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(54) **CONTAINER WITH INTEGRALLY FORMED RECOIL DEVICE**

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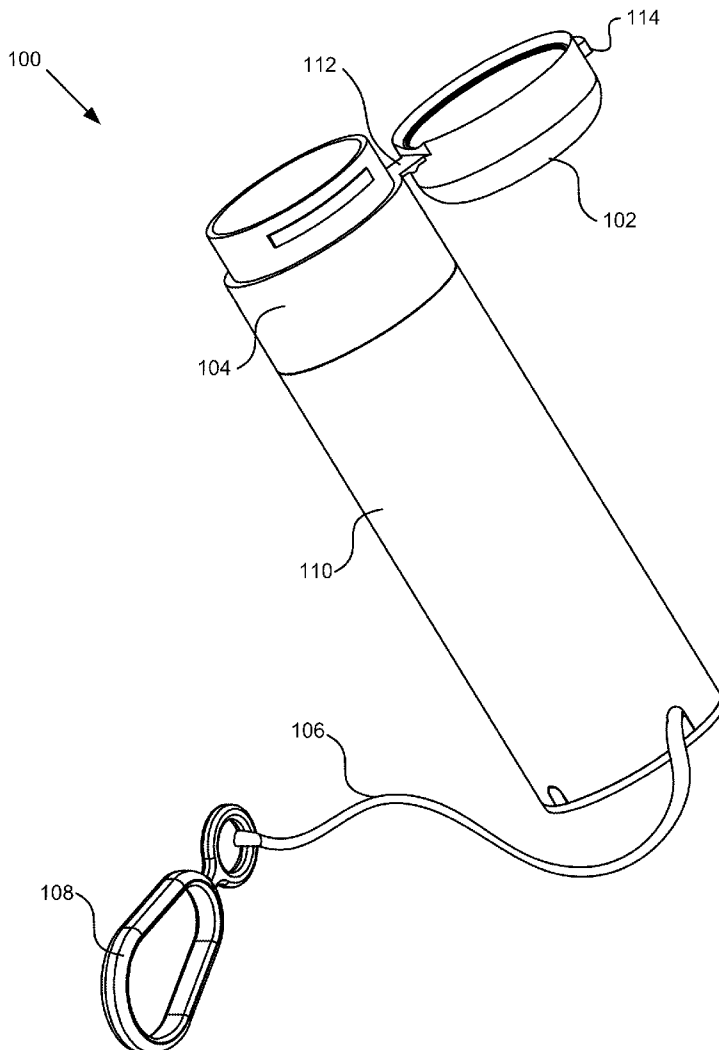
(57) **ABSTRACT**

A container is disclosed that includes an elongated, substantially hollow body having at least one opening, and a recoil mechanism integrally formed in the body and comprising a lanyard configured to extend from and recoil into the body. The container also includes a plunger slideably coupled with an interior surface of the body and configured to one of extend the item outward from an opening in the body, or, retract the item inward into the body. The container may include a flip-top cap integrally formed with the body, and an advance mechanism that causes the plunger to extend or retract in response to the direction of a rotating force.

Related U.S. Application Data

(63) Continuation-in-part of application No. 11/623,691, filed on Jan. 16, 2007, now Pat. No. 7,566,185.

(60) Provisional application No. 60/759,122, filed on Jan. 13, 2006.



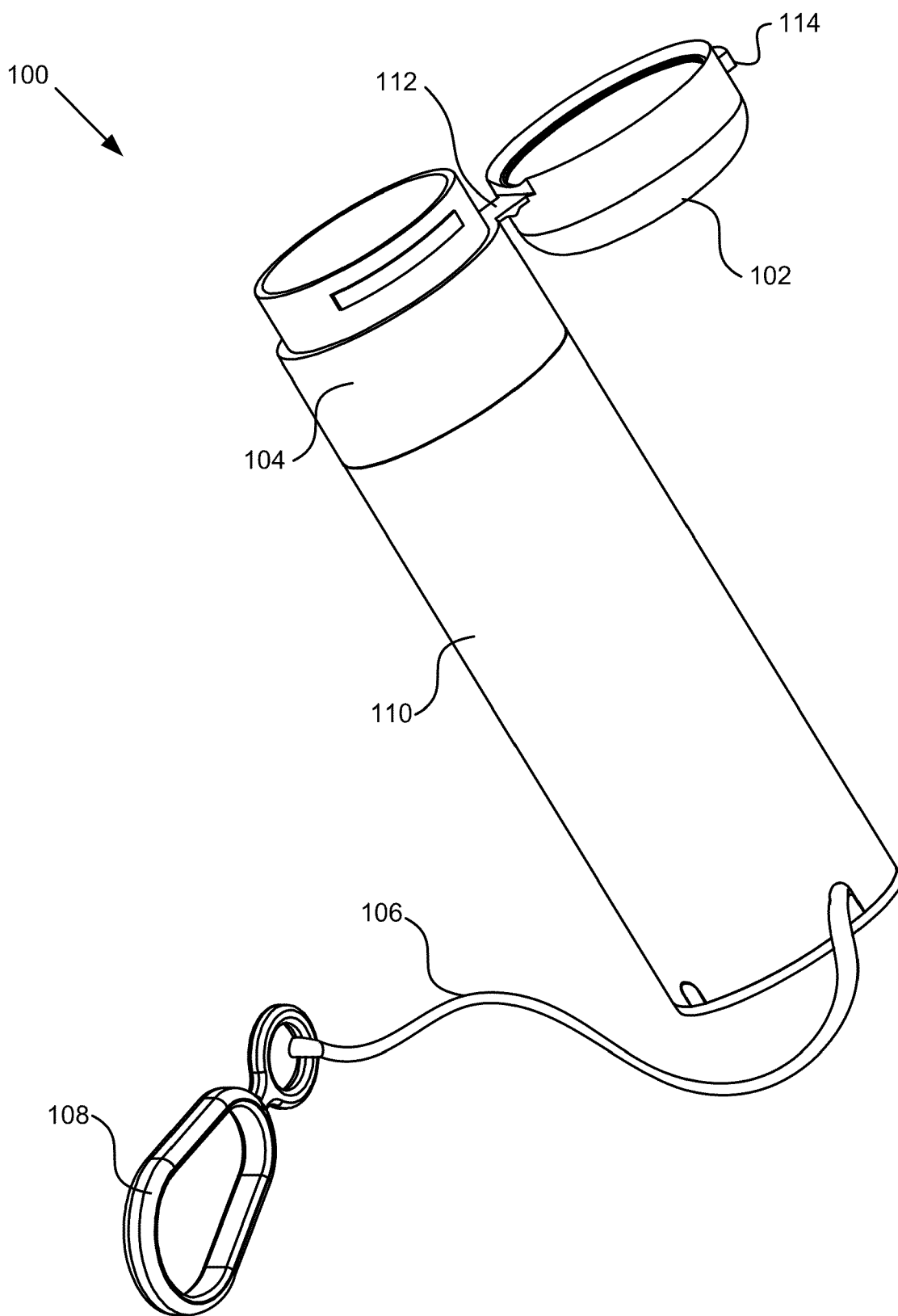


FIG. 1

200

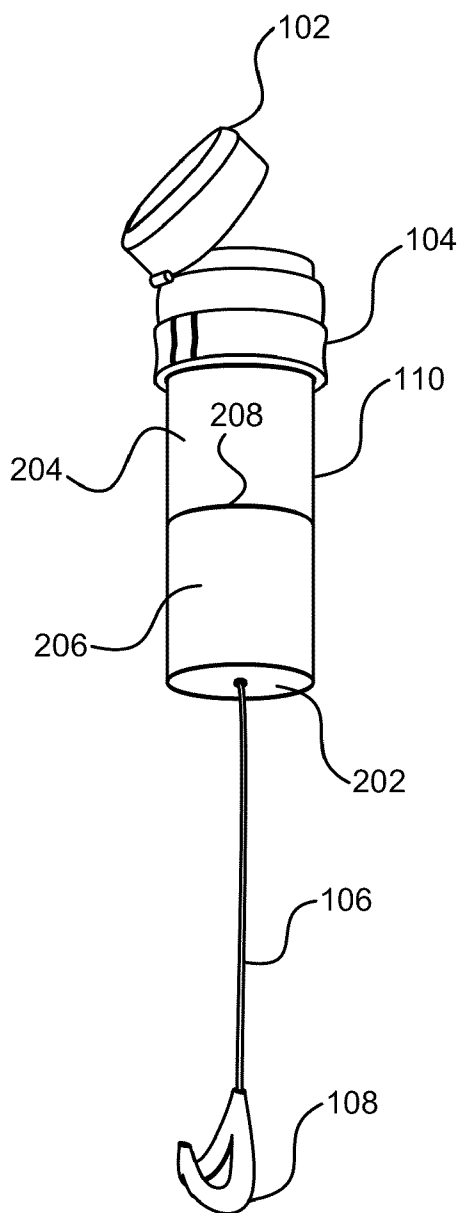


FIG. 2

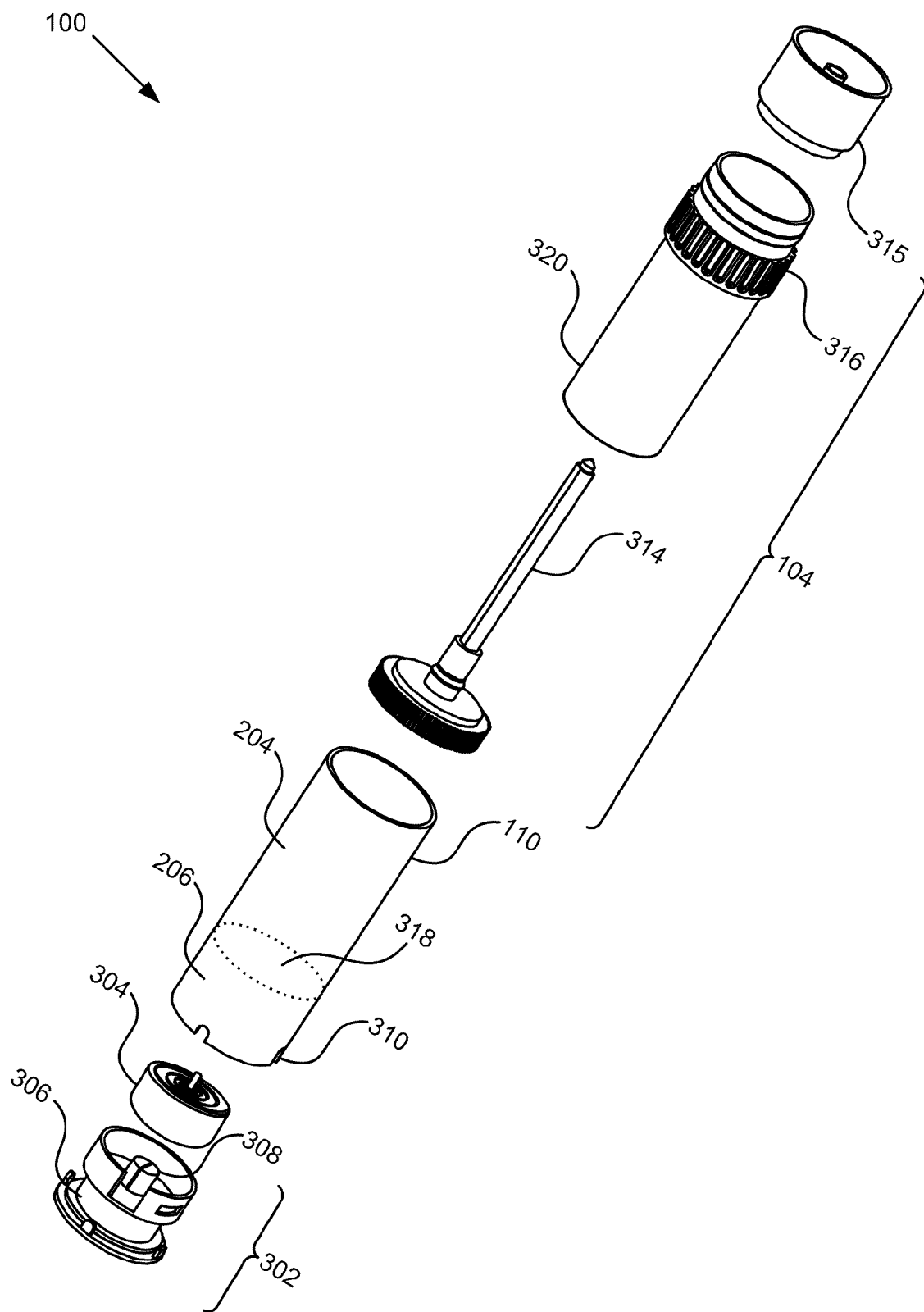


FIG. 3

100

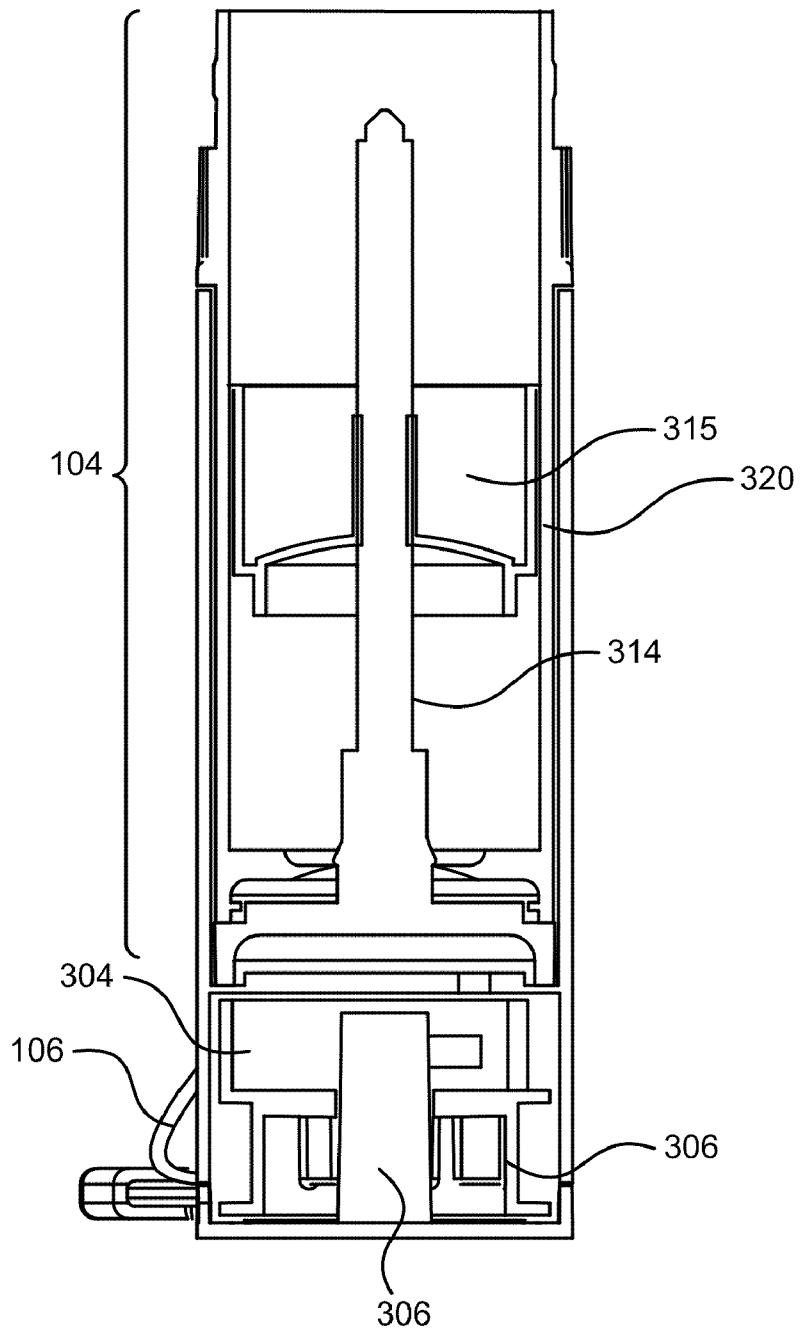


FIG. 4

500

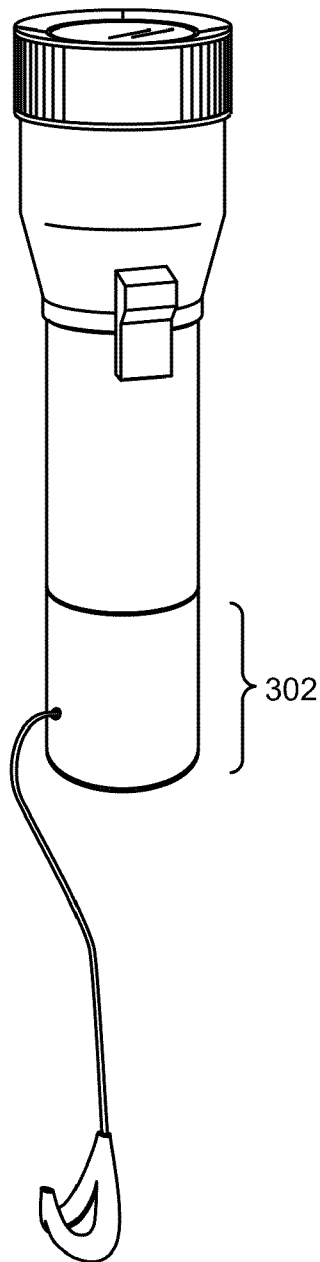



FIG. 5

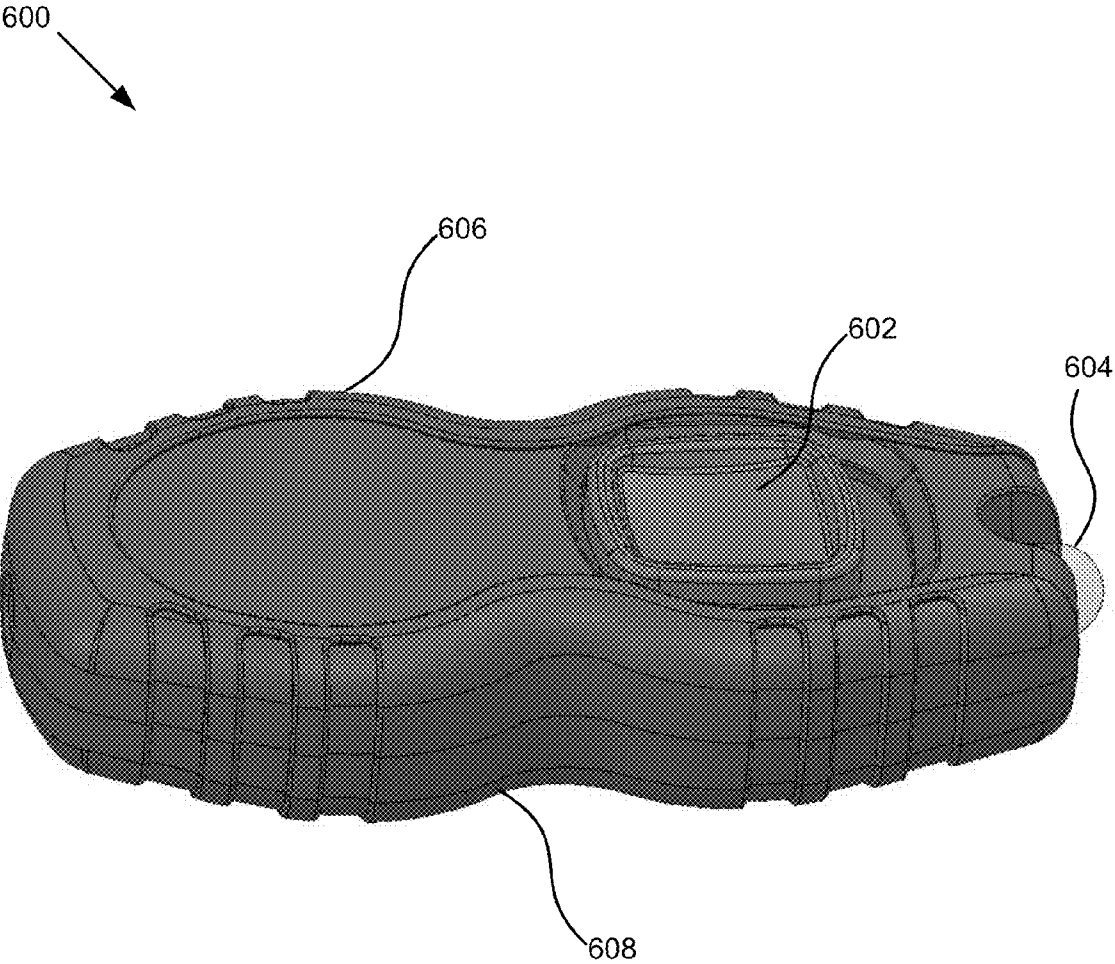


FIG. 6

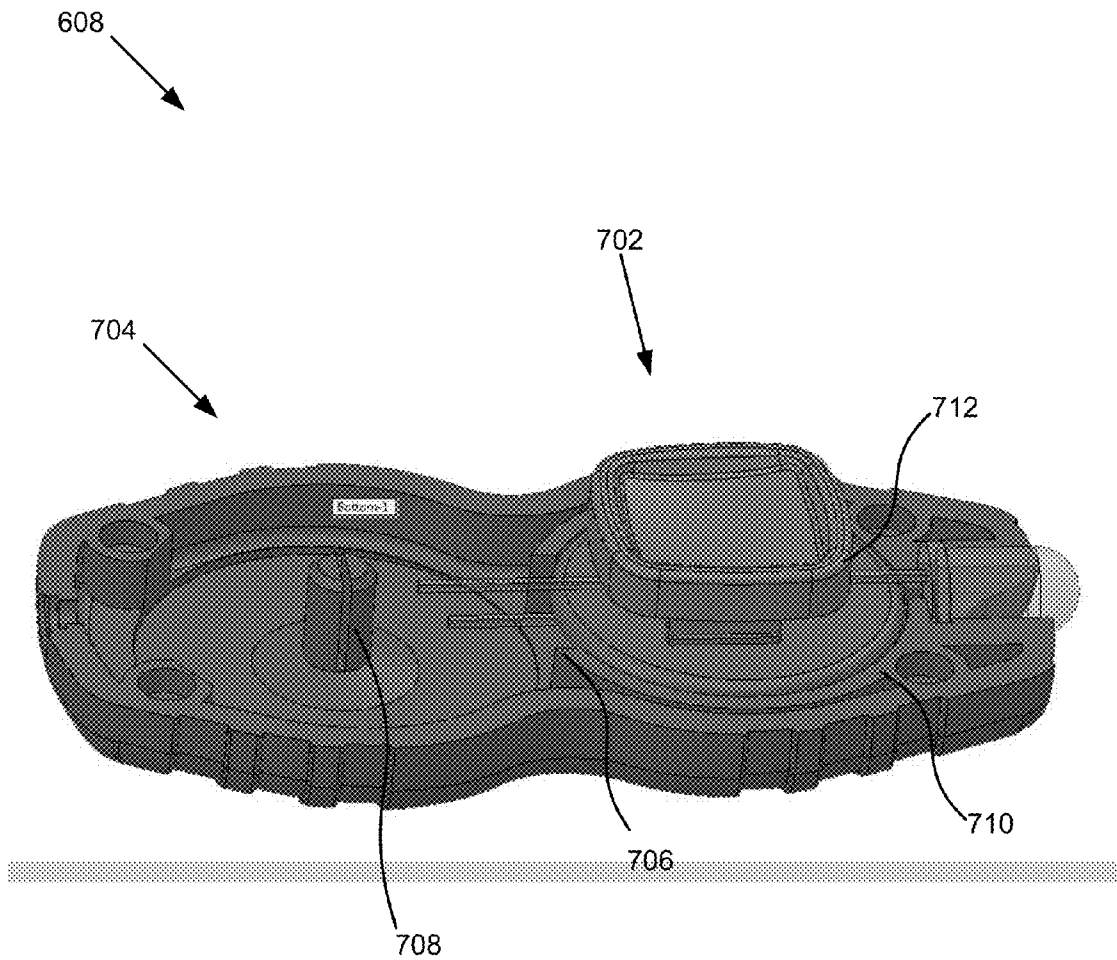


FIG. 7

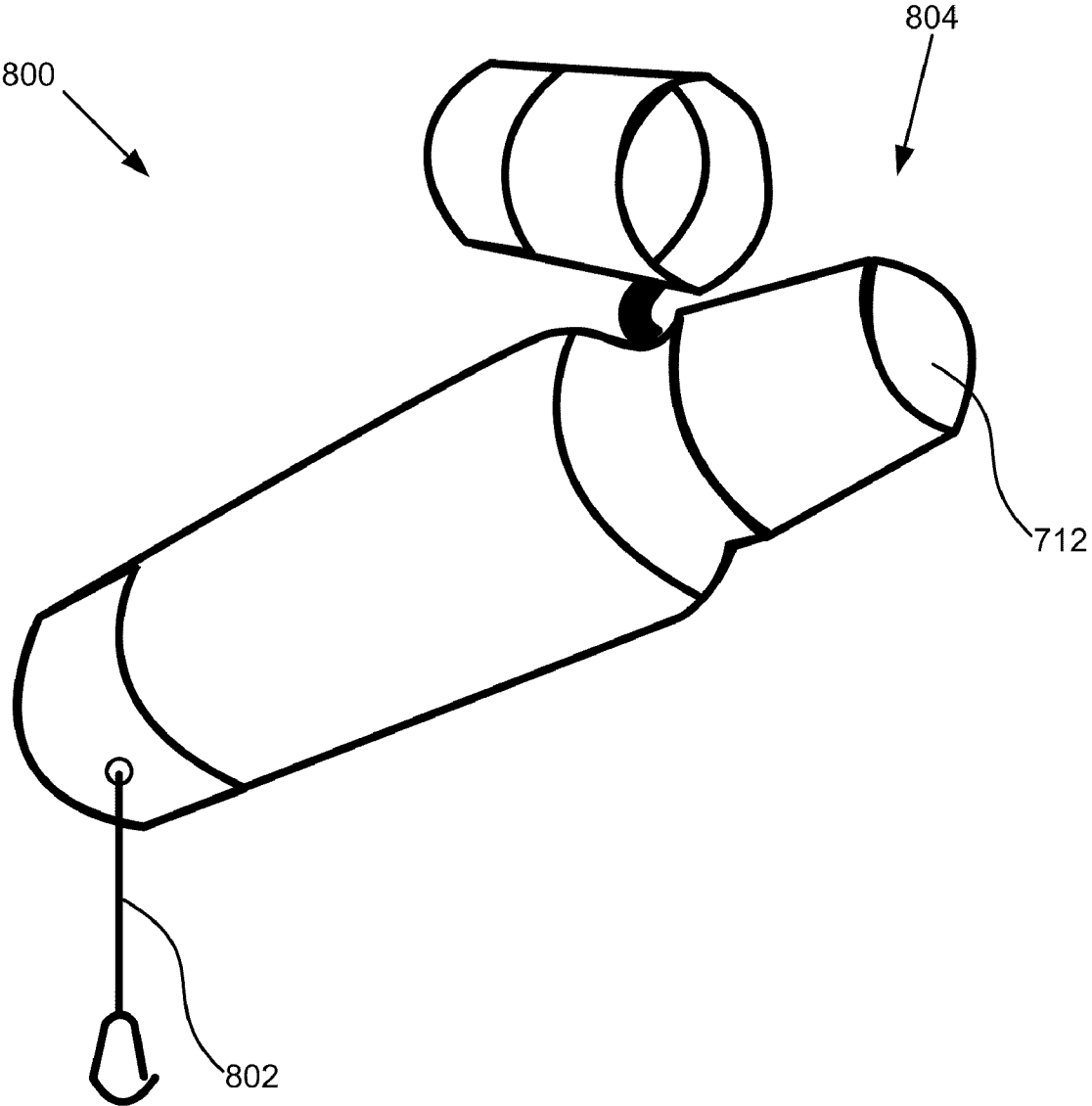


FIG. 8

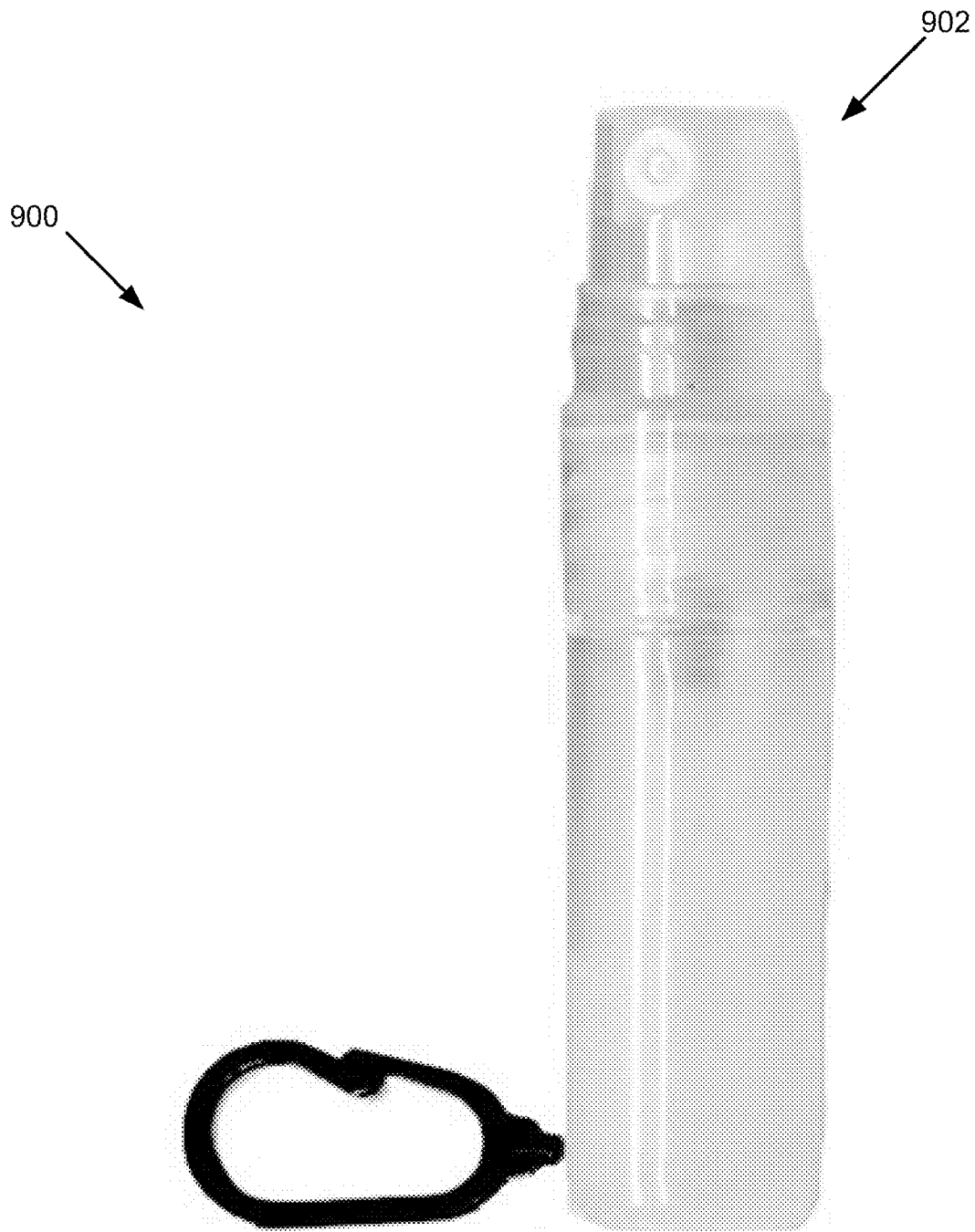


FIG. 9

CONTAINER WITH INTEGRALLY FORMED RECOIL DEVICE

CROSS-REFERENCES TO RELATED APPLICATIONS

[0001] This application is a continuation-in-part of and claims priority to U.S. Provisional Patent Application No. 60/759,122 entitled "CONTAINER WITH INTEGRALLY FORMED RECOIL DEVICE" and filed on Jan. 13, 2006 for Jacob D. Samuelson et al., and U.S. patent application Ser. No. 11/623,691 titled "CONTAINER WITH INTEGRALLY FORMED RECOIL DEVICE" and filed on Jan. 16, 2007 for Jacob D. Samuelson et al., both of which are incorporated herein by reference.

BACKGROUND

[0002] 1. Technical Field

[0003] This disclosure relates to containers and more particularly relates to a container having an integrally formed recoil device for securely fastening the container to an object.

[0004] 2. Description of the Related Art

[0005] A problem with current containers of household items is the dexterity required to open, dispense, and close the container. Due to the size of the container, often times a person must use both hands to remove the cap and access the household item. If gloves are being worn this task becomes nearly impossible. For example, consider lip balm. A large number of outdoor winter enthusiasts use lip balm because cold weather leads to chapped lips. Outdoor winter enthusiasts almost always wear some type of glove or mitten, and unfortunately, are unable to dispense and apply lip balm without first removing the gloves or mittens. Typically a skier must first remove his or her gloves, dig through the pocket or bag that contains the lip balm, apply the lip balm, return the lip balm to the pocket or bag, and replace the gloves. This is an uncomfortable but necessary procedure when using lip balm of the prior art.

[0006] Many have attempted to solve portions of the above described problem. For example, one apparatus provides a carrying case that attaches to a hook on a ski jacket. The carrying case is similar in structure to a pouch. However, one must still remove his or her gloves in order to remove the lip balm from the pouch, and dispense lip balm.

[0007] Another solution is to attach a neck lanyard to the lip balm. One problem with this solution is that the lanyard must be of sufficient length so that the lip balm can be applied to the lips when the lanyard is around a person's neck. However, the resulting length of the lanyard requires that one tuck the lanyard beneath clothing to prevent the lip balm from swinging and bouncing excessively. Again, gloves or mittens must be removed in order to retrieve and apply the lip balm.

[0008] From the foregoing discussion, it should be apparent that a need exists for a container having an integrally formed recoil device that prevents loss and a household item dispensing device that is capable of one-handed operation or operation when a person is wearing a glove or mitten.

SUMMARY OF THE DISCLOSURE

[0009] The present disclosure has been developed in response to the present state of the art, and in particular, in response to the problems and needs in the art that have not yet been fully solved by currently available lip balm containers. Accordingly, the present disclosure has been developed to

provide an apparatus that overcomes many or all of the above-discussed shortcomings in the art.

[0010] The container is provided with an elongated, substantially hollow body having at least one opening, a recoil mechanism integrally formed in the body and comprising a lanyard configured to extend from and recoil into the body, and a plunger slideably coupled with an interior surface of the body and configured to one of extend the item outward from an opening in the body, or, retract the item inward into the body.

[0011] The container may include a flip-top cap integrally formed with the body. The cap may include a ridge extending outward from the cap to enable one-finger operation. The cap is configured to cover the opening. The container also includes an advance mechanism formed on an exterior surface of the body. The advance mechanism is mechanically coupled with the plunger such that a rotating force causes the plunger to one of extend or retract in response to the direction of the rotating force.

[0012] In one embodiment, the container includes a threaded shaft coupled with the body. The shaft extends along a longitudinal axis of the body from a partition towards the opening. The threaded shaft is configured to engage a threaded opening in the plunger, rotate with the advance mechanism, and slide the plunger along the longitudinal axis in response to the rotating force.

[0013] In a further embodiment, the body includes a first chamber, a second chamber, and a partition disposed between the first and second chambers. The container may also include a hook coupled to a first end of the lanyard and configured to securely couple the container with an object. Examples of the object include articles of clothing, luggage, outerwear, sporting equipment, and vehicles. The item may include lip balm, cosmetic products, food products, coins, keys, pocket knives, and flashlights. In one embodiment, the recoil mechanism includes a spiral spring having first and second ends, where the first end is securely fastened with a shaft and the second end is coupled with the lanyard.

[0014] Reference throughout this specification to features, advantages, or similar language does not imply that all of the features and advantages that may be realized with the present disclosure should be or are in any single embodiment of the disclosure. Rather, language referring to the features and advantages is understood to mean that a specific feature, advantage, or characteristic described in connection with an embodiment is included in at least one embodiment of the present disclosure. Thus, discussion of the features and advantages, and similar language, throughout this specification may, but do not necessarily, refer to the same embodiment.

[0015] Furthermore, the described features, advantages, and characteristics of the disclosure may be combined in any suitable manner in one or more embodiments. One skilled in the relevant art will recognize that the disclosure may be practiced without one or more of the specific features or advantages of a particular embodiment. In other instances, additional features and advantages may be recognized in certain embodiments that may not be present in all embodiments of the disclosure.

[0016] These features and advantages of the present disclosure will become more fully apparent from the following

description and appended claims, or may be learned by the practice of the disclosure as set forth hereinafter.

BRIEF DESCRIPTION OF THE DRAWINGS

[0017] In order that the advantages of the disclosure will be readily understood, a more particular description of the disclosure briefly described above will be rendered by reference to specific embodiments that are illustrated in the appended drawings. Understanding that these drawings depict only typical embodiments of the disclosure and are not therefore to be considered to be limiting of its scope, the disclosure will be described and explained with additional specificity and detail through the use of the accompanying drawings, in which:

[0018] FIG. 1 is a schematic block diagram illustrating one embodiment of a container having an integrally formed recoil device;

[0019] FIG. 2 is a side and bottom perspective view diagram illustrating one embodiment of a container having a lanyard extending outward from a bottom of the container;

[0020] FIG. 3 is an exploded view diagram illustrating one embodiment of the container;

[0021] FIG. 4 is a cross-sectional view diagram illustrating the assembled internal components of the container;

[0022] FIG. 5 is a schematic block diagram illustrating an alternative embodiment of a container; and

[0023] FIG. 6 is a perspective view illustration showing another embodiment of a container for housing a flashlight;

[0024] FIG. 7 is a perspective view illustration showing another embodiment of the container;

[0025] FIG. 8 is a perspective view illustration showing one embodiment of a container having a roller-ball applicator top; and

[0026] FIG. 9 is a perspective view illustration showing one embodiment of a container having a pump-action top.

DETAILED DESCRIPTION

[0027] Reference throughout this specification to “one embodiment,” “an embodiment,” or similar language means that a particular feature, structure, or characteristic described in connection with the embodiment is included in at least one embodiment of the present disclosure. Thus, appearances of the phrases “in one embodiment,” “in an embodiment,” and similar language throughout this specification may, but do not necessarily, all refer to the same embodiment.

[0028] Furthermore, the described features, structures, or characteristics of the disclosure may be combined in any suitable manner in one or more embodiments. One skilled in the relevant art will recognize, however, that the disclosure can be practiced without one or more of the specific details, or with other methods, components, materials, and so forth. In other instances, well-known structures, materials, or operations are not shown or described in detail to avoid obscuring aspects of the disclosure.

[0029] FIG. 1 is a schematic block diagram illustrating one embodiment of a container 100 having an integrally formed recoil device in accordance with the present disclosure. In one embodiment, the container 100 is configured with a flip-top lid 102, an advance mechanism 104, a lanyard 106, and an attachment mechanism 108. The container 100 may be cylindrical as depicted in FIG. 1. Alternatively, the container 100 may have an elongated tubular shape having a cross-sectional area in the form of a square, rectangle, oval, etc.

[0030] The flip-top lid 102 may be integrally formed with a body 110, and coupled with the body 110 by way of a hinge 112. In a further embodiment, the lid 102 is detachable from the body 110. In a further embodiment, the lid 102 may include a ridge 114 for engaging the finger of a user in order to enable “flip-top” like functionality without requiring two fingers to pull off the cap 102.

[0031] The advance mechanism 104 is configured to vertically lift an item to expose or discharge the item from the body 110. Examples of items that may be exposed or discharged from the body include, but are not limited to, lip balm, lipstick, other cosmetic products, hard candy such as suckers, soft candy, coins, keys, etc. The body may be formed substantially of a lightweight rigid material such as, a polymer-based material. Examples of polymer based materials suitable for use with the present disclosure include, but are not limited to, polyethylene, nylon, or the like.

[0032] In one embodiment, the lanyard 106 comprises a cable or cord configured to extend and subsequently retract into the body 110. As used herein, the term “lanyard” refers to a flexible line of rope, wire, wire rope, or strap that is attached to any small object for the purpose of securing the object. The recoil mechanism will be discussed below with reference to FIGS. 3 and 4. As depicted, the lanyard 106 extends outward from the side of the body. Coupled with one end of the lanyard 106 is the attachment mechanism 108. The attachment mechanism 108 may comprise a hook, plastic or otherwise, configured to secure the container 100 to an article of clothing, a bag, a belt, a belt loop, a pocket, a purse, or the like. Alternatively, the attachment mechanism 108 may comprise a key ring. The lanyard 106 may be formed of nylon or an alternative durable material and is of a length sufficient to enable a user to move the container 100 to a desirable location such as adjacent the user’s mouth.

[0033] FIG. 2 is a side and bottom perspective view diagram illustrating one embodiment of a container 200 having a lanyard 106 extending outward from a bottom 202 of the container 200. In one embodiment, the body 110 may comprise a first chamber 204 for housing the item, and a second chamber 206 for housing the recoil mechanism. The body 110 may have an externally visual separation of the chamber 204, 206 as illustrated by the line 208, or there may be no externally visual evidence that the body comprises first and second chambers 204, 206. Line 208, in one embodiment indicates the position of a partition inside the body 110 disposed between the first and second chambers 204, 206.

[0034] FIG. 3 is an exploded view diagram illustrating one embodiment of the container 100 in accordance with the present disclosure. In one embodiment, the container comprises a recoil mechanism 302 located in the second or lower chamber 206 of the body 110. The recoil mechanism 302 may comprise a spiral spring 304, and a reel 306. An interior end of the spiral spring 304 may be fixedly connected with a peg 308, and the exterior end of the spiral spring 304 may be fixedly connected with the reel 306. At least one end of the peg 308 is fixedly coupled with the body 110.

[0035] In one embodiment, the lanyard 106 comprises a first end connected with the reel 306 and a second end connected with the attachment mechanism 108. The body 110 further comprises an opening 310 through which the lanyard 106 may pass. The opening 310 may include a metal grommet to prevent the lanyard from wearing through the body 110 as the lanyard 106 passes through the opening 310. As the lanyard 106 is extracted from the body 110, the reel 306 turns and

subsequently tensions the spiral spring 304. The tensioned spiral spring 304 serves to recoil the lanyard 106 once the extracting force is removed from the lanyard 106.

[0036] The advance mechanism, in one embodiment, may comprise a threaded rod 314, and a plunger 315. In the depicted embodiment, the advance mechanism also comprises a collar 316 configured to engage the finger or fingers of a user in order to extend or discharge the plunger 315. The collar 316, as depicted, may be disposed next to the lid 102, or alternatively may be disposed above the spiral spring 304. The plunger 315, as depicted, is configured to contain an item such as lip balm, lip stick, etc., as described above.

[0037] The plunger 315 is configured to support the item, and engage the threaded rod 314. As a user turns the collar 316, which may be integrally formed with the body, the threaded rod 314 also turns. Subsequently, the plunger 315 climbs the threaded rod 314 and extends or discharges the item 315. The threaded rod 314, in one embodiment, is fixedly coupled with the body 110. The threaded rod may be coupled with a partition 318 integrally formed with the body 110 and configured to separate the first chamber 204 from the second chamber 206.

[0038] The body 110, in one embodiment, may be configured as a sleeve to house the advance mechanism 104. As depicted, the advance mechanism may comprise an inner cylinder 320 configured to engage the body 110. This inner cylinder 320 configuration allows a person to, with one hand, hold the body 110 while rotating the advance mechanism 104 and extend or retract the item.

[0039] FIG. 4 is a cross-sectional view diagram illustrating the assembled internal components of the container 100 in accordance with the present disclosure. In one embodiment, the separate elements may be arranged as depicted, with the spiral spring 304 mounted to a top surface of the reel 306. Alternatively, the spiral spring 304 may be mounted to a bottom surface of the reel 306. The threaded rod 314 may be configured to pass into the second chamber and serve as the fixed peg for fixing the interior end of the spiral spring 304 and providing a point about which the reel 306 may rotate. Alternatively, this function may be performed by the peg 308 as described above.

[0040] FIG. 5 is a schematic block diagram illustrating an alternative embodiment of a container 500 in accordance with the present disclosure. In one embodiment, the container 500 is configured in the shape of a flashlight. The recoil mechanism 302 may be integrally formed into the container 500 and thereby provide a flashlight with a built-in recoil mechanism 500. The container 500 is illustrated here as a flashlight by way of example. However, one skilled in the art will recognize that the recoil mechanism 302 may be integrated into many objects. These items may include, but are not limited to, LED lights, pepper spray containers, weapons such as tazers, cigarette lighters, portable flash memory drives, portable media players, etc.

[0041] FIG. 6 is a perspective view illustration showing another embodiment of a container 600 for housing a flashlight. Although the particular application of FIG. 6 is a flashlight, the concepts of the upper and lower portions may be applied to form containers for other household items. The container 600, in one embodiment, includes a button 602, an LED 604, an upper portion 606, and a lower portion 608. The upper and lower portion 606, 608 together form the container 600. The button 602 slides and engages a battery (not shown)

to supply power to the LED 604. The container 600 will be discussed further with reference to FIG. 7.

[0042] FIG. 7 is a perspective view illustration showing another embodiment of the container 600, specifically, the lower portion 608 of the container 600. The container 600, in one embodiment, includes a first chamber 702, a second chamber 704, a partition 706, a spindle 708, and a housing 710. The first chamber 702 is an opening formed by the housing 710 and may be shaped to engage a multitude of household items, for example, a battery 712 for powering the LED 604. Alternatively, the first chamber 702 and housing 710 may be shaped to engage other household items described above, such as, lip balm, lip gloss, food items, etc.

[0043] In one embodiment, the housing 710 for engaging the household item may also function as the partition 706 separating the first and second chambers 702, 704. As shown, the first and second chamber 702, 704 may have an opening that enables a fluid to pass from one chamber to the other. Alternatively, the partition 706 may form a fluid or liquid barrier between the first and second chambers 702, 704. As such, the first chamber 702 becomes a reservoir for holding liquids, gels, creams, and other viscous household items. Beneficially, the first chamber 702 may be formed to hold such viscous household items, or as is depicted in FIG. 7, the first chamber 702 may be formed to hold rigid household items like the battery 712.

[0044] The spindle 708 may be formed in the lower portion 608 of the container 600. The spindle 708, as described above, is shaped to engage a recoil mechanism as described above. Alternatively, the spindle 708 may be formed in the upper portion 606 of FIG. 6. In a further alternative embodiment, the spindle 708 may be formed by the joining of the upper and lower portions of the container, that is, the upper portion 606 and the lower portion 608 may each include a portion of the spindle 708 such that when the upper portion 606 is mated to the lower portion 608, the spindle 708 is formed. Likewise, the housing 710 and the partition 706 may be formed by the joining of the upper and lower portions of container 600.

[0045] FIG. 8 is a perspective view illustration showing one embodiment of a container 800 having a roller-ball applicator top. In one embodiment the container 800 is formed with first and second chambers, as described above, having a liquid barrier partition. The liquid barrier partition prevents viscous household items from passing into the second chamber which houses the recoil device and lanyard 802. As such, the container 800 may house such viscous materials as lip gloss. The container 800 may be adapted to attach a roller-ball applicator top 804 to disburse the lip gloss, or other household item, in a manner known to those of skill in the art of roller-ball applicators. Other contemplated applications, aside from lip gloss, include, but are not limited to, writing instruments, sunscreen, lotions, hand sanitizer, lubricants, etc.

[0046] FIG. 9 is a perspective view illustration showing one embodiment of a container 900 having a pump-action top. The container 900, as described above, may be configured to house a viscous household item. In certain embodiments, these viscous household items may be disbursed using a pump-action top 902. The pump-action top 902, as is known by those of skill in the art, includes a draw tube that extends into the first chamber such that when a pumping force is applied to the pump-action top 902, the viscous household item is drawn out of the first chamber and sprayed. Likewise, the container 900 may be formed to attach to an aerosol top.

As such, household items such as hand sanitizer, sunscreen, self-defense liquids, etc., may be dispersed from the container 900.

[0047] The present disclosure may be embodied in other specific forms without departing from its spirit or essential characteristics. The described embodiments are to be considered in all respects only as illustrative and not restrictive. The scope of the disclosure is, therefore, indicated by the appended claims rather than by the foregoing description. All changes which come within the meaning and range of equivalency of the claims are to be embraced within their scope.

- 1. A container comprising:
 - a substantially hollow body;
 - a housing coupled with an interior surface of the substantially hollow body and shaped to engage a household item;
 - a recoil mechanism attached to the interior surface of the substantially hollow body and coupled with a first end of a lanyard that extends from and recoils into the body; and
 - an attachment mechanism coupled to a second end of the lanyard and configured to securely connect the substantially hollow body with an object.

2. The container of claim 1, wherein the household item is selected from a group consisting of lip balm, cosmetic products, food products, coins, keys, pocket knives, hand sanitizer, insect repellent, sunscreen, self-defense spray, compass, and flashlights.

3. The container of claim 1, wherein the attachment mechanism is a hook.

4. The container of claim 1, wherein the attachment mechanism is a hook and loop strap.

5. The container of claim 1, further comprising a flip-top cap integrally formed with the substantially hollow body, the cap comprising a ridge extending outward from the cap to enable one-finger operation, the cap configured to cover an opening of the substantially hollow body.

6. The container of claim 1, further comprising an advance mechanism formed on an exterior surface of the substantially hollow body and mechanically coupled with a plunger such that a rotating force causes the plunger to one of extend or retract in response to the direction of the rotating force.

7. The container of claim 1, wherein the substantially hollow body further comprises a partition separating a first chamber and a second chamber.

8. The container of claim 7, wherein the housing is integrally formed on an interior surface in the first chamber of the substantially hollow body.

9. The container of claim 7, wherein the recoilable spool is coupled with an interior surface of the second chamber of the substantially hollow body.

10. The container of claim 9, further comprising a threaded shaft coupled with the substantially hollow body and extending along a longitudinal axis of the body from the partition towards the opening, the threaded shaft configured to engage a threaded opening in a plunger, rotate with an advance mechanism, and slide the plunger along the longitudinal axis in response to a rotating force.

11. The container of claim 7, wherein the partition forms a barrier between the first and second chamber, and the first chamber forms a reservoir for one of liquids, gels, or creams.

12. The container of claim 11, further comprising a pump action top attachable to the substantially hollow body and having a draw tube that extends into the first chamber such that a pumping action causes the disbursement of one of liquids, gels, or creams.

13. The container of claim 11, further comprising a roller-ball top attachable to the substantially hollow body and having a roller-ball applicator for the disbursement of one of liquids, gels, or creams.

14. The container of claim 11, further comprising an aerosol spray top attachable to the substantially hollow body and having a dip tube that extends into the first chamber such that a depression force on an actuator causes an aerosol mist of liquid particles.

15. A container comprising:

- an elongated, substantially hollow body having at least one opening;

a recoil mechanism integrally formed in the body and comprising a lanyard configured to extend from and recoil into the body;

the body configured to contain an item; and

a plunger slideably coupled with an interior surface of the body and configured to extend the item outward from an opening in the body and retract the item inward into the body.

16. The container of claim 15, further comprising a flip-top cap integrally formed with the body, the cap comprising a ridge extending outward from the cap to enable one-finger operation, the cap configured to cover the at least one opening.

17. The container of claim 15, further comprising an advance mechanism formed on an exterior surface of the body and mechanically coupled with the plunger such that a rotating force causes the plunger to one of extend or retract in response to the direction of the rotating force.

18. The container of claim 17, further comprising a threaded shaft coupled with the body and extending along a longitudinal axis of the body from a partition towards the opening, the threaded shaft configured to engage a threaded opening in the plunger, rotate with the advance mechanism, and slide the plunger along the longitudinal axis in response to the rotating force.

19. The container of claim 15, wherein the body further comprises a first chamber, a second chamber, and a partition disposed between the first and second chambers.

20. A container comprising:

- a substantially hollow body;

a partition forming a liquid barrier between a first chamber and a second chamber inside the substantially hollow body, the first chamber forming a reservoir;

a housing coupled with an interior surface of the first chamber and shaped to engage a household item;

a recoilable spool attached to an interior surface of the second chamber and coupled with a first end of a lanyard that extends from and recoils into the body; and

an attachment mechanism coupled to a second end of the lanyard and configured to securely connect the substantially hollow body with an object.

* * * * *