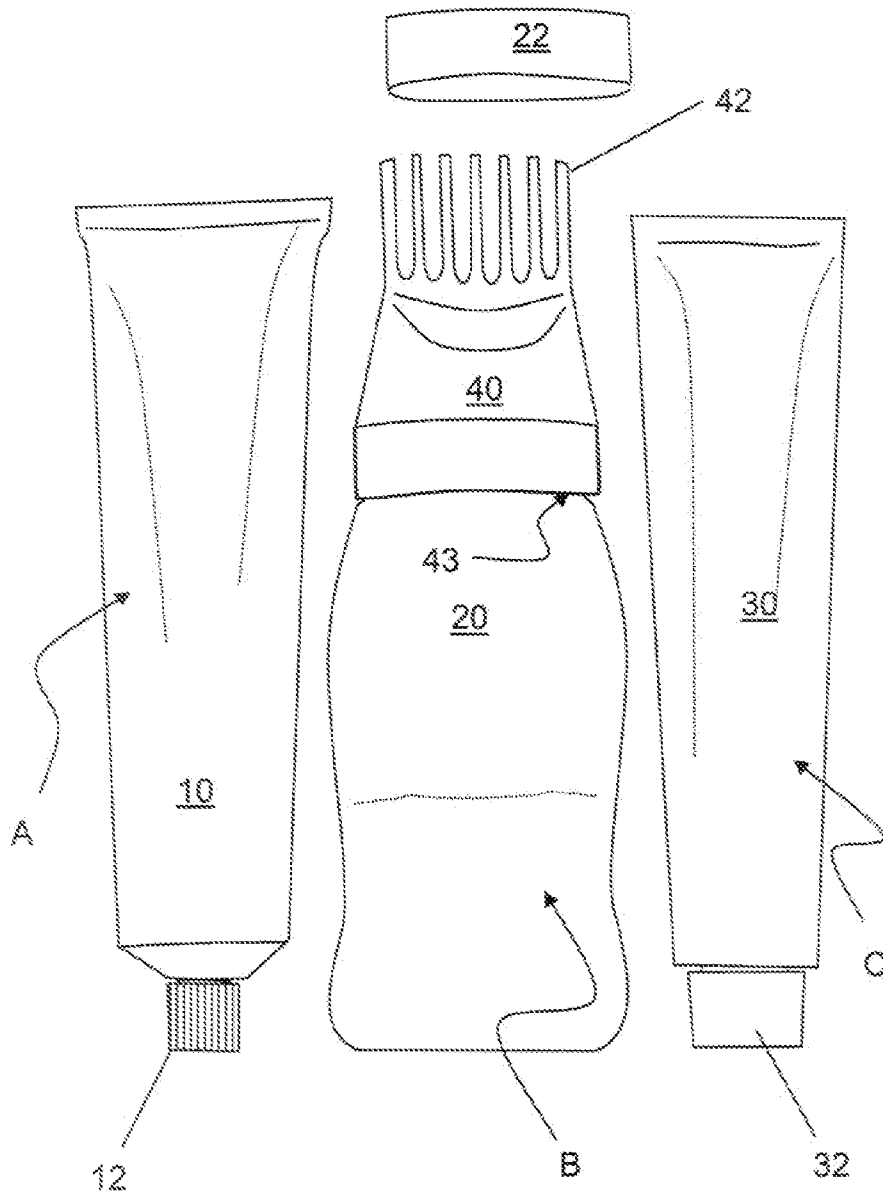
14. The packaging structure of claim 13, wherein said pouch comprises a cup and said spike is formed as a part of said cup.

15. The packaging structure of claim 13, wherein said pouch comprises a spout and said spike moves into said spout as said pouch is collapsed.

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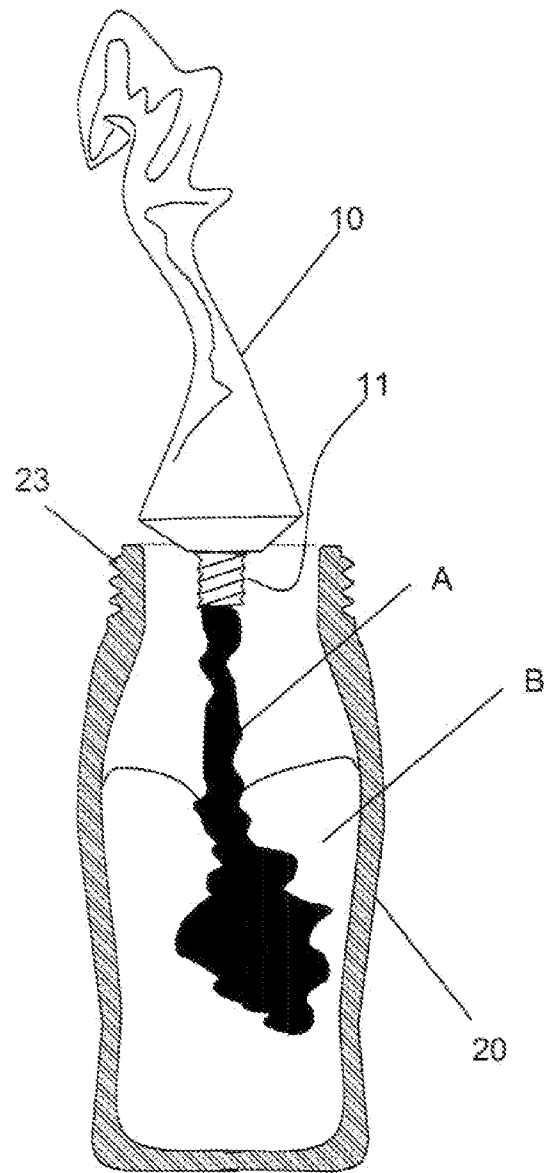
FIGURE 1

PRIOR ART



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FIGURE 2

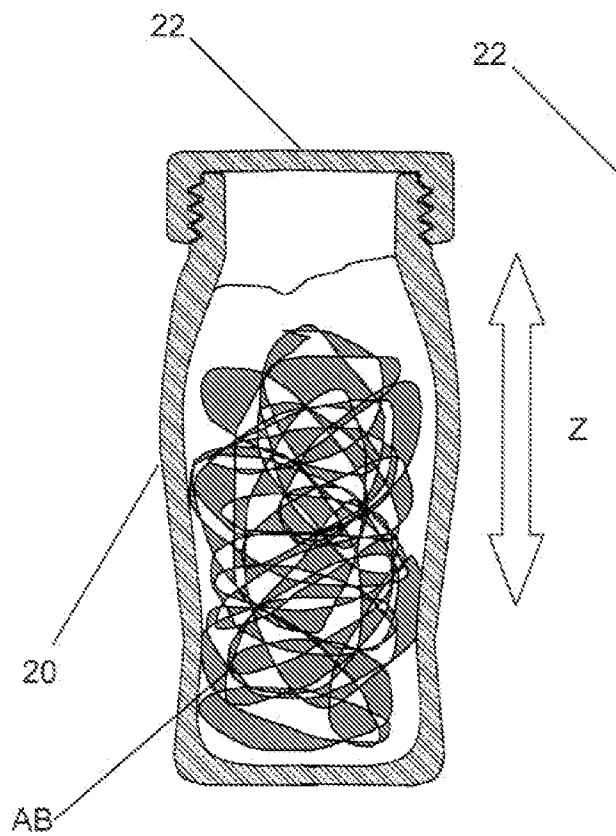
PRIOR ART



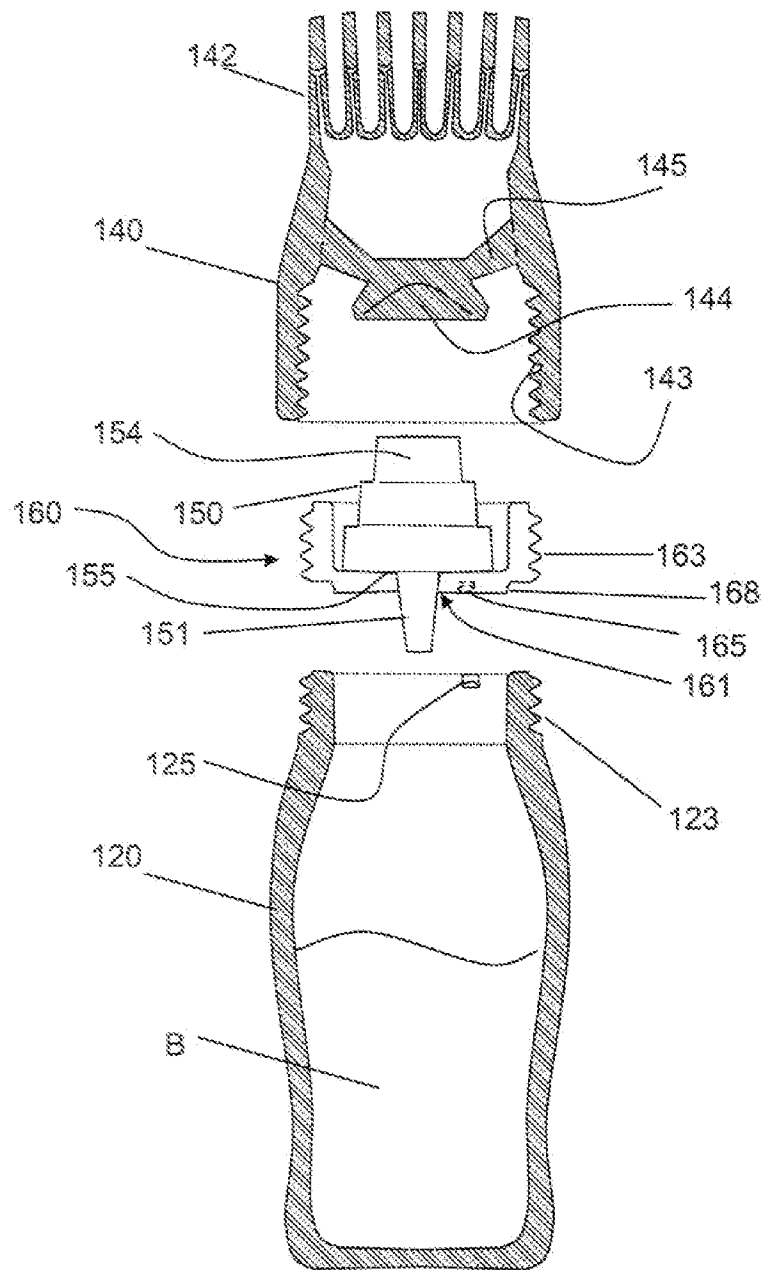
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FIGURE 3

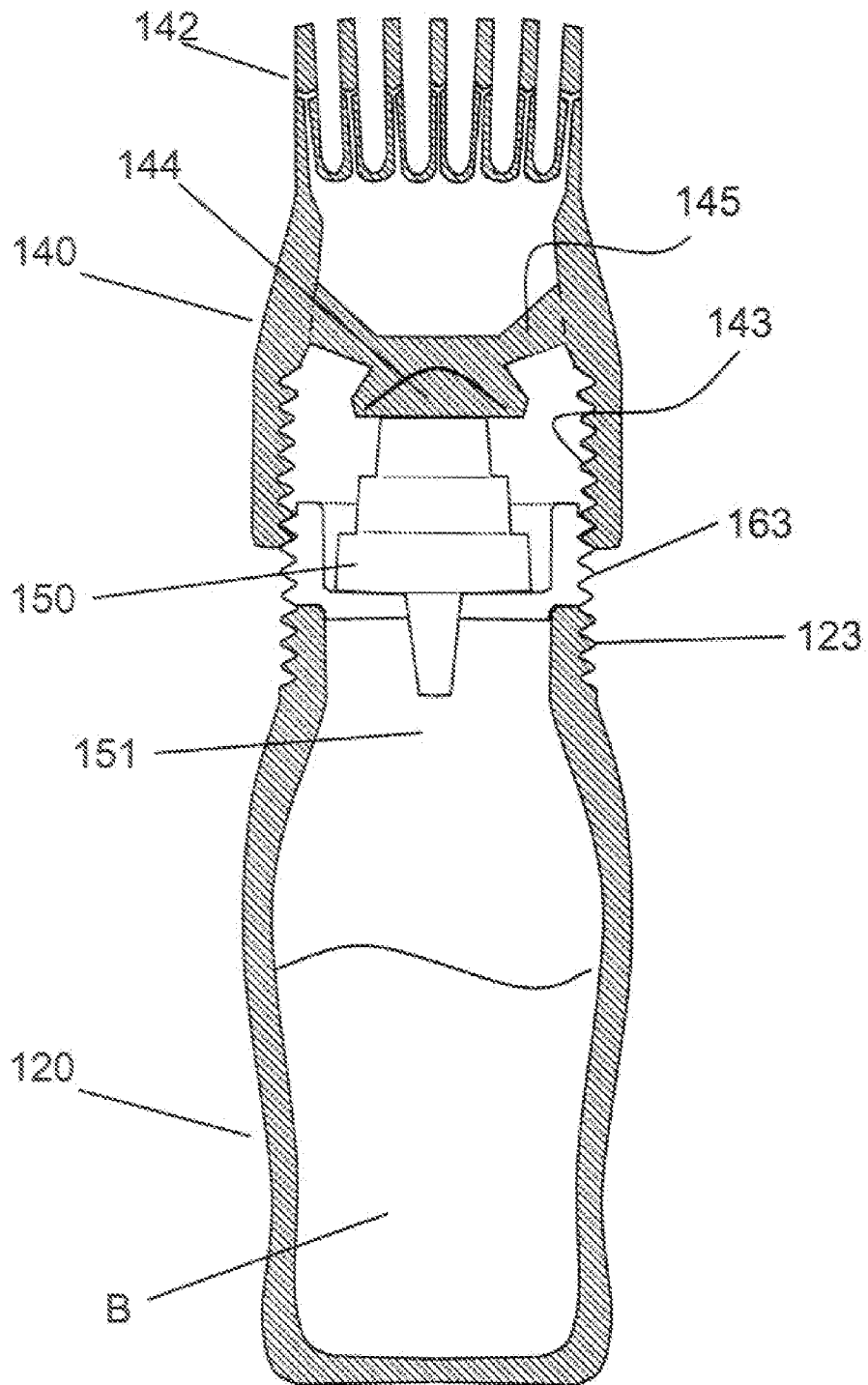
PRIOR ART



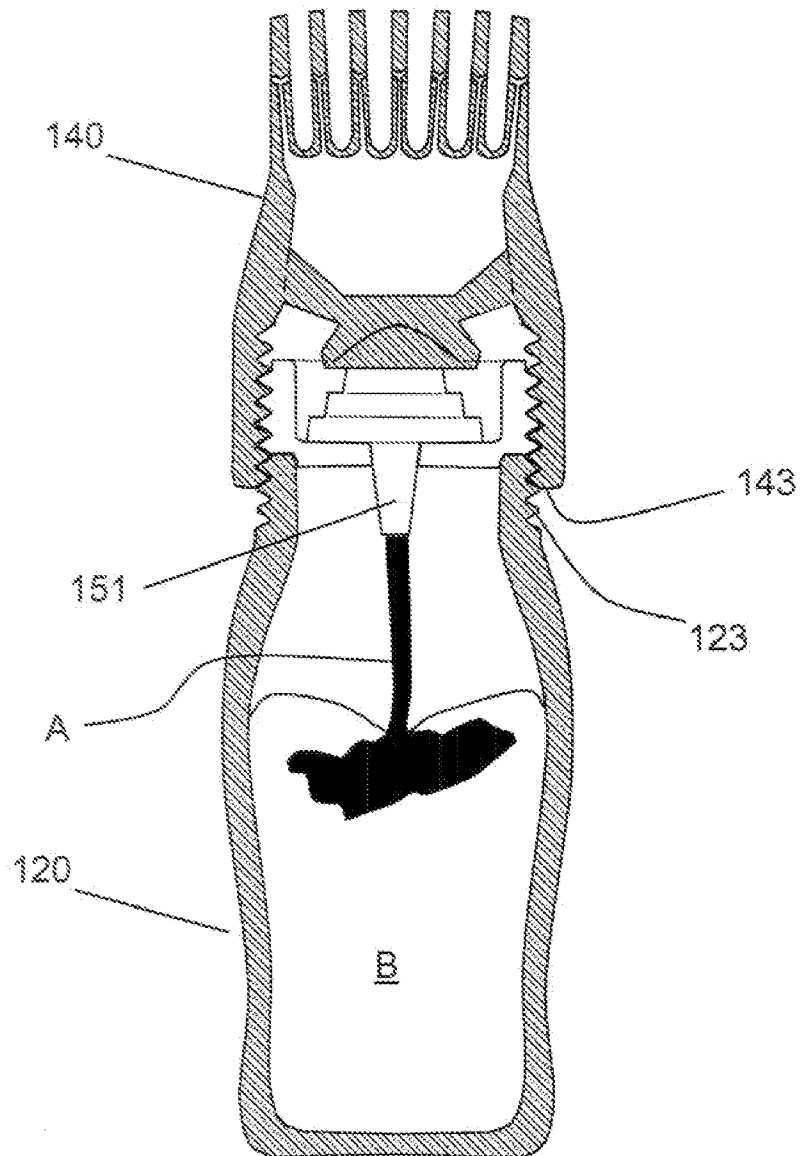
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FIGURE 4



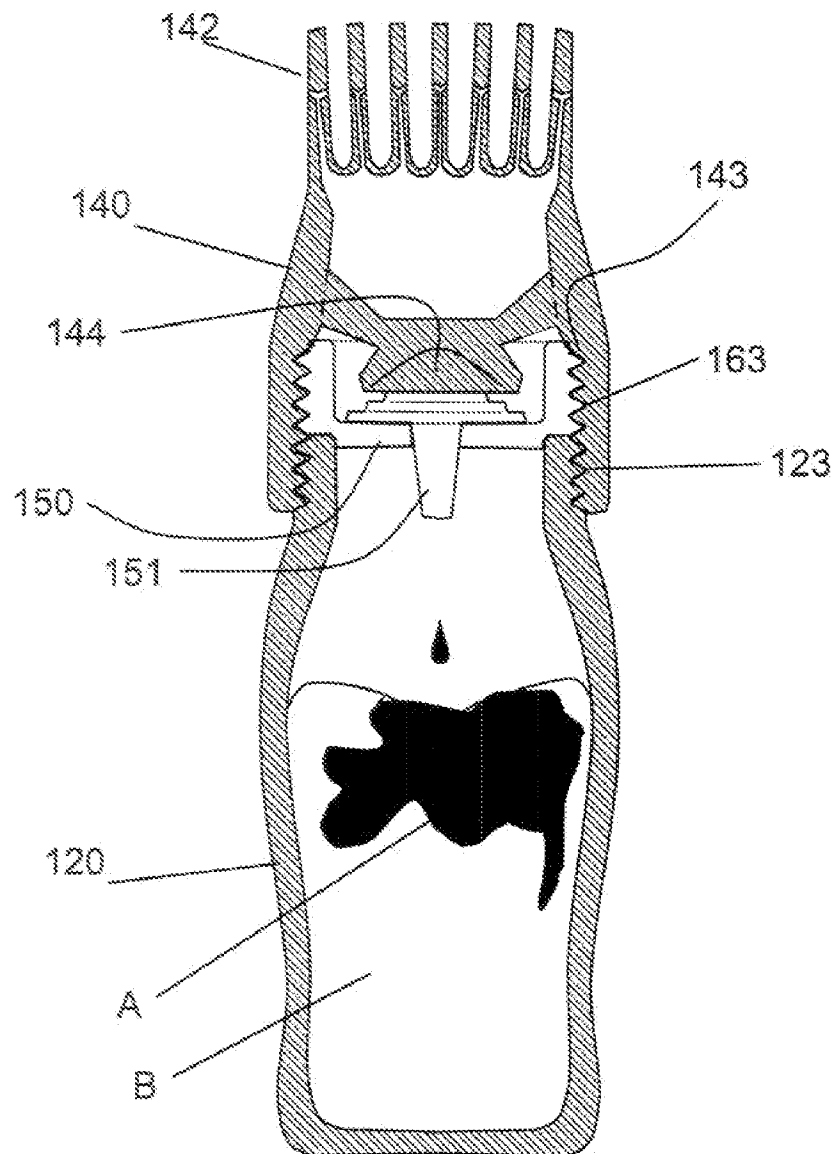
5 / 20
FIGURE 5



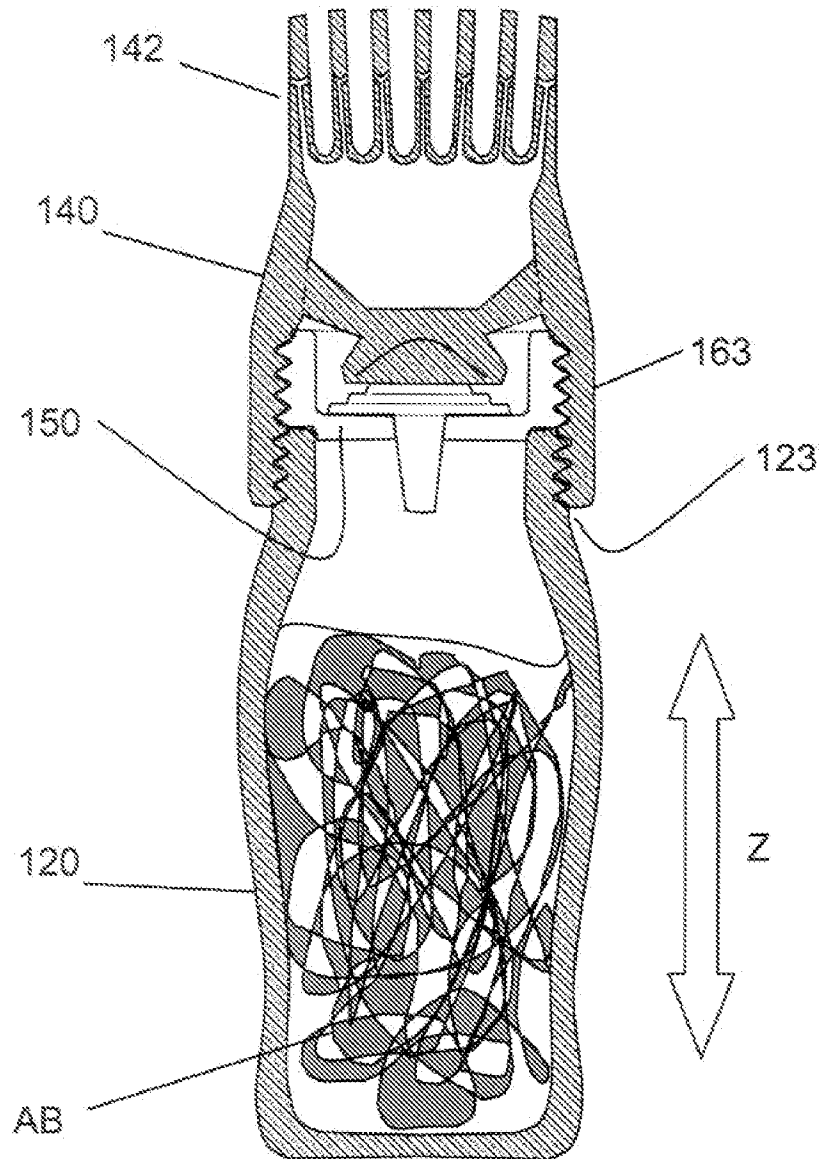
6 / 20
FIGURE 6



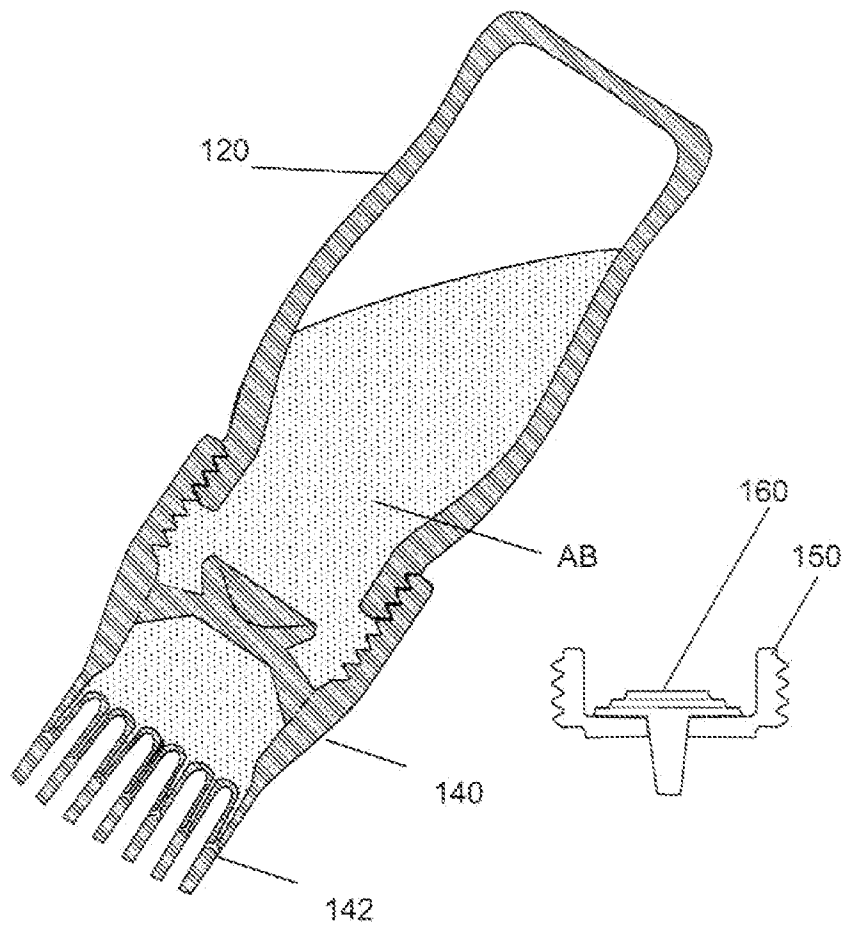
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FIGURE 7



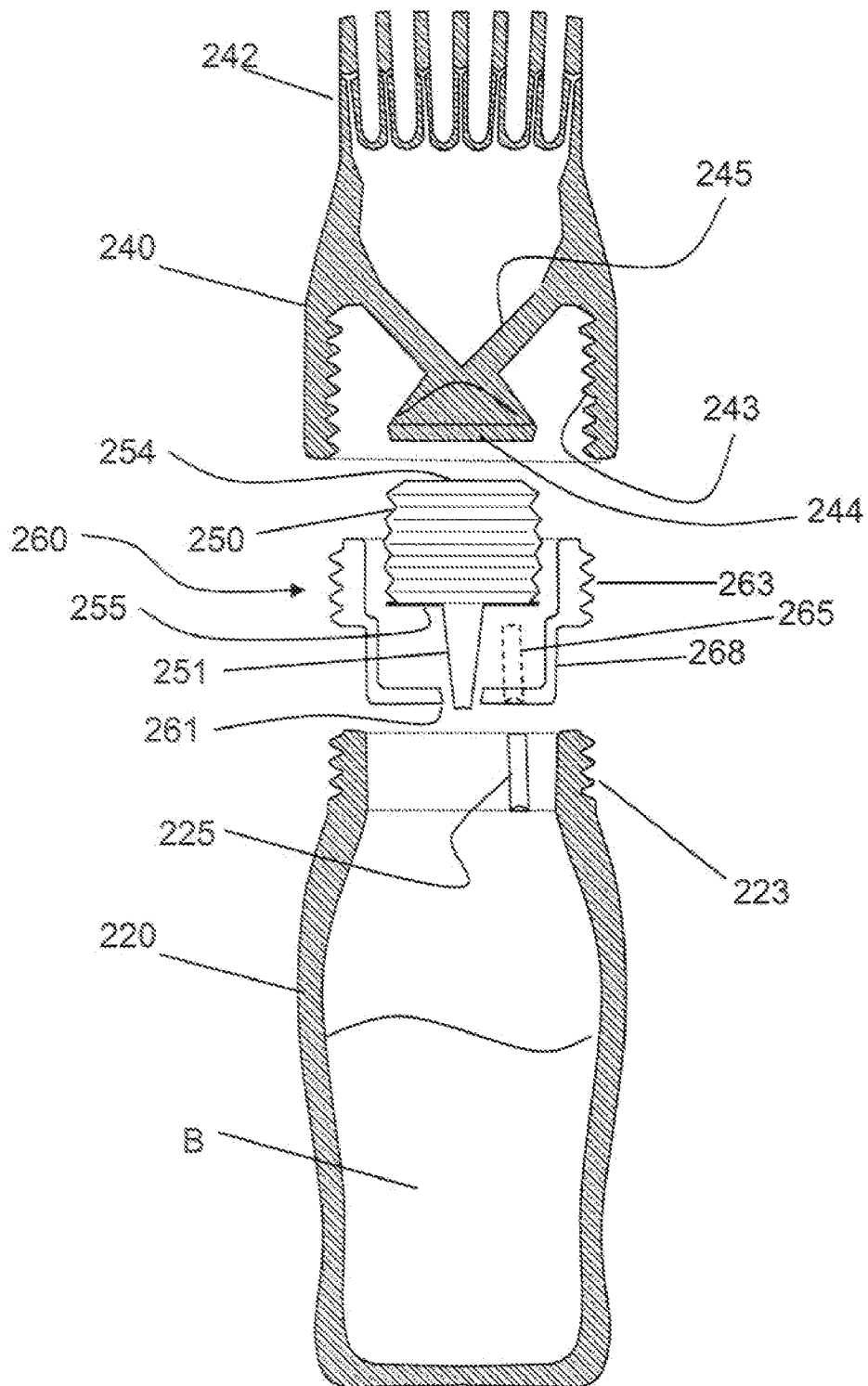
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FIGURE 8



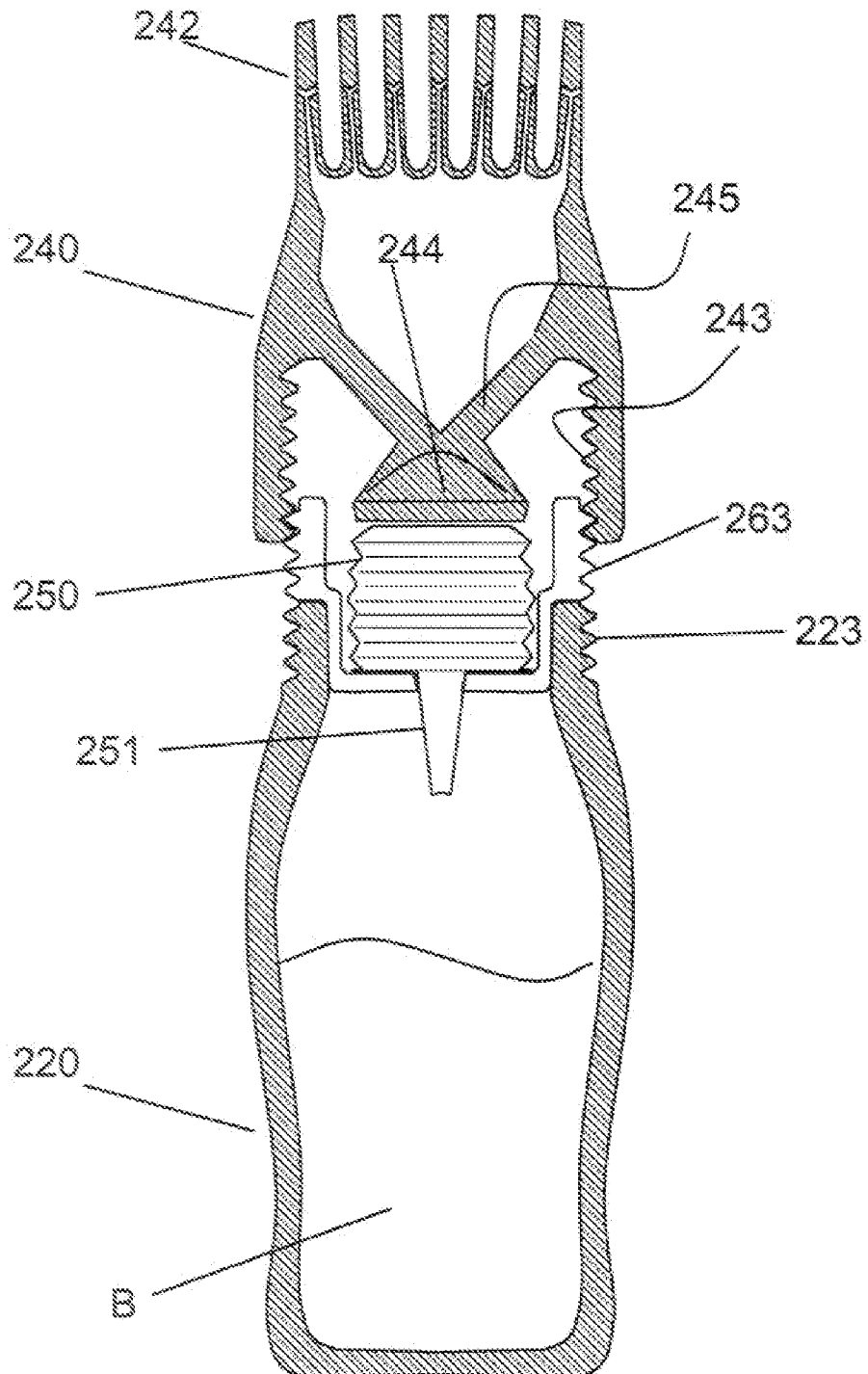
9 / 20
FIGURE 9



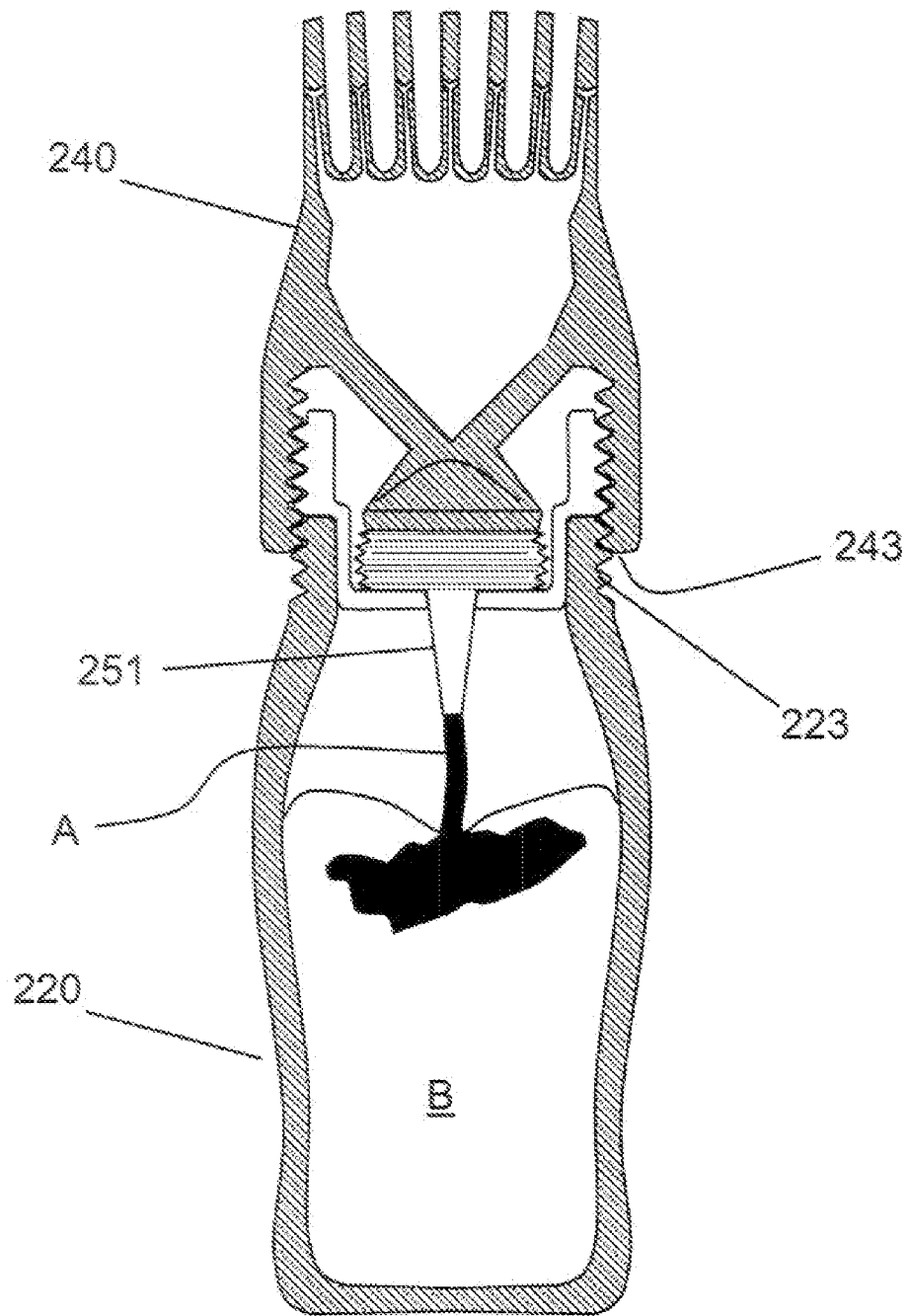
10 / 20
FIGURE 10



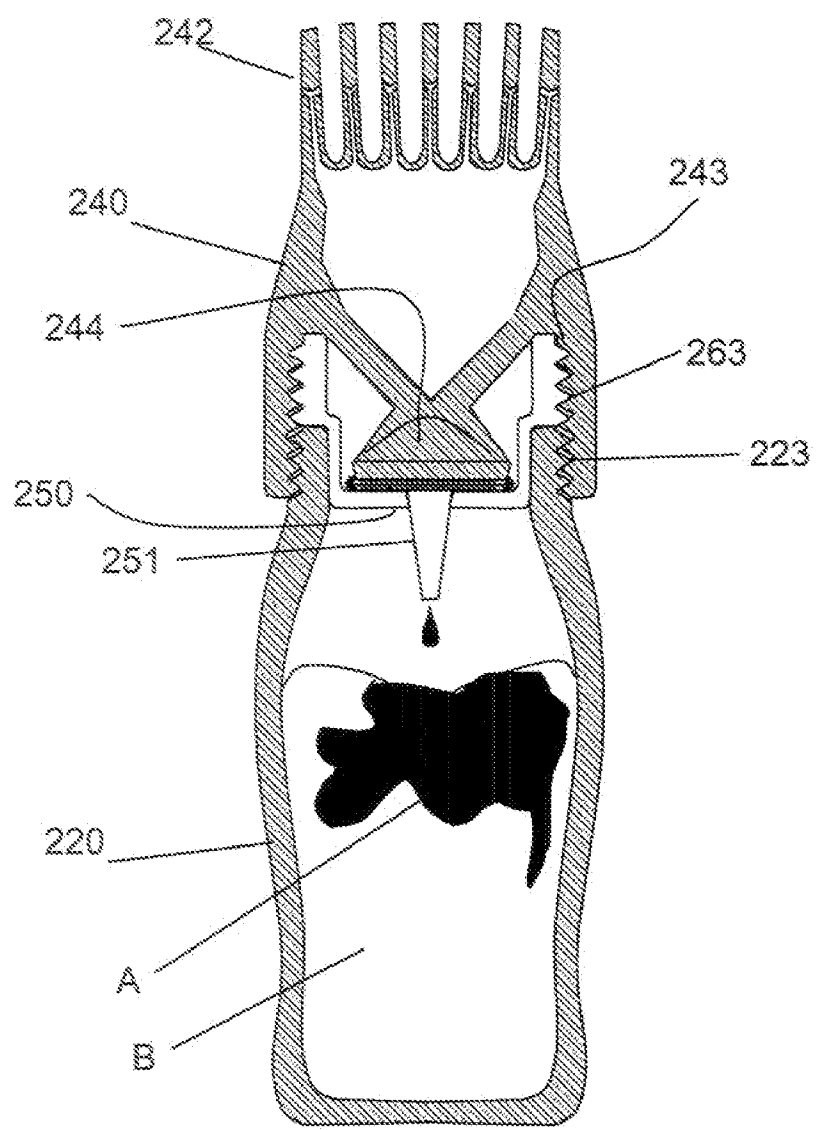
11 / 20
FIGURE 11



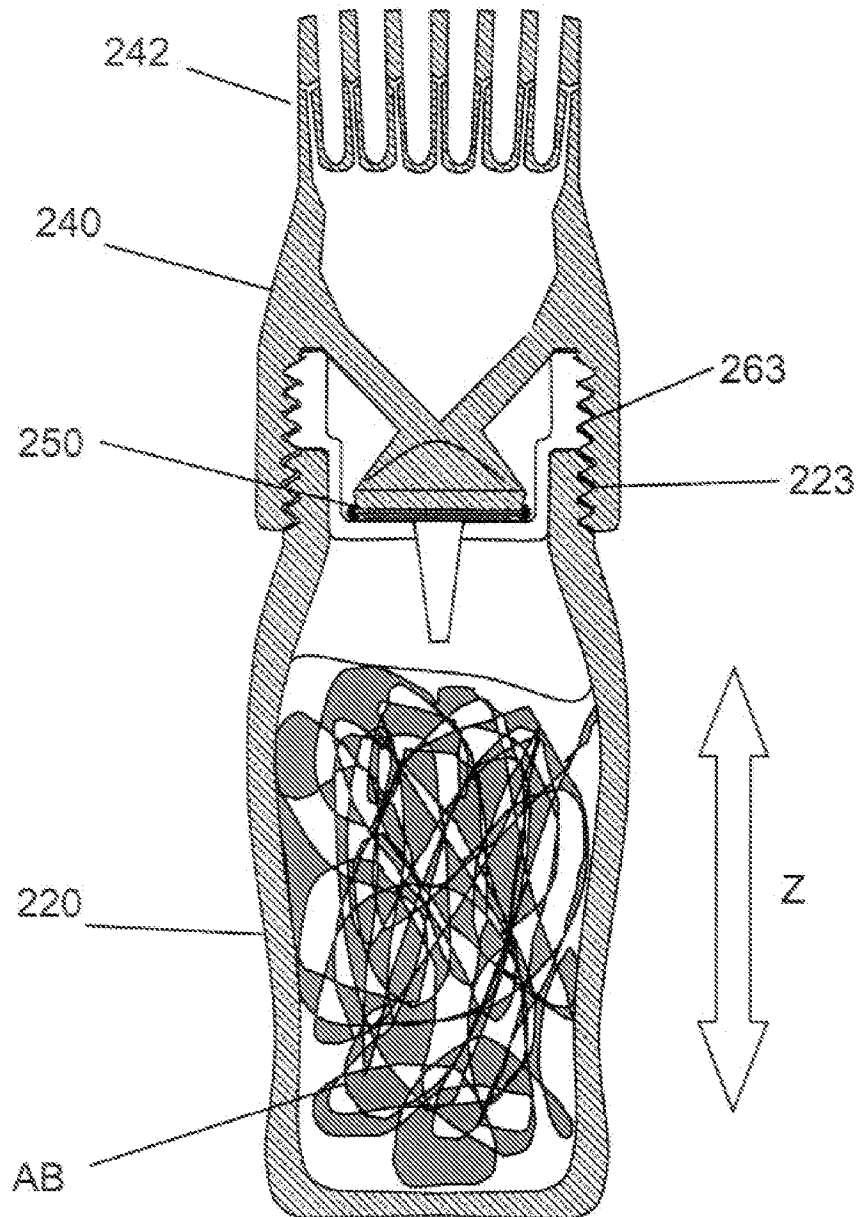
12 / 20
FIGURE 12



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FIGURE 13

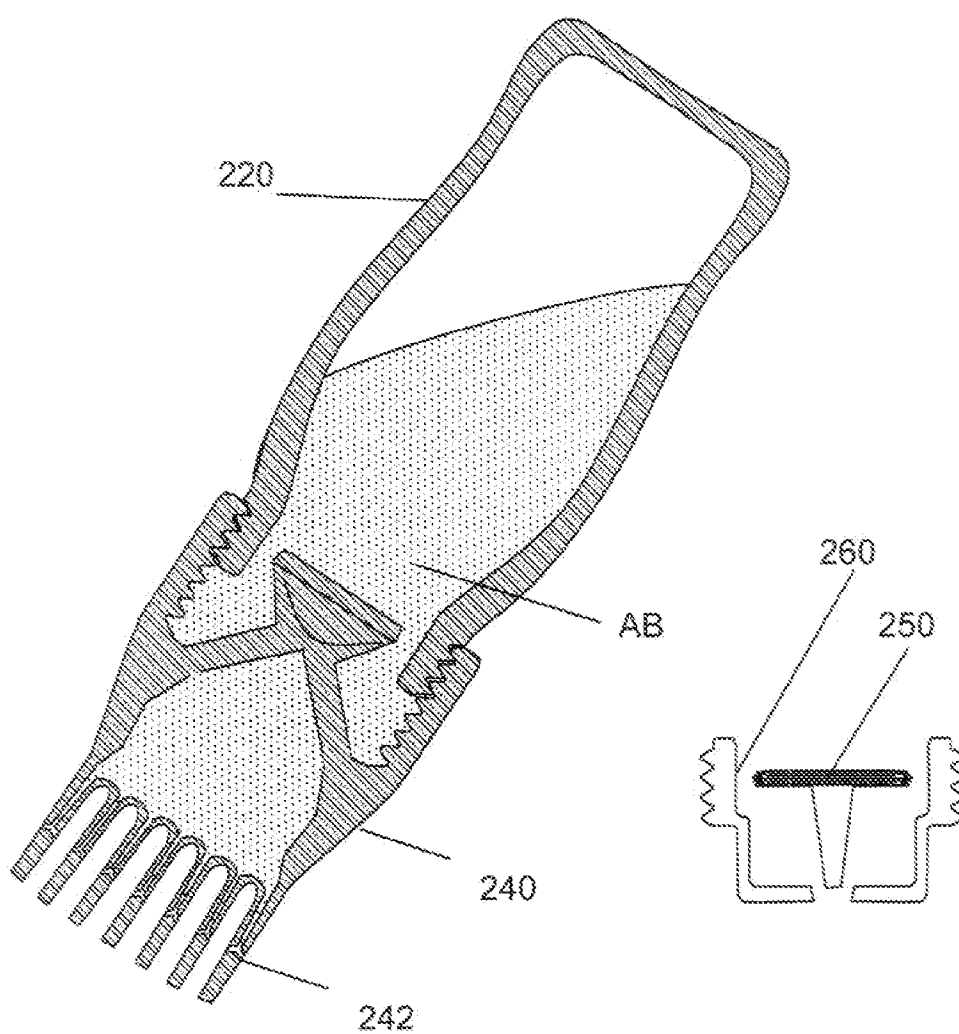


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FIGURE 14

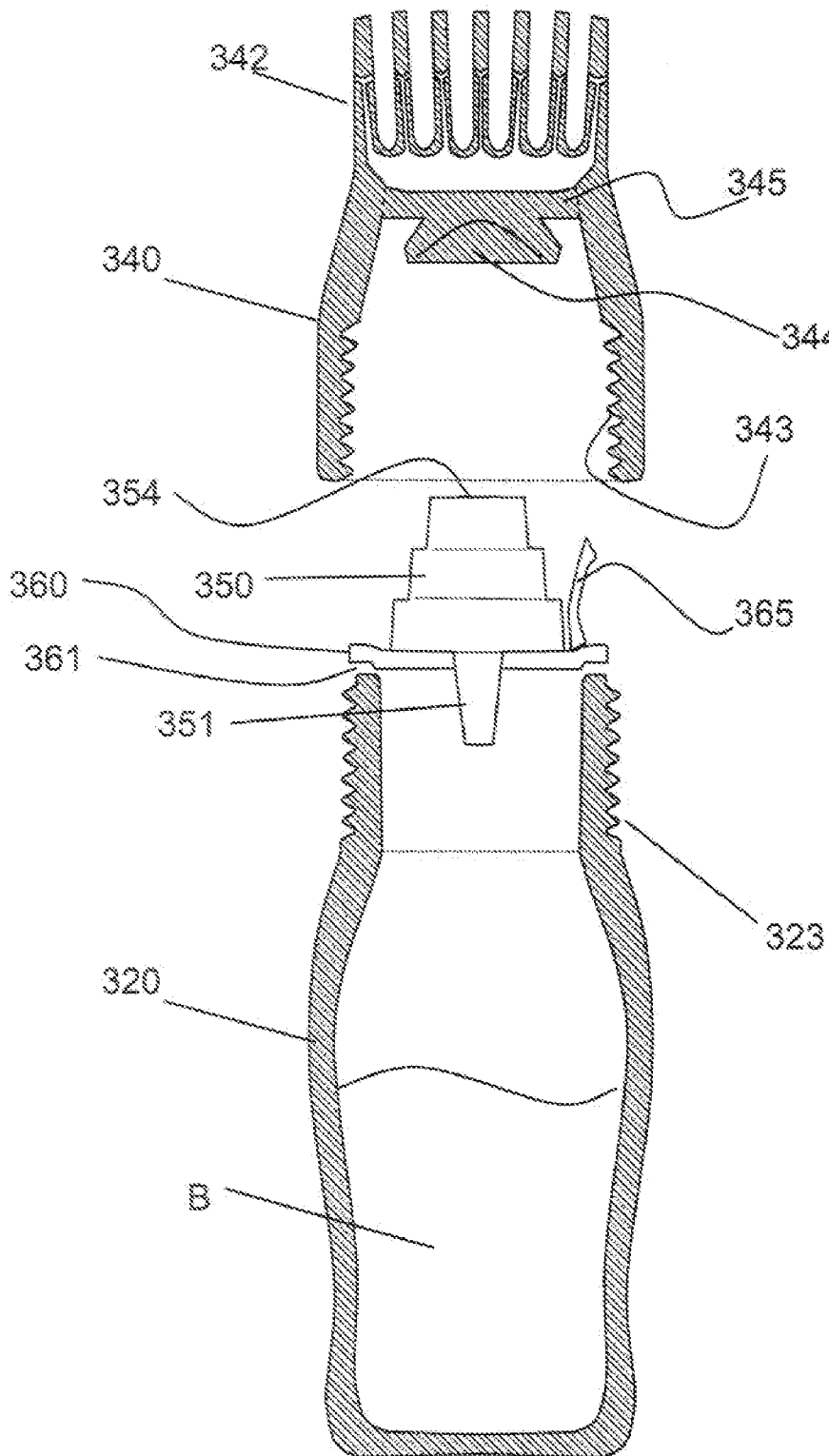


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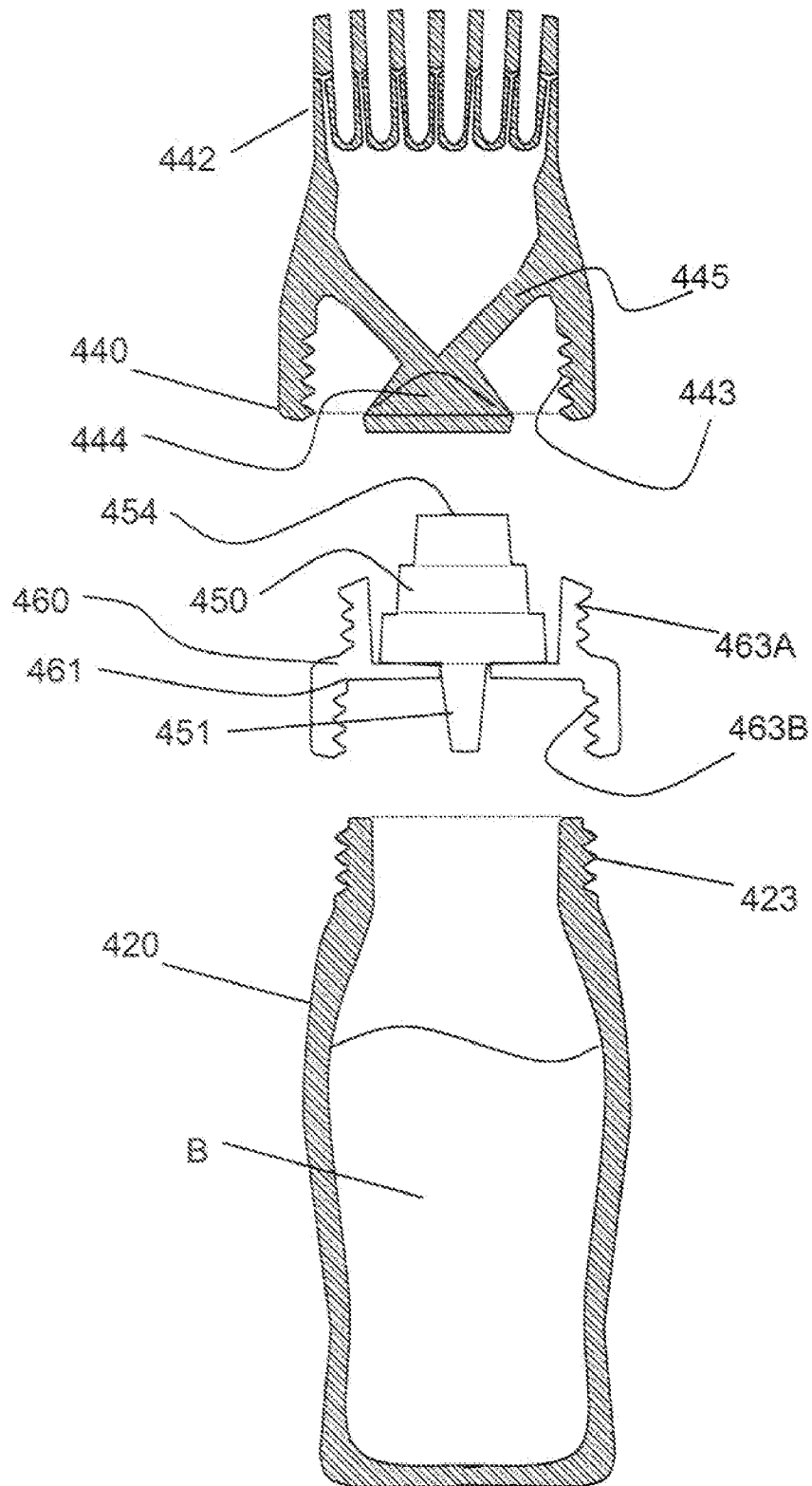
FIGURE 15



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FIGURE 16



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FIGURE 17



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FIGURE 18

FIG. 18A

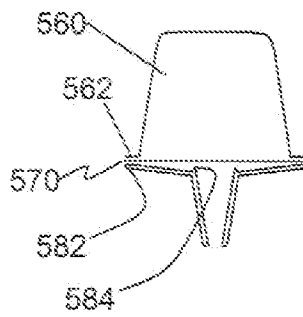
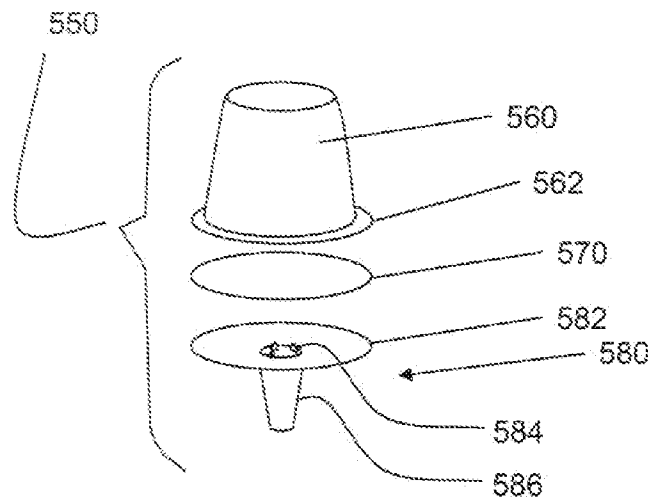


FIG. 18B

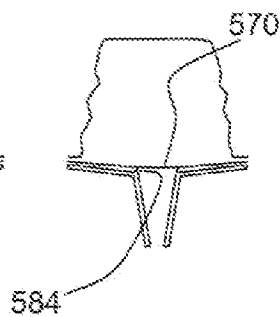


FIG. 18C

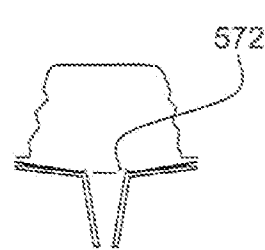


FIG. 18D

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FIGURE 19

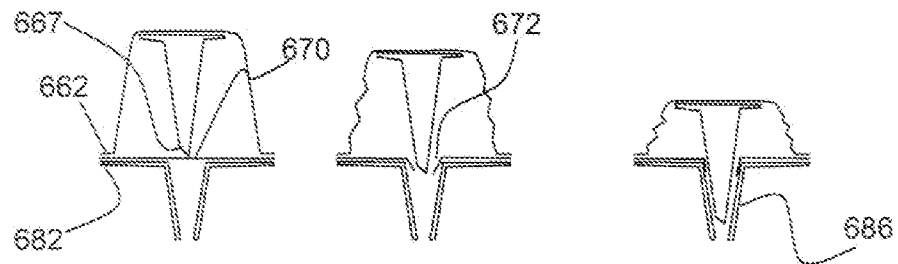
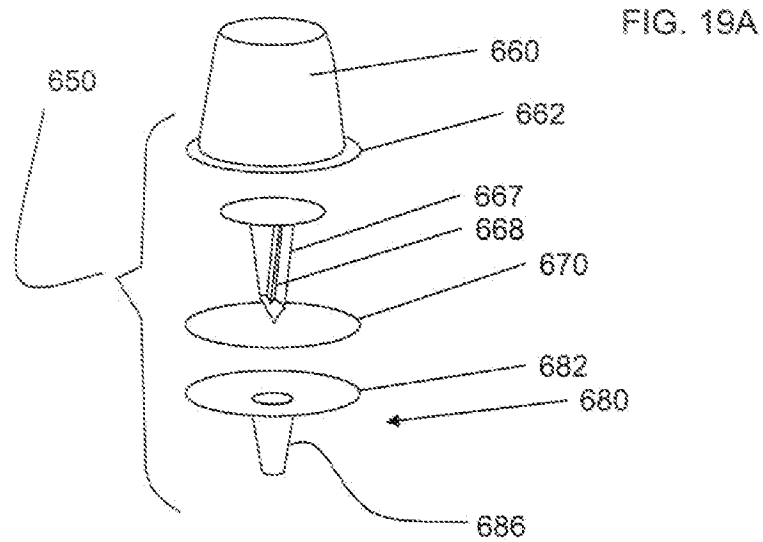


FIG. 19B

FIG. 19C

FIG. 19D

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FIGURE 20

