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Ballou

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(54) **BEVERAGE CONTAINER AND CARABINER ASSEMBLY**

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(51) **Int. Cl.**

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A45F 3/18	(2006.01)
A45F 5/00	(2006.01)
B65D 23/10	(2006.01)
B65D 43/02	(2006.01)
B65D 53/02	(2006.01)

(52) **U.S. Cl.**

CPC ***B65D 51/242*** (2013.01); ***A45F 3/18*** (2013.01); ***A45F 5/00*** (2013.01); ***B65D 23/102*** (2013.01); ***B65D 43/0229*** (2013.01); ***B65D 53/02*** (2013.01)

(58) **Field of Classification Search**

CPC B65D 51/242; B65D 23/102; B65D 43/0229; A45F 3/18

USPC 220/212, 212.5, 810, 737, 710.5

See application file for complete search history.

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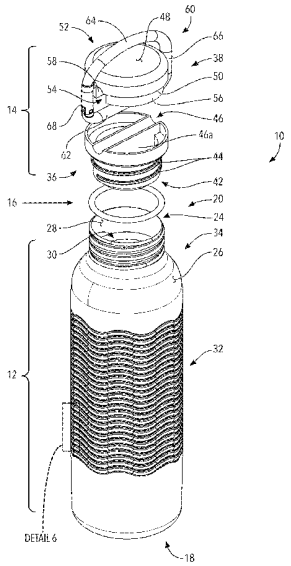
(57) **ABSTRACT**

A beverage container and carabiner assembly including a container having a distal end and a proximal end, the container having a cavity therein, the container having a threaded mouth at the proximal end, the mouth in communication with the cavity, a threaded cap having a distal end and a proximal end, the cap having a through-bore therein proximate the proximal end, the cap operatively arranged to threadably and removably engage the threaded mouth of the container, and

a carabiner, the carabiner having a proximal section, a distal section, and a clip, the distal section of the carabiner arranged within the through-bore of the cap.

9 Claims, 9 Drawing Sheets



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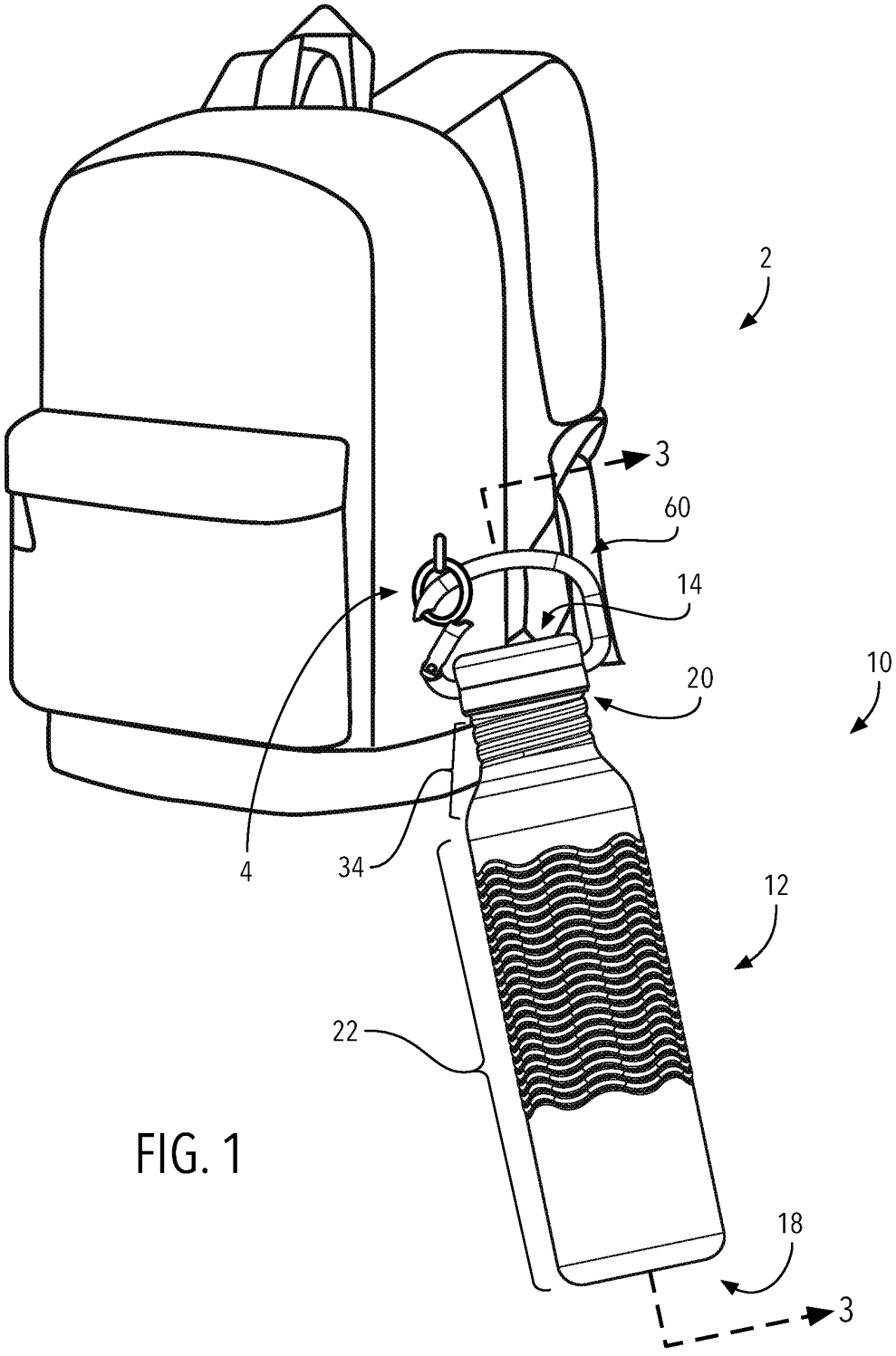
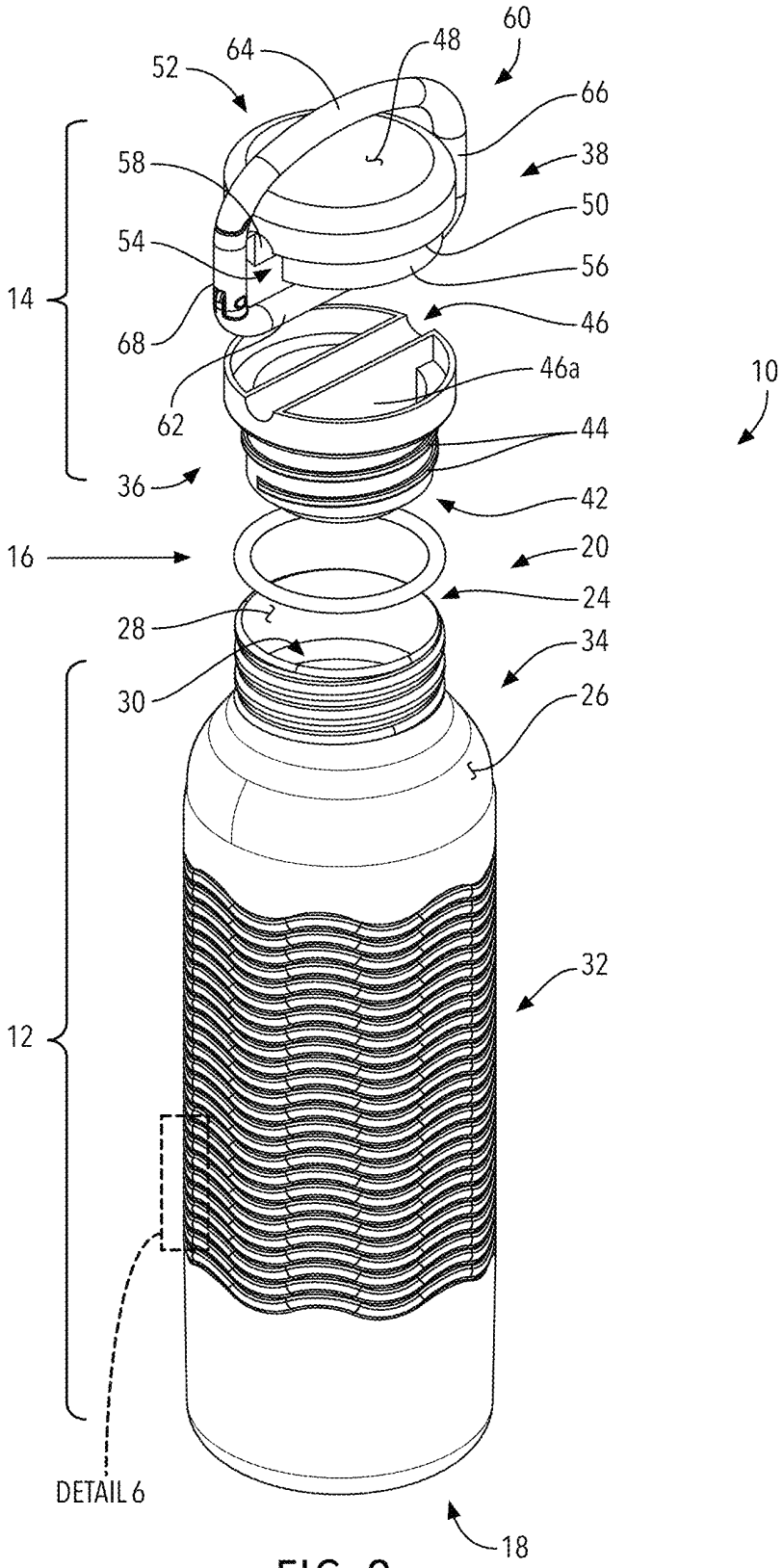


FIG. 1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DETAIL 6
18

FIG. 2

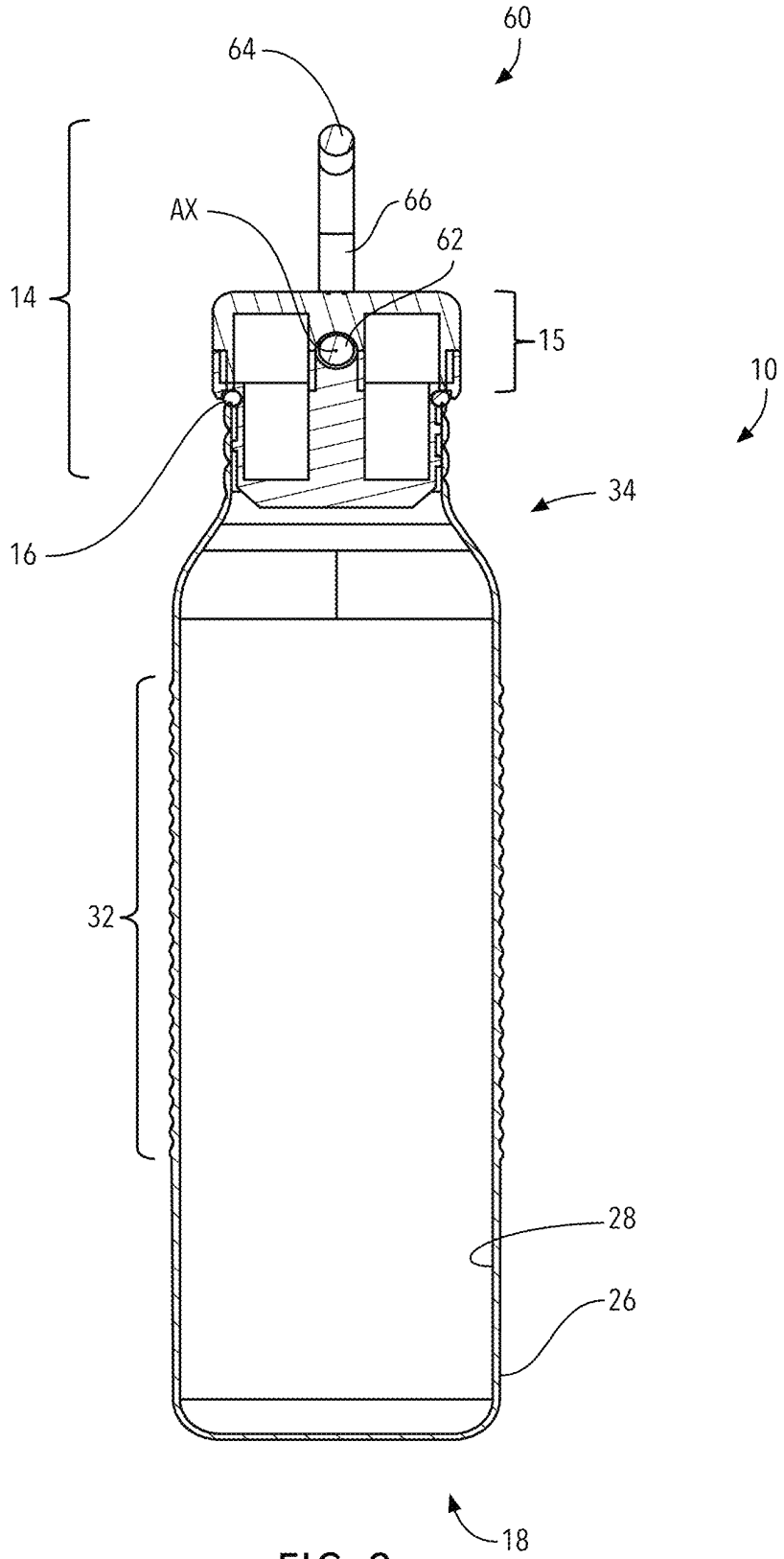
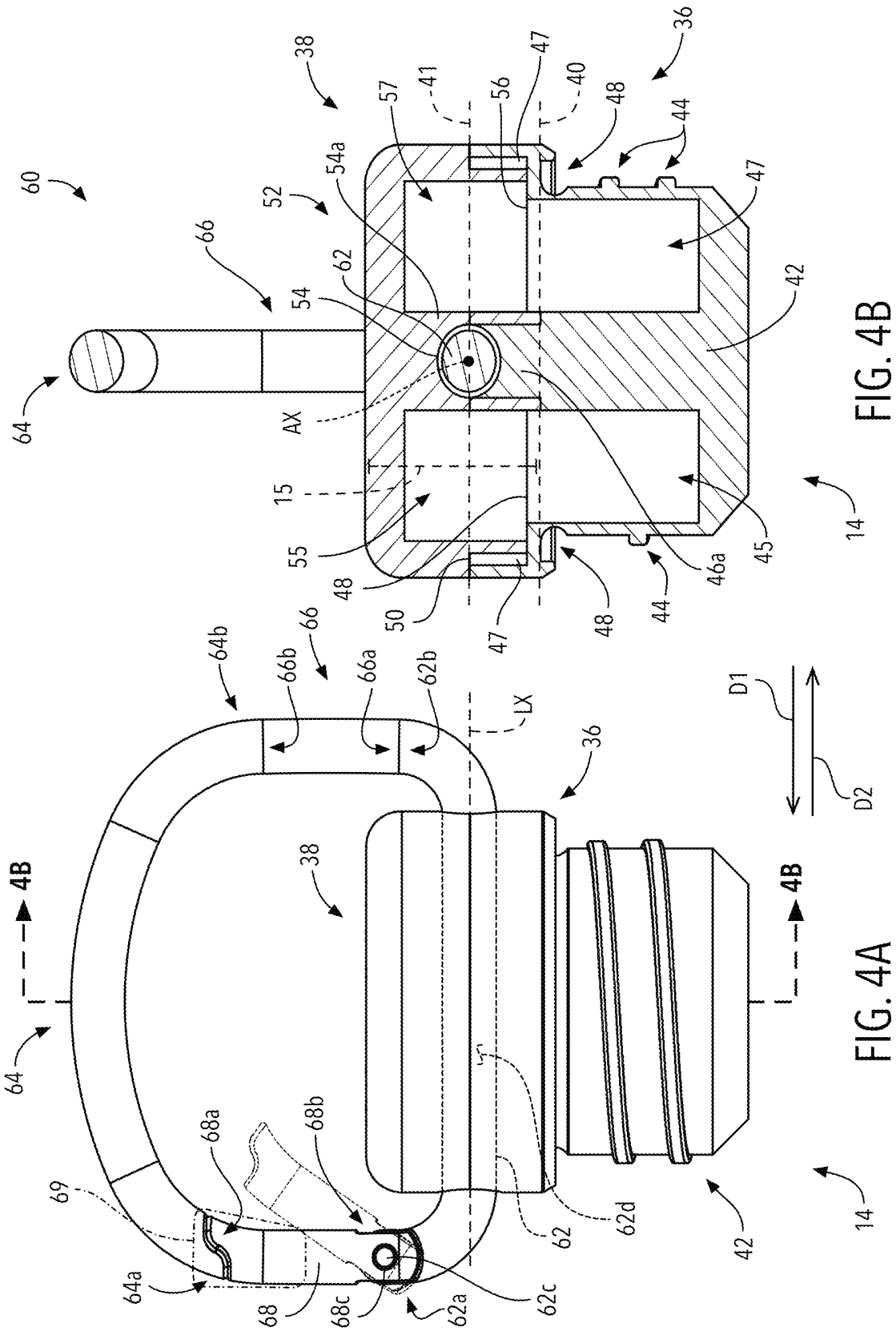


FIG. 3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50
46a
45
14
64b
66b
66a
62b
LX
D1
D2
4B
68a
68b
69
64a
68
68c
62a
62c
62
62d

FIG. 4B

FIG. 4A

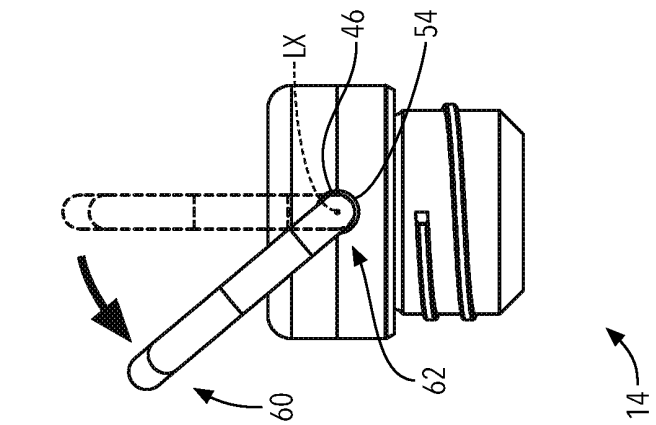


FIG. 5C

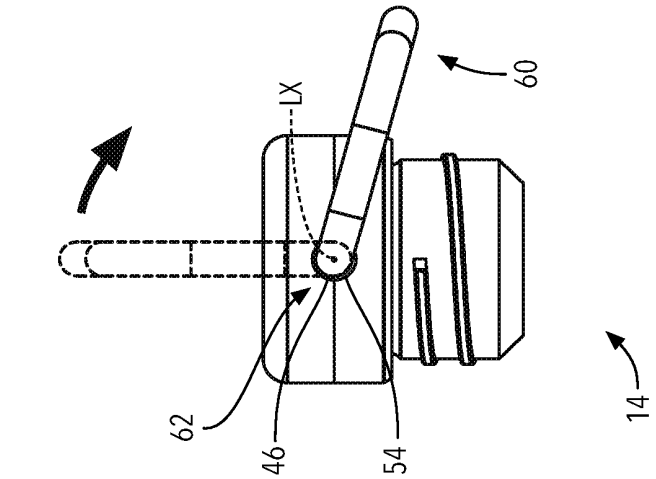


FIG. 5B

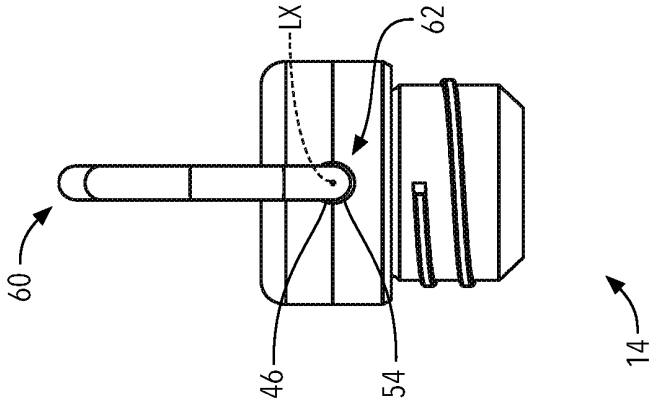


FIG. 5A

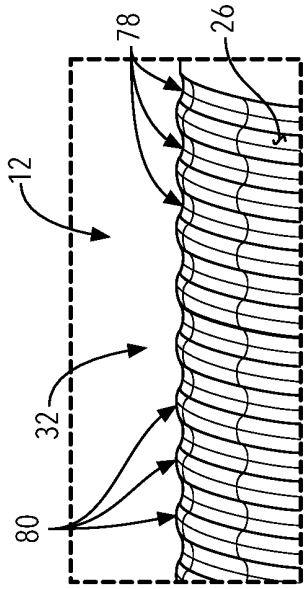


FIG. 6B

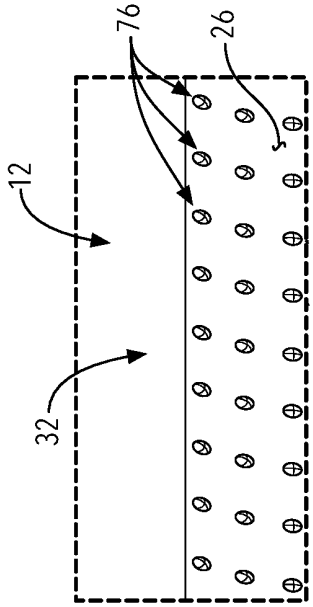


FIG. 6D

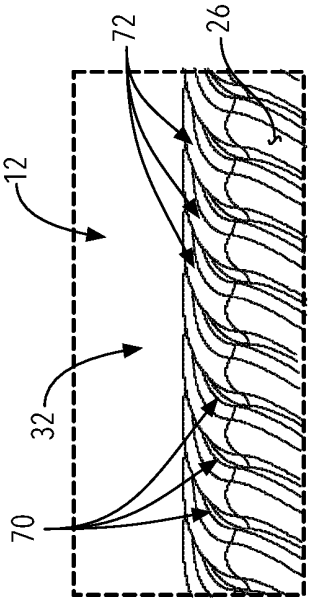


FIG. 6A

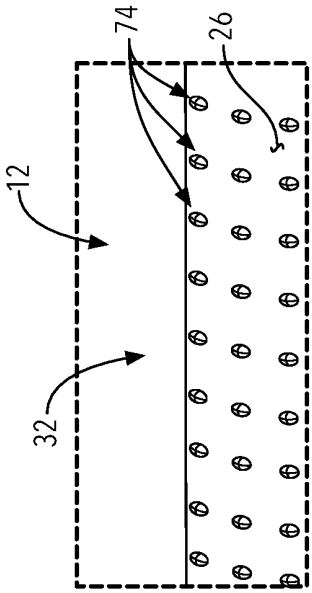
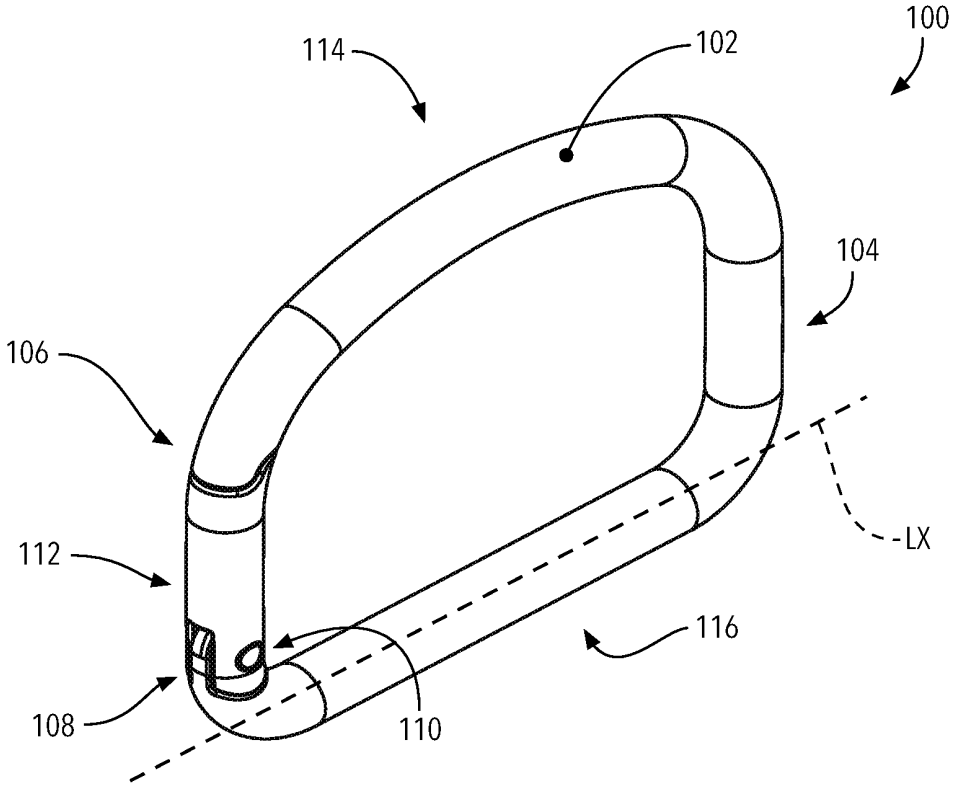


FIG. 6C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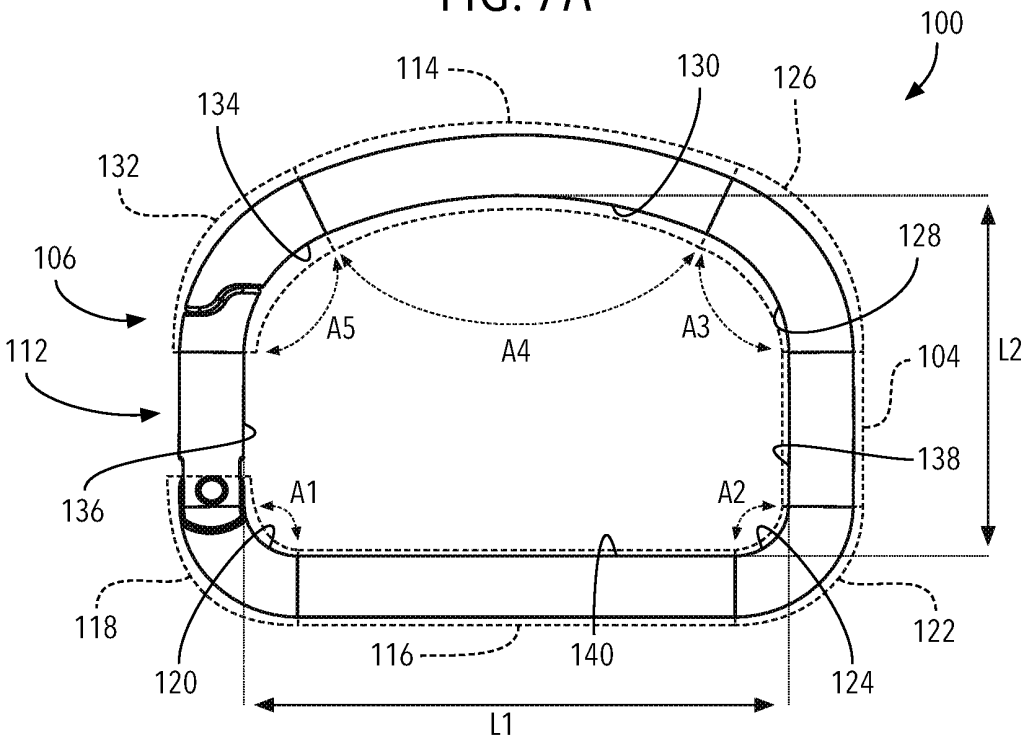
106
112
LX
116
108
110

FIG. 7A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128
106
A5
A4
A3
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L2
138
136
A1
A2
118
122
116
140
120
124
L1

FIG. 7B

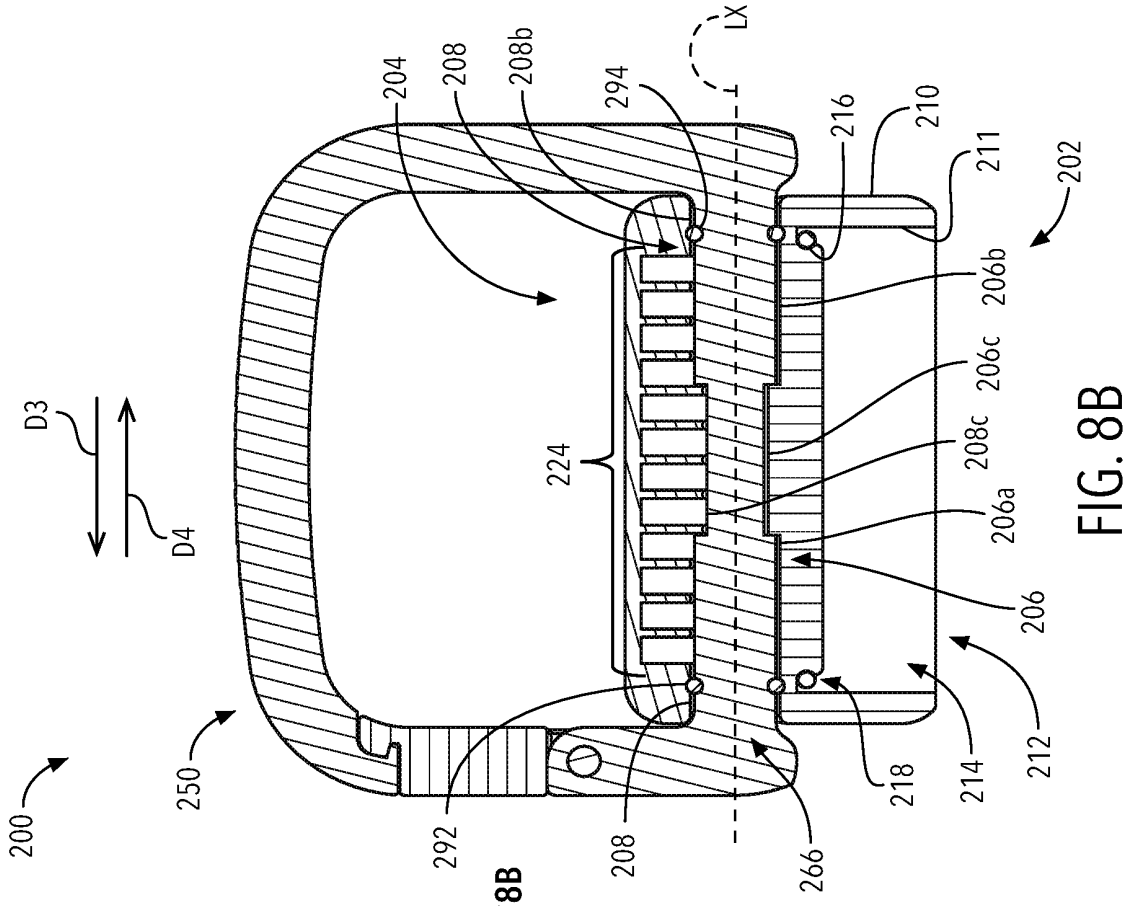
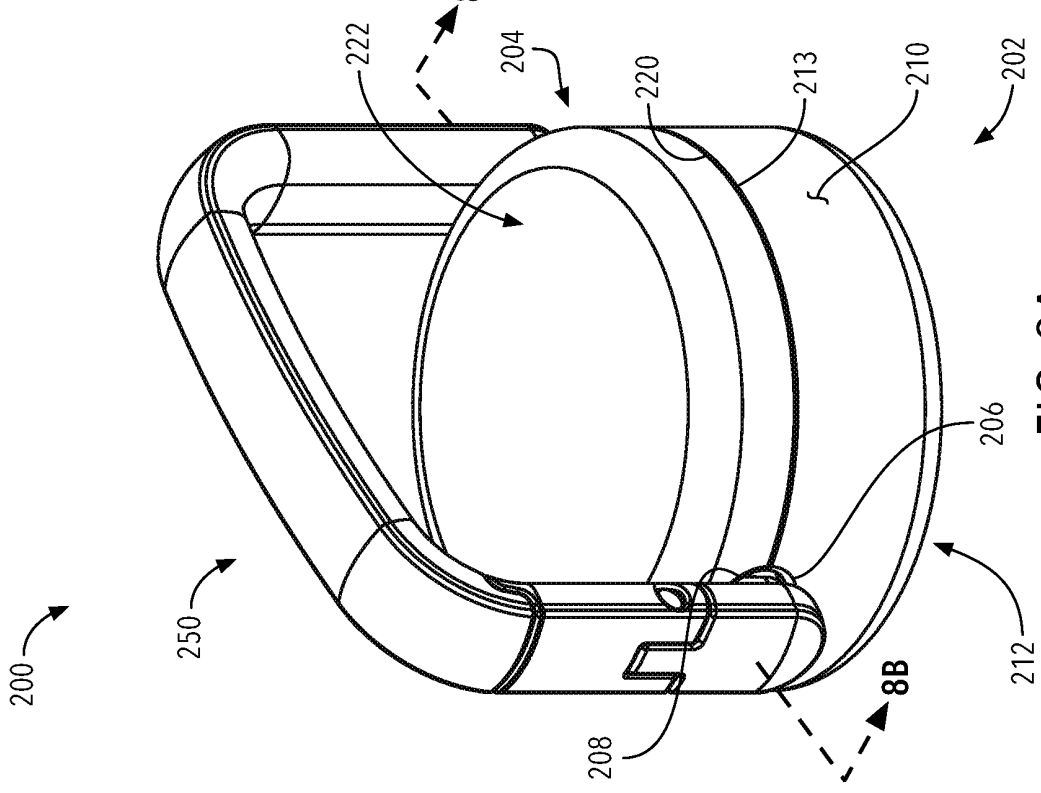

LX
204
208
208b
294
216
210
211
202
206b
206c
208c
206a
206
212
214
218
224
D3
D4
200
250
292
208
266
8B

FIG. 8B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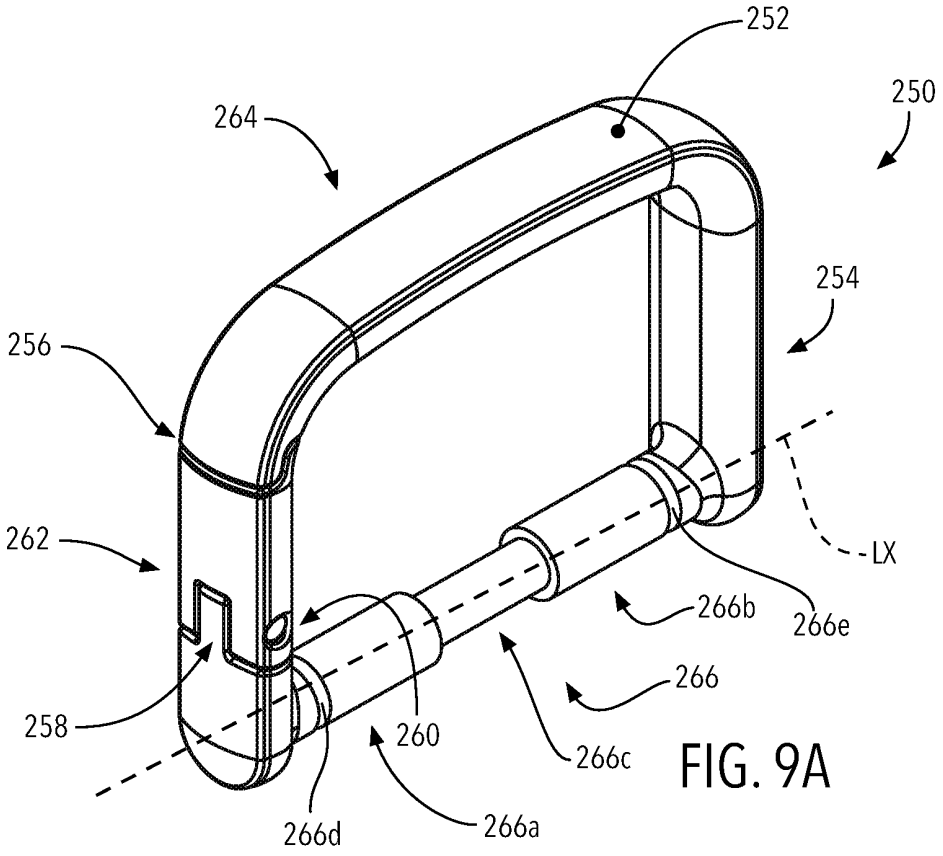
212
200
250
208
8B

FIG. 8A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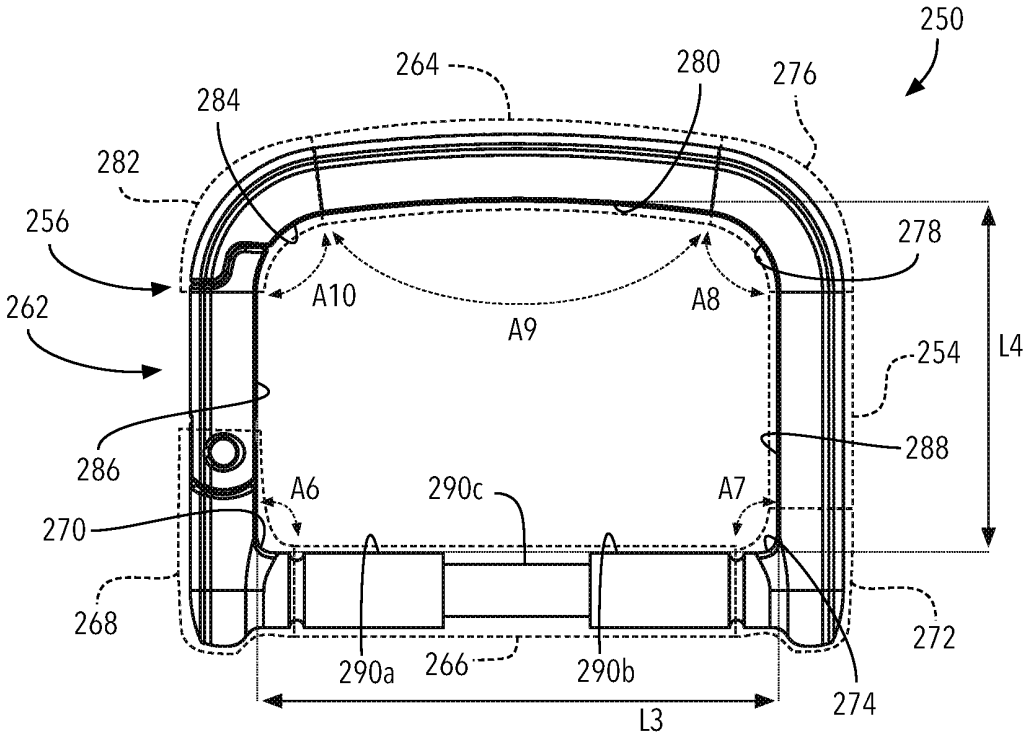
254
256
262
LX
266b
266e
266
258
260
266c
266d
266a

FIG. 9A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A10
A9
A8
262
L4
254
286
288
A6
290c
A7
270
268
272
290a
266
290b
274
L3

FIG. 9B

BEVERAGE CONTAINER AND CARABINER ASSEMBLY

FIELD

The present invention relates to a beverage container having a carrying system removably secured in a cap of the container. More specifically, the invention relates to a carrying system which includes a carabiner secured within a cap of a water bottle.

BACKGROUND

Reusable water bottles have become mainstream in recent years, primarily as an effort to reduce waste. Various name-brand companies have developed reusable water bottles with a plurality of features, such as, insulated walls to keep contents hot or cold and varieties of cap arrangements providing different drinking experiences.

An issue with some water bottles relates to a means for carrying them. Due to their various sizes and shapes, carrying mechanisms have been developed in various configurations. One of these mechanisms is a cap having an integrated handle, typically constructed of the same material and extending therefrom.

However, these handle solutions are arranged such that a closed loop is formed by the integrated handle, thereby requiring the use of another device to connect the handle to a desirable object, such as a backpack, travel bag, luggage, etc.

In many arrangements, carabiner clips are used as a connecting element between the integrated handle and the object. Although this solution temporarily cures the above-mentioned problem, it also introduces an additional component to the water bottle that can be removed and lost.

An example of the aforementioned combination is disclosed in U.S. Published Patent Application No. 2021/0147127. The '127 application discloses a fluid container having a lid that is arranged to accept a carabiner therein. The bottle generally includes a vessel, or container having a lid and a magnet thereon. The container includes threads arranged within an inner surface of a mouth of the container that are arranged to removably secure the lid, by way of threads, to the container. The lid further includes a carabiner support with a substantially annular-ring shaped configuration extending from an upper surface thereon, whereas the carabiner support is arranged to accept a carabiner therein. The carabiner can still be removed from the carabiner support.

Therefore, it is desirable to create a handle that is more integrally arranged with the cap, i.e., no additional extending components, nor a carabiner that can be removed. U.S. Published Patent Application No. 2019/0152655 discloses a container and a cap having a handle integrated into the cap. The cap is disclosed to have a base with a wall arranged to have threading thereon. The base further includes oppositely disposed apertures. The base extends from a terminal end portion. The handle includes a sleeve with oppositely arranged end portions, whereas the end portions are arranged to be seated within apertures, allowing the handle to be rotatably connected to the base of the cap. The configuration does provide a handle but does not utilize a carabiner and is configured as a closed loop.

Thus, there is a long felt need for a beverage container (e.g., a water bottle) having a cap, where the cap includes an integrated handle, where the handle takes the form of a carabiner and is integrated in a manner where the carabiner cannot be removed from the cap.

There is also a long felt need for a carabiner and cap combination for a water bottle where the carabiner is integrated therein in such a way that no additional components extend from the cap.

SUMMARY

According to aspects illustrated herein, the present invention generally comprises a beverage container and carabiner assembly including a container having a distal end and a proximal end, the container having a cavity therein, the container having a threaded mouth at the proximal end, the mouth in communication with the cavity, a threaded cap having a distal end and a proximal end, the cap having a through-bore therein proximate the proximal end, the cap operatively arranged to threadably and removably engage the threaded mouth of the container, and a carabiner, the carabiner having a proximal section, a distal section, and a clip, the distal section of the carabiner arranged within the through-bore of the cap.

The present invention may also generally comprise a carabiner cap combination, the carabiner cap combination having a cap having a first end and a second end, a protrusion extending from the first end, the protrusion having threads arranged on an outer surface, a through-bore disposed therein and proximate the proximal end, and a carabiner, the carabiner having a proximal section, a distal section, and a clip, the distal section of the carabiner arranged within the through-bore of the cap, wherein the carabiner may rotate within the through-bore.

In some embodiments, the present invention may comprise a carabiner cap combination including a cap having a proximal end and a distal end, a protrusion extending from the distal end, the protrusion having threads arranged on an outer surface, a through-bore disposed within the cap, and a carabiner, the carabiner having a proximal section, a distal section, and a clip, the distal section of the carabiner arranged for rotation within the through-bore of the cap.

In other embodiments, the present invention may include a beverage container and carabiner assembly having a container having a cavity, the container having a threaded mouth in communication with the cavity, a threaded cap having a through-bore therein, the cap operatively arranged to threadably engage the threaded mouth of the container, and a carabiner, a part of which is fixedly secured within the through-bore of the cap.

In some arrangements, the carabiner of the aforementioned present invention could comprise a frame, the frame having a nose arranged at a first end and a pivot end arranged at a second end, the frame having a spine arranged substantially between the nose and the pivot end, the frame including an arched portion arranged proximate the nose, the frame also including a longitudinal portion proximate the pivot end, and a gate pivotably secured to the pivot end and arranged to engage the nose, wherein the gate and the spine are spaced part at a first length, wherein the arched portion and the longitudinal portion are spaced apart at a second length, whereas the first length is greater than the second length.

These and other objects, features, and advantages of the present invention will become readily apparent upon a review of the following detailed description of the invention, in view of the drawings and appended claims.

BRIEF DESCRIPTION OF THE DRAWINGS

Various embodiments are disclosed, by way of example only, with reference to the accompanying schematic draw-

ings in which corresponding reference symbols indicate corresponding parts, in which:

FIG. **1** is a perspective view of the present invention in use;

FIG. **2** is an exploded view of the present invention shown in FIG. **1**;

FIG. **3** is a cross-sectional taken generally along line **3**-**3** in FIG. **1**;

FIG. **4**A is a front view of the cap of the present invention shown in FIG. **1**;

FIG. **4**B is a cross-sectional view taken generally along line **4**B-**4**B in FIG. **4**A;

FIGS. **5**A through **5**C are right-side views of the cap shown in FIG. **4**;

FIGS. **6**A through **6**D are generally taken from DETAIL **6** shown in FIG. **3**;

FIG. **7**A is a perspective view of a carabiner of the present invention shown in FIG. **1**;

FIG. **7**B is a front view of the carabiner shown in FIG. **7**A;

FIG. **8**A is a perspective view of the cap shown of the present invention shown in FIG. **1** having an alternative embodiment of a carabiner therein;

FIG. **8**B is a cross-sectional view taken generally along line **8**B-**8**B in FIG. **8**A;

FIG. **9**A is a perspective view of the carabiner shown in FIG. **8**A;

FIG. **9**B is a front view of the carabiner shown in FIG. **8**A;

DETAILED DESCRIPTION

At the outset, it should be appreciated that like drawing numbers on different drawing views identify identical, or functionally similar, structural elements. It is to be understood that the claims are not limited to the disclosed aspects.

Furthermore, it is understood that this disclosure is not limited to the particular methodology, materials and modifications described and as such may, of course, vary. It is also understood that the terminology used herein is for the purpose of describing particular aspects only and is not intended to limit the scope of the claims.

Unless defined otherwise, all technical and scientific terms used herein have the same meaning as commonly understood to one of ordinary skill in the art to which this disclosure pertains. It should be understood that any methods, devices or materials similar or equivalent to those described herein can be used in the practice or testing of the example embodiments.

It should be appreciated that the term "substantially" is synonymous with terms such as "nearly," "very nearly," "about," "approximately," "around," "bordering on," "close to," "essentially," "in the neighborhood of," "in the vicinity of," etc., and such terms may be used interchangeably as appearing in the specification and claims. It should be appreciated that the term "proximate" is synonymous with terms such as "nearby," "close," "adjacent," "neighboring," "immediate," "adjoining," etc., and such terms may be used interchangeably as appearing in the specification and claims. The term "approximately" is intended to mean values within ten percent of the specified value.

It should be understood that use of "or" in the present application is with respect to a "non-exclusive" arrangement, unless stated otherwise. For example, when saying that "item x is A or B," it is understood that this can mean one of the following: (1) item x is only one or the other of A and B; (2) item x is both A and B. Alternately stated, the word "or" is not used to define an "exclusive or" arrangement. For example, an "exclusive or" arrangement for the statement "item x is A or B" would require that x can be only one of A and B. Furthermore, as used herein, "and/or" is intended to mean a grammatical conjunction used to indicate that one or more of the elements or conditions recited may be included or occur. For example, a device comprising a first element, a second element and/or a third element, is intended to be construed as any one of the following structural arrangements: a device comprising a first element; a device comprising a second element; a device comprising a third element; a device comprising a first element and a second element; a device comprising a first element and a third element; a device comprising a first element, a second element and a third element; or, a device comprising a second element and a third element.

Moreover, as used herein, the phrases "comprises at least one of" and "comprising at least one of" in combination with a system or element is intended to mean that the system or element includes one or more of the elements listed after the phrase. For example, a device comprising at least one of: a first element; a second element; and, a third element, is intended to be construed as any one of the following structural arrangements: a device comprising a first element; a device comprising a second element; a device comprising a third element; a device comprising a first element and a second element; a device comprising a first element and a third element; a device comprising a first element, a second element and a third element; or, a device comprising a second element and a third element. A similar interpretation is intended when the phrase "used in at least one of:" or "at least one of" is used herein.

Adverting now to the drawings. The following description should be taken in view of FIGS. **1** through **3**. FIG. **1** illustrates the present invention, carabiner bottle **10** attached to article **2**, specifically ring **4** of article **2**. Carabiner bottle **10** includes carabiner **60** which allows bottle **10** to be removably secured to an object. FIGS. **2** and **3** generally illustrate an exploded view of carabiner bottle **10** and a cross-sectional view taken generally along line **3**-**3** in FIG. **1**. Carabiner bottle **10** generally comprises container **12**, carabiner cap combination **14**, and O-ring **16**.

In some arrangements, container **12** includes distal end **18**, proximal end **20**, body **22**, mouth **24**, and neck **34**. Body **22** has outer surface **26** and inner surface **28**. Body **22** extends from distal end **18** proximate proximal end **20**, thereby transitioning to neck **34**. Neck **34** extends to proximal end **20** and is terminated by mouth **24**. Mouth **24** is an aperture within neck **34**. Threading **30** is arranged on inner surface **28** within mouth **24** and/or neck **34**.

Container **12** includes plurality of gripping members **32** arranged on body **22**. There could also be a plurality of gripping members arranged on neck **34**. Specifically, plurality of gripping members **32** extend from, or are within, or a combination thereof, outer surface **26** of container **12**, arranged in either, or both, of body **22** and neck **34**, preferably disposed between distal end **18** and proximal end **20**. In a preferred embodiment, plurality of gripping members **32** are arranged on body **22** and disposed between distal end **18** and neck **34**. Plurality of gripping members **32** is shown and discussed further in view of FIGS. **6**A through **6**F, infra.

In some embodiments, container **12** is configured as a double wall insulated stainless steel container. In one embodiment, container **12** is configured as a single wall stainless steel container. It should be appreciated however, that alternative materials may be used in the construction of container **12**, such as metal and plastic combinations, plastics, polymers, various different types of metals, etc. As

such, those in the art will understand that any suitable material, now known or hereafter developed, may be used in forming container **10** described herein and supra.

Carabiner bottle **10** also includes O-ring **16**, which is arranged to be sandwiched between mouth **24** and/or proximal end **20** when carabiner cap combination **14** is engaged to container **12**—thereby providing a water-tight seal between container **12** and carabiner cap combination **14**.

The following description should be taken in view of the aforementioned figures and FIGS. **4**A and **4**B. FIG. **4**A generally illustrates a front view of carabiner cap combination **14** and FIG. **4**B illustrates a cross-sectional view of same taken generally along line **4**B-**4**B in FIG. **4**A. Carabiner cap combination **14** is preferably a singular component having carabiner **60** fixedly secured within a through-bore disposed within body **15** of carabiner cap combination. In some embodiments, carabiner cap combination **14** comprises distal portion **36** and proximal portion **38**, whereas distal portion **36** and proximal portion **38** are arranged to be fixedly secured, having carabiner **60** therein, forming cap **14**.

Distal portion **36** of cap **14** generally includes distal surface **40**, proximal surface **41**, outer surface **43**, protrusion **42**, and groove **46**. Protrusion **42** is arranged to extend from distal surface **40**. In a preferred embodiment, protrusion **42** takes a substantially cylindrical configuration that may also have a frustoconical portion arranged at an end of protrusion **42** arranged away from distal surface **40**. Threading **44** is arranged on an outside surface of protrusion **42**, whereas threading **44** is arranged to threadedly engage threading **30** of container **12**. Channel **48** is substantially arranged at least partially within distal surface **40** and preferably takes a circular configuration. Channel **48** is arranged to accept O-ring **16** therein, whereas O-ring **16** is substantially sandwiched within channel **48** when cap **14** is engaged to container **12**. O-ring **16** primarily increases the water-tight seal formed by threading **44** and threading **30**.

In some embodiments, first cavity **45** and second cavity **47** are formed at least between proximal surface **41** and distal surface **40**, arranged between outer surface **43** and groove **46** (whereas groove **46** is positioned within groove body **46***a*). In other arrangements, first cavity **45** and second cavity **47** may extend past distal surface **40** and into protrusion **42**.

In some configurations, proximal portion **38** of cap **14** generally includes distal surface **50**, proximal surface **52**, groove **54**, first protruding section **56**, and second protruding section **58**. First protruding section **56** and second protruding section **58** are arranged to extend from distal surface **50**. In some embodiments, first protruding section **56** and second protruding section **58** may also include first cavity **55** and second cavity **57**, respectively. Groove **54** is arranged within groove body **54***a*.

Carabiner **60** generally includes distal section **62**, proximal section **64**, connection section **66**, and clip **68**. Distal section **62** at least includes a straight portion, i.e., a non-bent portion, that at least has a length which is the same as a length of both grooves **46** and **54**. In a preferred embodiment, distal section **62** has a length which is greater than a length of both grooves **46** and **54**. Distal section **62** extends from opposing ends into clip **68** and connection section **66**, whereas clip **68** and connection section **66** extend in a direction away from distal section. Proximal section **64** is joined to the respective ends of clip **68** and connection section **66** that extend away from distal section **62**. Carabiner **60** is generally configured to have a substantially circular cross-section.

In some embodiments, carabiner **60** may include distal section **62**, proximal section **64**, connection section **66**, and clip **68**. Distal section **60** may include first end **62***a*, second end **62***b*, and pin **62***c* disposed within an aperture arranged proximate first end **62***a*. Distal section **62** may also include longitudinal portion **62***d*, substantially disposed between first end **62***a* and second end **62***b*, whereas longitudinal portion **62***d* includes longitudinal axis LX. Proximal section **64** may include first end **64***a* and second end **64***b*. Connecting section **66** may include first end **66***a* and second end **66***b*. Clip **68** may include first end **66***a*, second end **66***b*, and aperture **68***c*. In some embodiments, clip **68** may also include locking sleeve **69**, which may be threadedly engaged to clip **68** such that rotation there moves locking sleeve in either a direction towards and past first end **66***a* (i.e., a locked position) or a direction towards second end **66***b* (i.e., an unlocked position). Second end **62***b* of distal section **62** is connected to first end **66***a* of connecting section **66**. Second end **66***b* of connecting section **66** is connected to second end **64***b* of proximal section **64**. First end **64***a* of proximal section **64** and first end **68***a* of clip **68** are arranged to have complimentary arrangements, such that first end **68***a* of clip **68** abuts first end **64***a* of proximal section, thereby restricting first end **68***a* from moving in direction D**1**, i.e., past first end **64***a* (but can move in direction D**2**). Clip **68** is rotatably secured to distal section **62** via pin **62***c* within an aperture of first end **62***a* of distal section **62** and within aperture **68***c* of clip **68**. In a preferred embodiment, and well known within the art, clip **68** includes a spring mechanism such that first end **68***a* of clip **68** maintains contact with first end **64***a* of proximal section **64** until force, generally in direction D**2**, is imparted on clip **68**.

When cap **14** is assembled, body **15** of cap **14** is formed by proximal portion **38** (bounded by distal surface **50** and proximal surface **52**) and a portion of distal portion **36** (the portion bounded by proximal surface **41** and distal surface **40**), thus, it can be said that body **15** of cap **14** is the portion of cap **14** substantially arranged between proximal surface **52** and distal surface **40**, best shown in FIG. **4**B. When cap **14** is assembled, first protruding section **56** and second protruding section **58** of proximal portion **38** are arranged to be at least partially seated within cavities **45** and **47** of distal portion **36**, whereas groove **54** and groove **46** thereby form the through-bore of cap **14** which secured holds carabiner **60** therein. In a preferred embodiment, the through-bore (comprised of groove **54** and groove **46**) has an internal circumference that is less than an outer circumference of distal portion **62** of carabiner **60**—allowing carabiner **60** to rotate within, shown in FIGS. **5**A through **5**C.

The following description should be taken in view of the aforementioned figures and FIGS. **5**A through **5**C which generally illustrate a side view of carabiner cap combination **14**. As illustrated and discussed supra, carabiner **60** is fixedly secured within the through-bore (comprised of groove **54** and groove **46**) of cap **14** such that carabiner may rotate about axis AX of distal section **62** of carabiner **60**, shown representatively in FIGS. **5**B and **5**C specifically.

The following description should be taken in view of FIG. **2** and FIGS. **6**A through **6**D. FIGS. **6**A through **6**D illustrate an enlarged portion of container **12** taken generally from DETAIL **6** in FIG. **2**. As discussed supra, container **12** may include plurality of gripping members **32** disposed on, within, or a combination thereof, outer surface **26**. Each of plurality of gripping members **32** may be comprised of at least one of: sinusoidal groove **70** (shown in FIG. **6**A); sinusoidal protrusion **72** (shown in FIG. **6**A); annular groove **78** (shown in FIG. **6**B); annular protrusion **80** (shown in

FIG. **6**B); dome-like protrusion **74** (shown in FIG. **6**C); and, dome-like indentation **76** (shown in FIG. **6**D). As such, plurality of gripping members **32** may be comprised of one of the aforementioned configurations or a combination of the aforementioned configurations, e.g., plurality of gripping members **32** may comprise a plurality of sinusoidal grooves **70** and a plurality of sinusoidal protrusions **72** (as shown in FIG. **6**A), or plurality of gripping members **32** may comprise a plurality of annular grooves **78** and a plurality of annular protrusions **80** (as shown in FIG. **6**B), or other combinations. As such, various arrangements of the plurality of gripping members, in addition to the coverage of the members on the outer surface of the container (i.e., partially covered, completely cover, etc.) are within the scope of the appended claims.

The following description should be taken in view of FIGS. **7**A and **7**B which generally illustrates an embodiment of a carabiner used in some embodiments of the present invention. In some embodiments, carabiner **100** generally includes frame **102** having spine **104** disposed opposite of gate **112**. Frame **102** is terminated by two end sections, nose **106** and pivot end **108**. Pivot end **108** includes an aperture therein, where the aperture is arranged to accept pivot pin **110**, thereby rotatably securing gate **112** to pivot end **108**. In some arrangements, frame **102** includes elongated curve portion **114** which is arranged opposite of longitudinal portion **116**, whereas spine **104** connects elongated curve portion **114** and longitudinal portion **116**. Longitudinal portion **116** also includes longitudinal axis LX. Carabiner **100** is generally configured to have a substantially circular cross-section.

Pivot pin **110** could be a rivet, a fixed secured pin, or other like structure, so long as it can rotatably secure gate **112** to pivot end **108**.

In a preferred embodiment, gate **112** includes a spring mechanism, or like mechanism, such that gate **112** forcibly contacts nose **106** until force is imparted thereon—allowing gate **112** to move in a direction towards spine **104**. In some embodiments, gate **112** could also include a lock, such as a screw-lock which would threadably secure to nose **106**, or a twist lock allowing gate **112** to be turned a specific degree to allow gate **112** to be released from nose **106**, or a twist and pull lock which requires gate **112** to be twisted and slid down to release gate **112** from nose **106**.

In some embodiments, frame **102** also includes pivot portion **118** which includes pivot end **108** and major arch **120** having angle A**1**. Pivot portion **118** is the connecting section between pivot end **108** and longitudinal portion **116**. Longitudinal portion **116** includes inner face, or surface, **140**. Longitudinal portion **116** and spine **104** are connected by first curved portion **122** having major arch **124**. Major arch **124** includes angle A**2**, whereas angle A**1** and angle A**2** are substantially equal. Spine **104** includes inner face, or side, **138**. Spine **104** and elongated curve portion **114** are connected by second curved portion **126** having minor arch **128**, whereas minor arch **128** has angle A**3**. Elongated curve portion **114** includes elongated arch **130** having angle A**4**. Nose portion **132** includes nose **106** and is connected to elongated curve portion **114**. Nose portion **132** includes minor arch **134** having angle A**5**. Gate **112** also includes inner face **136**.

The distance between inner face **136** of gate **112** (when gate **112** is abutting nose **106**) and inner face **138** of spine **104** is length L**1**. The distance between inner face, or surface **140** of longitudinal portion **116** and elongated arch **130** of elongated curve portion **114** is length L**2**. Length L**1** is greater than length L**2**. In a preferred embodiment, length L**1** and length L**2** are in an approximate ratio of five to three, respectively. In other embodiments, length L**2** may be approximately 50%-75% of length L**1**. In a preferred embodiment, length L**1** is at least 66% longer than length L**1**.

Angle A**1** of major arch **120** is substantially equal to angle A**2** of major arch **124**. Angle A**3** of minor arch **128** is substantially equal to angle A**5** of minor arch **134**. Angles A**1** and A**2** are less than angles A**3** and A**5**. Angle A**4** of elongated arch **130** is greater than angles A**3** and A**5**. Angle A**4** of elongated arch **130** is greater than angles A**1** and A**2**.

It should be noted that gate **112** is substantially equivalent to clip **68**. Longitudinal portion **116** is substantially equivalent to distal section **62**. Spine **104** is substantially equivalent to connecting section **66**. Elongated curve portion **114** is substantially equivalent to proximal section **64**. Nose **106** is substantially equivalent to first end **64***a*. Pivot end **108** is substantially equivalent to first end **62***a*. Pivot pin **110** is substantially equivalent to pivot pin **110**. It also should be appreciated that either carabiner **60** or carabiner **100** may be used in cap **14** of the present invention.

The following description should be taken in view of the aforementioned figures and their respective description and FIG. **8**A through **9**B. FIG. **8**A through **9**B generally illustrate a perspective view and a cross-sectional view of an alternative embodiment of carabiner cap combination **14**, carabiner cap combination **200**, having an alternative embodiment of carabiners **60** and **100**, carabiner **250**, therein, and a perspective view and a front view of carabiner **250**.

Carabiner cap combination **200** is preferably a singular component having carabiner **250** (or carabiner **60** or carabiner **100**) fixedly secured within a through-bore therein. In some embodiments, carabiner cap combination **200** comprises distal portion **202** and proximal portion **204**, whereas distal portion **202** and proximal portion **204** are arranged to be fixedly secured, having carabiner **250** therein, forming Carabiner cap combination **200**.

In some embodiments, distal portion **202** of cap **200** generally includes distal surface **212**, proximal surface **213**, external surface **210**, internal surface **211**, and groove **206**. In some arrangements, external surface **210**, proximate distal surface **212** may have threading (similar to threading **44**) arranged thereon. In other arrangements, internal surface **211**, proximate distal surface **212** and within cavity **214**, may have threading arranged thereon (similar to threading **44**)—this arrangement may be configured to correspond to threading **30** of container **12** which may be alternatively arranged on outer surface **26** of mouth **24** of container **12**. O-ring channel **216** is arranged within cavity **214** proximate groove **206** and is arranged to accept O-ring **218** therein. Groove **206** includes first outer portion **206***a*, second outer portion **206***b*, and inner portion **206***c*, where first outer portion **206***a* and second outer portion **206***b* have a great diameter than inner portion **206***c*.

In some arrangements, proximal portion **204** of carabiner cap combination **200** generally includes distal surface **220**, proximal surface **222**, and groove **208**. Plurality of ribs **224** extend from distal surface **220** into groove **208** (i.e., protruding into groove **208**). Groove **208** includes first outer portion **208***a*, second outer portion **208***b*, and inner portion **208***c*, where first outer portion **208***a* and second outer portion **208***b* have a diameter greater than the diameter of inner portion **208***c*.

Grooves **206** and **208**, when distal portion **202** and proximal portion **204** are joined, form the through-bore that fixedly and rotatably holds carabiner **250**, specifically longitudinal portion **266**, therein.

In some embodiments, carabiner **250** generally includes frame **252** having spine **254** disposed opposite of gate **262**. Frame **252** is terminated by two end sections, nose **256** and pivot end **258**. Pivot end **258** includes an aperture therein, where the aperture is arranged to accept pivot pin **260**, thereby rotatably securing gate **262** to pivot end **258**. In some arrangements, frame **252** includes elongated curve portion **264** which is arranged opposite of longitudinal portion **266**, whereas spine **254** connects elongated curve portion **264** and longitudinal portion **266**. Longitudinal portion **266** includes first outer section **266***a*, second outer section **266***b*, and inner section **266***c*, whereas first outer section **266***a* and second outer section **266***b* have a greater diameter than inner section **266***c*. Longitudinal portion **266** also includes first groove **266***d* disposed within first outer section **266***a* and second groove **266***e* disposed within second outer section **266***b*. First groove **266***d* and second groove **266***e* are annular channels and are arranged to accept first carabiner O-ring **292** and second carabiner O-ring **294** therein, respectively. Longitudinal portion **266** also includes longitudinal axis LX. Longitudinal portion **266** is arranged to have a substantially circular cross-section.

Pivot pin **260** could be a rivet, a fixed secured pin, or other like structure, so long as it can rotatably secure gate **262** to pivot end **258**.

In a preferred embodiment, gate **262** includes a spring mechanism, or like mechanism, such that gate **262** forcibly contacts nose **256** until force is imparted thereon—allowing gate **262** to move in a direction towards spine **254**. In some embodiments, gate **262** could also include a lock, such as a screw-lock which would threadably secure to nose **256**, or a twist lock allowing gate **262** to be turned a specific degree to allow gate **262** to be released from nose **256**, or a twist and pull lock which requires gate **262** to be twisted and slid down to release gate **262** from nose **256**.

In some embodiments, frame **252** also includes pivot portion **268** which includes pivot end **258** and major arch **270** having angle A**6**. Pivot portion **268** is the connecting section between pivot end **258** and longitudinal portion **266**. Longitudinal portion **228** includes inner faces, or surfaces, **290***a*, **290***b*, and **290***c*, arranged on first outer section **226***a*, second outer section **266***b*, and inner section **266***c*, respectively. Longitudinal portion **266** (specifically, second outer section **266***b*) and spine **254** are connected by first curved portion **272** having major arch **274**. Major arch **274** includes angle A**7**, whereas angle A**6** and angle A**7** are substantially equal. Spine **254** includes inner face, or side, **288**. Spine **254** and elongated curve portion **264** are connected by second curved portion **276** having minor arch **278**, whereas minor arch **278** has angle A**8**. Elongated curve portion **264** includes elongated arch **280** having angle A**9**. Nose portion **282** includes nose **256** and is connected to elongated curve portion **264**. Nose portion **282** includes minor arch **284** having angle A**10**, whereas angle A**10** and A**8** are substantially equal. Gate **262** also includes inner face **286**.

The distance between inner face **286** of gate **262** (when gate **262** is abutting nose **256**) and inner face **288** of spine **254** is length L**3**. The distance between inner faces, or surfaces **290***a* and **290***b* of first outer section **266***a* and second outer section **266***b* of longitudinal portion **266** and elongated arch **280** of elongated curve portion **264** is length L**4**. Length L**3** is greater than length L**4**. In a preferred embodiment, length L**3** and length L**4** are in an approximate ratio of five to three, respectively. In other embodiments, length L**4** may be approximately 50%-75% of length L**3**. In a preferred embodiment, length L**3** is at least 66% longer than length L**4**.

Angle A**6** of major arch **270** is substantially equal to angle A**7** of major arch **274**. Angle A**8** of minor arch **278** is substantially equal to angle A**10** of minor arch **284**. Angles A**6** and A**7** are less than angles A**8** and A**10**. Angle A**9** of elongated arch **280** is greater than angles A**8** and A**10**, and also may be greater than angle A**4** of carabiner **100** (shown in FIG. **7**B). Angle A**9** of elongated arch **280** is greater than angles A**6** and A**7**. In some embodiments, angles A**8** and A**10** may be less than angles A**3** and A**5** of carabiner **100** (shown in FIG. **7**B). The relationships between the angles of carabiner **100** and carabiner **250**, are recited below:

$$A1 = A2$$
$$A3 = A5$$
$$A1 < A3$$
$$A1 < A5$$
$$A2 < A3$$
$$A2 < A5$$
$$A1 < A4$$
$$A2 < A4$$
$$A3 < A4$$
$$A6 = A7$$
$$A8 = A10$$
$$A6 < A8$$
$$A6 < A10$$
$$A7 < A8$$
$$A7 < A10$$
$$A6 < A9$$
$$A7 < A9$$
$$A8 < A9$$
$$A10 < A9$$
$$A4 < A9$$
$$A1 = A6$$
$$A1 = A7$$
$$A2 = A6$$
$$A2 = A7$$
$$A8 < A3$$
$$A8 < A5$$
$$A9 < A3$$
$$A9 < A5$$

It also should be appreciated that either carabiner **60**, carabiner **100**, or carabiner **200** may be used in cap **14** of the present invention.

It should be appreciated that various aspects of the disclosure above and other features and functions, or alternatives thereof, may be desirably combined into many other different systems or applications. Various presently unforeseen or unanticipated alternatives, modifications, variations, or improvements therein may be subsequently made by those skilled in the art which are also intended to be encompassed by the following claims.

REFERENCE NUMERALS

2 Article
4 Ring
10 Carabiner bottle
12 Container
14 Carabiner cap combination
15 Body of cap **14**
16 O-Ring
18 Distal end
20 Proximal end
22 Body
24 Mouth
26 Outer surface
28 Inner surface
30 Threading
32 Plurality of gripping members
34 Neck
36 Distal portion
38 Proximal portion
40 Distal surface
41 Proximal surface
42 Protrusion
43 Outer surface
44 Threading
45 First cavity
46 Groove
46*a* Groove body
47 Second cavity
48 Channel
50 Distal surface
52 Proximal surface
54 Groove
54*a* Groove body
55 First cavity
56 First protruding section
57 Second cavity
58 Second protruding section
60 Carabiner
62 Distal section
62*a* First end
62*b* Second end
62*c* Pin
62*d* Longitudinal portion
64 Proximal section
64*a* First end
64*b* Second end
66 Connecting section
66*a* First end
66*b* Second end
68 Clip
68*a* First end
68*b* Second end
68*c* Aperture
69 Locking sleeve
70 Sinusoidal groove
72 Sinusoidal protrusion
74 Dome-like protrusions
76 Dome-like indentations
78 Annular groove
80 Annular protrusion
100 Carabiner
102 Frame
104 Spine
106 Nose
108 Pivot end
110 Pivot pin
112 Gate
114 Elongated curve portion
116 Longitudinal portion
118 Pivot portion
120 Major arch
122 First curved portion
124 Major arch
126 Second curved portion
128 Minor arch
130 Elongated arch
132 Nose portion
134 Minor arch
136 Inner face
138 Inner face
140 Inner face
200 Cap
202 Distal portion
204 Proximal portion
206 Groove
206*a* First outer portion
206*b* Second outer portion
206*c* Inner portion
208 Groove
208*a* First outer portion
208*b* Second outer portion
208*c* Inner portion
210 External surface
211 Internal surface
212 Distal surface
213 Proximal surface
214 Cavity
216 O-ring channel
218 O-ring
220 Distal surface
222 Proximal surface
224 Plurality of ribs
250 Carabiner
252 Frame
254 Spine
256 Nose
258 Pivot end
260 Pivot pin
262 Gate
264 Elongated curve portion
266 Longitudinal portion
266*a* First outer section
266*b* Second outer section
266*c* Inner section
266*d* First groove
266*e* Second groove
268 Pivot portion
270 Major arch
272 First curved portion
274 Major arch
276 Second curved portion
278 Minor arch
280 Elongated arch
282 Nose portion
284 Minor arch
286 Inner face
288 Inner face
290*a* Inner face
290*b* Inner face
290*c* Inner face
292 First carabiner O-ring
294 Second carabiner O-ring
A1 First angle

A2 Second angle
A3 Third angle
A4 Fourth angle
A5 Fifth angle
A6 Sixth angle
A7 Seventh angle
A8 Eighth angle
A9 Ninth angle
A10 Tenth angle
Axis AX
D1 Direction
D2 Direction
D3 Direction
D4 Direction
L1 First length
L2 Second length
L3 Third length
L4 Fourth length
LX Longitudinal axis

What is claimed is:

1. A carabiner cap combination, comprising:

a cap having a proximal end and a distal end, a protrusion extending from said distal end, said protrusion having threads arranged on an outer surface, said cap having a distal portion having a lower groove arranged therein, said cap having a proximal portion having an upper groove arranged therein, wherein said proximal portion is arranged to be fixedly secured to said distal portion such that said lower groove and said upper groove form a through-bore within said cap and between said proximal and distal ends of said cap, said through-bore having a longitudinal axis and a pair of openings disposed colinearly about said longitudinal axis, said pair of openings arranged on an external surface of said cap; and,

a carabiner, said carabiner having a proximal section, a distal section, and a gate, said distal section of said carabiner fixedly and directly secured to said cap within said through-bore, wherein said carabiner is adapted to rotate within said through-bore of said cap.

2. A container having a proximal end and a distal end, said container comprising a mouth arranged at said proximal end, wherein said protrusion of said carabiner cap combination recited in claim 1 is arranged to be threadedly secured to said mouth of said container, thereby forming a container and carabiner cap combination.

3. The container recited in claim 2 further comprising an outer surface and a plurality of gripping members arranged on and circumscribing at least a portion of said outer surface of said container.

4. The container recited in claim 3, wherein said plurality of gripping members are arranged on a portion of said outer surface and disposed between said first end and said second end of said container.

5. The container recited in claim 4, where each of said plurality of gripping members may comprises at least one of:

a plurality of sinusoidal grooves;
a plurality of sinusoidal protrusions;
a plurality of annular grooves;
a plurality of annular protrusions;
a plurality of dome-like indentations; and,
a plurality of dome-like protrusions.

6. The container and carabiner cap combination recited in claim 2 further comprising an O-ring arranged to be sandwiched between said mouth of said container and said protrusion of said cap when said cap is engaged to said mouth.

7. The cabined cap combination recited in claim 1, wherein said carabiner comprises:

a frame comprised of said proximal section of said carabiner and aid distal section of said carabiner, said frame having a nose arranged at a first end and a pivot end arranged at a second end, said frame having a spine arranged substantially between said nose and said pivot end, said frame including an arched portion arranged proximate said nose, said frame also including a longitudinal portion proximate said pivot end, said longitudinal portion being a part of the distal section of said carabiner; and,

said gate pivotably secured to said pivot end and arranged to engage said nose, wherein said gate and said spine are spaced part at a first length, wherein said arched portion and said longitudinal portion are spaced apart at a second length, whereas said first length is greater than said second length, wherein:

said longitudinal portion of said frame is said part of said carabiner secured within said through-bore of said cap.

8. The carabiner recited in claim 7, wherein said first length is 50-75% longer than said second length.

9. The carabiner recited in claim 7, wherein said first length is at least 66% longer than said second length.

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