

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
30 October 2008 (30.10.2008)

PCT

(10) International Publication Number
WO 2008/130342 A1

(51) International Patent Classification:
B65D 25/08 (2006.01)

(21) International Application Number:
PCT/US2007/009355

(22) International Filing Date: 16 April 2007 (16.04.2007)

(25) Filing Language: English

(26) Publication Language: English

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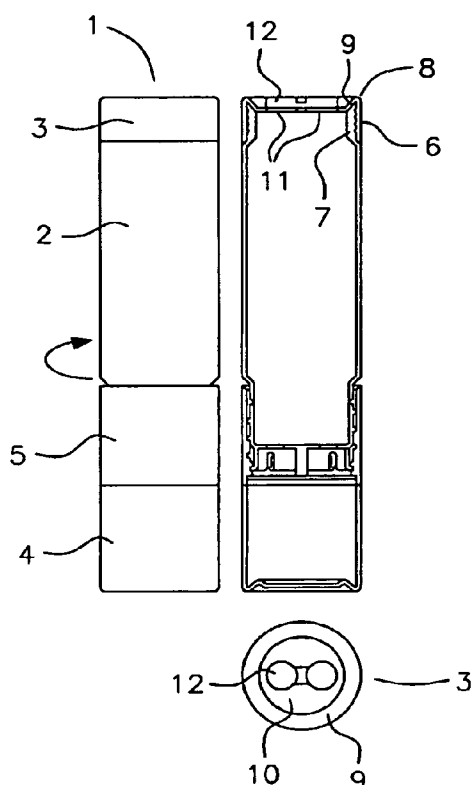
(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— with international search report

(54) Title: MULTIPLE COMPARTMENT CONTAINER FOR BEVERAGES ALLOWING FOR MIXING DIFFERENT SUBSTANCES

FIG. 1



(57) Abstract: A translucent container for beverages that allows for mixing different substances that are separated by compartments before being consumed and which the user subsequently mixes using means provided by the container for that purpose. The substances to be mixed being two drinkable beverages contained in two portions of the container having cylindrical configuration, an upper portion and a lower one, separated by a mixing ring, and two or more flavoring tablets contained in a blister forming the top of the container. The user can apply a light downward pressure on the top, to actuate the mixing ring tearing a separating membrane, allowing the mixture of both substances and subsequently to release the content of the blister into the mixture. The effervescent reaction produced can be observed through the sections of the transparent cylindrical container that are not covered by the trade name label.

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MULTIPLE COMPARTMENT CONTAINER FOR BEVERAGES ALLOWING FOR MIXING DIFFERENT SUBSTANCES

Field

The present invention relates to containers for beverages allowing
5 for mixing different substances separated in compartments before being
consumed and which the user later mixes using the means provided in the
container for that purpose.

State of the art

Countless containers that contain two separated products, which
10 are later mixed according the user's requirements to be consumed, are
well known in different technical fields and for different applications.

In the medical field there are numerous embodiments of packages
or rigid or flexible containers that contain two substances, which must be
kept isolated prior to their use and which provide watertight compartments
15 that keep both substances free from contamination or mixing until such a
time as the user activates the means that allow the mixture, either by
puncturing a dividing membrane or by rupturing a weakened area along
pre-cut lines or by activating the opening of a connecting member that links
both chambers, which produces the desired chemical effect within the
20 container when the two substances, which should be delivered to the
patient in that condition, are mixed together.

Examples of this type of medicinal container are known in the field
of blood transfusions, serum containers and of other types of medicines
which have to mix liquids with pulverized substances or substances with
25 very small particles.

Some embodiments even mix two substances previously kept
separated, but not to be delivered to the patient, for example to
encapsulate a disposable needle and avoid a second use such as, when
the two substances mix together by the rupture of a dividing membrane,

when it is punctured by the needle, a chemical reaction is produced which solidifies the mixture and does not allow the needle that was introduced to be extracted.

Also within this field, there are known embodiments which facilitate
5 the delivery of medicines to small children or babies, through a feeding bottle with two chambers, a top chamber in the teat containing the medicine and a lower chamber in the body of the feeding bottle containing milk or liquid which, when the feeding bottle is up turned, breaks a dividing membrane due to the weight of the milk itself and enables the mixture of
10 the medication contained in the teat.

In very different technical fields, such as for example, the one of adhesives with reactive components, the state of the art also found a good application, disclosing individual containers which later have to be screwed on to one another, the female thread containing a sharp element which
15 perforates the base of the male thread, enabling the mixture of both components for their subsequent use.

Also known are capsules and test tubes with two separate chemical substances, provided with means for mixing that enable exothermic or endothermic reactions of said substances, afterwards maintaining the test
20 tube at a certain temperature.

Similar solutions are also known in the aerosol (spray?) field, which have to act after mixing two liquid substances, or one liquid and the other in powder form produced according to the user's wishes within the container itself.

25 In the technical field of beverages some very simple embodiments are known, such as those that provide one container within another one in the shape of a glass, the container contained in the bottom of the larger container having a dose of, for example coffee, covered with a lid that can be torn by means of a tab that the user can peel off just before pouring hot
30 water into the glass.

Another type of simple embodiments are those that disclose a sachet containing for example a juice, such sachet comprising a separate portion in an angle containing a powder with a special flavor, the consumer being able to tear a brittle strip that separates the portion with the powder,
5 to subsequently shake the package and mix the contents.

Another group of inventions known in the beverage field, are those that disclose a container with a drinkable liquid and a closure in the form of a screw-on lid or like that in turn contains a second container with material in powder form which is subsequently mixed with the liquid when
10 the screw-on lid is turned and a division membrane is ripped or exerting downward pressure on the top and puncturing such membrane with a sharp element which hangs from the top of the container top.

Notwithstanding the aforementioned, the embodiments known in prior art contain some flaws: the inventions which combine one container
15 within another one are generally not cheap given the high production costs and others are not directly feasible given to complications in die-stamping due to the insertion of small cutting pieces and the combination of different types of materials which complicate construction of the container.

From the point of view of the problems which are solved in practice,
20 the embodiments known in prior art are limited to some partial combinations, for example allowing the mixture within the container but not it being consumed directly from the container. In addition, it is often necessary for the user to perform several successive movements of different kinds to obtain the desired result.

25 In some of the fields where this invention is applied, for example energizing type beverages which are sold in bars, pubs or discos; the most common situation is for the user to ask on the one hand for the energizing beverage which is sold in cans, and on the other for a glass with an alcoholic beverage, and subsequently proceeds to mix both of them in said
30 glass, pouring in the content of the can containing the energizing drink.

This is an uncomfortable situation for the consumer because it forces the consumer to ask for two different beverages or to ask the barman or bartender for a drink, who then must follow the steps described previously so as to subsequently sell the already mixed beverage. In
5 addition, the glass cannot be closed, allowing the contents to be spilled. A container which could be closed and at the same time being used as a glass would be desirable in this case.

Another limitation of the energizing beverages is that they all have the same flavor and their only variation consists in the subsequent mixture
10 with the alcoholic beverage, which could be vodka or gin, for example. But if the consumer would like the mixture to have a taste of, for example orange, the consumer should further mix it with orange juice, so that the mixture would be of three different beverages, with the resulting additional cost.

15 A container which would include the two beverages to be mixed; i.e., energizing and alcoholic, and that in addition would supply the flavoring in effervescent tablet form would be desirable in this field.

Analyzing the limitations of prior art in this field, to concluded it would be desirable for the state of the art to provide a container which
20 would enable the mixture of two or more components that can be liquid or solids, for example two beverages and a solid flavorizer, having a simple design and low manufacturing costs, easy to handle by the user and that in addition would enable the user to visualize the effervescent reaction that is produced within the container when the mixture is produced. None of the
25 mentioned background complies with all of these needs, which are satisfied by the new and inventive configuration of the present invention.

In a similar manner, the present invention provides solutions to technical problems not solved by prior art in other fields of use, such as that of medicinal containers where two substances would have to be mixed
30 and with the additional possibility of using blisters to incorporate medicinal

products in the form of pills, which the patient must take jointly with the liquid medicine.

The invention is also applicable with all the above benefits in the field of containers for children or babies.

5 Summary of the invention

The present invention sets forth a translucent beverage container that allows for mixing of different substances which are separated by compartments before their are consumed and which are subsequently mixed by the user using the means provided by the container for that
10 purpose. The substances to be mixed are two drinkable beverages contained in two portions of the container having a cylindrical configuration, an upper portion and a lower one, separated by a mixing ring, and two or more flavoring tablets contained in a blister forming the top of the container. The user can proceed with a light downward pressure on the
15 top, to actuate the mixing ring tearing a separating membrane, allowing the mixture of both substances and subsequently release the content of the blister into the mixture. The effervescent reaction produced can be observed through the sections of the transparent cylindrical container that are not covered by the trade name label.

20 Brief description of the drawings

Figure 1 represents a front view, a cross-section and a plan view of the preferred embodiment of the present invention.

Figure 2 shows a front view, a cross-section and a plan view of the upper body (2) of the preferred embodiment.

25 Figure 3 illustrates a front view, a cross-section and a plan view of the mixing piece (5) of the preferred embodiment.

Figure 4 represents a front view, a cross-section and a plan view of the lower body (4) of the preferred embodiment.

Figure 5 illustrates a front view, a cross-section and a plan view of the lid (3) of the preferred embodiment.

Figure 6 illustrates a front view, a cross-section and a plan view of the blister (12) arranged over the lid (3) of the preferred embodiment.

5 Figure 7 shows an exploded view of the preferred embodiment.

Figure 8 represents a front view, a cross-section and a plan view of a second embodiment of the present invention.

Figure 9 represents a front view, a cross-section and a plan view of the lower body (204) of the second embodiment.

10 Figure 10 shows a front view, a cross-section and a plan view of the perforating ring (216) of the second embodiment.

Figure 11 illustrates a front view, a cross-section and a plan view of the upper body (202) of the second embodiment.

15 Figure 12 illustrates a front view, a cross-section and a plan view of the lid (203) of the second embodiment.

Figure 13 illustrates a front view, a cross-section and a plan view of the blister (212) arranged over the lid (203) of the second embodiment.

Figure 14 shows an exploded view of the second embodiment.

20 Figure 15 represents a front view, a cross-section and a plan view of a third embodiment of the present invention.

Figure 16 illustrates a front view, a cross-section and a plan view of the upper body (302) of the third embodiment.

Figure 17 illustrates a front view, a cross-section and a plan view of the lid (303) of the third embodiment.

25 Figure 18 illustrates a front view, a cross-section and a plan view of the blister (312) arranged over the lid (303) of the third embodiment.

Figure 19 represents a front view, a cross-section and a plan view of the lower body (304) of the third embodiment.

Figure 20 shows an exploded view of the third embodiment.

30 Figure 21 represents a front view, a cross-section and a plan view of a fourth embodiment of the present invention.

Figure 22 illustrates a front view, a cross-section and a plan view of the lid (403) of the fourth embodiment.

Figure 23 illustrates a front view, a cross-section and a plan view of the blister (412) arranged over the lid (403) of the fourth embodiment.

5 Figure 24 illustrates a front view, a cross-section and a plan view of the upper body (402) of the fourth embodiment.

Figure 25 illustrates on the one hand a front view, a cross-section and a plan view of the silicone membrane (423) and on the other hand a front view, a cross-section and a plan view of the liquid separating part
10 (405) of the fourth embodiment.

Figure 26 represents a front view, a cross-section and a plan view of the lower body (404) of the fourth embodiment.

Figure 27 shows an exploded view of the fourth embodiment.

Detailed description of the invention

15 The preferred embodiment of the present invention is detailed in Figures 1 to 7.

According to this preferred embodiment, the multiple compartment container for beverages (1) comprising an upper piece (2) containing a first beverage closed off by a screw-on lid (3). Said lid (3) is in one piece,
20 preferably of polypropylene and having a skirt (6) which screws-on on the end (7) of the body (2) containing the first beverage and further comprising a edge (8) from the topmost end from which a slope (9) descends until it produces the base (10) of said lid (3). In the central part of said base (10) there are one or two circular slits (11) on top of which there are arranged
25 one or two blister type tablet containers (12), having a transparent covering made by thermoforming and a brittle sheet on its bottom on top of which the tablets lay until such time when they are used.

The height of said blister type tablet containers (12) is the same as that of the edge (8) of the lid (3).

The upper body (2) containing the first beverage is hollow, preferably made of injected PET and having a circular section and straight walls, which, when reaching their lower end reduce the section by means of the stop or reduction (13), giving place to a threaded sector (14) which ends after a new reduction (17) in an outlet with an edge in the shape of a projection (16) interrupted by a series of slits (15).

The upper body (2) containing the first beverage comprising a bottom (18) made of the same material as that of the rest of the body, which has a series of concentric perforations (19) and a sharp element (20) which also forms part of the same piece, located in the barycenter of the body pointing downwards.

This upper body (2) containing the first beverage is linked to the beverage mixing piece (5), which at rest acts as the liquid separating part. This part (5) is made of polypropylene and comprises firstly a threaded surface (21) in its inner walls through which it is linked to the threaded sector (14) of the upper body (2), to end at its lower part with a pair of reductions (22), followed by an embedded perimeter partition (25).

The base of said mixing piece (5) is a brittle membrane (23) also made of polypropylene, injected originally as part of said piece. This brittle membrane (23) is positioned immediately below the last reduction (22) and comprising a series of radial weakenings (24) that will tear when the sharp element (20) pressures the center (26) of said membrane (23).

The element that completes the assembly defining the container (1) sets forth is the lower body (4), being hollow, like the upper body (2) and containing the second beverage to be mixed, for example an alcoholic beverage. This lower body (4) having a smaller size than the upper body (2), maintaining the cylindrical shape by straight walls (28) and connecting with the mixing piece (5) through an embedded perimeter partition (25) of said mixing piece (5). Both embedded pieces being later joined by ultrasound.

The base (29) of said lower body (4) being flat and can have grooves (3) that help define a supporting perimeter ring (31) for the whole assembly.

When a user wishes to use the multiple compartment container set
5 forth, the user will have to firstly mix the contents of both the upper and lower bodies breaking the brittle membrane which acts as a separator. To do that, the user will have to twist the upper body (2) clockwise, so that the thread (14) can screw itself onto the threaded area (21) of the mixing piece (5). By doing this, the upper body (2) will begin to descend until the edge
10 in the shape of a projection (16) abandons its position under the first of the reductions (22) such as can be seen in Figure 1 and goes on to couple under the last of the reductions (22), causing the sharp element (20) to puncture the membrane (23) through the middle, at the same time that the edge in the shape of a projection (16) also contributes to tear it along its
15 perimeter. Then, the reduction (13) of the upper body (2) will abut against the upper border of the mixing piece (5), completely embedding both pieces.

The grooves (15) interrupting the perimeter of the lower mouth of the body (2) function to allow embedding between both pieces, absorbing
20 the compression force exerted by the user when he screws said upper body (2).

Once the membrane is broken, the liquid content of the upper body (2) will fall, due to gravity, through the perforations 19 made in the bottom of said body and will mix with the liquid content of the lower body (4). An
25 O-ring (32) located between the abutment (13) and the threaded area (14) does not allow liquid to filter through the jointure uniting both pieces.

Next, the user will proceed to flavor the mixture exerting pressure on the blister or blisters (12), so that the tablets contained therein drop into the container and producing the expected effervescent reaction, which can
30 be visualized through a section of the translucent container without trade name labels that allows the inside to be seen.

Finally, once the user has released the tablets, the user only has to unscrew the lid (3) normally and proceed to drink the mixture from the same container (1) as if it were a glass for long drinks, which it resembles in proportion.

5 The second alternative embodiment of the multiple compartment container set forth can be seen in Figures 8 to 14.

According to this alternative embodiment, the multiple compartment container for beverages (201) comprising an upper piece (202) containing a first beverage enclosed by a screw-on lid (203).

10 Said lid (203) is in one piece, preferably of polypropylene and has a skirt that is slightly curved towards the outside (206) which screws-on on the outside on the end (207) of the body (202) containing the first beverage and further comprising a perimeter edge (270) which begins at the base (280) of said lid (203). In the central part of said base (280) there are one
15 or two circular slits (281) on top of which there are arranged one or two blister type tablet containers (212), having a transparent covering made by thermoforming and a brittle sheet on its bottom on top of which lay the tablets until such a time when they are to be used.

The height of said blister type tablet containers (212) being the
20 same as that of the perimeter edge (270) of the top (203).

The upper body (202) containing the first beverage is hollow, preferably made of injected PET and having a circular section and straight walls in its main part, forming skirts which are slightly curved toward the outside in their upper (207) and lower (217) ends.

25 The upper skirt (207), as mentioned above, screws-on on the threaded area (206) of the top, while the lower skirt (217) comprises an inner area with a brittle membrane (215) made of aluminum laminated with PE, joined by heat seal to the internal walls of the skirt (217), more precisely at the end where the straight internal wall ends and the internal
30 diameter grows, as can be seen in Figure 11. Following the internal setting forth of the skirt (217) of the upper body (202), perimeter grooves can be

seen, an upper groove (250) and a lower one (260). These grooves defining the two conditions of the container: at rest (260) and ready for use (250), as will be explained later.

The following piece of the assembly with which said upper piece
5 (202) comes into close contact is the lower body (204), containing the second beverage to be mixed. This lower piece (204) having the same circular section as that of the whole assembly, having straight translucent walls and comprising a flat bottom or base (229) with a slight hollowing that defines a perimeter ring (231), supporting the whole assembly.

10 This lower body (204) containing the second beverage comprising in its upper perimeter edge a lip intercut by a series of slits (215) providing the upper mouth of the body enough movement for both pieces to be embedded by compression. Said area of the mouth or outlet of the lower body (204) continuing with the space (221) where the lower edge of the
15 upper body (202) fits when the assembly is at rest, as can be seen in Figure 8. In this position, i.e., before the user proceeds to mix the liquids, the perimeter lip (209) of the outlet of the lower body (204) fitting in the slit (260) of the upper body (202).

Following on from said space (221), the outlet area ending in a neck
20 (208) along which the upper body will slide until abutting with the lips or stops (222) provided in the lower body (204) just at the position where the outlet area ends and the main body of said piece containing the second beverage to be mixed begins.

Positioned between both main pieces, the upper one (202) and the
25 lower one (204), there is a third piece (216) consisting of a perforating polypropylene ring with a circular section divided in two parts by a retaining perimeter disk (211): the base (210) and the edge (218).

Said perforating ring (216) fitting over the outlet of the lower body
(204), the retaining disk (211) abutting over the edge (209) of said lower
30 body (204), as can be seen in the cross-section of Figure 8.

The sharp element (217) remaining under and very close to the brittle membrane (215) of the upper body, pointing towards its center.

When a user wishes to use the multiple compartment container (201) that is set forth in this second embodiment alternative, the user will
5 have to firstly mix the contents of both the upper (202) and the lower (204) bodies, so as to allow the passage of liquid from one body to the next. To do that, he will have to press the upper body (202) downwards, exerting a force (x) on the lid (203), so that the exerted force overcomes the resistance of the perimeter border (209) that is coupled in the lower groove
10 (260) and positions itself in the upper groove (250), all the assembly abutting on the lip or stop (222) of the lower body, completing the container's design accompanying the curve of the lower skirt (217) of the upper body (202). The grooves (215) interrupting the perimeter of the outlet of the lower piece (204) function to allow the embedding between
15 both pieces, absorbing the compression force exerted by the user when the user exerts pressure (x) on the upper body (202).

Once both pieces have abutted due to the user's actions, the sharp element (217) will perforate the brittle membrane (215), which until now retained all the liquid contained in the upper body (202), so that the liquid
20 content of said upper body (202) will fall, due to gravity, through the slits (219) made in the disk (211) and will mix with the liquid content of the lower body (204). An O-ring (not shown) located over the space (221) of the lower body (204), does not allow liquid to filter through the jointure uniting both pieces.

25 Lastly, the user will proceed to flavor the mixture by exerting pressure on the blister or blisters (212), so that the tablets contained therein drop into the container and producing the expected effervescent reaction, which can be visualized through a section of the translucent container, without trade name labels, that allows the inside to be seen.

30 Finally, once the user has released the tablets, the user only has to unscrew the lid (203) normally and drink the mixture from the same

container (201) as if it were a glass for long drinks, which it resembles in proportion.

The third alternative embodiment of the multiple compartment container set forth can be seen in Figures 15 to 20.

5 According to this third alternative embodiment, the multiple compartment container for beverages (301) comprising an upper piece (302) containing a first beverage enclosed by a screw-on lid (303).

Said lid (303) being in one piece, preferably of polypropylene and having a skirt (306) which screws-on on the outside on the end (307) of the
10 upper body (302) containing the first beverage, comprising at this position an upper stop (305a) beginning where the thread (307) ends, marking the limit or maximum position of jointure between both pieces.

Said lid (303) further comprising a edge (308) from the topmost position from which a slope (309) descends leading to the base (310) of
15 said lid (303). In the central part of said base (310) there are one or two circular slits (311) on top of which there are arranged one or two blister type tablet containers (312), having a transparent covering made by thermoforming and a brittle sheet on its bottom on top of which lay the tablets until such a time as they are to be used.

20 The height of said blister type tablet containers (312) being the same as that of the perimeter edge (309) of the lid (303).

The upper body (302) containing the first beverage being hollow, preferably made of injected PET and having a mainly circular section and straight walls, to end in its lower area with a stop (305b) preceding a lower
25 outlet (313) having a membrane (314) as a base or bottom made of laminated aluminum, joined by heat sealing to the lower edge of the outlet of said upper piece (302).

Following the internal set up of the outlet (313) of the upper body (302), comprising a male or perimeter lip (350) and also a space perimeter
30 (360) where an O-ring (not shown) fits can be seen, which does not allow liquid to filter through the jointure attaching both pieces.

The following piece of the assembly with which said upper body (302) comes into close contact being the lower body (304), containing the second beverage to be mixed. This lower piece (304) having the same circular section as that of the whole assembly, having straight translucent
5 walls and comprising a flat bottom or base (329) with a slight hollowing defining a perimeter ring (331), supporting the whole assembly.

This lower body (304) containing the second beverage comprising an upper perimeter edge intercut by a series of slits (315) providing the upper mouth of the body enough movement for both pieces to become
10 embedded by compression. Said area of the mouth or outlet of the lower body (304) comprising an upper groove (350) where the male (317) of the upper body (302) fits when the assembly is at rest, as can be seen in Figure 15, and another lower groove (360). These grooves defining the two conditions of the container: at rest (350) and ready for use (360), as will be
15 explained later.

The lower body (302) comprising at a certain position of its inner walls, a sharp element (317) held by a bracket (316), both elements being injected in polypropylene forming an integral part of the lower body (304).

This sharp element (317) remaining in a position at rest, under and
20 very close to the brittle membrane (314) of the upper body, pointing towards its edge.

When a user wishes to use the multiple compartment container (301) that is set forth in this third embodiment alternative, the user will have to firstly proceed to mix the contents of both the upper (302) and the lower
25 (304) bodies, so as to allow the passage of liquid from one body to the next. To do that, the user will have to firstly press the upper body (302) downwards, exerting a force (z) on the lid (303), so that the exerted force overcomes the resistance of the perimeter male (317) that is coupled in the upper groove (350) and positions itself in the lower groove (360), all the
30 assembly abutting on the lip or stop (305b) of the upper body. The grooves (315) interrupting the perimeter of the outlet of the lower piece (304)

function to allow the embedding between both pieces, absorbing the compression force exerted by the user when the user exerts pressure (z) on the upper body (302).

Once both pieces having abutted by the user's actions, the sharp
5 element (317) will perforate the brittle membrane (314), which up to now retained all the liquid contained in the upper body (302). Next, the user will have to twist the upper body (302) clockwise, so that the sharp element (317) which have already perforated the membrane (314), can now tear it completely along its border edge and the liquid content of said upper body
10 (302) will fall due to gravity, mixing with the liquid content of the lower body (304).

Lastly, the user will proceed to flavor the mixture by exerting pressure on the blister or blisters (312), so that the tablets contained therein drop into the container and producing the expected effervescent
15 reaction, which can be visualized through a section of the translucent container (301), without trade name labels, allowing the inside to be seen.

Finally, once the user has released the tablets, the user only has to unscrew the lid (303) normally and drink the mixture from the same container (301) as if it were a glass for long drinks, which it resembles in
20 proportion.

The fourth and last alternative embodiment being different from the previous ones in that it does not comprise any sharp elements at all, but mixing of both liquids is done turning the location of a slit membrane, so that it coincides with the slits in the base and allows the liquid to pass
25 through them.

According to this fourth alternative embodiment which can be seen in Figures 21 to 27, the multiple compartment container for beverages (401) comprising an upper piece (402) containing a first beverage enclosed by a screw-on lid (403). Said lid (403) being in one piece, preferably of
30 polypropylene and having a skirt (406) which screws-on on the outside of the end (407) of the body (402) containing the first beverage, and further

comprising a perimeter edge (409) that begins from the base (410) of said lid (403). In the central part of said base (410) there are one or two circular slits (411) on top of which there are arranged one or two blister type tablet containers (412), having a transparent covering made by thermoforming and a brittle sheet on its bottom on top of which lay the tablets until such a time as they are to be used.

The height of said blister-like tablet containers (412) is the same as that of the perimeter edge (409) of the lid (403).

The upper body (402) containing the first beverage is hollow, preferably made of injected PET and having a circular section and straight translucent walls, which when reaching their lower end make the section smaller by means of the stop or reduction (413), leading to a threaded area (414) that subsequently ends in a base or bottom (417).

The upper body (402) containing the first beverage comprising in said bottom (417), made of the same material as that of the rest of the body, a series of slits (419) in the shape of a petal.

This upper body (402) containing the first beverage is linked to a beverage separating part (405), also having a circular section, comprising a series of slits (415) in its upper perimeter edge and an inner threaded area (421) where the threaded area (414) of the upper body (402) screws on. Said separating part (405) comprising in its bottom (422) a series of slits in the shape of a petal (424) with the same shape as the petals (419) made in the bottom of the aforementioned upper body (402). Bound in between both parts (402) and (405) there is a silicone membrane (423), the particularity of which is that it also has a series of slits in the shape of a petal (426) with the same shape as the petals (419) and (424) of said parts (402) and (405). This membrane (423) is located so that its slits (426) coincide with the slits (423) of the liquid separating part (405), said part comprising in its base a perimeter reduction (425) which acts as a fitter over the perimeter mouth (427) of the lower piece (404), containing the

second beverage to be mixed. Both embedded pieces (405) and (404) are joined by a heat seal.

This lower piece (404) having the same circular section of the whole assembly, having straight translucent walls and comprising a flat bottom
5 or base (429) with a slight hollowing defining a perimeter ring (431), supporting the whole assembly.

When a user wishes to use the multiple compartment container that is set forth, the user will have to firstly proceed to mix the contents of both the upper and the lower bodies, making the slits in the shape of a petal,
10 (419), (424) and (426), coincide, so as to allow the passage of liquid from one body to the next. To do that, the user will have to twist the upper body (402) clockwise one quarter of a turn so that the grooves (419) are aligned with the other grooves (424) and (426) of the separating piece and the membrane respectively, which were already previously aligned. The
15 quarter turn is made possible by screwing-on on the threaded area (414) of the upper body on its opposite threaded area (421) of the mixing piece (405).

The grooves (415) that interrupt the perimeter of the upper mouth of the mixing piece (405) function to allow the embedding between both
20 pieces, absorbing the compression force exerted by the user when the user screws-on said upper body (402).

Once the piece is twisted and all the grooves are aligned, the liquid content of the upper body (402) will fall due to gravity through the grooves and will mix with the liquid content of the lower body (404). An O-ring (432)
25 located before the base (417) of the upper body not allowing liquid to filter through the jointure attaching both pieces.

Next, the user will flavor the mixture exerting pressure on the blister or blisters (412), so that the tablets contained therein drop into the container and producing the expected effervescent reaction, which can be
30 visualized through a section of the translucent container, without trade name labels, allowing the inside to be seen.

Finally, once the user having released the tablets, the user only having to unscrew the lid (403) normally and drink the mixture from the same container (401) as if it were a glass for long drinks, which it resembles in proportion.

- 5 When the exemplified and disclosed compartmentalized beverage container, allowing for mixing different substances, is put into practice, embodiment modifications and/or variations could be introduced, all of which must be considered as comprised within the scope and protection of the present invention patent; the scope of which is determined basically,
10 by the text of the claims that follow.

CLAIMS

1. The multiple compartment container for beverages allowing for mixing of different substances, comprising at least two watertight compartments with different liquids to be mixed by the user, characterized
5 in comprising at least one upper body containing a first liquid, a lid, a lower body containing a second liquid, means to retain the liquid contained in the upper body when the assembly is at rest and when the user requires it means for mixing the liquid contained in the upper body with the one contained in the lower body; said upper body containing a first liquid
10 enclosed by a screwed lid, said lid comprising a skirt that screws on the end of the body containing the first liquid and in addition comprising one or two circular slits on top of which there are arranged one or two blister-like tablet containers, having a transparent covering and a brittle sheet on its bottom on top of which lay some tablets until such a time as they are to be
15 used; said upper body containing the first liquid being hollow, having a circular section, straight walls and provided with a bottom and means of assembly in its lower end; said lower body being hollow, of a smaller size than the upper body, with a cylindrical shape having straight walls and a flat hollowed bottom defining a perimeter ring, supporting the whole
20 assembly.

2. A multiple compartment container for beverages, according to claim 1, characterized in that said straight walls of said upper body containing the first liquid, which section being smaller by means of a stop or reduction, leading to a threaded area that ends after a new reduction in a outlet with
25 an edge in the shape of a projection interrupted by a series of slits, further comprising a bottom made of the same material as that of the rest of the body, having a series of concentric perforations and a sharp element, located in the baricenter of the body.

3. A multiple compartment container for beverages, according to claim
30 1, characterized in comprising a beverage mixing piece, and further

comprising firstly a threaded surface in its inner walls through which it is linked to the threaded section of the upper body, to end in its lower part with a pair of reductions, followed by an embedded perimeter partition, further comprising a brittle membrane located immediately below the last
5 reduction and comprising a series of radial weakenings which will tear when the sharp element pressures on the center of said membrane.

4. A multiple compartment container for beverages, according to claim 1, characterized in that the hollow lower body, connecting with the mixing piece through an embedded perimeter partition fitting in the embedded
10 partition of said mixing piece, further comprising a flat base, which can have grooves defining a supporting perimeter ring for the whole assembly.

5. A multiple compartment container for beverages, according to claim 1, characterized in that said lid of said multiple compartment container for beverages being in one piece, and comprising a skirt which is slightly
15 curved towards the outside which screws-on on the outside of the body containing the first beverage and further comprising a perimeter edge beginning at the base of said lid .

6. A multiple compartment container for beverages, according to claim 1, characterized in that said upper body containing the first beverage
20 comprising straight walls in its main part, forming skirts which are slightly curved toward the outside in their upper and lower ends, where said upper skirt, screws-on on the threaded area of the lid, while the lower skirt comprising an inner area with a brittle membrane joined to the internal walls of the skirt, and where the skirt of the upper body, comprising
25 perimeter grooves, an upper groove and a lower one.

7. A multiple compartment container for beverages, according to claim 1, characterized in that said lower body further comprising in its upper
perimeter edge a lip intercut by a series of slits and a space where the lower edge of the upper body fits when the assembly is at rest; following
30 the mentioned space, the outlet area ends with a neck along which the

upper body will slide until it abuts with the lips or stops provided in the lower body.

8. A multiple compartment container for beverages, according to claim 7, characterized in that in the position at rest, that is to say before the user
5 mixes the liquids, the perimeter lip of the outlet of the lower body fitting in the slit of the upper body.

9. A multiple compartment container for beverages, according to claim 7, characterized in that after the user mixes the liquids, the perimeter lip of the outlet of the lower body fitting in the slit of the upper body.

10 10. A multiple compartment container for beverages, according to claim 1, characterized in that between both main parts, upper and lower, there is a third part comprising a sharp element, this part consisting in a perforating ring with a circular section divided into two parts by a retaining
15 perimeter disk: the base and the edge, where said perforating ring fits over the outlet of the lower body, the retaining disk abutting over the border of said lower body.

11. A multiple compartment container for beverages, according to claim 1, characterized in that said lid of the multiple compartment container for beverages being in one piece, further comprising an edge from the up
20 most point from which a slope descends until it produces the base of said lid, in the central part of said base are arranged the aforementioned one or two circular slits.

12. A multiple compartment container for beverages, according to claim 1, characterized in that said upper piece containing a first beverage
25 comprising an upper stop beginning where the thread ends, and in its lower area a stop preceding a lower outlet having a membrane as a base or bottom joined by heat seal to the lower border of the outlet of said upper piece, said outlet of the upper body further comprising a male or perimeter lip and a space perimeter also where an O-ring fits, not allowing liquid to
30 filter through the jointure of both pieces.

13. A multiple compartment container for beverages, according to claim 1, characterized in that said upper part coming into close contact with the lower body, further comprising an upper perimeter edge intercut by a series of slits, an upper groove, a lower groove and at a certain position of its inner walls, a sharp element held by a bracket, both elements being
5 injected forming an integral part of the lower body.
14. A multiple compartment container for beverages, according to claim 1, characterized in that when the assembly is in a position at rest, that is, before the user mixes the liquids, the male of the upper body fits into the
10 upper groove.
15. A multiple compartment container for beverages, according to claim 1, characterized in that after the user mixes the liquids, the male of the upper body fits into the lower groove .
16. A multiple compartment container for beverages, according to claim
15 1, characterized in that said lid of said multiple compartment container for beverages being in one piece, and comprising a perimeter edge beginning from the base of said lid, where are arranged one or two circular slits.
17. A multiple compartment container for beverages, according to claim
20 1, characterized in that said upper body containing the first beverage, having straight walls, comprising translucent sections, said straight walls when reaching their lower end make the section smaller by means of the stop or reduction, leading to a threaded area that subsequently ends in a base or bottom, said bottom comprising a series of slits in the shape of a petal.
- 25 18. A multiple compartment container for beverages, according to claims 1, characterized in that said upper body containing the first beverage is linked to a liquid separating part, also having a circular section, comprising a series of slits in its upper perimeter edge and an inner threaded area onto which the threaded area of the upper body screws on,
30 in its bottom comprising a series of slits in the shape of a petal having the same shape as the petals made in the bottom of said upper body, the

multiple compartment container for beverages further comprising a silicone membrane bound in between both parts and, said membrane having a series of slits in the shape of a petal having the same shape as the petals and of said parts.

- 5 19. A multiple compartment container for beverages, according to claim 18, characterized in that said membrane is located so that its slits coincide with the slits of the liquid separating part, said part comprising in its base a perimeter reduction which acts as a fitter over the perimeter mouth of the lower part, that contains the second beverage to be mixed.
- 10 20. A multiple compartment container for beverages, according to claim 19, characterized in that said lower part being in one piece.

FIG. 1

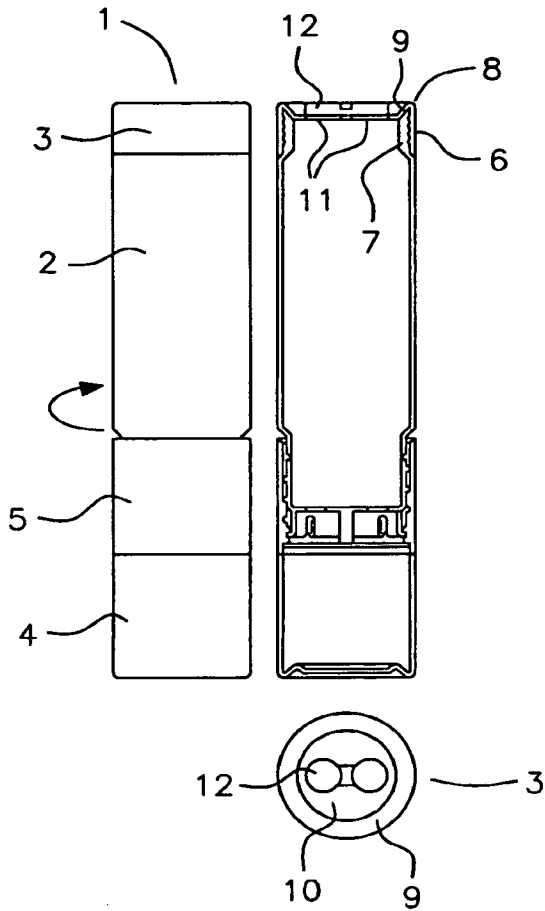


FIG. 2

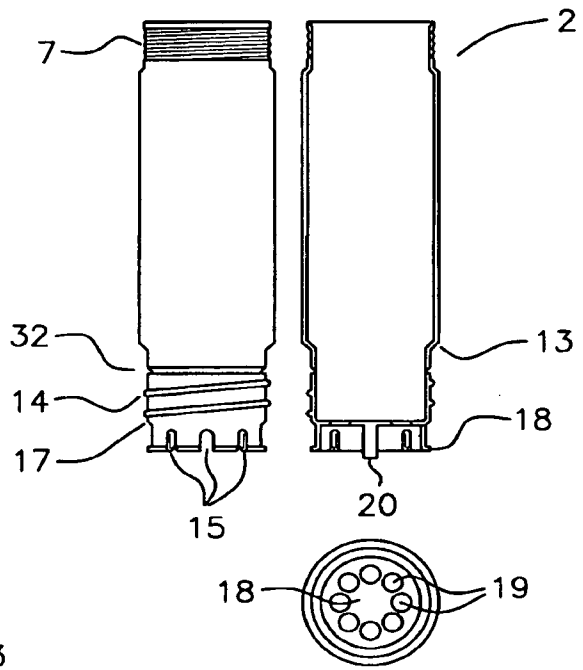


FIG. 3

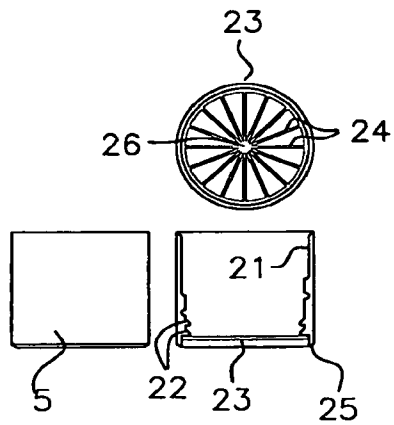


FIG. 4

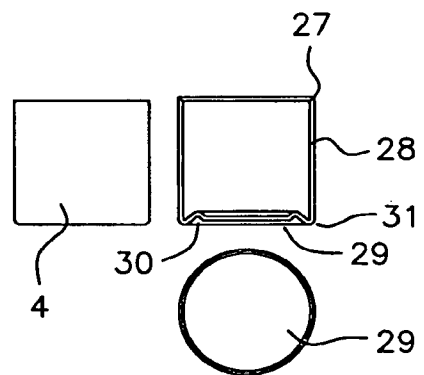


FIG. 5

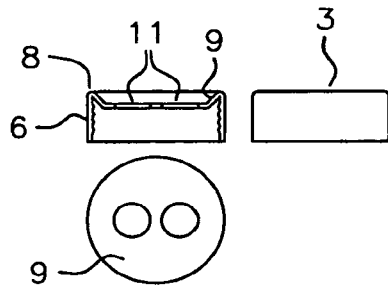


FIG. 6

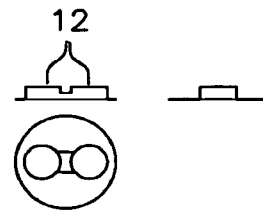


FIG. 7

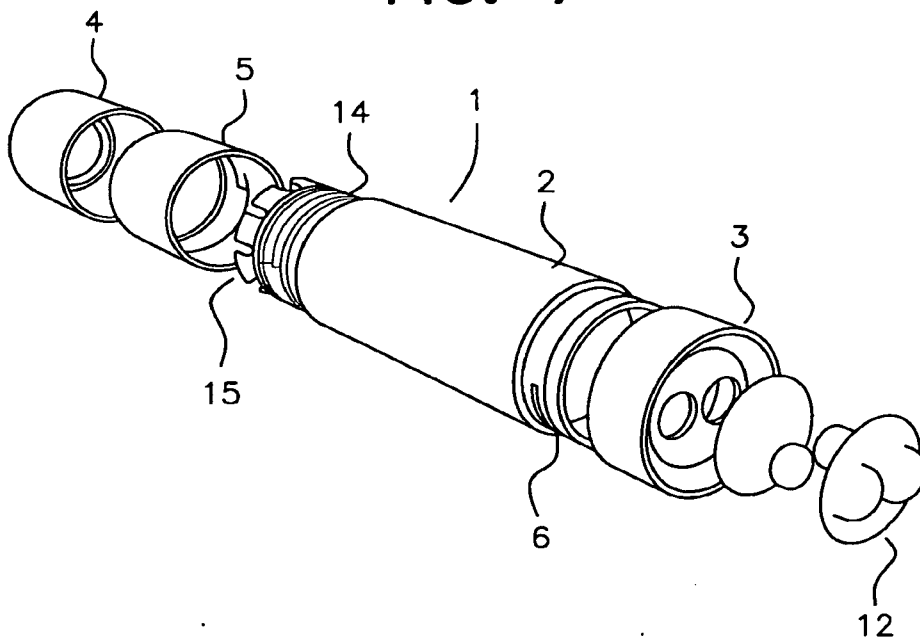


FIG. 8

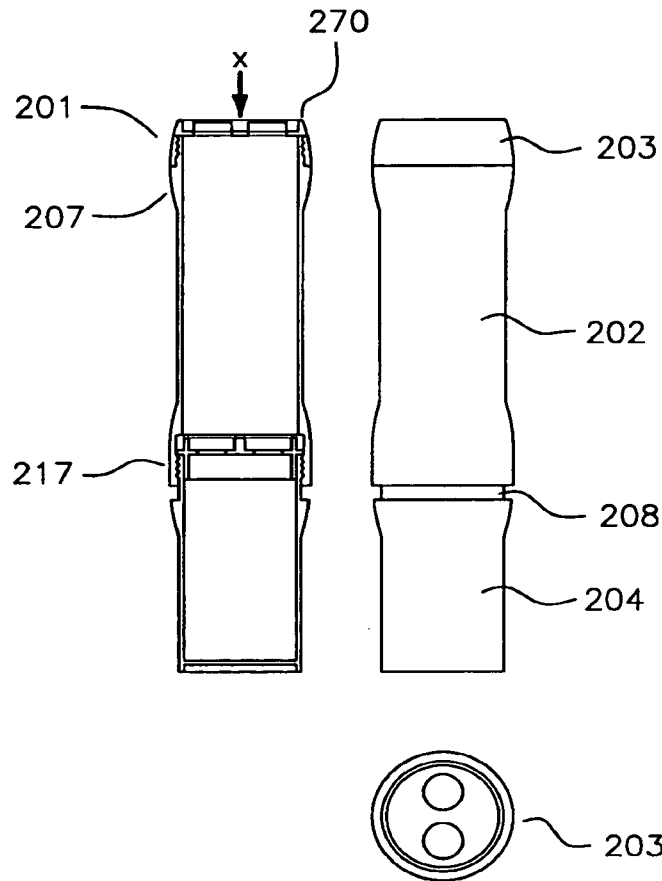


FIG. 9

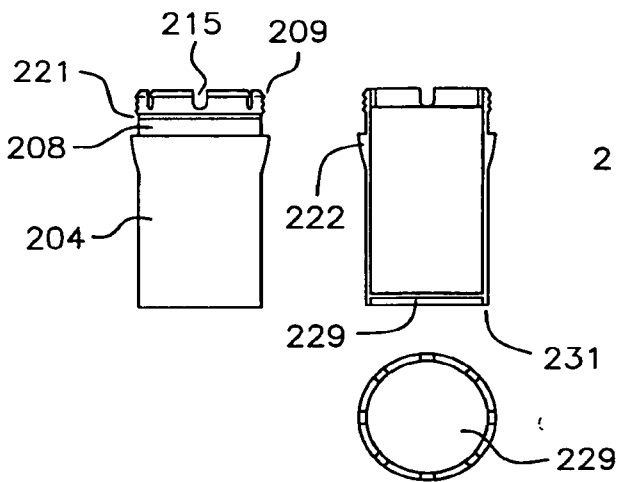


FIG. 10

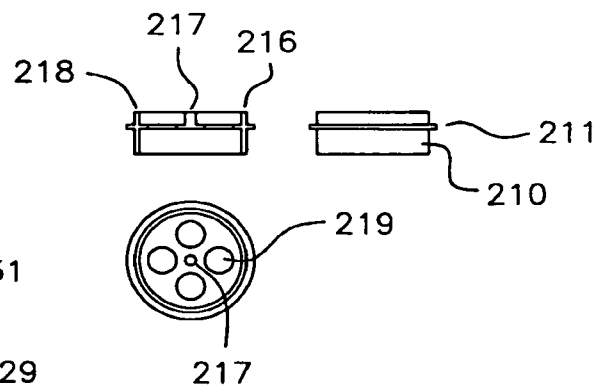


FIG. 11

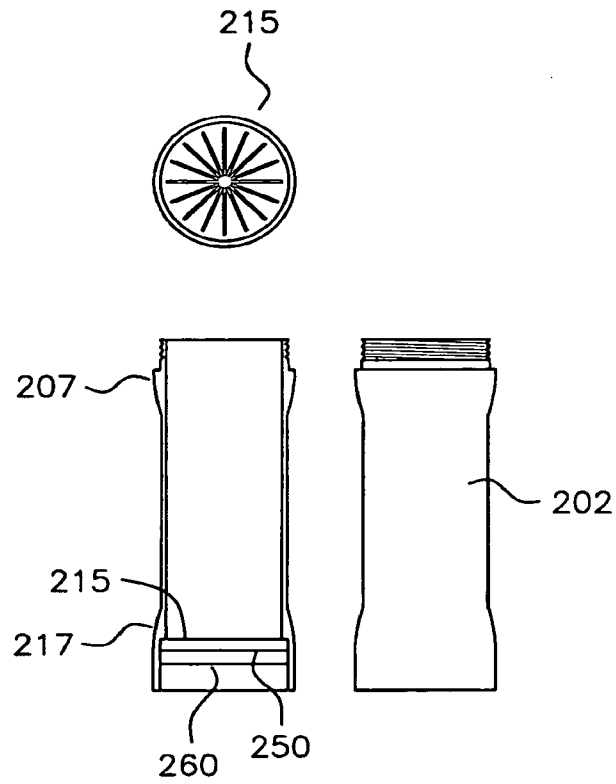


FIG. 12

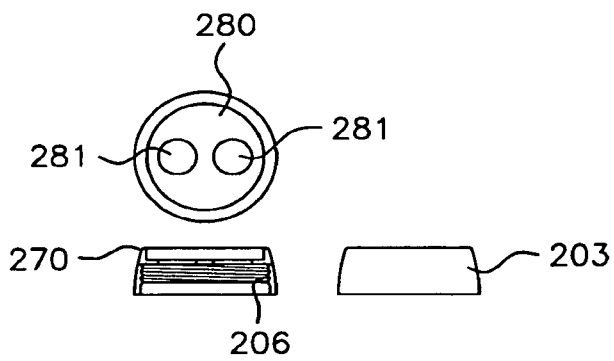


FIG. 13

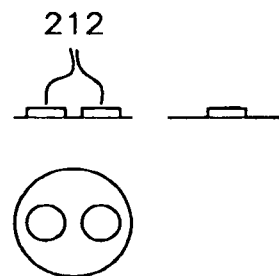


FIG. 14

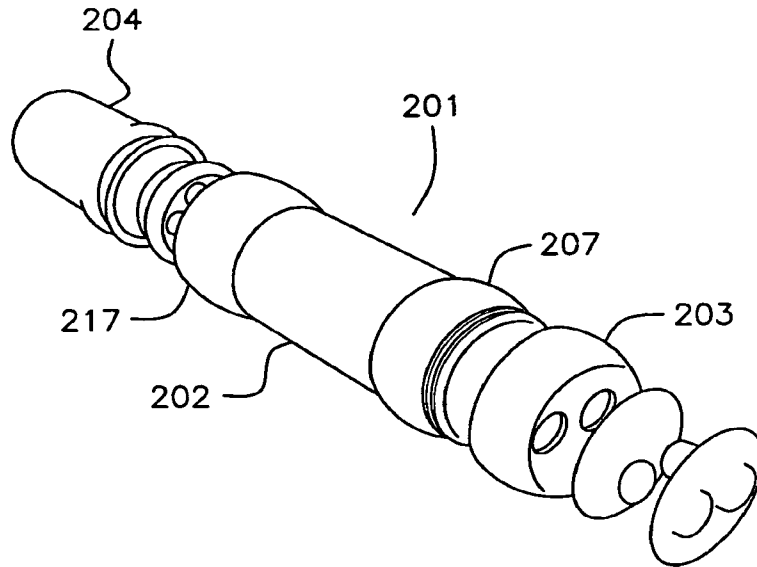


FIG. 15

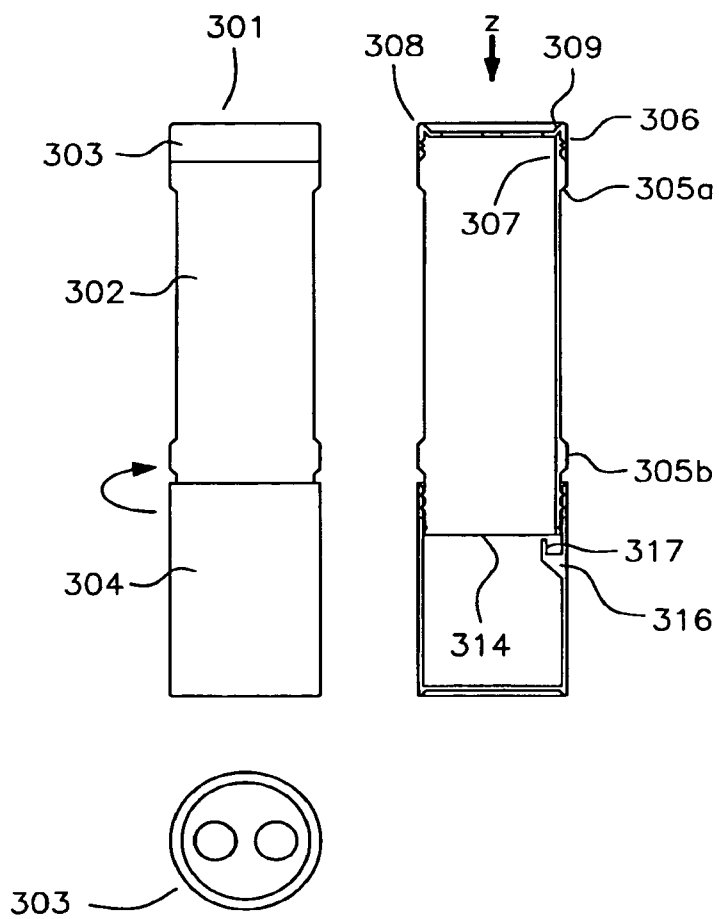


FIG. 16

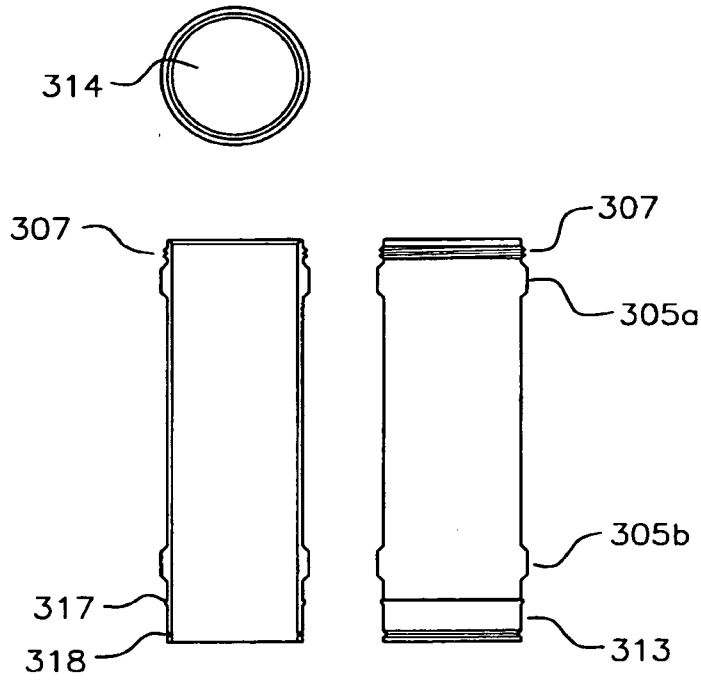


FIG. 17

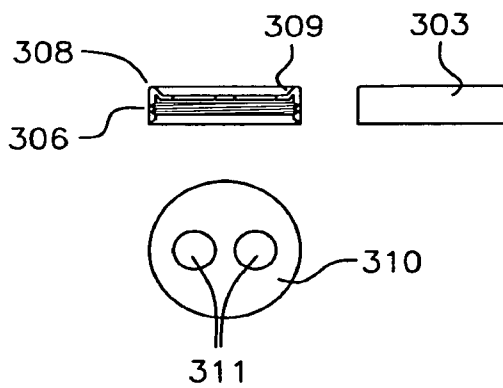


FIG. 18

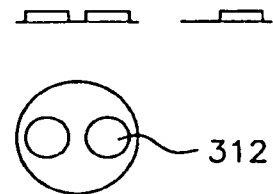


FIG. 19

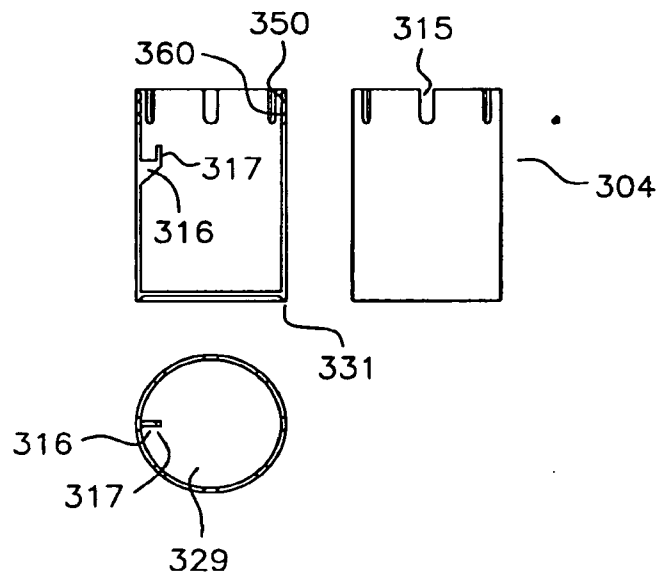


FIG. 20

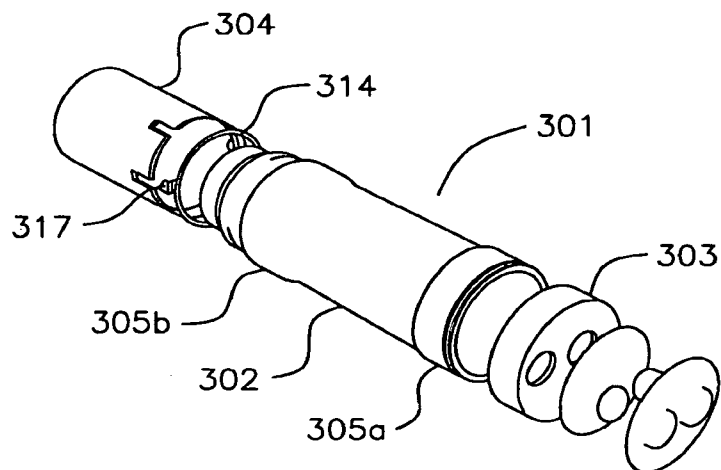


FIG. 21

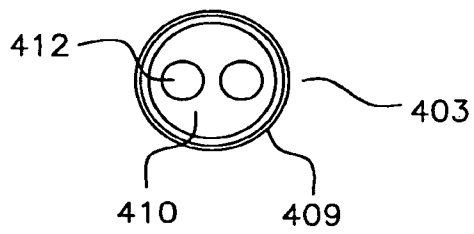
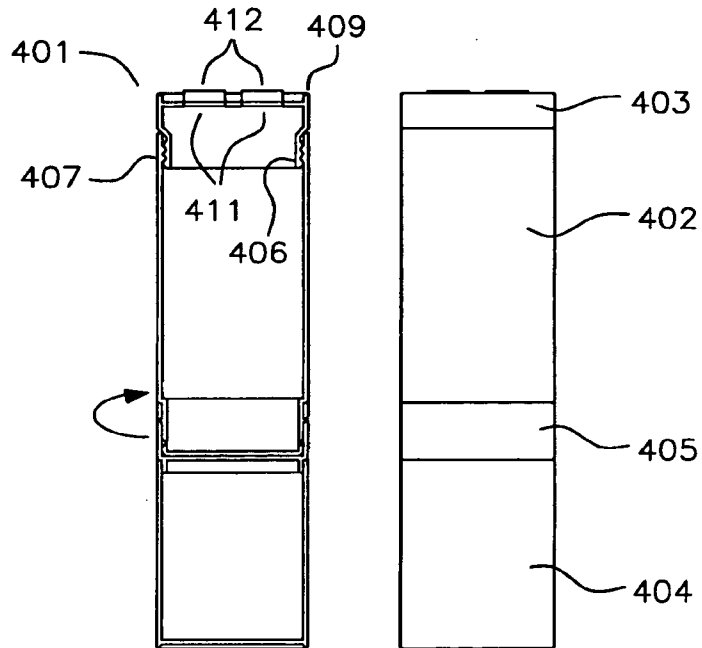


FIG. 22

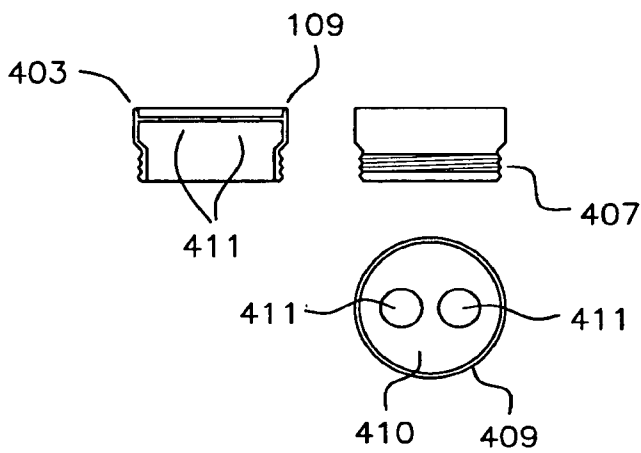


FIG. 23

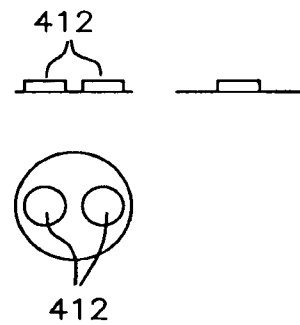


FIG. 24

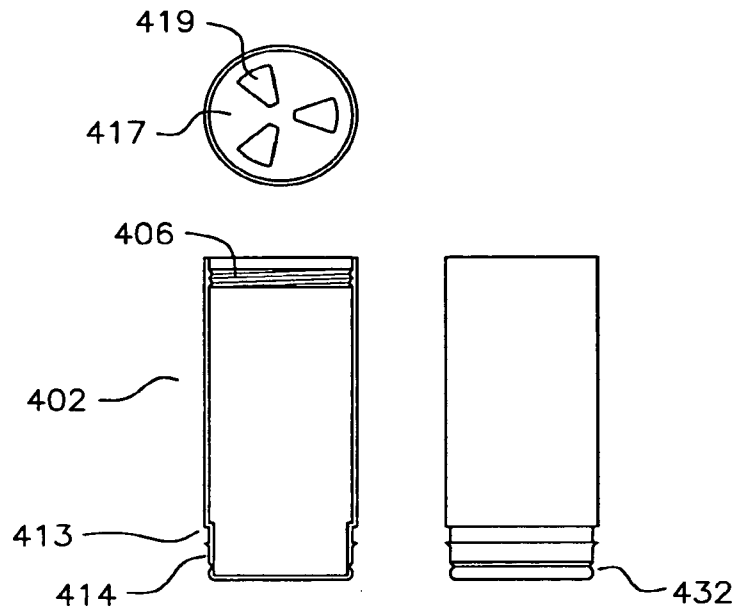


FIG. 25

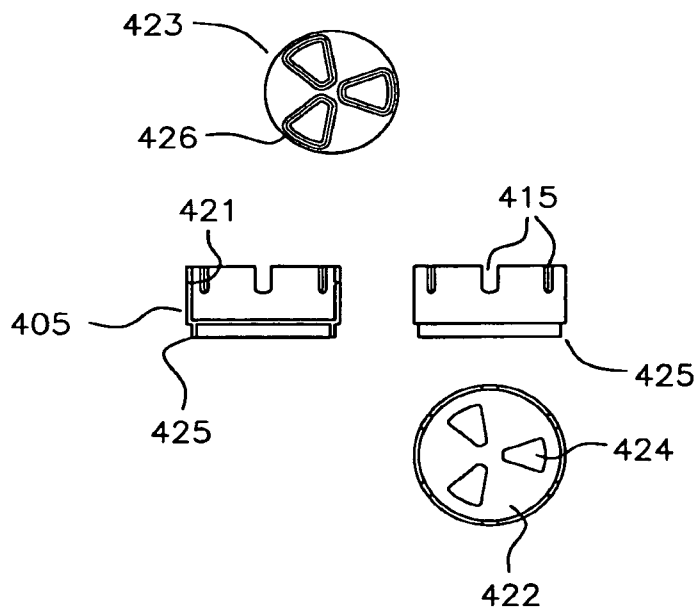


FIG. 26

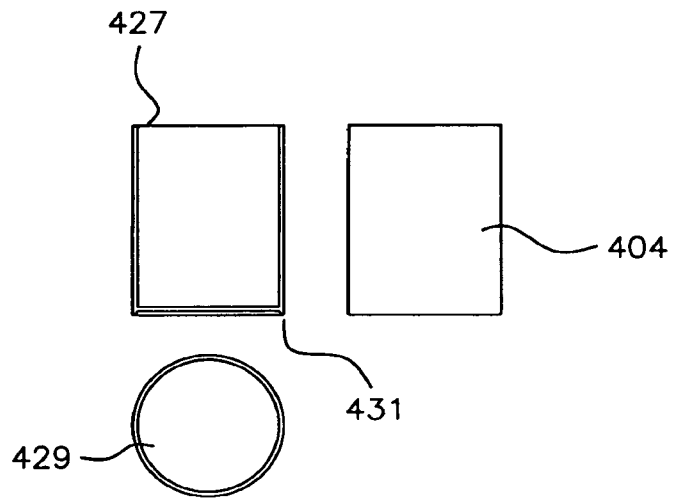
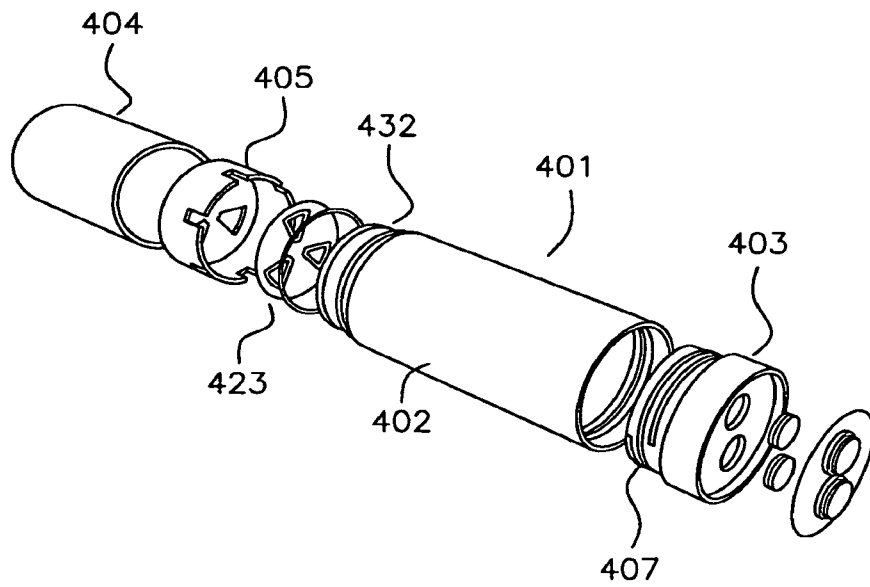


FIG. 27



INTERNATIONAL SEARCH REPORT

International application No.

PCT/US07/09355

A. CLASSIFICATION OF SUBJECT MATTER
 IPC: **B65D 25/08(2006.01)**

USPC: **206/219**
 According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
 U.S. : 206/219, 222, 221; 215/Dig.8

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|--|-----------------------|
| A | US 2006/0113201 A1 (MICIC et al) 01 June 2006 (01.06.2006), see figures 1-9. | 1 |
| A | US 2004/0011679 A1 (VLODEK) 22 January 2004 (22.01.2004), see figures 15-17. | 1 |
| A | US 6,959,841 B2 (VLODEK) 01 November 2005 (01.11.2005), see figures 15-19. | 1 |
| A | US 4,785,931 A (WEIR et al) 22 November 1988 (22.11.1988), see figures 1-5 | 1 |
| A | US 6,126,032 A (HERZOG) 03 October 2000 (03.10.2000), see figure 1. | 1 |

Further documents are listed in the continuation of Box C. See patent family annex.

| * Special categories of cited documents: | | |
|--|---|---|
| "A" | document defining the general state of the art which is not considered to be of particular relevance | "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention |
| "E" | earlier application or patent published on or after the international filing date | "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone |
| "L" | document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) | "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. |
| "O" | document referring to an oral disclosure, use, exhibition or other means | |
| "P" | document published prior to the international filing date but later than the priority date claimed. | "&" document member of the same patent family |

| | |
|---|--|
| Date of the actual completion of the international search 23 May 2008 (23.05.2008) | Date of mailing of the international search report 13 JUN 2008 |
| Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201 | Authorized officer <i>David T. Fiedri</i> Telephone No. (571) 272-3700 |