

DRINK CONTAINERS WITH CLOSURE STORAGE MECHANISMS

FIELD

The present disclosure relates to drink containers, and more particularly to portable drink containers with at least an open drink spout that is selectively sealed by a closure.

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BACKGROUND

For some time, people have recognized the need to stay hydrated. Conventionally, many individuals carry drink containers that hold water or other potable beverages. These drink containers typically include a bottle that is formed from plastic or metal. These containers also frequently include a cap, which is removably secured to a neck or other opening of the bottle.

10 Some bottles include a threaded or other neck from which a user drinks liquid contained in the bottle after removal of the cap. In some conventional drink containers, the cap is tethered to the bottle so that upon removal of the cap, the cap does not become lost, misplaced, or otherwise separated from the bottle. Illustrative, non-exclusive examples of such drink containers include a threaded cap that is tethered to the neck of the container. Some conventional drink containers

15 include a drink spout, or nozzle, that is integral with the cap and from which liquid may be drawn from the drink bottle without removal of the cap from the bottle. Illustrative, non-exclusive examples of such drink containers include squeezable drink containers with push-pull drink spouts and CAMELBAK® brand drink containers with bite-actuated mouthpieces.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a schematic diagram representing illustrative, non-exclusive examples of drink containers with closure storage mechanisms according to the present disclosure.

Fig. 2 is a fragmentary schematic diagram representing illustrative, non-exclusive
5 examples of cap assemblies with closure storage mechanisms according to the present disclosure.

Fig. 3 is a schematic diagram representing additional illustrative, non-exclusive examples of cap assemblies according to the present disclosure.

Fig. 4 is an isometric view of an illustrative, non-exclusive example of a drink container according to the present disclosure.

10 Fig. 5 is an isometric view of the cap assembly and the tether of the drink container of Fig. 4, with the closure in a closed position.

Fig. 6 is a side view of the cap assembly and the tether of the drink container of Fig. 4, with the closure in a closed position.

Fig. 7 is a top view of the cap assembly and the tether of the drink container of Fig. 4,
15 with the closure in the closed position.

Fig. 8 is an isometric view of the cap assembly of the drink container of Fig. 4, with the closure in a closed position and with the tether removed.

Fig. 9 is a plan view of the closure retention structure of the cap assembly of the drink container of Fig. 4.

20 Fig. 10 is a plan view of the tether of the drink container of Fig. 4.

Fig. 11 is an isometric view of the cap assembly and the tether of the drink container of Fig. 4, with the closure in the stowed position.

Fig. 12 is a side view of the cap assembly and the tether of the drink container of Fig. 4, with the closure in the stowed position.

Fig. 13 is a top view of the cap assembly and the tether of the drink container of Fig. 4, with the closure in the stowed position.

5 Fig. 14 is a fragmentary cross-sectional side view of the drink container of Fig. 4, with a user's finger engaged with the handle of the cap assembly.

Fig. 15 is a schematic side view illustrating a user consuming liquid from a drink container according to the present disclosure.

10 Fig. 16 is photograph of an illustrative, non-exclusive example of a drink container according to the present disclosure.

DESCRIPTION

Drink containers with closure storage mechanisms according to the present disclosure are schematically illustrated in Fig. 1 and are indicated generally at 10. Drink containers 10 according to the present disclosure are designed to receive and selectively dispense to a user a volume of potable drink liquid. Illustrative, non-exclusive examples of drink liquids that may be used in drink containers 10 according to the present disclosure include such potable liquids as water, juice, sports drinks, milk, soft drinks, and the like. Drink containers 10 include at least a liquid container 12 and a cap assembly 14, with the cap assembly including at least a base 16, a drink spout 18, and a closure 20. As discussed in more detail herein, the cap assembly further includes a closure storage mechanism that is configured to releasably receive and retain the closure when the closure is not being used to seal or otherwise obstruct the drink spout.

Liquid containers 12 according to the present disclosure are adapted to receive and hold or otherwise contain up to a predetermined volume of drink liquid 22 for selective consumption by a user. Liquid containers 12 may include an open neck 24, through which drink liquid may be selectively poured, or otherwise dispensed, into an internal compartment 26 of the liquid container, and from which the drink liquid may be selectively dispensed from the internal compartment to a user, such as when the cap assembly is not secured to the neck and/or when the drink spout is not sealed or otherwise obstructed by the closure. It is within the scope of the present disclosure that neck 24 may (but is not required in all embodiments to) define the only opening through which drink liquid may be added to or removed from the liquid container. As discussed in more detail herein, when cap assembly 14 is operatively coupled to the liquid container, this selective dispensing of the drink liquid may be through the drink spout 18 of the cap assembly when the closure 20 is selectively removed from the drink spout. As used herein,

“selective” and “selectively,” when modifying an action, movement, configuration, or other activity of one or more components or characteristics of a drink container according to the present disclosure, means that the specified action, movement, configuration, or other activity is a direct or indirect result of user manipulation of an aspect of, or one or more components of, the
5 drink container.

Liquid containers 12 may have any suitable shape and may be formed from any suitable material or combination of materials to hold up to a predetermined volume of drink liquid. Illustrative, non-exclusive examples of suitable sizes, or capacities, of liquid containers 12 (i.e., volume of drink liquid 22 able to be received into a liquid container at one time) include 4 oz.,
10 6 oz., 8 oz., 10 oz., 12 oz., 16 oz., 20 oz., 24 oz., 32 oz., 36 oz., 4–11 oz., 12–19 oz., 19–25 oz., 12–36 oz., 25–36 oz., and 10–70 oz. (with these illustrative, non-exclusive examples referring to liquid (fluid) ounces of drink liquid that may be received at one time into an empty liquid container). It is within the scope of the present disclosure that liquid containers having different sizes, including sizes that are smaller than, larger than, or within the illustrative sizes and/or
15 ranges presented above, may be used without departing from the scope of the present disclosure.

An illustrative, non-exclusive example of a material that may be used to construct liquid containers 12 according to the present disclosure includes the TRITAN™ copolyester polymer developed by Eastman Chemical Company. Other illustrative, non-exclusive examples of materials that may be suitable for construction of liquid containers according to the present
20 disclosure include polycarbonate, glass, and metal, such as aluminum or stainless steel. Further illustrative, non-exclusive examples are disclosed in U.S. Patent Application Publication No. 2006/0226110, the disclosure of which is incorporated herein by reference.

Liquid containers 12 may be (but are not required to be) rigid or at least semi-rigid and may include a bottom surface 28 such that a liquid container may be generally self-supporting, or free-standing when placed on a horizontal surface. In such embodiments, drink containers 10 may be referred to as drink bottles. In some illustrative, non-exclusive embodiments, a liquid
5 container 12 according to the present disclosure may be constructed of polyethylene or other material that permits the liquid container to be reversibly collapsed during use. Such an illustrative, non-exclusive example may permit opposing portions of the liquid container to be squeezed and/or otherwise urged toward, or even into contact with, each other to reduce the volume of the liquid container and thereby aid in the dispensing of drink liquid 22 therefrom. In
10 such an embodiment, the liquid container may be configured to return automatically to its prior configuration upon reduction of the pressure that was applied to urge the sides of the liquid container toward each other.

Cap assemblies 14 according to the present disclosure may be adapted to be removably coupled to a liquid container 12 to cover, or otherwise enclose, the neck 24 thereof. When so
15 coupled to a liquid container, a cap assembly 14 restricts drink liquid within the liquid container's internal compartment 26 from being dispensed from the drink container other than through the drink spout 18. When the drink spout is obstructed or otherwise closed or sealed by the closure 20, the cap assembly prevents drink liquid from being dispensed from the liquid container. Accordingly, any drink liquid in the internal compartment of the liquid container is
20 prevented from being dispensed to a user or otherwise removed from the liquid container until either the cap assembly is uncoupled from the liquid container or until the closure is removed from the drink spout.

Although not required in all embodiments, cap assembly 14 typically is removably coupled to liquid container 12, such as to neck 24 thereof, to permit selective and non-destructive removal and replacement (i.e., repeated uncoupling and recoupling) of the cap assembly relative to the liquid container. For example, cap assembly 14 may be uncoupled from the liquid container to permit the liquid container to receive a volume of drink liquid, after which the cap assembly may be recoupled to the liquid container. Accordingly, drink containers 10 according to the present disclosure may include a coupling assembly 30, with the liquid container 12 including coupling structure 32, and with the cap assembly 14 including coupling structure 34, which is adapted to selectively mate with coupling structure 32. In such an embodiment, neck 24 of the liquid container may include coupling structure 32, and base 16 of cap assembly 14 may include coupling structure 34. Coupling assembly 30 may provide a liquid-tight connection between the cap assembly and the liquid container. When such a connection is established between the cap assembly and the liquid container, the cap assembly may restrict liquid from being dispensed from the drink container other than through the drink spout 18. Illustrative, non-exclusive examples of coupling assembly 30 that may be incorporated into drink containers according to the present disclosure include (but are not limited to) threads, snap-fit arrangements, friction-fit arrangements, clasp arrangements, etc.

Drink spout 18 may take any suitable form and may be described as including or defining a passage 36 through which drink liquid from the internal compartment of the liquid container may be selectively dispensed from an inlet 38 to an outlet 40 of the drink spout.

As used herein, the inlet of the passage refers to the portion of the passage that is closest to the internal compartment of the drink container and into which drink liquid first passes from the internal compartment of the drink container, as the drink liquid is dispensed through the

passage. Similarly, the outlet of the passage refers to the portion of the passage that is farthest away from the internal compartment of the drink container and from which the drink liquid last passes from the internal compartment of the drink container as the drink liquid is dispensed from the passage.

5 The inlet and the outlet of the passage are separated by a distance, which also corresponds to the length of the passage. It is within the scope of the present disclosure that any suitable passage length may be used, such as lengths that are, or are similar to, the thickness of the material forming the upper surface of the cap assembly, as well as lengths that are 2, 3, 4, 5, 10, or more times this thickness. Additional illustrative, non-exclusive examples of suitable
10 thicknesses include thicknesses of at least 1 mm, 2 mm, 3 mm, 4 mm, 5 mm, 10 mm, 15 mm, 20 mm, 25 mm, 30 mm, 40 mm, 1-10 mm, 5-30 mm, or 10-50 mm. The passage may have any suitable size that is suitable for dispensing drink liquid from the drink container to a user's mouth. As illustrative, non-exclusive examples, the passage may have a cross-sectional area (measured in the plane of the inlet or outlet and/or transverse to the long axis of the passage) that
15 is at least 50 mm², 75 mm², 100 mm², 200 mm², 300 mm², 400 mm², 500 mm², 600 mm², 50-300 mm², 100-500 mm², or 250-750 mm².

 The drink spout may be defined by structure that is separate from the base such as schematically illustrated in Fig. 1 with a dashed line separating the drink spout from the base. Alternatively, the base and the drink spout may be defined by a unitary structure having a base
20 portion and a drink spout portion. In some embodiments, the drink spout may extend from the base of the cap assembly and may define structure that is configured to be received by a user's mouth. The drink spout may be cylindrical, generally cylindrical, elliptical, or may have any other suitable shape. Similarly, the outlet 40 to the drink spout may take any suitable shape and

form, such as ergonomic shapes that facilitate comfortable engagement with a user's mouth for drinking drink liquid from the drink container. As schematically optionally illustrated in dashed lines in Fig. 1, the outlet 40 in some embodiments may be angled relative to the drink spout (i.e., at an angle other than a right angle) to facilitate ergonomic drinking of drink liquid. By this it is meant that the outlet defines a plane that extends at an angle other than a right (90°) angle relative to the central, or longitudinal, axis of the drink spout.

Closure 20 is configured to be removably coupled relative to the drink spout in a closed position, with the closed position schematically illustrated in solid lines in Fig. 1. When in the closed position, the closure restricts dispensing of drink liquid through the passage of the drink spout. When closure 20 is removed from the drink spout, drink liquid is permitted to be dispensed through the drink spout. Stated differently, closure 20 may be uncoupled from the drink spout to permit dispensing of drink liquid from the liquid container through passage 36 of the drink spout, after which the closure may be recoupled to the drink spout to seal the passage of the drink spout. Accordingly, cap assemblies 14 according to the present disclosure may include a coupling assembly 42, with the base 16 and/or the drink spout 18 including coupling structure 44, and with the closure 20 including coupling structure 46, which is adapted to selectively mate with coupling structure 44. Coupling assembly 42 may provide a liquid-tight connection between the closure and the drink spout and/or the base. When such a connection is established between the closure and/or the base of the cap assembly, the closure may prevent liquid from being dispensed from the drink container through the drink spout. Illustrative, non-exclusive examples of coupling assembly 42 that may be incorporated into cap assemblies according to the present disclosure include (but are not limited to) threads, snap-fit arrangements, friction-fit arrangements, clasp arrangements, etc.

Although not required to all embodiments, some cap assemblies 14 according to the present disclosure additionally include a handle 50 that extends from the base 16 of the cap assembly. In Fig. 1, a handle is schematically illustrated as extending generally laterally from a side of the base of the cap assembly; however, it is within the scope of the present disclosure that an optional handle may extend from any portion of the base and at any angle relative to the base and/or relative to the drink spout. When present, handle 50 may, but is not required to, define a closed perimeter, or boundary, 52 through which a lanyard, carabiner, belt, strap, user's finger or fingers, or other structure may extend to hold and/or retain the drink container in a selected position or orientation. The closed perimeter may be defined entirely by the handle or may be defined by the handle and the base of the cap assembly. Regardless, the closed boundary refers to a closed perimeter around an opening through which an object may be inserted and optionally secured around at least a portion of the perimeter.

Fig. 2 provides a fragmentary plan view of an optional handle 50 relative to the base 16 of a cap assembly 14. As schematically illustrated by dashed lines in Fig. 2, the handle may be defined by structure that is separate from the base; however, it also is within the scope of the present disclosure that the base and the handle may be defined by a unitary structure having a base portion and a handle portion. In some embodiments, the handle may include and/or form a portion of a closure retention mechanism 54 that is configured to selectively retain the closure 20 in a stowed configuration, as schematically illustrated in dash-dot lines in Figs. 1–2, when the closure is selectively removed from the drink spout 18 and received by the closure retention mechanism. In other words, in some embodiments of drink containers 10 according to the present disclosure, the closure and/or the handle may be specifically designed and configured to permit a user to stow the closure relative to the handle after removal of the closure from the drink

spout. Such a configuration may be useful to prevent the closure from being lost, misplaced, or otherwise separated from the drink container while a user is consuming drink liquid therefrom through the drink spout. Additionally or alternatively, the handle may be described as providing a stowage for the closure to be selectively positioned and retained (i.e., stowed) during periods in which the closure is not operatively coupled to the drink spout to seal or otherwise obstruct the drink spout's passage.

The closure retention mechanism 54 may take any suitable form such that it is configured to operatively retain the closure in the stowed position at least temporarily until such time that a user selectively removes the closure from handle. As an illustrative, non-exclusive example, the closure retention mechanism may define at least a portion of the closed perimeter 52 of the handle, such that when the closure is positioned in the stowed position, the closure is positioned at least partially within the closed perimeter, as schematically represented in both of Figs. 1–2. In some such embodiments, the closure retention mechanism may be configured to retain the closure in the stowed position in a friction-fit arrangement and/or in a snap-fit arrangement. In some embodiments, the closure retention structure may include any suitable closure retention structure 55 configured to receive and selectively retain the closure. As an illustrative, non-exclusive example, the closure retention structure may include at least a pair of opposed tabs 56 that are configured to selectively engage and retain, or otherwise grip, the closure in the stowed position, as schematically and optionally illustrated in Fig. 2. Such optional opposed tabs may be described as extending from the closed perimeter and/or may be described as defining a portion of the closed perimeter. When present, the opposed tabs may be integral to the handle, or otherwise define a unitary structure with the handle; however, it also is within the scope of the present disclosure that the tabs may be separate structure that is not formed as a unitary structure

with the body of the handle. In some such embodiments, the opposed tabs may be integral to each other. As an illustrative, non-exclusive example, the closure retention mechanism (and/or the closure retention structure thereof) may include a web or other structure that interconnects the tabs, and in some embodiments that defines a portion of the closed perimeter of the handle.

5 The number, size, shape, dimension, and/or relative spacing and/or positioning of tabs 56 and/or other closure retention structures 55 may vary without departing from the scope of the present disclosure.

In some embodiments, the closure retention structure may include and/or be constructed of a resiliently compressible material, such that the closure retention structure is configured to
10 selectively compress when the closure is being positioned into the stowed position and to thereby selectively retain the closure in the stowed position, such as by an internal bias, or spring, force created by the closure retention structure. Such a configuration additionally or alternatively may be described as providing a friction-fit arrangement between the closure and the handle.

Additionally or alternatively, in embodiments of closure retention mechanisms 54 that
15 include opposed tabs 56, the closure 20 may be described as having a circumference with a lateral dimension that is greater than a dimension between the opposed tabs. Stated differently, the opposed tabs may be spaced-apart by less than the lateral dimension of the closure. In other words, at least one cross-section of the closure may have a maximum width that is greater than the distance between the opposed tabs, so that when the closure is positioned between the
20 opposed tabs, the opposed tabs engage the closure across the maximum width. In some embodiments, the closure may be generally circular in cross-section or profile, such as generally defining a cylindrical volume of space, and the lateral dimension of the closure that is engaged by the opposed tabs may correspond to a diameter of the closure.

Additionally or alternatively, the closure may define corresponding structure 58 that is configured to cooperate with, or otherwise engage, the closure retention mechanism 54, such as to cooperate with the optional opposed tabs 56 or other closure retention structure 55. As illustrative, non-exclusive examples, such corresponding structure 58 may include one or more of a depression, a channel, and/or a concave region that defines part of the outer surface of the closure and that is configured to cooperate with the closure retention mechanism (and/or closure retention structure thereof) to facilitate retention of the closure in the stowed position.

While Fig. 2 and the preceding discussion present examples of closure retention mechanisms 54 that are associated and/or operatively connected with the handle 50 of cap assembly 14, it is within the scope of the present disclosure that a cap assembly 14 may not include a handle 50 and/or that the cap assembly may include a closure retention mechanism 54 that is associated and/or operatively connected with the body and/or other exterior portion of the cap assembly (other than a handle). An illustrative, non-exclusive example of such a cap assembly 14 is schematically depicted in Fig. 3. As shown, cap assembly 14 includes an exterior surface 15 through which passage 36 of drink spout 18 extends. A closure retention mechanism 54 also is shown on, or operatively coupled to, upper surface 15. As illustrated, closure retention mechanism 54 includes a closure retention structure 55 in the form of three spaced apart tabs 56, although any of the closure retention structures and/or mechanisms disclosed and/or illustrated herein may be utilized. Also shown in Fig. 3 is an optional handle 50, which is separate and distinct from the closure retention mechanism and which further optionally may define (alone and/or with the base of the cap assembly) a closed perimeter 52.

Referring back to Fig. 1, some drink containers 10 according to the present disclosure further include a tether 60 that operatively couples the closure 20 to the one or both of the cap

assembly 14 and/or the liquid container 12. That is, in some embodiments, the optional tether directly couples the closure to the liquid container. In some embodiments, the optional tether directly couples the closure to the cap assembly. In some embodiments, the optional tether couples the closure to both of the liquid container and the cap assembly. For example, as
5 schematically illustrated in Fig. 1, when a drink container 10 includes a handle 50 that defines a closed perimeter 52, the tether may extend through the closed perimeter from the closure to the liquid container. In some such embodiments where the closure is sized so as to not be permitted to pass through the closed perimeter of the handle, even when the closure is removed from the drink spout 18 and when the base 16 of the cap assembly is decoupled from the neck 24 of the
10 liquid container, the cap assembly 14 is retained on the tether, and thus is indirectly coupled to the liquid container. In other embodiments, the tether may extend through the closed perimeter from the closure to the base of the cap assembly. Other configurations of tethers also are within the scope of the present disclosure and may be incorporated into a drink container 10 according to the present disclosure.

15 In some embodiments, the optional tether is rotatably coupled to the closure, to the liquid container, and/or to the cap assembly. As an illustrative, non-exclusive example, in embodiments in which the tether is coupled to the liquid container, the tether may define a ring, or collar, that operatively extends around the neck of the liquid container. In some such embodiments, the collar may be retained on the liquid container by structure associated with the coupling structure
20 32, such as threads. Additionally or alternatively, the liquid container may define a circumferential channel around or adjacent to the neck of the liquid container, within which the collar of the tether is operatively positioned. Similar structure may be used to operatively and rotatably couple the tether to the closure and/or to the cap assembly. Optional tethers 60

according to the present disclosure may be configured in any suitable manner from any suitable material and typically include at least a flexible body 62 that extends between the closure and the liquid container and/or the base of the cap assembly.

Also within the scope of the present disclosure are cap assemblies 14 that are provided without an associated liquid container. For example, a cap assembly may be provided as a replacement and/or alternative cap assembly for a liquid container. Additionally or alternatively, a cap assembly may be configured to be used with a generic liquid container that is not necessarily specifically configured, sold, and/or intended to be used with a cap assembly 14 according to the present disclosure. In some embodiments of cap assemblies, an optional tether may be described as a component of the cap assembly.

Turning now to Figs. 4–16, illustrative non-exclusive examples of drink containers 10 and component parts thereof are illustrated. Where appropriate, the reference numerals from the schematic illustrations of Figs. 1–3 are used to designate corresponding parts; however, the examples of Figs. 4–16 are non-exclusive and do not limit drink containers 10 to the illustrated embodiments of Figs. 4–16. That is, drink containers 10 are not limited to the specific embodiments illustrated in Figs. 4–16, and drink containers according to the present disclosure may incorporate any number of the various aspects, configurations, characteristics, properties, etc. that are illustrated in and discussed with reference to the schematic representations of Figs. 1–3 and/or the embodiments of Figs. 4–16, as well as variations thereof, without requiring the inclusion of all such aspects, configurations, characteristics, properties, etc. For the purpose of brevity, each previously discussed component, part, portion, aspect, region, etc. or variants thereof may not be discussed, illustrated, and/or labeled again with respect to the examples of

Figs. 4–16; however, it is within the scope of the present disclosure that the previously discussed features, variants, etc. may be utilized with such examples, or variations thereon.

Fig. 4 presents an illustrative, non-exclusive example of a drink container 10, identified generally at 100, and Figs. 5–14 presents various views of component parts thereof, including a cap assembly 14 indicated generally at 102 and a tether 60 indicated generally at 104. That is, drink container 100 is an example of a drink container 10 that includes a liquid container 10, a cap assembly 14, and a tether 60.

Cap assembly 102 includes a base 16 and a handle 50 that defines a closed perimeter 52. The tether 104 is operatively coupled to the closure 20 and extends through the closed perimeter of the handle to be operatively coupled to the neck of the liquid container, as seen in Fig. 4. While Figs. 5–7 and 12–13 illustrate the cap assembly and the tether without the liquid container, it should be understood that these Figures show the position of the tether relative to the base of the cap assembly as if the tether were operatively coupled to an associated liquid container.

The handle of cap assembly 102 includes a closure retention mechanism 54 that includes closure retention structure 55 in the form of opposed tabs 56. As separately illustrated in Fig. 9, opposed tabs of the closure retention mechanism of cap assembly 102 are interconnected by a web 108. As schematically represented by the dashed circle in Fig. 9, the closure 20 of cap assembly 102 is circular in cross-section and has a diameter that is greater than the distance between the opposed tabs 56, at least when the closure is not operatively positioned in the stowed position. Accordingly, the tabs are configured to compress upon selective insertion of the closure between the tabs and to grip the closure to retain it in the stowed configuration, as illustrated in Figs. 11–13. The closure 20 of cap assembly 102 includes structure 58 in the form

of opposed depressions, as seen in Figs. 5–8 and 10–13, that are configured to cooperate with the compressible tabs of the closure retention structure.

As seen with collective reference to Figs. 10 and 14, tether 104 of drink container 100 includes a tether body 62, a closure collar 110 that extends around a channel 112 defined by the closure, and a neck collar 114 that extends around a channel 116 defined by the neck of the liquid container. As best seen in Fig. 10, the tether body includes a pair of webs 118 interconnecting the closure collar and the neck collar. The closure collar and the neck collar are constructed of a relatively hard, or rigid, plastic, while the tether body and the webs thereof are constructed of a relatively flexible elastomer that is over-molded over the collars. As a result, the hard plastic of the collars facilitates rotation, or spinning, of the collars relative to the neck and the closure, respectively.

Referring to Figs. 5–7, the webs of the tether body engage opposed lateral sides of the closed perimeter of the handle when the closure is in its closed position relative to the drink spout.

As best seen in Fig. 12, the drink spout of cap assembly 102 is an example of a drink spout 20 that includes an outlet 40 that is angled relative to the drink spout at an angle other than a right angle. Such a configuration permits for ergonomic drinking of drink liquid, as illustrated in Fig. 15. As also illustrated in Fig. 15, the angle of the handle relative to the base of cap assembly 102 facilitates ergonomic drinking of drink liquid without the handle (and/or the handle with the closure in its stowed position) engaging the user's face or even blocking a significant portion of the user's line of sight while consuming drink liquid.

As seen in Fig. 14, the closed perimeter of the handle of cap assembly 102 is sized to receive a user's finger or fingers for carrying the drink container 100, at least when the closure is in its closed position on the drink spout.

Fig. 16 illustrates another illustrative, non-exclusive example of a drink container 10, generally indicated at 200. Drink container 200 is constructed similarly to drink container 100.

Illustrative, non-exclusive examples of drink containers and cap assemblies according to the present disclosure are described in the following enumerated paragraphs:

A. A drink container, comprising:

a liquid container having a neck with an opening and having an internal compartment sized to hold a volume of potable drink liquid; and

a cap assembly removably coupled to the liquid container, the cap assembly comprising:

a base removably coupled to the neck of the liquid container;

a drink spout extending from the base and defining a passage through which drink liquid from the internal compartment of the liquid container may be selectively dispensed; and

a closure configured to be removably coupled relative to the drink spout in a closed position to selectively restrict dispensing of liquid through the passage and to selectively permit dispensing of liquid through the passage when removed from the drink spout.

A1. The drink container of paragraph A, wherein the cap assembly further comprises a closure retention mechanism configured to selectively retain the closure in a stowed position relative to the base when the closure is selectively removed from the drink spout and received by the closure retention mechanism.

A1.1 The drink container of paragraph A1, wherein the closure retention mechanism is configured to retain the closure in the stowed configuration in a friction-fit arrangement and/or a snap-fit arrangement.

5 A1.2 The drink container of any of paragraphs A1–A1.1, wherein the closure retention mechanism includes opposed tabs configured to grip the closure in the stowed position.

A1.3 The drink container of any of paragraphs A1–A1.2, wherein the closure retention mechanism is constructed of a resiliently compressible material, and wherein the closure retention mechanism is configured to selectively compress when the closure is entering the stowed position and to selectively retain the closure in the stowed configuration.

10 A1.4 The drink container of any of paragraphs A1–A1.3, wherein the closure has a circumference with a lateral dimension, wherein the closure retention mechanism includes opposed tabs spaced-apart by less than the lateral dimension of the closure.

15 A1.5 The drink container of any of paragraphs A1–A1.4, wherein the closure is generally circular, and optionally when depending from paragraph A1.4 wherein the lateral dimension is a diameter of the closure.

A1.6 The drink container of any of paragraphs A1–A1.5, wherein the closure defines one or more of a depression, a channel, and/or a concave region defined on an outer surface of the closure and configured to cooperate with the closure retention mechanism when the closure is in the stowed position.

20 A2. The drink container of paragraph A, wherein the cap assembly further comprises:
a handle extending from the base, wherein the handle includes a closure retention mechanism configured to selectively retain the closure in a stowed position relative to the handle

when the closure is selectively removed from the drink spout and received by the closure retention mechanism.

A2.1. The drink container of paragraph A2, wherein the handle (optionally collectively with the base) defines a closed perimeter.

5 A2.1.1 The drink container of paragraph A2.1, wherein the closure retention mechanism defines at least a portion of the closed perimeter, and wherein in the stowed position, the closure is positioned at least partially within the closed perimeter.

10 A2.2. The drink container of any of paragraphs A2–A2.1.1, wherein the closure retention mechanism is configured to retain the closure in the stowed configuration in a friction-fit arrangement and/or a snap-fit arrangement.

A2.3. The drink container of any of paragraphs A2–A2.2, wherein the closure retention mechanism includes opposed tabs configured to grip the closure in the stowed position.

15 A2.4. The drink container of any of paragraphs A2–A2.3, wherein the closure retention mechanism is constructed of a resiliently compressible material, and wherein the closure retention mechanism is configured to selectively compress when the closure is entering the stowed position and to selectively retain the closure in the stowed configuration.

A2.5. The drink container of any of paragraphs A–A2.4, wherein the closure has a circumference with a lateral dimension, wherein the closure retention structure includes opposed tabs spaced-apart by less than the lateral dimension of the closure.

20 A2.6. The drink container of any of paragraphs A2–A2.5, wherein the closure is generally circular, and optionally when depending from paragraph A2.5 wherein the lateral dimension is a diameter of the closure.

A2.7. The drink container of any of paragraphs A2–A2.6, wherein the closure defines one or more of a depression, a channel, and/or a concave region defined on an outer surface of the closure and configured to cooperate with the closure retention mechanism when the closure is in the stowed position.

5 A3. The drink container of any of paragraphs A–A2.7, further comprising:
a tether operatively coupling the closure to the cap assembly and/or the liquid container.

A3.1. The drink container of paragraph A3 when depending from paragraph A2.1, wherein the tether extends through the closed perimeter of the handle.

10 A3.2. The drink container of any of paragraphs A3–A3.1, wherein the tether is rotatably coupled to the closure.

A3.3. The drink container of any of paragraphs A3–A3.2, wherein the tether is rotatably coupled to the liquid container and/or the cap assembly.

A3.4. The drink container of any of paragraphs A3–A3.3, wherein the tether includes:
a tether body constructed of a relatively flexible material;
15 a closure collar constructed of a relatively rigid material, coupled to the tether body, and extending around and engaged with the closure; and

a neck collar constructed of the relatively rigid material, coupled to the tether body, and extending around and engaged with the base of the cap assembly or the neck of the liquid container.

20 A3.5. The drink container of any of paragraphs A3–A3.4, wherein the tether includes:
a closure collar extending around and engaged with the closure;
a neck collar extending around and engaged with the base of the cap assembly or the neck of the liquid container;

a pair of webs that interconnect the closure collar and the neck collar.

A3.5.1. The drink container of paragraph A3.5 when depending from paragraph A2.1, wherein the closed perimeter has opposed lateral sides, and wherein the pair of webs extend along, and optionally engage, the opposed lateral sides when the closure is in the closed position.

5 A3.6. The drink container of any of paragraphs A3–A3.5.1 when depending from paragraph A2.1, wherein the tether extends through the closed perimeter.

B. A cap assembly, comprising the cap assembly as described in any of paragraphs A–A3.6, separate from a liquid container, wherein the cap assembly is configured to be removably coupled to a liquid container.

10 As used herein, the term “and/or” placed between a first entity and a second entity means one of (1) the first entity, (2) the second entity, and (3) the first entity and the second entity. Multiple entities listed with “and/or” should be construed in the same manner, i.e., “one or more” of the entities so conjoined. Other entities may optionally be present other than the entities specifically identified by the “and/or” clause, whether related or unrelated to those entities
15 specifically identified. Thus, as a non-limiting example, a reference to “A and/or B,” when used in conjunction with open-ended language such as “comprising” may refer, in one embodiment, to A only (optionally including entities other than B); in another embodiment, to B only (optionally including entities other than A); in yet another embodiment, to both A and B (optionally including other entities). These entities may refer to elements, actions, structures, steps,
20 operations, values, and the like.

As used herein, the phrase “at least one,” in reference to a list of one or more entities should be understood to mean at least one entity selected from any one or more of the entity in the list of entities, but not necessarily including at least one of each and every entity specifically

listed within the list of entities and not excluding any combinations of entities in the list of entities. This definition also allows that entities may optionally be present other than the entities specifically identified within the list of entities to which the phrase “at least one” refers, whether related or unrelated to those entities specifically identified. Thus, as a non-limiting example, “at
5 least one of A and B” (or, equivalently, “at least one of A or B,” or, equivalently “at least one of A and/or B”) may refer, in one embodiment, to at least one, optionally including more than one, A, with no B present (and optionally including entities other than B); in another embodiment, to at least one, optionally including more than one, B, with no A present (and optionally including entities other than A); in yet another embodiment, to at least one, optionally including more than
10 one, A, and at least one, optionally including more than one, B (and optionally including other entities). In other words, the phrases “at least one,” “one or more,” and “and/or” are open-ended expressions that are both conjunctive and disjunctive in operation. For example, each of the expressions “at least one of A, B and C,” “at least one of A, B, or C,” “one or more of A, B, and C,” “one or more of A, B, or C” and “A, B, and/or C” may mean A alone, B alone, C alone, A
15 and B together, A and C together, B and C together, A, B and C together, and optionally any of the above in combination with at least one other entity.

As used herein the terms “adapted” and “configured” mean that the element, component, or other subject matter is designed and/or intended to perform a given function. Thus, the use of the terms “adapted” and “configured” should not be construed to mean that a given element,
20 component, or other subject matter is simply “capable of” performing a given function but that the element, component, and/or other subject matter is specifically selected, created, implemented, utilized, programmed, and/or designed for the purpose of performing the function. It is also within the scope of the present disclosure that elements, components, and/or other

recited subject matter that is recited as being adapted to perform a particular function may additionally or alternatively be described as being configured to perform that function, and vice versa.

5 The disclosure set forth above encompasses multiple distinct inventions with independent utility. While each of these inventions has been disclosed in a preferred form or method, the specific alternatives, embodiments, and/or methods thereof as disclosed and illustrated herein are not to be considered in a limiting sense, as numerous variations are possible. The present disclosure includes all novel and non-obvious combinations and subcombinations of the various elements, features, functions, properties, methods and/or steps disclosed herein. Similarly, where
10 any disclosure above or claim below recites “a” or “a first” element, step of a method, or the equivalent thereof, such disclosure or claim should be understood to include one or more such elements or steps, neither requiring nor excluding two or more such elements or steps.

Applicant reserves the right to submit claims directed to certain combinations and subcombinations that are directed to one of the disclosed inventions and are believed to be novel
15 and non-obvious. Inventions embodied in other combinations and subcombinations of features, functions, elements and/or properties may be claimed through amendment of those claims or presentation of new claims in that or a related application. Such amended or new claims, whether they are directed to a different invention or directed to the same invention, whether different, broader, narrower or equal in scope to the original claims, are also regarded as included within
20 the subject matter of the inventions of the present disclosure.

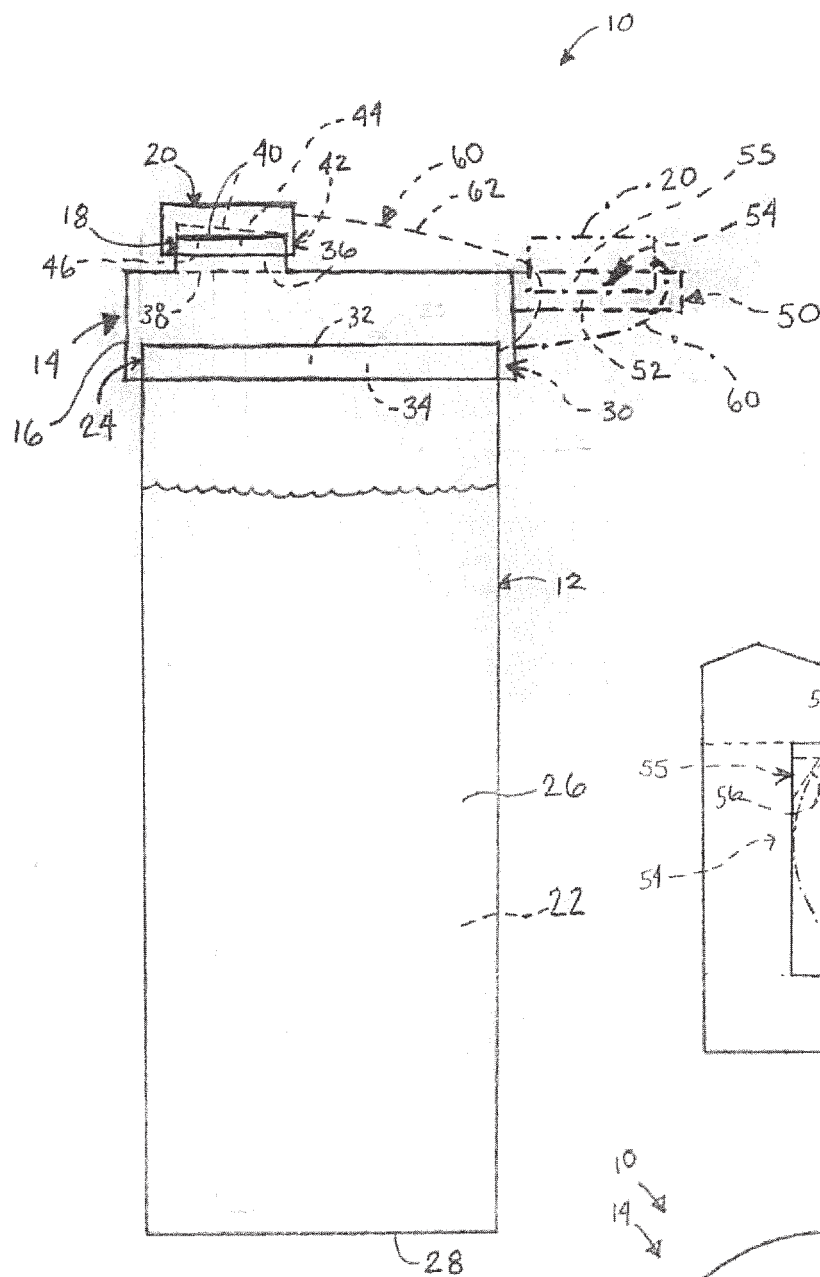


FIG. 1

FIG. 2

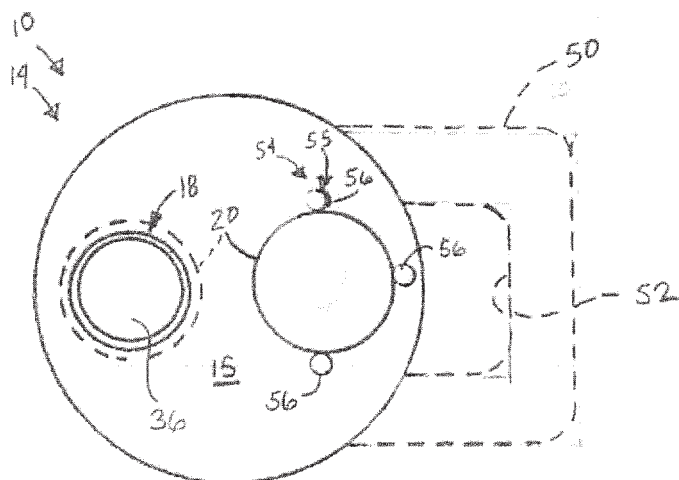
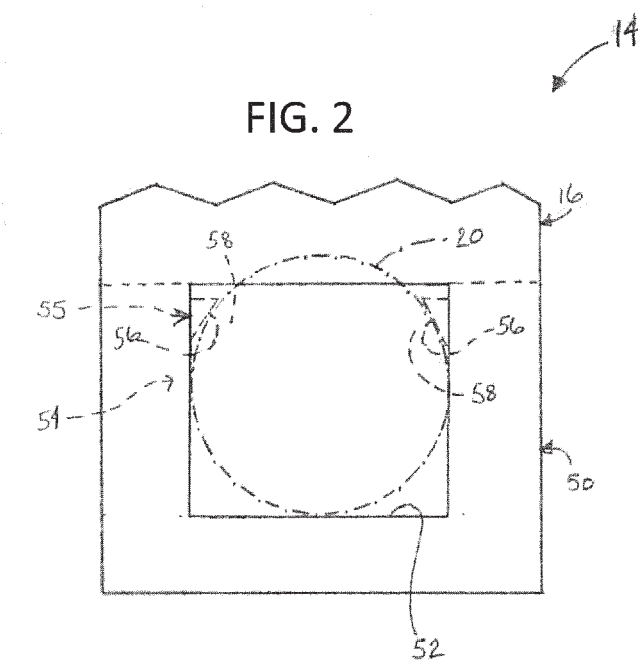


FIG. 3

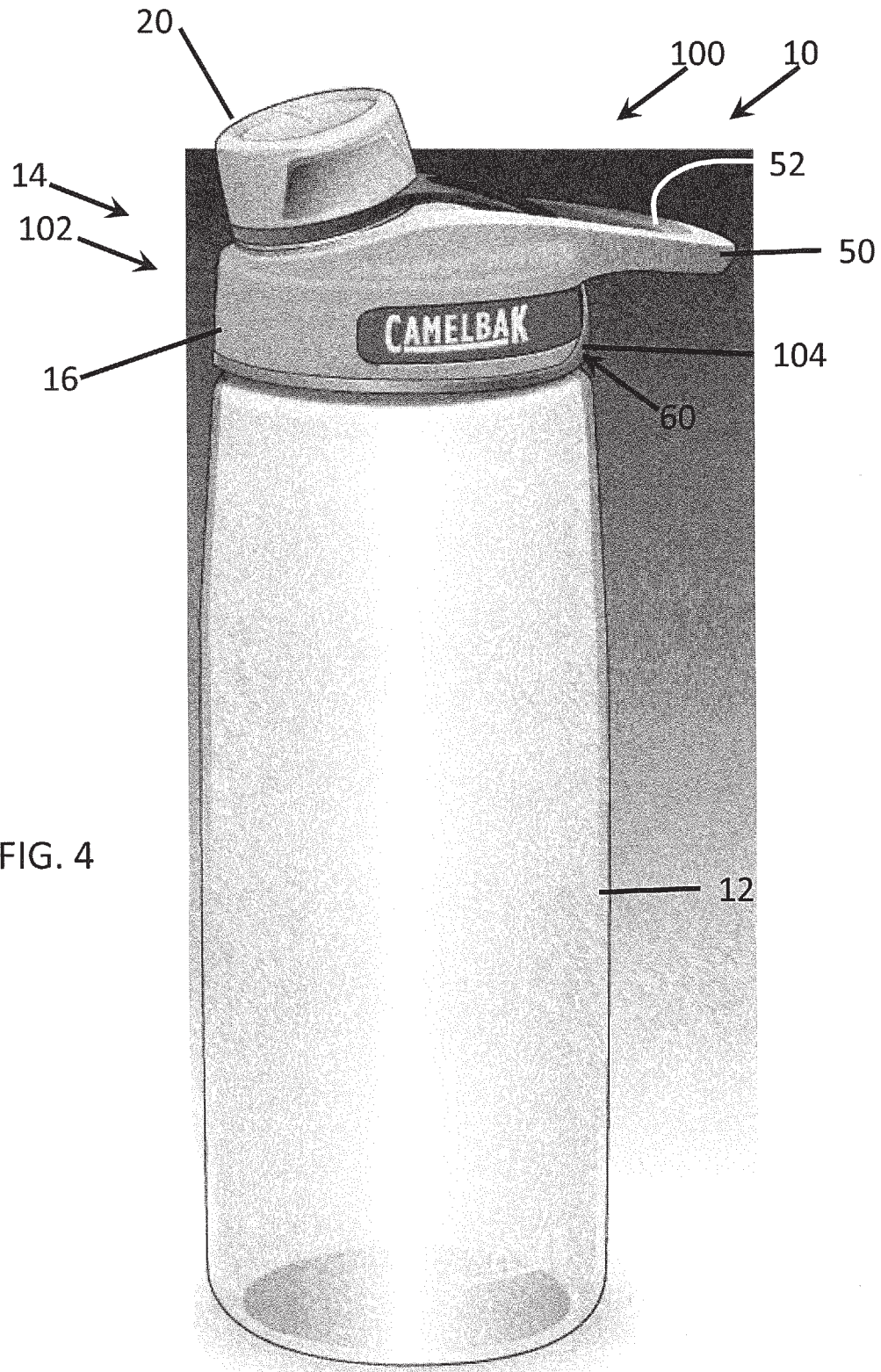
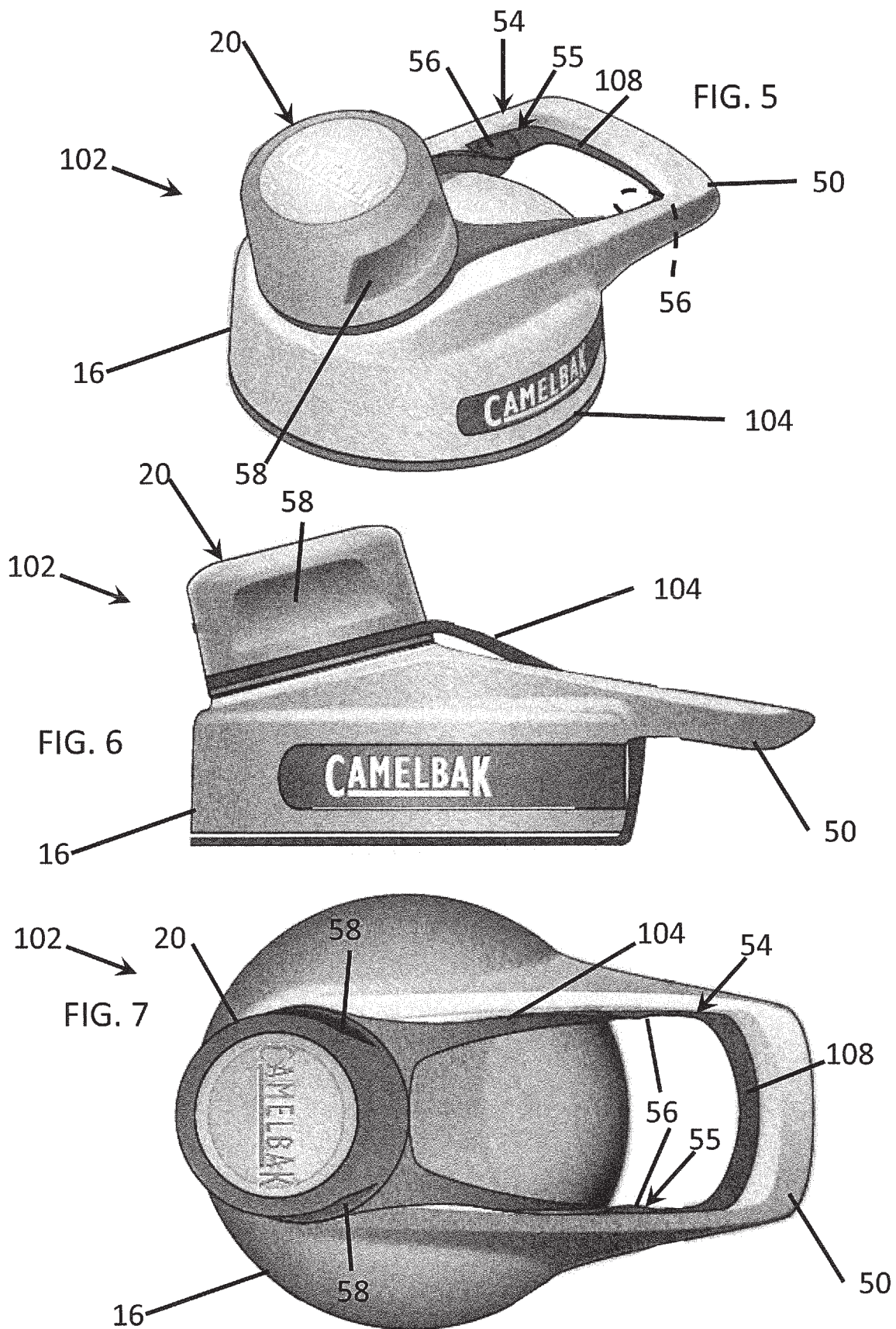
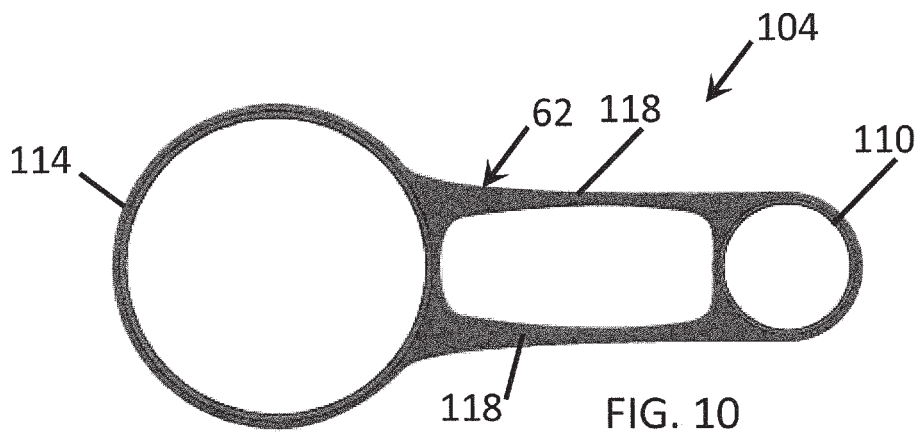
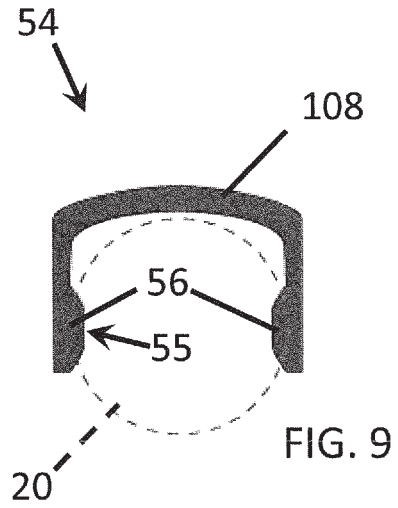
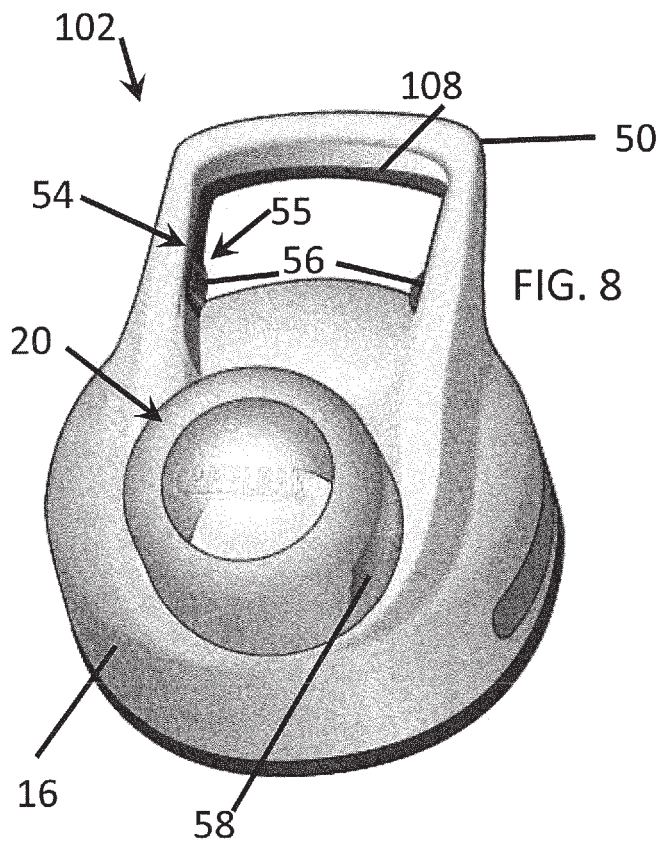
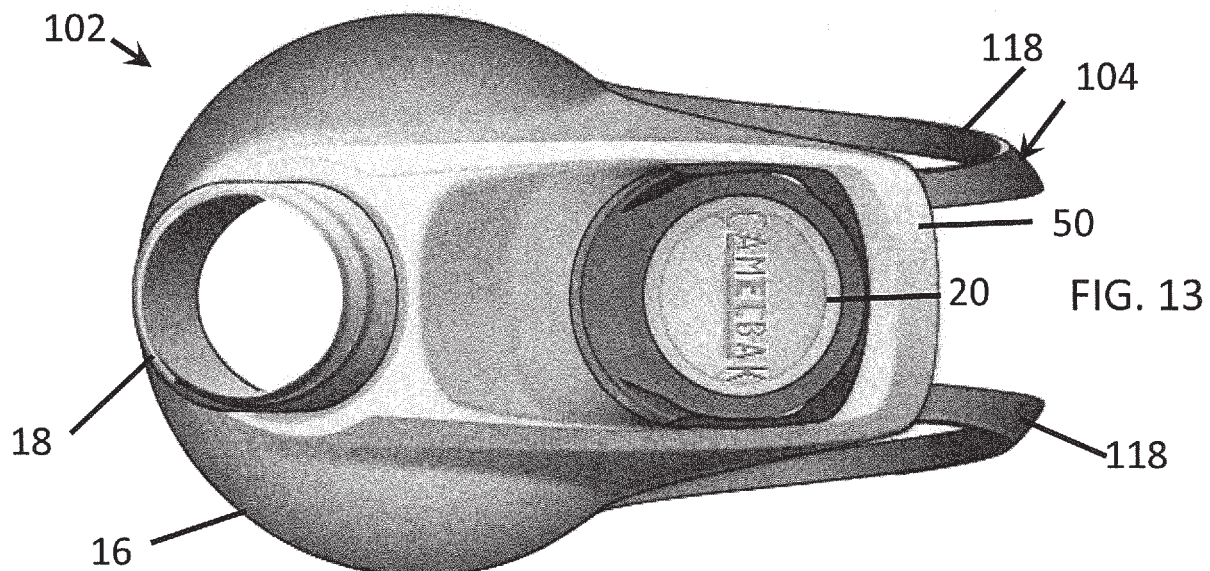
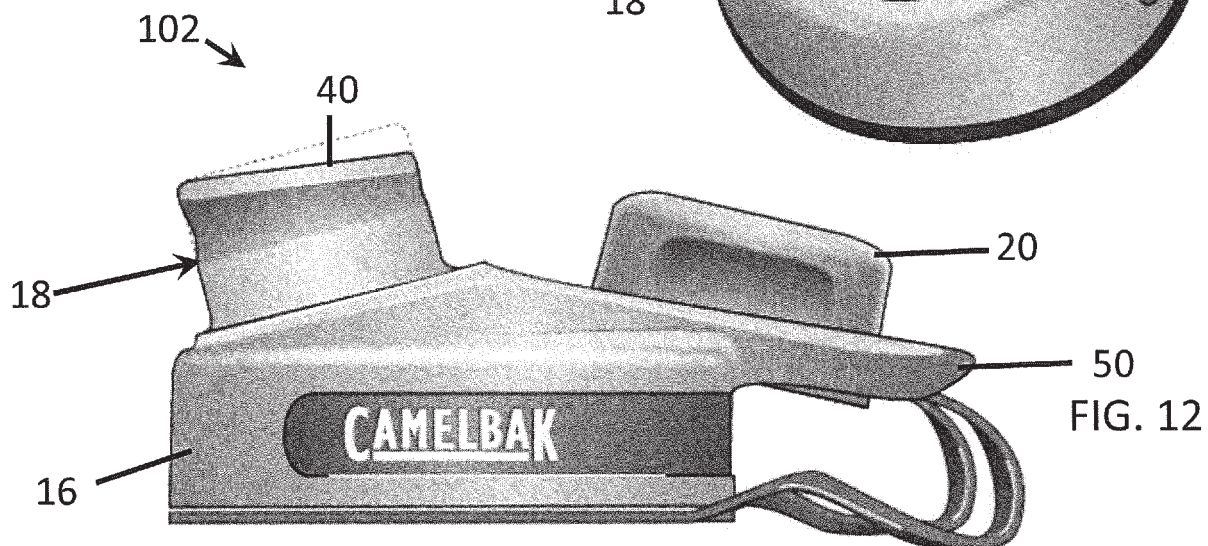
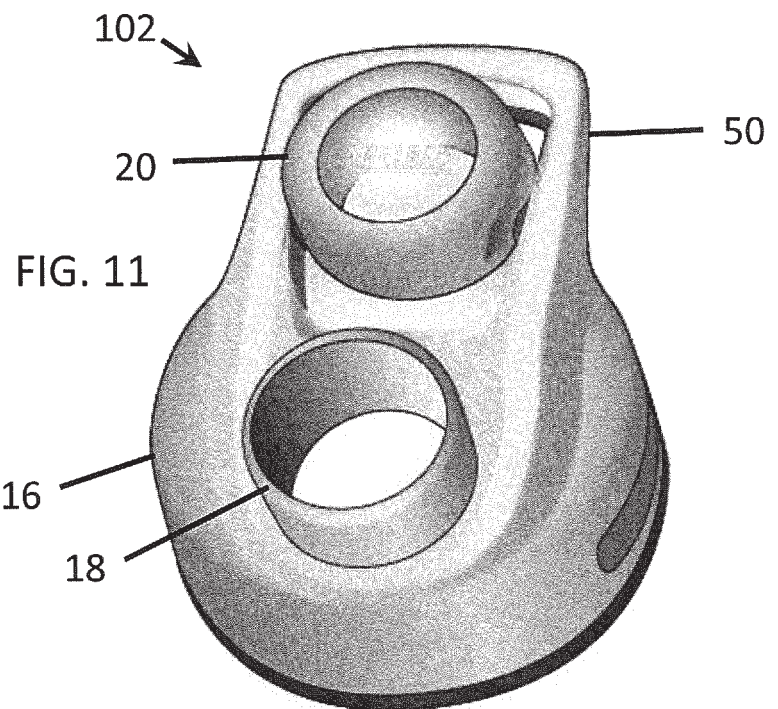
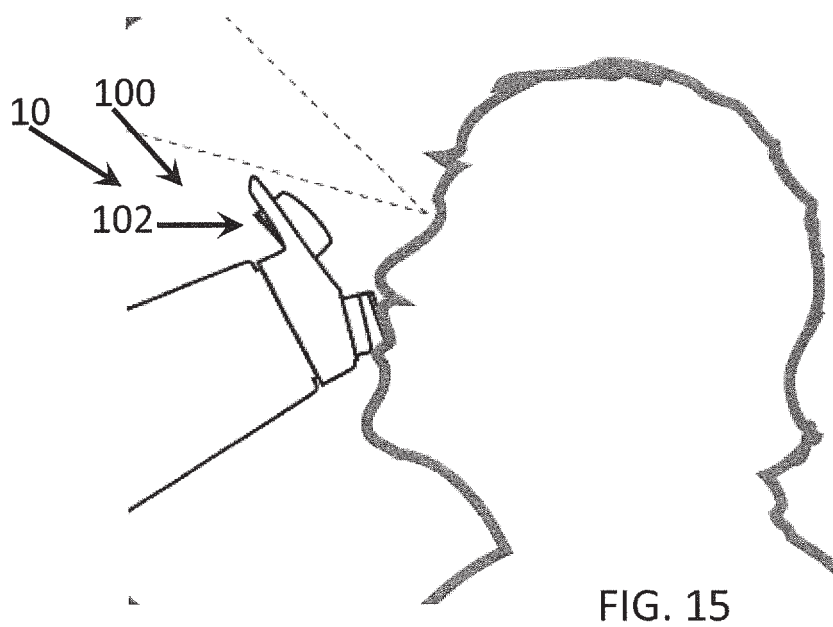
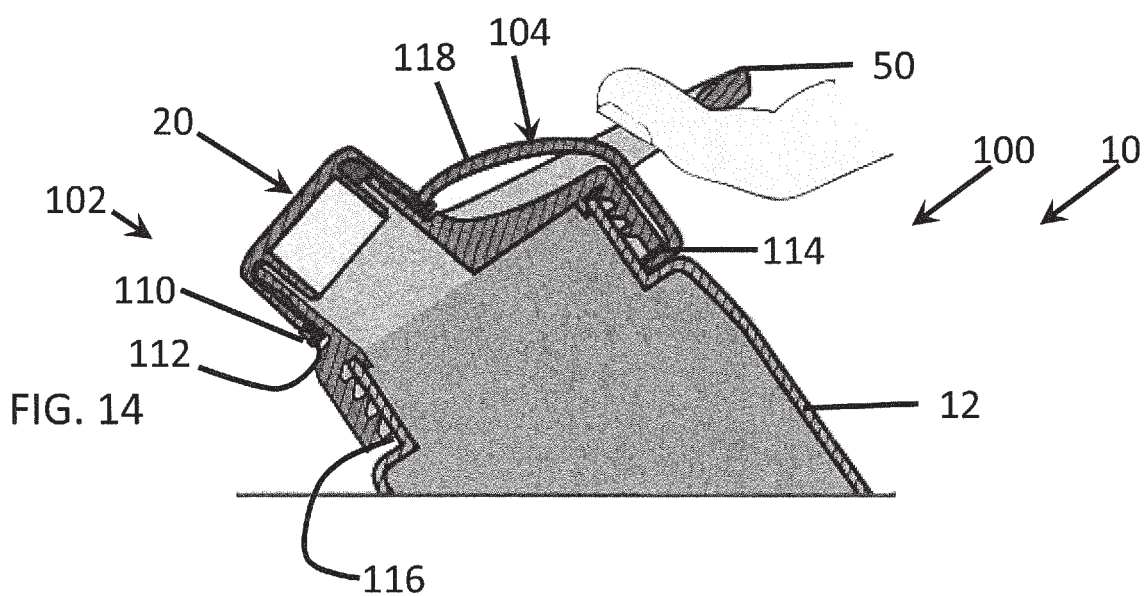


FIG. 4









200 10

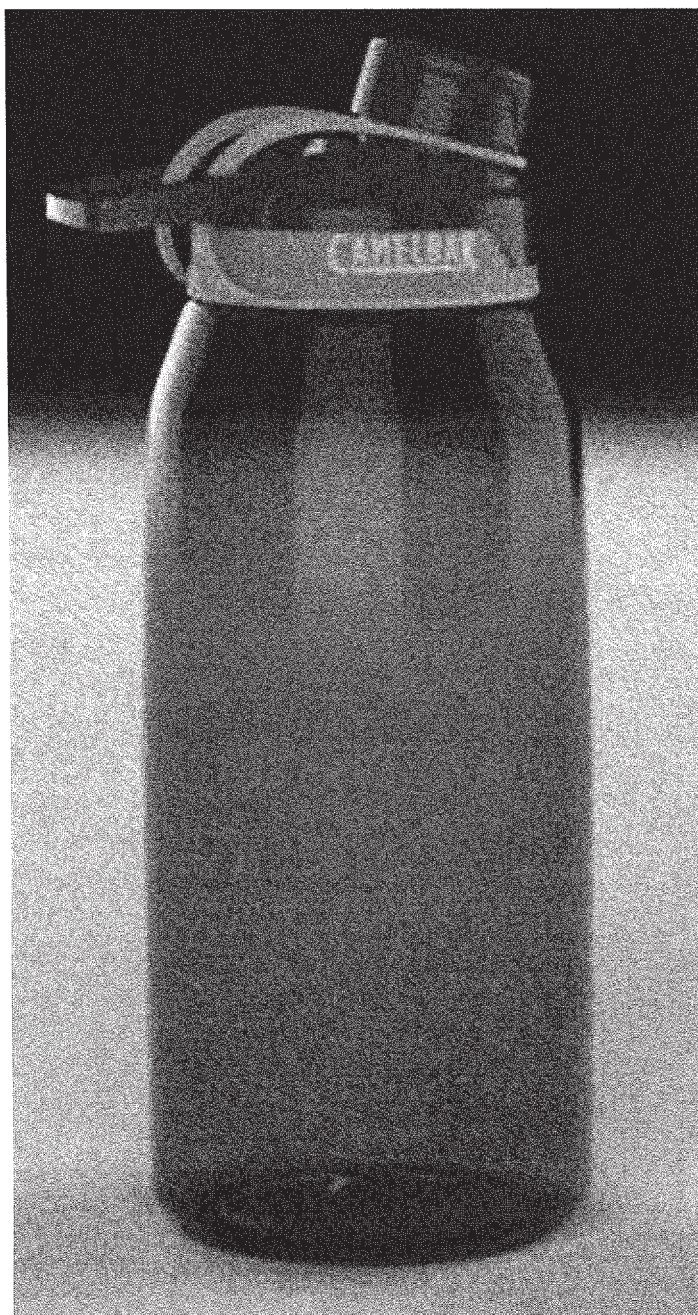


FIG. 16

Electronic Acknowledgement Receipt

EFS ID:	15204434
Application Number:	61779084
International Application Number:	
Confirmation Number:	6402
Title of Invention:	DRINK CONTAINERS WITH CLOSURE STORAGE MECHANISMS
First Named Inventor/Applicant Name:	Matt Latham
Customer Number:	78569
Filer:	David S. D'Ascenzo/Robin Davin
Filer Authorized By:	David S. D'Ascenzo
Attorney Docket Number:	KRN 374P
Receipt Date:	13-MAR-2013
Filing Date:	
Time Stamp:	13:59:11
Application Type:	Provisional

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$ 250
RAM confirmation Number	234
Deposit Account	504551
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

Trove Brands Ex. 1008
IPR Petition - USP 8,905,232

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Provisional Cover Sheet (SB16)	Provisional_Application_Cover_Sheet_KRN374P_3-13-13.pdf	2071672	no	3
			21f3f4574feb703e6844d1ac54bd2e3ea4e0be93		
Warnings:					
Information:					
2	Application Data Sheet	Application_Data_Sheet_KRN374P_3-13-13.pdf	206195	no	5
			8374bb1caf96e3ee1d47d15a7f10761d0a71ff41		
Warnings:					
Information:					
This is not an USPTO supplied ADS fillable form					
3		Power_of_Attorney_KRN374P_3-13-13.pdf	190264	yes	4
			5488eab380c068e1b7bb76620c36792e7e3ea6a6		
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Power of Attorney		1	1	
	Assignee showing of ownership per 37 CFR 3.73.		2	4	
Warnings:					
Information:					
4	Specification	provisional_patent_application_KRN374P_3-13-13.pdf	343853	no	24
			76531094db1a7566f567d6ab3999c75655a64a1f		
Warnings:					
Information:					
5	Drawings-only black and white line drawings	drawings_KRN374P_3-13-13.pdf	1410602	no	7
			5f1077e3c2a89c19c2392a77b5bb8aeb202d94d8		
Warnings:					
Information:					
6	Fee Worksheet (SB06)	fee-info.pdf	29703	no	2
			cc4f5955beb9912cb7665648ddc547fb4ea47cd		
Warnings:					
Information:					
Total Files Size (in bytes):			4252289		

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If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.