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(54) **Multi compartment cap for container**

(57) A multi-compartment container cap (100) comprising a hollow tubular body (110) having a dividing wall (150) forming a proximal compartment (210) located at a proximal end (200) of the hollow tubular body (110) and a distal compartment (310) located at the distal end (300) of the hollow tubular body. The proximal end (200) of the

hollow tubular body is adapted to be releasably attached to a container body (600) while the distal compartment comprises (310) a separate compartment for the storage and dispensing of a composition (500) which can be selected to be complementary to any composition store within the container cap (100).

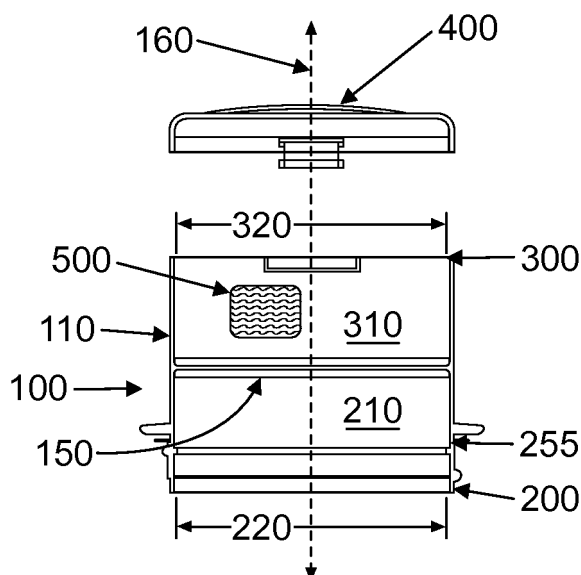


Fig. 2

Description

FIELD OF THE INVENTION

[0001] The present invention relates generally to the field of removable caps for bottles and containers. More specifically, the present invention relates to a convenient and easy to use article which allows two or more products to be stored in the same container in separate compartments.

BACKGROUND OF THE INVENTION

[0002] Container caps having more than one function are known. For example, many container caps provided on conventional laundry detergent bottles provide the dual functions of releasably sealing the container and providing a dosing feature to allow consumers to measure a predetermined volume of the laundry detergent composition for use. Dosing caps are commercially available in a variety of products, including in containers for liquid or granular laundry detergents and fabric softeners. Examples of dosing caps are available in U.S. Patent Nos. 2,985,343 to Mask; 4,892,126 to Bucherer et al.; 5,662,249 to Grosse; 5,855,302 to Fisscher et al.; 5,865,331 to Jacobs et al.; 6,422,426 to Robins, III et al.; and U.S. Patent Publ. No. 2001/0030165 A1 to Jacobs et al.

[0003] In addition, multi-compartment containers are known. *See, e.g.*, U.S. Patent No. 2,899,096 to Henchert et al. These multi-compartment containers have many different purported uses. One category of multi-compartment containers uses the separate compartments to keep different component ingredients separate during storage but allows for mixing prior to use. Examples of these multi-compartment containers are described in U.S. Patent No. 5,255,812 to Hsu et al.; and 5,954,213 to Gerhart et al. Another category of multi-compartment containers are designed to provide a composition reservoir in a first compartment and a composition dispensing mechanism in a second compartment. The composition dispensing mechanism extracts the composition from the first compartment and dispenses the extracted composition. Examples of these types of multi-compartment containers are described in U.S. Patent No. 2,553,302 to Keskitalo; 4,636,328 to Flynn et al.; 5,188,472 to Sgro; and 7,066,674 to Gueret.

[0004] Although container designers and manufacturers have reported many different types of dosing caps and multi-compartment containers, there remains a need for a container cap which can provide the multiple functions of conventional container caps, as well as creating a multi-compartment container for storing and/or packaging a complementary product. The complementary product can be used with the composition stored within the container or can be used in a stand alone application. As such, there remains a need for a new container cap which provides the functionality of a conventional con-

tainer cap, such as protecting the contents of the container from undesired exposure to the environment and dosing, while providing multi-compartment storage capabilities. Further, the new container cap should be user friendly and simple to manufacture.

SUMMARY OF THE INVENTION

[0005] One aspect of the present invention provides for a multi-compartment container cap comprising: a hollow tubular body comprising: a proximal end; a distal end; an axial dimension extending through said hollow tubular body from said proximal end to said distal end; and a dividing wall positioned within said hollow tubular body, said dividing wall separating said hollow tubular body into a proximal compartment and a distal compartment, wherein said axial dimension is transverse to said dividing wall, wherein said proximal compartment comprises a proximal opening at said proximal end, and wherein said distal compartment comprises a distal opening at said distal end.

[0006] Another aspect of the present invention provides for a kit comprising one or more of a multi-compartment container cap comprising: a hollow tubular body comprising: a proximal end; a distal end; an axial dimension extending through said hollow tubular body from said proximal end to said distal end; and a dividing wall positioned within said hollow tubular body, said dividing wall separating said hollow tubular body into a proximal compartment and a distal compartment, wherein said axial dimension is transverse to said dividing wall, wherein said proximal compartment comprises a proximal opening at said proximal end, and wherein said distal compartment comprises a distal opening at said distal end; and a container body comprising a reservoir and a neck operably connected to said reservoir, wherein said proximal compartment of said one or more of said multi-compartment container caps are adapted to be removably attached to said neck.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007]

FIG. 1 is a frontal planar view of a container and a multi-compartment container cap in accordance with at least one embodiment of the present invention.

FIG. 2 is a cross sectional view along view line A-A shown in FIG. 1, of the multi-compartment container cap shown in FIG. 1.

FIG. 3 is a fragmentary side view of a multi-compartment container cap along with a container body in accordance with at least one embodiment of the present invention.

FIG. 4 is an elevated side view of a multi-compartment container cap in accordance with another embodiment of the present invention.

FIG. 5 is an elevated side view of a multi-compartment

ment container cap in accordance with another embodiment of the present invention.

FIG. 6 is a top view of the multi-compartment container cap shown in FIG. 5.

FIG. 7 is a side view of the multi-compartment container cap shown in FIG. 5.

FIG. 8 is a side view of the multi-compartment container cap shown in FIG. 5 with dashed lines showing some interior features of said multi-compartment container cap.

FIG. 9 is an elevated side view of a multi-compartment container cap in accordance with another embodiment of the present invention.

FIG. 10 is another elevated side view of the multi-compartment container cap shown in FIG. 9.

FIG. 11 is a side view of the multi-compartment container cap shown in FIG. 9.

FIG. 11 is a side view of the multi-compartment container cap shown in FIG. 9 with dashed lines showing some interior features of said multi-compartment container cap.

FIG. 13 is an elevated side view of a multi-compartment container cap in accordance with yet another embodiment of the present invention.

FIG. 14 is another elevated side view of the multi-compartment container cap.

FIG. 15 is an elevated side view of a roll of substrates which can be stored within a multi-compartment container cap in accordance with at least one embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

Definitions:

[0008] As defined herein, hermetic refer to seals between container components (such as the lid and multi-compartment container cap and the multi-compartment container cap and container body) which provide at least a degree of resistance to moisture migration through the seal, at least equal to that of the container and hollow tubular body materials. Such seals may also provide resistance to migration of gases at least equal to that of the container body and lid materials

[0009] As defined herein, hollow tubular body means a conical, cylindrical, squared or other multi-sided shape which can have the same or varying shape and/or cross sectional area along its height. Non-limiting examples of suitable container cap shapes are provided in U.S. Patent Nos. D390,466 and D390,462 both to Mao; D389,740 to Toleman; D189,059 to Vanderhyde; and D306,265 to Jeo.

[0010] As defined herein, substantially perpendicular to a planar surface means that upon determining a normal vector to said planar surface, any line intersecting said planar surface forms an angle of between about 0° and about 15° from said normal vector. Where the surface does not form a plane, the normal vector is determined

by ascertaining the center point of said surface, then taking the normal vector of the tangential plane to the center point of said surface.

[0011] As defined herein, substantially water tight means that no appreciable amount of liquid water will be visibly observed to pass through a sealed compartment under ambient environmental conditions.

[0012] FIG. 1 illustrates a container body **600** with a multi-compartment container cap **100** in accordance with at least one embodiment of the present invention. Container body **600** comprises a reservoir **640** capable of storing a liquid or granular composition, and a neck **620** adapted to be removably attached with a corresponding container cap. FIG. 1 shows a cut away **650** revealing the interior contents of the reservoir **640**. Granular or liquid composition **700** is shown stored within reservoir **640**. Any container body which can be closed with a container cap can be used with the present invention. In one embodiment, the container body has a separate handle, not shown, such as available with commercially marketed laundry softener or detergent containers and automatic dish washing gel or liquid containers. Those of skill in the art will understand that container bodies without handles are also within the scope of the present invention. Non-limiting examples of container bodies which can be used in accordance with the present invention include containers for liquid or granular laundry detergents, liquid fabric softeners, paint containers, bottles for liquid or granular hard surface containers, aerosol cans, food containers such as cookie jars, beauty and cosmetic containers, and so forth.

[0013] The container cap shown in FIG. 1 is a multi-compartment container cap **100** having a hollow tubular body **110** comprising a proximal end **200** and a distal end **300**. Within said hollow tubular body is a dividing wall **150** separating said hollow tubular body into a proximal compartment **210** and a distal compartment **310**. Those of skill in the art will understand that the dividing wall **150** can be a single layer wall or a dual or multi layered wall. When said multi-compartment container cap **100** is removably attached to said container body about said neck **620**, a substantially water tight seal is created. In one embodiment, this substantially water tight seal between said multi-compartment container cap **100** and the container body **600** is a hermetic seal (not shown).

[0014] FIG. 2 is a cross section view of the multi-compartment container cap **100** shown in FIG. 1, taken along view lines A-A. Any conventional container body which is suitable for storing compositions including but not limited to liquid, granular, gelled and semi-solid compositions can be used in accordance with the present invention, including but not limited to container bodies for storing liquid laundry detergent or fabric softener. In addition, the container body can be an aerosol can, a spray bottle for hard surface cleaning compositions, and any container body which is used suitable for storing a composition and adapted to be closed with a removable cap.

[0015] The multi-compartment container cap **100** com-

prises a hollow tubular body **110** forming a proximal end **200** and a distal end **300**. The portion of the hollow tubular body forming said proximal end further comprises a container attachment member **255** adapted to form a substantially water tight removable closure with the neck of a container. The multi-compartment container cap further comprises an axial dimension **160** extending through the length of said hollow tubular body; and a dividing wall **150** separating said hollow tubular body into a proximal compartment **210** and a distal compartment **310**. The axial dimension **160** intersects the dividing wall **150** in a transverse orientation. In one embodiment, the dividing wall **150** is a planar surface. In another embodiment, the dividing wall is a cupped surface, wherein the cupped surface can be concave towards the proximal end or convex from the proximal end, or an otherwise non-flat surface which can contain flat portions, convex portions and concave portions. In one embodiment, the axial dimension is substantially perpendicular to said dividing wall, alternatively perpendicular to said dividing wall. The portion of the tubular body **110** forming the proximal compartment **210** forms a proximal opening **220** at the proximal end **200**. The portion of the tubular body **110** forming the distal compartment **310** forms a distal opening **320** at the distal end **300**. In one embodiment, the distal opening comprises an opening size of from about 5 cm² to about 200 cm², alternatively from about 20 cm² to about 150 cm², alternatively from about 50 cm² to about 100 cm².

[0016] As shown in FIG. 2, in one embodiment, the distal compartment **310** contains a pouched article **500**. Those of skill in the art will understand that the composition contained within the distal compartment can be chosen to be complementary to the composition stored within the container body. For example, where the composition stored in the container body is a liquid, gel, or granular detergent composition, the composition stored in the distal compartment can be complementary to the composition stored in the container body. As defined herein, "complementary" means combination of products which can be used together in parallel, or used in a series of steps; or used in separate but related steps such as where the container body contains a liquid or gelled automatic dish washing composition and the composition stored within the distal compartment is a wet nap for treating hard surfaces. Those of skill in the art will understand that any two or more products which can be suitably marketed together can be contained by a container and cap in accordance with at least one embodiment of the present invention.

[0017] In one embodiment, the composition contained within the container body, as shown in FIG. 1, is a liquid, gel or granular laundry or hard surface detergent composition, such as an automatic dish washing composition or a car washing formulation. In another embodiment, the composition stored within the distal compartment of the container cap is a granule, a sheet, a pouch or a tabletted treatment composition which can be used in a

laundry application. Non-limiting examples of compositions which can be placed within the distal compartment include: one or more softening and/or antistatic dryer sheets; one or more whitening or bleaching tablets comprising additional surfactants, bleaches, bleach activators and mixtures thereof; one or more pouched odor controlling agent such as a perfume additive comprising free perfume, encapsulated perfumes, cyclodextrin compositions, malodor control agents, and mixtures thereof; and combinations thereof. This is believed to be particularly useful in situations where the manufacturer wants to provide consumers with a sample product which is complementary to any product marketed within the container body. For example, in one embodiment, TIDE® liquid laundry detergent is stored within the container body and a BOUNCE® dryer sheet is provided within the distal compartment of the multi-compartment container cap. The two products can be complementary in terms of the desired end use and/or they can include complementary elements such as the same or a similar fragrance scent; the same or a similar perfume ingredient; the same or similar aesthetic appearance such as coloring or pearlescence; and combinations thereof. In another embodiment, the products marketed within the container body and the multi-compartment container cap are chosen to provide a synergistic benefit when used in parallel or in series. Those of skill in the art will understand that combinations of products can be used to provide a desired end user benefit such as overall scent experience, stain repellency, shine on hard surfaces, etc. In one embodiment, the container body and/or the distal compartment is empty such that a consumer can fill either compartment with any combination of objects or products they desire.

[0018] FIG. 2 further shows a multi-compartment container cap comprises a lid **400**, which is in a detached position. The lid can form a substantially water tight removable closure when sealed onto said distal end **300**, thereby removably sealing said distal compartment **310**. In one embodiment, the multi-compartment container cap, or any portion thereof can be translucent or transparent such that a consumer can see the interior contents. In one embodiment, the lid **400** is translucent or transparent. In another embodiment, the hollow-tubular body or a portion thereof is translucent or transparent.

[0019] FIG. 3 illustrates the upper portion of another opened container body **600** with a corresponding multi-compartment container cap **100** in accordance with at least one embodiment of the present invention. Partial cut-away **312** reveals that a granular composition **505** is located within the proximal compartment **310**. Further, in this embodiment, the multi-compartment container cap **100** is shown with the lid **400** removably attached upon the proximal opening. The lid shown in this embodiment comprises a plurality of ribs **410** adapted to allow a user to grip and turn the lid to remove it from the hollow tubular body **110**.

[0020] FIG. 4 illustrates a multi-compartment container

cap **100** in accordance with at least one embodiment of the present invention. The multi-compartment container cap shown in FIG. 4 is in an inverted position such that the proximal end **200** of said hollow tubular body **110** is in an upwards orientation such that a measured volume of liquid, gel, or granular composition **610** is collected in said proximal compartment of the multi-compartment container cap.

[0021] A dosing indicator **230** is provided on said hollow body **110** to allow the end user to determine the amount of composition which can be dosed into the proximal compartment. The dosing indicator shown in FIG. 4 is a visual indicator in the form of a fill line comprising a groove formed in at least a portion of the interior of the proximal compartment. Those of skill in the art will understand that one or more dosing indicators can be provided on the interior of the proximal compartment, for example where the composition stored within the container body is a fabric softener, the dosing indicator can include a first fill line for "Soft" a second fill line for "Extra Soft." Those of skill in the art will also understand that the dosing line can be positioned to allow the user to measure a predetermine amount of the composition depending upon the recommended dosage amount, for example from about 0.5 fl. oz. to about 5 fl. oz., alternatively from about 1 fl. oz. to about 3 fl. oz. In one embodiment, the dosing indicator comprises more than one fill line. In another embodiment, the dosing indicator comprises an indicia applied to the surface of the interior of the proximal compartment, such as ink or paint indicia; physical deformations to a portion of the interior of the proximal compartment, including protuberances and/or grooves applied to the interior of the proximal compartment; and combinations thereof. The dosing indicator can be applied to a portion of a ring around the interior of the proximal compartment, applied to a full ring around the interior of the proximal compartment, or combinations thereof.

[0022] A partial cut away **312** reveals a pouched article **500** contained within the distal compartment. The multi-compartment container cap of FIG. 4 is shown with the lid **400** in a detached position. In this embodiment, although the lid is not attached to the distal opening **300**, the composition stored within the distal compartment will not necessary fall out when the multi-compartment container cap is in an orientation where the distal end is facing downwards and the lid is not attached. In one embodiment, a removable freshness seal is provided (not shown in this embodiment) further sealing said distal opening **300**. In one embodiment, the removable freshness seal is a foil wrapper which restricts or prevents air from passing into the distal compartment. In one embodiment, the removable freshness seal hermetically seals the interior of the distal compartment from the ambient environment.

[0023] In one embodiment, the composition contained within the distal compartment comprises: a granular composition, a pouched article, a substrate, tabletted products, such as molded products like vitamins or laundry/dish washing detergent tablets; and combinations there-

of. In one embodiment, the distal compartment contains one or more compositions wherein the compositions can be the same form having the same or different variants (such as a plurality of pouched articles with varying scents or colors) or have the same form and be the same variant. In one embodiment, where the distal compartment comprises a pouched article, the pouched article comprises a water-soluble or partially soluble film material such as polyvinyl alcohol or a derivative thereof. In another embodiment, the pouched article comprises a single compartment pouch, a dual compartment pouch, or a multi-compartment pouch, wherein said pouched articles are adapted to store a liquid composition, a granular composition, a gelled composition, and mixtures or combinations thereof. Examples of suitable pouched articles and suitable water-soluble films for use therein are provided in U.S. Patent Application No. U.S. Patent Nos. 6,881,713 to Sommerville-Roberts et al., 6,815,410 to Boutique et al., and 7,125,828 to Catlin et al. Where the composition contained within the distal compartment is a substrate, the substrate can be in the form of folded sheets or a roll of sheets as shown in FIG. 16.

[0024] FIG. 5 illustrates another multi-compartment container cap in accordance with at least one embodiment of the present invention. Those of skill in the art will recognize that the lid **400** of FIG. 5 is adapted to form a removable seal with said distal compartment **310** at the distal opening **320**. In one embodiment, the lid forms a substantially water tight seal with said distal opening **320**. The lid of FIG. 5 comprises one or more attachment members **455** which are adapted to fit with one or more receiving members **355** from said distal compartment. In one embodiment, said one or more attachment members are designed such that the lid is a screw-on lid, such as a partial turn lid, a quarter turn or half turn lid. In another embodiment, the attachment members of the lid are a full thread such that the lid is a screw-on lid which can require one or more full revolutions. In another embodiment, the lid is a snap on lid, where said one or more attachment members of said lid and said receiving members of said hollow body **110** can be either ball and socket or tongue and groove fitments such that the lid can be snapped onto the hollow body to form a closure around the distal opening. In another embodiment, the lid comprises both screw-on and snap-on receiving members. Those of skill in the art will understand that the container attachment member **255** can similarly be selected such that the multi-compartment container cap is either a screw-on cap, a snap-on cap, or a combination thereof.

[0025] In the embodiment illustrated in FIG. 5, the lid **400** comprises a gripping member **410** formed on the outer surface of the lid. In one embodiment, the gripping member is selected from the group consisting of one or more vertical ribs; one or more horizontal ribs, and combinations thereof.

[0026] FIG. 6 illustrates a top view of the lid **400** shown in FIG. 5. As shown in this figure, the gripping member **400** includes both a plurality of vertical ribs **411** and a

horizontal rib **412**. Those of skill will understand that vertical ribs are particularly useful for screw-on lids, whereas horizontal ribs are particularly useful for snap-on lids.

[0027] FIG. 7 illustrates a side view of the multi-compartment container cap **100** with the lid **400** removably attached onto the distal opening.

[0028] FIG. 8 illustrates a side view of the multi-compartment container cap **100** shown in FIG. 5 with dashed lines showing some interior features of said multi-compartment container cap. A dividing wall **150** is provided to separate said hollow tubular body into a proximal compartment **210** and a distal compartment **310**.

[0029] FIG. 9 illustrates an elevated side view of a multi-compartment container cap **100** in accordance with another embodiment of the present invention. The lid **401** comprises a hinged flip top lid wherein the surface of said flip top lid forms an opening which is hingedly closable from a hinged flap **420** which can be swung open to reveal the interior contents of the distal compartment. Those of skill in the art will understand that the amount of the lid surface which is occupied by said flip top opening can be varied based on the desired access area desired. In one embodiment the lid **400** forms an access area of from about 10 % to about 80 % of the planar area of said lid; alternatively from about 30 % to about 70 %, alternatively from about 40 % to about 60 %. As defined herein, the lid area means the planar area occupied by the outer perimeter of the lid of the present invention if the outer perimeter were superimposed on a flat surface.

[0030] FIG. 10 illustrates another elevated side view of the multi-compartment container cap **100** shown in FIG. 9. In this view, the hinged flip top lid **401** is removed from the multi-compartment container cap, revealing the dividing wall **150**. The hinged flip top lid can also be a screw-on lid and/or a snap-fit lid to allow the hinged flip top lid to form a removable seal with said hollow tubular body **110** at the location of the distal opening.

[0031] FIG. 11 illustrates a side view of the multi-compartment container cap **100** shown in FIG. 9. The hinged flap **420** is in a partially open position.

[0032] FIG. 12 illustrates a side view of the multi-compartment container cap **100** shown in FIG. 9 with dashed lines showing some interior features of said multi-compartment container cap. Dividing wall **150** separates the hollow tubular body **110** into the proximal compartment **210** and the distal compartment **310**.

[0033] FIG. 13 illustrates an elevated side view of a multi-compartment container cap **110** in accordance with yet another embodiment of the present invention. FIG. 13 shows an embodiment of the present invention wherein at least one of said lid **402** and said hollow tubular body **110** forming said distal compartment comprises a minor distal opening **430**. Lid **402** comprises at least one minor distal opening **430** providing an access path from the interior of the distal compartment to the environment external to the multi-compartment container cap. In addition, the hollow tubular body **110** forms another minor distal opening **330**. Said one or more minor distal open-

ings are adapted to allow a composition to be transferred from the distal chamber to the exterior of the multi-compartment container cap. The composition which is transferred can be a substrate or granular composition which can be released like salt from a salt shaker. In one embodiment, the minor distal opening comprises an opening size of from about 0.01 cm² to about 5 cm², alternatively from about 0.03 cm² to about 4 cm², alternatively from about 1 cm² to about 3 cm². In one embodiment, said minor distal opening is formed in a shape which facilitates the separation of sheets which can be in a roll contained within the distal compartment. In one embodiment, the shape of the minor distal opening is selected from the group consisting of: a tapered opening which is can be triangular or isosceles trapezoid; a rectangular opening; an X shape; a circle; or square. In another embodiment, the shape is tapered such that the cross section area of the minor distal opening facing the interior of the distal compartment is smaller than the cross sectional area of the opening facing the exterior of the multi-compartment container cap. These and other shapes which facilitate the distribution and tearing of substrates which can be in a roll with tear lines separating individual doses of the substrates are within the scope of the present invention.

[0034] FIG. 14 illustrates another elevated side view of the multi-compartment container cap **100**. Lid **402** comprises a minor distal opening which comprises an obstructing member **435**. In one embodiment, the obstructing member comprises a flexible membrane disposed over said minor distal opening, said flexible membrane having at least one aperture or cut in the membrane to allow a substrate to be drawn out of the distal compartment. In one embodiment, the flexible membrane comprises a silicone rubber membrane. Non-limiting examples of flexible membranes which can be used in accordance with the present invention are disclosed in U.S. Patent Nos. 5,989,469 to Dirr et al., 5,931,352 to Dirr et al., 5,897,033 to Hiroyuki Okawa et al., 4,728,006 to Drobish et al. Other obstructing members can be a hook or tooth which is extends into the center of the minor distal opening such that the obstructing member can catch any separation between passing sheets and allow the sheets to separate upon a user pulling on a dispensed sheet.

[0035] Those of ordinary skill will understand that any obstruction or flexible membranes which can allow a substrate to be drawn out of the interior of the distal compartment can be used with the minor distal opening in order to provide an obstruction to assist in separating any substrates within the distal compartment or to control the amount of any granular composition poured out of the distal compartment. As mentioned herein, the minor distal opening can be located on the lid as shown as **430** or on a portion of the hollow tubular body forming the distal opening as shown as **330**. As shown in FIG. 13, the minor distal opening **430** can be shaped to act as an obstructing member where the edges of the minor distal opening can catch a portion of the substrate allowing a

user to pull on the substrate dispensed through the minor distal opening and separate said dispensed substrate from any other substrates within the distal compartment.

[0036] The multi-compartment container cap **100** shown in FIG. 14 further comprises a removable freshness seal **360** applied over the distal opening. In one embodiment, the removable freshness seal is a foil wrapper which restricts or prevents air from passing into the distal compartment. Non-limiting examples of foil wrappers are commonly used in tennis ball containers and food containers. In one embodiment, the removable freshness seal hermetically seals the interior of the distal compartment from the ambient environment. In yet another embodiment, the lid itself provides a hermetic seal when initially releasably attached to said distal opening of the hollow tubular body. Forming a hermetic seal between the lid and the distal opening can be achieved by selecting a one or more attachment members **455** which are adapted to fit with one or more receiving members **355** from said distal compartment to form a hermetic seal. A non-limiting example of a suitable attachment member and receiving member systems is described in U.S. 5,511,680 to Kinne. This tamper evident system allows a consumer to know if the distal compartment had been accessed prior to purchase.

[0037] FIG. 15 illustrates a roll of substrates **510** which can be placed within the distal compartment for use in a multi-compartment container cap in accordance with the present invention. The free end **511** of the roll of substrates can be drawn through the one or more minor distal openings provided in accordance with the present invention. In addition, the roll of substrates can be used with any of the embodiments of the multi-compartment container cap shown in the figures provided, where the free end of the roll of substrates can be pulled either through the distal opening when the lid is removed, or through the access area of a hinged flip top lid. The roll of substrates **510** can be one continuous roll of substrates wherein a plurality of lines of weakness **517** is introduced. Examples of lines of weakness include tear lines, score lines or mini apertures along a portion of the substrate. Examples of these types of rolls of substrates with line of weakness are toilet paper and hand towels.

[0038] Non-limiting examples of suitable substrates which can be used in accordance with the present invention include thermoplastic films; fibrous substrates including woven and non-woven substrates; paper products including: tissues, hand towels; water-soluble and non-water soluble substrates; and so forth. Those of skill in the art will recognize that the substrate can be a carrier for cleaning, freshening, or fabric softening benefits, such as a dryer sheet or moist cleaning towelle. Non-limiting examples of suitable substrates for use herein are described in: U.S. Patent Publ. No. 2008/0014393 A1 to Denome et al.; U.S. Patent Nos. 5,173,200 to Kellett et al., 5,425, 887 to Lam et al., 5,593,508 to Gatt et al., 6,025,321 to Smith et al., and 6,716,805 to Sherry et al.

[0039] It should be understood that every maximum

numerical limitation given throughout this specification includes every lower numerical limitation, as if such lower numerical limitations were expressly written herein. Every minimum numerical limitation given throughout this specification includes every higher numerical limitation, as if such higher numerical limitations were expressly written herein. Every numerical range given throughout this specification includes every narrower numerical range that falls within such broader numerical range, as if such narrower numerical ranges were all expressly written herein.

[0040] All parts, ratios, and percentages herein, in the Specification, Examples, and Claims, are by weight and all numerical limits are used with the normal degree of accuracy afforded by the art, unless otherwise specified.

[0041] The dimensions and values disclosed herein are not to be understood as being strictly limited to the exact numerical values recited. Instead, unless otherwise specified, each such dimension is intended to mean both the recited value and a functionally equivalent range surrounding that value. For example, a dimension disclosed as "40 mm" is intended to mean "about 40 mm".

[0042] Except as otherwise noted, the articles "a," "an," and "the" mean "one or more."

[0043] All documents cited in the Detailed Description of the Invention are, in relevant part, incorporated herein by reference; the citation of any document is not to be construed as an admission that it is prior art with respect to the present invention. To the extent that any meaning or definition of a term in this document conflicts with any meaning or definition of the same term in a document incorporated by reference, the meaning or definition assigned to that term in this document shall govern.

[0044] While particular embodiments of the present invention have been illustrated and described, it would be obvious to those skilled in the art that various other changes and modifications can be made without departing from the spirit and scope of the invention. It is therefore intended to cover in the appended claims all such changes and modifications that are within the scope of this invention.

Claims

1. A multi-compartment container cap comprising:

a. a hollow tubular body comprising:

- i. a proximal end;
- ii. a distal end;
- iii. an axial dimension extending through said hollow tubular body from said proximal end to said distal end; and
- iv. a dividing wall positioned within said hollow tubular body, said dividing wall separating said hollow tubular body into a proximal compartment and a distal compartment,

- wherein said axial dimension is transverse to said dividing wall,
wherein said proximal compartment comprises a proximal opening at said proximal end, and
wherein said distal compartment comprises a distal opening at said distal end.
2. The multi-compartment container cap of claim 1, wherein said axial dimension is substantially perpendicular to said dividing wall.
 3. The multi-compartment container cap of claim 1, wherein said multi-compartment container cap is selected from the group consisting of a screw-on cap, a snap-on cap, and a combination thereof.
 4. The multi-compartment container cap of claim 1, wherein said proximal compartment comprises a dosing indicator on the interior of said proximal compartment.
 5. The multi-compartment container cap of claim 1, wherein said distal compartment comprises a lid removably sealing said distal opening.
 6. The multi-compartment container cap of claim 5, wherein said lid forms a substantially water tight seal with said distal opening.
 7. The multi-compartment container cap of claim 5, further comprising a removable freshness seal hermetically sealing said distal opening.
 8. The multi-compartment container cap of claim 5, wherein said distal opening comprises an opening size of from about 5 cm² to about 200 cm².
 9. The multi-compartment container cap of claim 5, wherein said lid is selected from the group consisting of a screw-on lid, a snap-on lid, and a combination thereof.
 10. The multi-compartment container cap of claim 9, wherein said lid comprises a gripping member selected from the group consisting of: one or more vertical ribs; one or more horizontal ribs; and a combination thereof.
 11. The multi-compartment container cap of claim 5, wherein said lid further comprises a hinged flip top lid.
 12. The multi-compartment container cap of claim 5, wherein at least one of said lid and said hollow tubular body forming said distal compartment comprises a minor distal opening.
 13. The multi-compartment container cap of claim 12, wherein said lid forms said minor distal opening.
 14. The multi-compartment container cap of claim 12, wherein said minor distal opening comprises an opening size of from about 0.01 cm² to about 5 cm².
 15. The multi-compartment container cap of claim 12, wherein said minor distal opening comprises an obstructing member.
 16. The multi-compartment container cap of claim 15, wherein said obstructing member comprises a flexible membrane.
 17. The multi-compartment container cap of claim 12, further comprising at least one substrate contained within said distal compartment.
 18. The multi-compartment container cap of claim 1, wherein said distal compartment contains a composition selected from the group consisting of: a substrate; a granular composition; a pouched article; a tabletted article; and combinations thereof.
 19. A kit comprising:
 - a. one or more of a multi-compartment container cap comprising:
 - i. a hollow tubular body comprising:
 1. a proximal end;
 2. a distal end;
 3. an axial dimension extending through said hollow tubular body from said proximal end to said distal end; and
 4. a dividing wall positioned within said hollow tubular body, said dividing wall separating said hollow tubular body into a proximal compartment and a distal compartment,

wherein said axial dimension is transverse to said dividing wall,
wherein said proximal compartment comprises a proximal opening at said proximal end, and
wherein said distal compartment comprises a distal opening at said distal end; and
 - b. a container body comprising a reservoir and a neck operably connected to said reservoir, wherein said proximal compartment of said one or more of said multi-compartment container caps are adapted to be removably attached to said neck.
 20. The kit of claim 19, wherein distal compartment of said multi-compartment container cap contains a composition selected from the group consisting of:

a substrate; a granular composition; a pouched article; a tabletted article; and combinations thereof.

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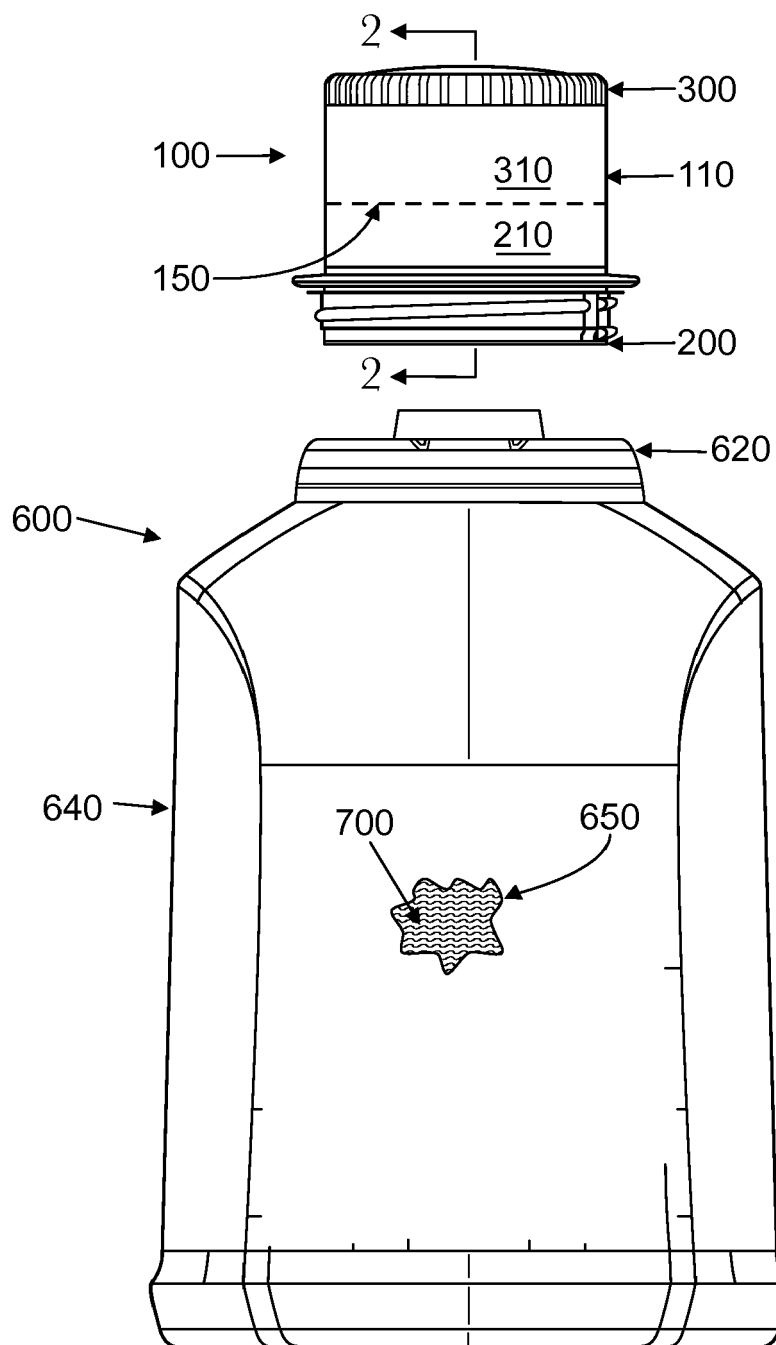


Fig. 1

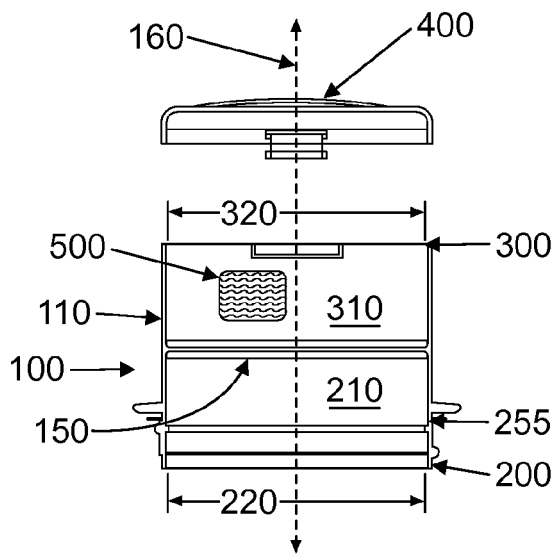


Fig. 2

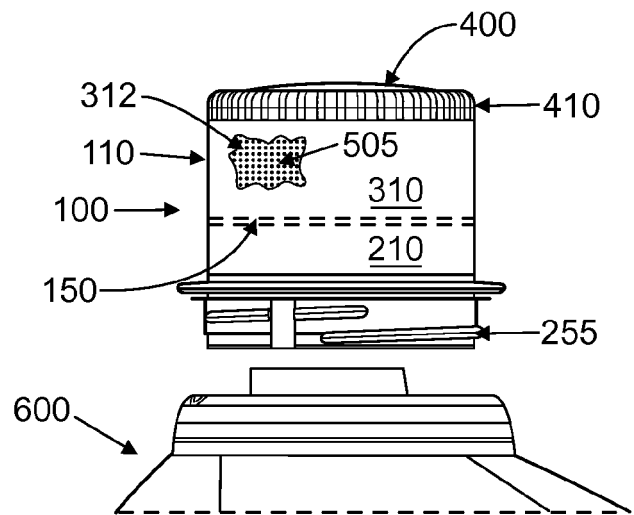


Fig. 3

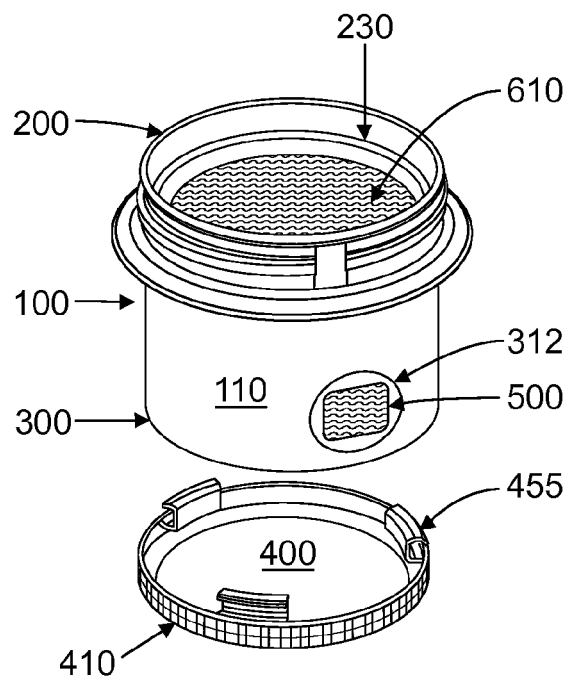


Fig. 4

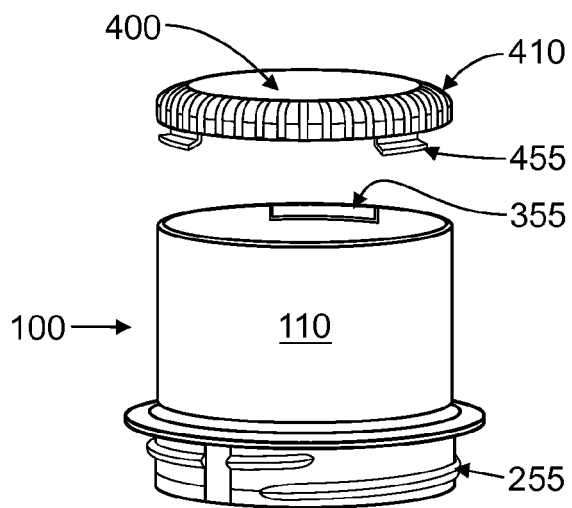


Fig. 5

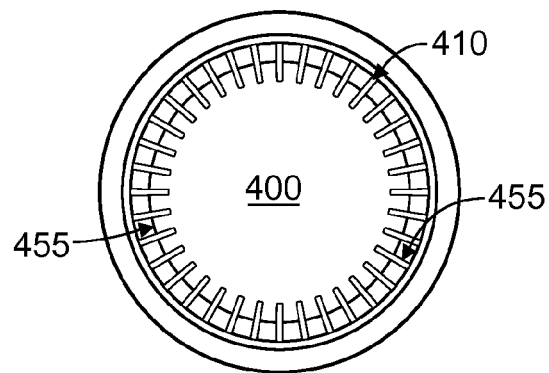


Fig. 6

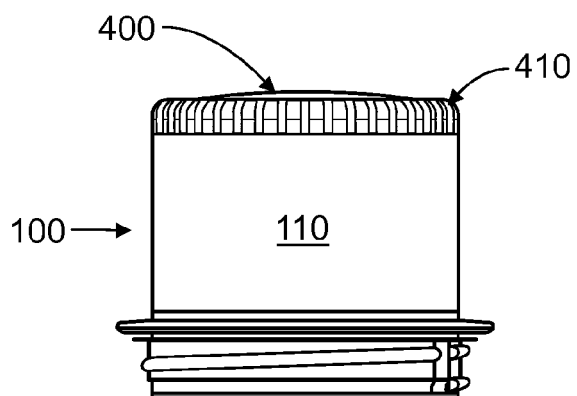


Fig. 7

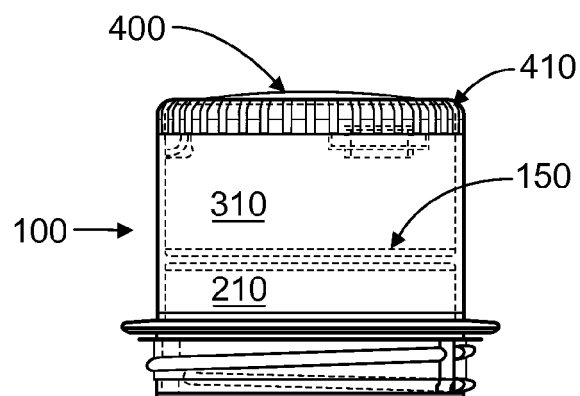


Fig. 8

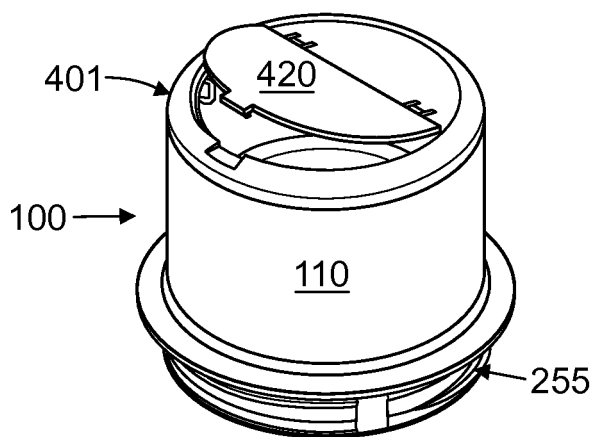


Fig. 9

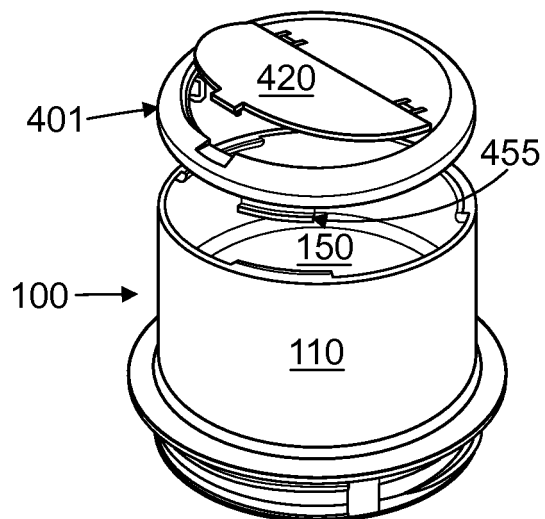


Fig. 10

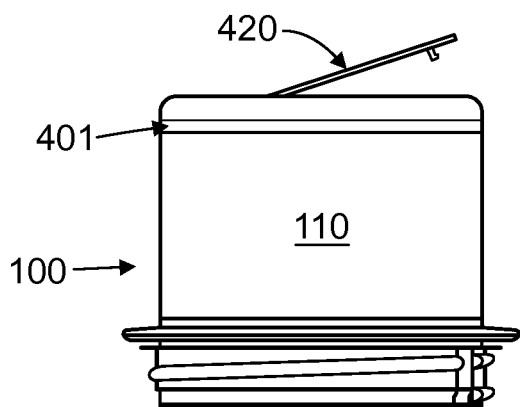


Fig. 11

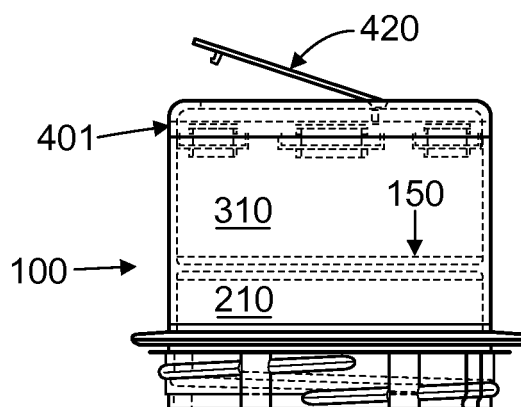


Fig. 12

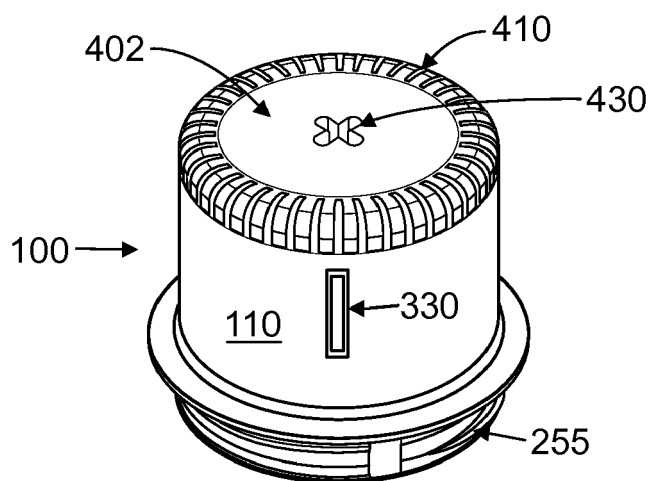


Fig. 13

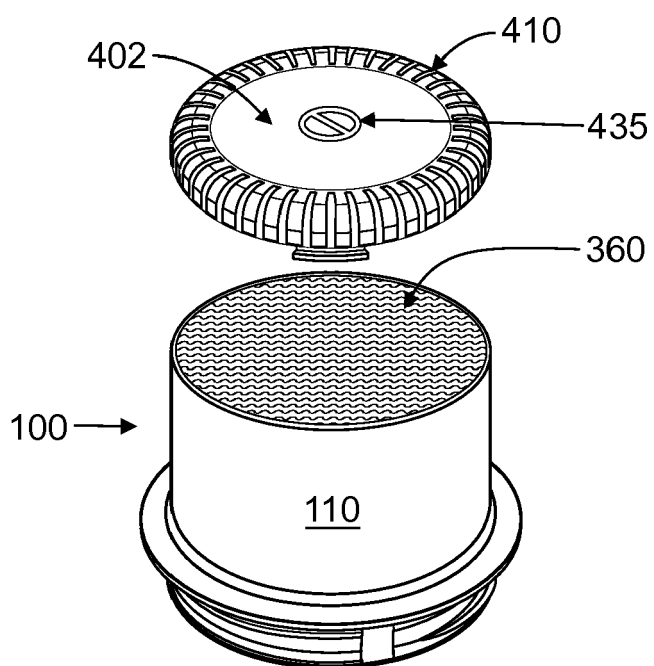


Fig. 14

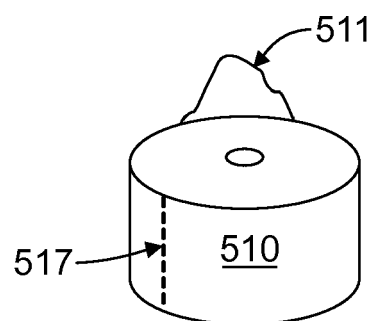


Fig. 15



EUROPEAN SEARCH REPORT

Application Number
EP 09 16 0992

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The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 13 August 2009	Examiner Dederichs, August
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