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(54) **SPRAY DISPENSERS**

SPRÜHSPENDER

ATOMISEURS

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Description

FIELD OF THE INVENTION

[0001] This invention relates to spray dispensers, and more particularly to aerosol spray dispensers for personal care products.

BACKGROUND OF THE INVENTION

[0002] Spray dispensers containing personal care products that are applied topically are often referred to as "body sprays." These body sprays may be used to spray individual selected areas of the body, such as the underarm or foot, or may be used to spray large areas of the body. Such body sprays are generally portable, and include an aerosol canister fitted with an actuator mechanism and spray nozzle at the top of the canister that the user operates to apply the product to the user's skin. The personal care product may include a wide variety of cosmetic and/or skin care ingredients including, for example, fragrances, deodorant agents, antiperspirant agents, botanicals, and moisturizers. FR 2335420, US 3157317 and US 2002/0074349 disclose spray dispensers according to the preamble of claim 1. US 5531359, FR 2705322 and US 4024988 show locking assemblies for aerosol spray actuators.

SUMMARY OF THE INVENTION

[0003] The present invention features a spray dispenser according to claim 1.

[0004] The details of one or more embodiments of the invention are set forth in the accompanying drawings and the description below. Other features, objects, and advantages of the invention will be apparent from the description and drawings, and from the claims.

DESCRIPTION OF DRAWINGS

[0005]

FIG. 1 is a perspective view of a dispenser.
FIG. 2 is a front view of the dispenser of FIG 1.
FIG. 2A is a cross-sectional view of the dispenser with a canister in place, taken along line A-A in FIG 2.
FIG. 3 is a side view of the dispenser.
FIG. 4 is a perspective view of the dispenser, showing a canister exploded from the dispenser.
FIG. 5 is an enlarged perspective view of the door of the dispenser.
FIG. 6 is an enlarged cross-sectional view of the lower portion of the dispenser.
FIG. 7 is an enlarged bottom view of the dispenser.
FIG. 8 is an enlarged perspective view of a the door of the dispenser with the leaf spring removed.
FIG 9 is an enlarged perspective view of an upper portion of the dispenser.
FIG. 10 is an enlarged perspective view of the actuator button and actuator lock (the spray actuator assembly with the outer shell removed).
FIG. 11 is a highly enlarged partial perspective view showing engagement of corresponding portions of the actuator lock and actuator button.
FIG. 12 is a radial cross-sectional view of the assembly shown in FIG 10, taken through the upper portion of the actuator button, showing the actuator in its unlocked position.
FIG. 13 is similar to FIG. 12, but shows the actuator in its locked position.
FIG. 14 is a perspective view of an alternative door assembly.
FIG. 14A is a cross-sectional view of the door assembly of FIG 14, taken along line A-A.
FIGS. 15-15B are perspective views illustrating assembly steps for a closure assembly.
FIG. 16 is a perspective view of the upper portion of an alternative housing.
FIGS. 17-17A are front views showing a portion of the actuator lock in two positions relative to the upper portion of the housing shown in FIG 16.
FIGS. 18-18A are enlarged partial cross-sectional views, showing the actuator/nozzle member in contact with the stem of the canister.

[0006] Like reference symbols in the various drawings indicate like elements.

DETAILED DESCRIPTION OF THE INVENTION

[0007] Referring to FIG. 1, spray dispenser 10 includes a housing 12 having an upper end 11, a lower end 13 and a sidewall 15. Housing 12 defines an interior compartment dimensioned to hold a replaceable aerosol canister 30, shown in FIG 4 and described below. The housing 12 is small and compact, allowing it to be easily carried by the user in a pocket, briefcase, sportsbag, backpack or handbag, while also being of sufficient size to hold a canister having a desired volume. For example, referring to FIG 3, the dispenser 10 may have an overall length L of about 5 to 15 cm, preferably about 8 to 12 cm), and a maximum diameter D of about 1.3 to about 4.5 cm), more preferably about 2 to about 4 cm, most preferably about 2.5 to about 3.5 cm. In some implementations, the canister contained within the housing may have a volume of about 0.1 to 5 ounces (about 3 to 150 ml), preferably about 0.5 to 1.5 ounces (about 15 to 45 ml). In a preferred embodiment, the spray dispenser 10 is sized so that its entire length will fit in a user's hand, or in a user's pocket or small handbag. In this embodiment, it is preferred that the length be less than about 12 cm.

[0008] Housing 12, near the upper end 11 thereof, includes a spray actuator assembly 18 (FIG 10). Spray actuator assembly 18, which will be discussed in detail below, includes an outer shell 17, a spray nozzle 16, an outlet 14 in outer shell 17 for the spray nozzle, and a

manually depressible actuator button 20 exposed at the surface of the dispenser to allow the user to depress the button and deliver a spray of liquid particles from the nozzle. The spray actuator assembly also includes an actuator lock, discussed below, having a handle portion 22 which is exposed, through an elongated opening 23 in the outer shell 17, for manipulation by the user in a radial direction between locked and open positions.

[0009] The housing includes a viewing window 27 in sidewall 15 through which a user of the dispenser may view the type of replaceable aerosol canister (described below) that is positioned within the housing. The viewing window may be an open cut-out 29 in the sidewall. The open cut-out may be as little as 5% of the housing sidewall or it may be as large as 90% of the housing sidewall. Preferably the cut-out will be about 10% to about 50% of the housing sidewall. More preferably, the viewing window is a transparent element 24 of the sidewall, as shown in FIGS. 1-4. The transparent element 24 may be the entire housing sidewall (i.e., 100% of the housing sidewall; e.g., where the entire housing sidewall is molded entirely of transparent plastic) or the transparent element may occupy as little as 5% of the housing sidewall. Preferably, the transparent element will be about 10% to about 50% of the housing sidewall. While the transparent element may be molded into the sidewall housing, more typically it will be a separate piece affixed or mounted to a similarly dimensioned cut-out 29. The term transparent is intended to include optical clarity ranging from clear to translucent, provided that the clarity is sufficient to permit a user to visually discern identifiable markings on a canister contained within the spray dispenser. Most preferably, transparent means optical clarity sufficient to enable a user to discern at least 12 point black letters (Times New Roman typeface font) on white paper pressed against the transparent element.

[0010] The viewing window is a particularly advantageous feature when the dispenser is part of a product line that includes a plurality (i.e., two or more, preferably three to ten) of replaceable body spray aerosol canisters that have different contents, such as, for example, different fragrances and/or performance or aesthetic characteristics (e.g., deodorant, moisturizing, freshening, earthy, citrus, floral, etc.) and/or different external markings (e.g., words, colors, designs, etc.) on the canisters. Thus, while the viewing window may be any desired size or shape, preferably it should be of sufficient size and shape to enable the user to see external markings (e.g., descriptive or identification markings) on the canister. Typically, the viewing window will have an area (i.e., a projected area) of about 1 cm^2 to about 30 cm^2, more typically about 3 cm^2 to about 25 cm^2.

[0011] A closure assembly 25 (FIG 5) is mounted at the lower end 13 of the housing, which closure is adapted to be easily openable by a user to permit the user to easily insert or remove a replaceable aerosol canister 30 through a bottom opening 32 at the bottom end of the housing (see FIGS. 2A and 4). The closure assembly preferably comprises a door 26 mounted to the housing by a hinge 28. The door has an inwardly facing surface 31 (Fig. 5) and an externally facing surface 33 (Fig. 7) (when viewed in the closed position). The door 26 includes a latching mechanism, the operation of which will be discussed below. Because the door is attached to the housing, there is no need for the user to hold the closure assembly in one hand while inserting the canister, as would be the case with a twist-on door. Of course, it is contemplated that the preferred door-type closure described above could be replaced with a different type of closure such as a twist-on cap or press-fit cap, provided that such a cap is equipped with a sufficient retention mechanism to keep it in place during storage and use.

[0012] The spray dispenser is used in conjunction with a replaceable body spray aerosol canister 30, including a can 21, a dip tube (not shown), a valve (not shown) and a stem 133. The spray dispenser uses a mechanical break-up feature to achieve a hollow cone pattern with a spread or diameter of about 3.8 to about 6.4 cm measured 15.2 cm from the nozzle. A replaceable aerosol canister (as used herein) does not include a spray nozzle or actuator mechanism. Thus, the replaceable canister will not deliver its contents until inserted into a reusable spray dispenser as described herein.

[0013] The replaceable aerosol canister includes a personal care composition. The personal care composition is formulated to be safe for topical application to human skin, and generally is suitable for spraying on clothing without damage to fabrics. The personal care composition may include a wide variety of cosmetic and/or skin care ingredients including, for example, fragrances, deodorant agents, antiperspirant agents, botanicals, vitamins, essential oils, skin conditioning ingredients, and other active and inactive ingredients suitable for topical application to skin. Suitable antiperspirant agents include aluminum salts, such as, for example, aluminum chlorohydrate. A suitable deodorant active is any agent that inhibits, suppresses, masks or neutralizes malodor. These may include (1) antimicrobial or bactericidal agents which kill the bacteria responsible for malodor production, (2) agents which inhibit or suppress or interfere with the bacterial enzymatic pathway that produces malodor, and (3) agents which mask or absorb or neutralize malodor. Fragrances are not considered deodorant active ingredients within the meaning of this application. Examples of deodorant actives include triclosan, triclocarban, usnic acid salts, zinc phenolsulfonate, b-chloro-D-alanine, D-cycloserine, aminooxyacetic acid, cyclodextrin, sodium bicarbonate.

[0014] Preferably, the replaceable aerosol canister is part of a system or product line that comprises a plurality (i.e., two or more, preferably three to ten) of replaceable aerosol canisters that have different personal care compositions, such as, for example, different fragrances and/or performance or aesthetic characteristics (e.g., deodorant, moisturizing, freshening, soothing, earthy, citrus, floral, musk, etc.) and/or different external markings

(e.g., words, colors, designs, etc.) on the canisters.

[0015] Various preferred features of the dispenser 10 will be discussed below.

Leaf Spring

[0016] As shown in FIG 5, the closure assembly 25 includes a resilient member such as a leaf spring 34, mounted on an internally facing surface 31 of door 26 so that the resilient member is biased (or pressed) against the canister when the canister is inserted and the door is closed, thereby biasing the canister 30 against the actuator assembly 18, limiting movement of the canister during transport and use of the dispenser, and resisting the force created when the user depresses the actuator button. The resilient member also assists in springing open the door 26 when unlatched by the user, as described below. When a leaf spring is used, as shown, the leaf spring may be a plastic molded component that is formed integrally with door 26. The force generated by the resilient member is preferably sufficient to resist the actuation force of the actuator button when it is depressed by a user, which is generally in the range of 2 to 8 pounds (0.9 to 3.6 kg). It is also generally preferred that the force generated by the resilient member be sufficiently low so that the door can be closed relatively easily. For example, in some embodiments it is preferred that the closure force for the door, with a canister in the holder, be less than 5 kg, more preferably about 1 kg to about 3.5 kg. Naturally, of course, the resilient member may include any other suitable type of resilient material such as a resilient plastic or foam piece, coil spring, etc.

[0017] The geometry and physical characteristics of the leaf spring can be selected to provide the spray holder with desired characteristics. For example, making the leaf spring thicker (assuming other factors are kept the same) will tend to make the spring stiffer and thus make the door more difficult to close and reduce the overall deflection of the leaf spring during spray actuation. Conversely, making the leaf spring thinner will tend to reduce the stiffness of the leaf spring, making it easier to close the door and increasing the overall deflection of the leaf spring during spray actuation. If a low door closure force is desired, but it is also desired to prevent full deflection of the leaf spring during spray actuation, positive stops 37 may be provided on the internally-facing surface 31 of the door, e.g., as shown in FIGS. 14 and 14A. When the canister is deflected downwards, it will come to rest on stops 37 prior to the leaf spring bottoming out.

Door Latch Mechanism

[0018] The closure assembly 25 includes a latch mechanism that holds the door 26 securely closed and allows the door to be easily opened and closed by a user by operation of a latch actuator 38 (FIGS. 6 and 7). Referring to FIGS. 5 and 6, the latch mechanism includes a latch 40 that moves forward and back in the plane of the door. When the latch is in its extended position, as shown in FIG 6, it engages a rim 42 of a lower portion 44 of the housing 12, preventing the door from opening. Referring to FIG 8, latch 40 is biased towards its extended position by integrally formed springs 46a and 46b. Springs 46a and 46b include relatively thin curved arms 48, molded into the at-rest extended position, and disc portions 50 which are configured to slide along radially extending planar surfaces 52.

[0019] To open the door, the user pushes the latch actuator 38, which is preferably located on an externally facing surface 33 of the door, in the direction of the arrow 53 (FIG 7), i.e., towards the hinge 28 (arrow A, FIG 6). This causes the arms 48 to straighten out, sliding the disc portions 50 outwardly along the surfaces 52 and thereby pulling latch 40 to its retracted position. When latch 40 is retracted it no longer engages rim 42 of the housing, allowing the closure assembly 25 to swing open. Opening of the door is aided by the compression force of the leaf spring (if a canister is within the holder), and also by a torsion spring 19 associated with hinge 28.

[0020] When the user pushes the door closed, the latch 40 is pushed to its retracted position by the interaction of the rim 42 with the angled top surface 43 of latch 40. The angled surface 43 helps to force the latch into the open position when the door is being closed. The angled surface 43 contacts the rim 42, compressing the springs 46a and 46b of the latch mechanism and pushing the latch 40 into the closure assembly. As soon as the latch 40 passes the rim 42 it springs back into its normal, extended position, due to the biasing force of springs 46a and 46b. There is no need for the user to move the latch actuator 38 when closing the door.

Assembling the Closure Assembly

[0021] The closure assembly may be manufactured in any desired manner. In some embodiments, the parts of the closure assembly may be snap fit together. For example, the parts may be assembled as illustrated by the series of FIGS. 15-15B, in which a latch portion 102 is first assembled into a door shell 100 which includes the leaf spring (FIGS. 15 and 15A, and then a cover 106 is snap fit into the door shell 100 (FIG 15B) by inserting prongs 106 carried by an inward-facing surface 105 of the cover 106 into receiving openings 108 in the door shell 100. Prongs 106 are configured to deflect and spring back upon insertion so that the prongs will be permanently retained in the openings. Cover 106 includes an opening 110 through which the latch actuator 38 extends when the closure assembly is fully assembled.

[0022] The closure assembly may be assembled in any other desired manner, for example using adhesives or heat or ultrasonic welding.

Actuator Assembly

[0023] Referring to FIG 10, the spray actuator assem-

bly 18 is shown with the outer shell 18 removed. The spray actuator assembly 18 includes an actuator/nozzle member 49, and a locking member 51. The actuator/nozzle member 49 includes a manually depressible actuator button 20 and a spray nozzle 16, discussed above. Member 49 also defines a pair of notches 54 which are configured to locate and prevent rotational motion of the actuator/nozzle member 49.

[0024] The locking member 51 is mounted to pivot with respect to the actuator/nozzle member 49. The actuator assembly is fixed in the housing 12, with the actuator button 20 protruding outwardly. The pivoting motion of the locking member is in a plane that is generally perpendicular to the long axis of the canister, about a pivot point 57 (Fig. 12). Rotational movement of the locking member is guided by the pivot 57 and an opening 23 in the outer shell 17 of the spray actuator assembly 18.

[0025] The locking member is pivoted by the user moving the handle portion 22, discussed above, back and forth radially. Moving the handle 22 along opening 23 in the direction of arrow 56 (FIG. 9) moves the locking member 51 to the locked position, shown in FIGS. 11 and 13. In this position, a protrusion 58 on the upper surface of the locking member engages a corresponding protrusion 60 on the lower surface of the rim of actuator button 20. This engagement prevents the actuator button 20 from being pressed down, thereby preventing actuation of the spray dispenser. Moving the handle portion in the opposite direction (away from arrow 56) causes the protrusion 58 to move into a hollow region of the actuator button, where it does not engage any corresponding portion of the button. As a result, in this position the actuator is unlocked and the actuator button can be depressed to actuate the spray.

[0026] If desired, positive stops may be provided for the two positions of the handle portion 22, to give the user a tactile signal that locking/unlocking has been completed, and to prevent inadvertent locking and unlocking. For example, as shown in FIGS. 16 and 17-17A, the housing 12 may include an upper portion 120, at its upper end 11, that has a flexible tab 122 configured to flex up and down (arrow A). Tab 122 includes a arcuate rib 124 that extends upward, toward locking member 51 of the spray actuator assembly 18 (omitted for clarity in FIG. 16). As shown in FIGS. 17-17A, the locking member 51 includes a pair of arcuate grooves 126, having a radius of curvature that is substantially the same as that of the arcuate rib 124. These grooves are positioned so that when the locking member 51 is in its locked position, the rib 124 engages one of the grooves 126, and when the locking member 51 is in its unlocked position the rib 124 engages the other groove 126. When the handle 22 is moved by the user between the two positions, the camming action of the curved surfaces of the rib and groove causes the tab 122 to deflect downward, releasing the rib from the groove in which it was engaged.

[0027] The actuator/nozzle member 49 also includes a lower surface that is configured to engage the stem of the canister. Referring to FIGS. 2A and 18, the lower surface includes a tapered frustro-conical portion 62 that engages the rim of stem 133. This tapered surface provides a good seal with the stem, preventing undesirable leaking of the aerosol composition into the interior of the housing. As shown in FIG 18A, in some embodiments the frustro-conical portion 62 may include a thin layer of an elastomeric material 64, providing a resilient gasket between the rim of the stem and the lower surface of member 49.

Other Embodiments

[0028] A number of embodiments of the invention have been described. Nevertheless, it will be understood that various modifications may be made without departing from the scope of the invention.

[0029] The dimensions and values disclosed herein are not to be understood as being strictly limited to the exact numerical values recited. Instead, unless otherwise specified, each such dimension is intended to mean both the recited value and a functionally equivalent range surrounding that value. For example, a dimension disclosed as "40 mm" is intended to mean "about 40 mm".

[0030] While particular embodiments of the present invention have been illustrated and described, it would be obvious to those skilled in the art that various other changes and modifications can be made without departing from the scope of the invention. It is therefore intended to cover in the appended claims all such changes and modifications that are within the scope of this invention.

Claims

1. A spray dispenser (10) for an aerosol personal care composition, comprising:

a housing (12) having an upper end (11) a bottom end (13) and a sidewall (15) wherein the housing (12) defines an interior compartment for holding a replaceable aerosol canister (30) and has a bottom opening (32) at the bottom end (13) dimensioned to receive the replaceable aerosol canister (30);

a spray actuator assembly (18) mounted at the upper end (11) of the housing (12) wherein said spray actuator assembly (18) comprises a spray nozzle (16) and a manually depressible actuator button (20);

a closure (25) mounted to the bottom opening (32) of the housing (12), wherein the closure (25) is openable and closable, thereby permitting insertion, retention and removal of the replaceable aerosol canister (30) within or from the housing (12) and **characterized by** an actuator lock (51) configured to prevent accidental actuation, the actuator lock (51) being movable between a

locked position and an unlocked position by radial movement of a locking member (51)
wherein the locking member (51) is pivotable with respect to the actuator button (20) and in the locked position interferes with axial movement of the actuator button (20),
wherein the locking member (51) includes an exposed handle (22) that is configured to allow a user to pivot the locking member (51) by movement of the handle (22),
wherein the spray actuator assembly (18) includes an elongated opening (23) through which the handle (22) extends, the opening (23) being configured to allow radial movement of the handle (22) while minimizing axial movement.

2. The spray dispenser of claim 1 further comprising a viewing window in the sidewall (15) of the housing (12) to permit a user to view a marking on the replaceable aerosol canister (30).

3. The spray dispenser of claim 2 wherein the viewing window comprises a cut-out (29) in the sidewall (15) of the housing (12) to permit a user to view a marking on the replaceable aerosol canister (30).

4. The spray dispenser of claim 3 wherein the cut-out (29) comprises from 5% to 90% of the sidewall (15); and preferably from 10% to 50% of the sidewall (15).

5. The spray dispenser claim 3 or 4 wherein the viewing window comprises a transparent element (24) in the sidewall (15) of the housing (12) to permit a user to view a marking on the replaceable aerosol canister (30).

6. The spray dispenser of claim 5 wherein the transparent element (24) comprises from 1% to 100% of the sidewall (15), and preferably from 1% to 50% of the sidewall (15).

7. The spray dispenser of any one of claims 2 to 6 wherein the viewing window has an area of 1 cm^2 to 30 cm^2, and preferably of 3 cm^2 to about 25 cm^2.

8. The spray dispenser of any one of the preceding claims wherein the dispenser (10) has a length of less than about 12 cm.

9. The spray dispenser of any one of the preceding claims further comprising a hinge (28) about which the closure (25) is configured to pivot between its open and closed positions.

10. The spray dispenser of any one of the preceding claims further comprising a latch mechanism (40) configured to maintain the closure (25) in its closed position, the latch mechanism (40) comprising a latch portion (102) configured to engage a region of the housing (12) defining the bottom opening (32), a latch actuator (38) positioned to allow a user to move the latch portion (102) out of engagement with the housing (12), and a spring mechanism configured to bias the latch portion (102) toward its engaged position.

11. The spray dispenser of claim 10 wherein the spring mechanism comprises a pair of resilient arms (48).

12. The spray dispenser of any one of the preceding claims wherein the closure (25) further comprises a resilient member (34) affixed to the internally facing surface (31) of the closure (25), wherein the resilient member (34) is configured to bias a replaceable body spray canister (30), when inserted in the dispenser (10), towards the upper end of the housing (12).

13. The spray dispenser of claim 12 wherein the resilient member (34) is configured to assist in springing open the closure (25) when unlatched by the user.

14. The spray dispenser of claim 12 wherein the resilient member (34) comprises a leaf spring (34).

15. The spray dispenser of claim 14 wherein the locking member (51) pivots in a plane that is parallel to the plane of the closure (25) when the closure is in a closed position.

16. The spray dispenser of any one of the preceding claims further comprising a replaceable body spray aerosol canister (30) disposed within the housing (12).

Patentansprüche

1. Sprühspender (10) für eine Körperpflege-Aerosolzusammensetzung, der Folgendes umfasst:

ein Gehäuse (12) mit einem oberen Ende (11), einem unteren Ende (13) und einer Seitenwand (15), wobei das Gehäuse (12) ein Innenfach für die Aufnahme eines austauschbaren Aerosolbehälters (30) bildet und eine Bodenöffnung (32) am unteren Ende (13) aufweist, die dafür ausgelegt ist, dass der austauschbare Aerosolbehälter (30) darin aufgenommen werden kann;
eine Sprühbetätigungselementanordnung (18), die auf dem oberen Ende (11) des Gehäuses (12) angebracht ist, wobei die Sprühbetätigungselementanordnung (18) eine Sprühdüse (16) und einen manuell drückbaren Betätigungsknopf (20) umfasst
einen Verschluss (25), der auf der Bodenöffnung (32) des Gehäuses (12) angebracht ist,

wobei der Verschluss (25) geöffnet und geschlossen werden kann, wodurch der austauschbare Aerosolbehälter (30) in das Gehäuse (12) eingefügt, darin einbehalten oder aus diesem entnommen werden kann; und **gekennzeichnet durch** eine Betätigungsverriegelung (51), die so konfiguriert ist, dass sie eine versehentliche Betätigung verhindert, wobei die Betätigungsverriegelung (51) zwischen einer Verriegelungsposition und einer Entriegelungsposition **durch** Radialbewegung eines Verriegelungselements (51) verschoben werden kann, wobei das Verriegelungselement (51) in Bezug auf den Betätigungsknopf (20) gedreht werden kann und in seiner verriegelten Position eine Axialbewegung des Betätigungsknopfes (20) behindert, wobei das Verriegelungselement (51) einen freiliegenden Griff (22) aufweist, der so konfiguriert ist, dass er es einem Benutzer ermöglicht, das Verriegelungselement (51) **durch** Bewegen des Griffs (22) zu schwenken, wobei die Sprühbetätigungselementanordnung (18) eine langgestreckte Öffnung (23) aufweist, **durch** die der Griff (22) verläuft, wobei die Öffnung (23) so konfiguriert ist, dass eine Radialbewegung des Griffs (22) ermöglicht wird, während die Axialbewegung minimiert wird.

2. Sprühspender von Anspruch 1, der ferner ein Sichtfenster in der Seitenwand (15) des Gehäuses (12) umfasst, um einem Benutzer einen Blick auf eine Markierung auf dem austauschbaren Aerosolbehälter (30) zu ermöglichen.

3. Sprühspender von Anspruch 2, wobei das Sichtfenster einen Ausschnitt (29) in der Seitenwand (15) des Gehäuses (12) umfasst, um einem Benutzer einen Blick auf eine Markierung auf dem austauschbaren Aerosolbehälter (30) zu ermöglichen.

4. Sprühspender von Anspruch 3, wobei der Ausschnitt (29) zu 5 % bis 90 % der Seitenwand (15) umfasst und vorzugsweise zu 10 % bis 50 % der Seitenwand (15).

5. Sprühspender von Anspruch 3 oder 4, wobei das Sichtfenster ein transparentes Element (24) in der Seitenwand (15) des Gehäuses (12) umfasst, um einem Benutzer einen Blick auf eine Markierung auf dem austauschbaren Aerosolbehälter (30) zu ermöglichen.

6. Sprühspender von Anspruch 5, wobei das transparente Element (24) zu 1 % bis 100 % der Seitenwand (15) umfasst und vorzugsweise zu 1 % bis 50 % der Seitenwand (15).

7. Sprühspender nach einem der Ansprüche 2 bis 6, wobei das Sichtfenster einen Bereich von 1 cm^2 bis 30 cm^2 aufweist und vorzugsweise von 3 cm^2 bis etwa 25 cm^2.

8. Sprühspender nach einem der vorstehenden Ansprüche, wobei der Spender (10) eine Länge von unter etwa 12 cm aufweist.

9. Sprühspender nach einem der vorstehenden Ansprüche, der ferner ein Scharnier (28) umfasst, um das der Verschluss (25) so konfiguriert ist, dass er zwischen den offenen und geschlossenen Positionen schwenken kann.

10. Sprühspender nach einem der vorstehenden Ansprüche, der ferner einen Schnappmechanismus (40) umfasst, der so konfiguriert ist, dass er den Verschluss (25) in seiner geschlossenen Position behält, wobei der Schnappmechanismus (40) einen Schnappabschnitt (102) umfasst, der so konfiguriert ist, dass er in einen Bereich des Gehäuses (12) eingreift, der die Bodenöffnung (32) ausmacht, wobei ein Schnappbetätigungselement (38) so positioniert ist, dass es einem Benutzer das Verschieben des Schnappabschnitts (102) aus der Einrastposition mit dem Gehäuse (12) ermöglicht, und einen Federmechanismus, der so konfiguriert ist, dass er den Schnappabschnitt (102) in Richtung der eingerasteten Position vorspannt.

11. Sprühspender nach Anspruch 10, wobei der Federmechanismus ein Paar elastischer Arme (48) umfasst.

12. Sprühspender nach einem der vorstehenden Ansprüche, wobei der Verschluss (25) ferner ein elastisches Element (34) umfasst, das an der nach innen weisenden Fläche (31) des Verschlusses (25) befestigt ist, wobei das elastische Element (34) so konfiguriert ist, dass ein austauschbarer Körperspraybehälter (30) bei Einfügen in den Spender (10) in Richtung des oberen Endes des Gehäuses (12) vorgespannt wird.

13. Sprühspender von Anspruch 12, wobei das elastische Element (34) so konfiguriert ist, dass es beim Entriegeln durch den Benutzer das Aufspringen des Verschlusses (25) unterstützt.

14. Sprühspender nach Anspruch 12, wobei das elastische Element (34) eine Blattfeder (34) umfasst.

15. Sprühspender nach Anspruch 14, wobei das Verriegelungselement (51) in einer Ebene schwenkt, die parallel zur Ebene des Verschlusses (25) verläuft, wenn sich der Verschluss in einer geschlossenen Position befindet.

16. Sprühspender nach einem der vorstehenden Ansprüche, der ferner einen austauschbaren Körperspray-Aerosolbehälter (30) umfasst, der innerhalb des Gehäuses (12) angeordnet ist.

Revendications

1. Atomiseur (10) pour une composition de soin personnel en aérosol, comprenant :

un logement (12) ayant une extrémité supérieure (11), une extrémité inférieure (13) et une paroi latérale (15), dans lequel le logement (12) définit un compartiment intérieur pour contenir un réservoir aérosol remplaçable (30) et a une ouverture inférieure (32) au niveau de l'extrémité inférieure (13) dimensionnée pour recevoir le réservoir aérosol remplaçable (30) ;
un ensemble actionneur de pulvérisation (18) monté au niveau de l'extrémité supérieure (11) du logement (12) dans lequel ledit ensemble actionneur de pulvérisation (18) comprend une buse de pulvérisation (16) et un bouton d'activation pouvant être enfoncé manuellement (20)
une fermeture (25) montée sur l'ouverture inférieure (32) du logement (12), dans lequel la fermeture (25) peut être ouverte et fermée, ce qui permet l'insertion, la rétention et le retrait du réservoir aérosol remplaçable (30) dans ou hors du logement (12) ; et **caractérisé par** un verrouillage d'actionneur (51) configuré pour empêcher un actionnement accidentel, le verrouillage d'actionneur (51) étant mobile entre une position verrouillée et une position déverrouillée par un mouvement radial d'un élément de verrouillage (51), dans lequel l'élément de verrouillage (51) peut pivoter par rapport au bouton d'activation (20) et dans la position verrouillée interfère avec le mouvement axial du bouton d'activation (20), dans lequel l'élément de verrouillage (51) inclut une poignée exposée (22) qui est configurée pour permettre à un utilisateur de pivoter l'élément de verrouillage (51) par un mouvement de la poignée (22), dans lequel l'ensemble actionneur de pulvérisation (18) inclut une ouverture allongée (23) à travers laquelle la poignée (22) s'étend, l'ouverture (23) étant configurée pour permettre un mouvement radial de la poignée (22) tout en minimisant un mouvement axial.

2. Atomiseur selon la revendication 1, comprenant en outre une fenêtre d'observation dans la paroi latérale (15) du logement (12) pour permettre à un utilisateur de voir un marquage sur le réservoir aérosol remplaçable (30).

3. Atomiseur selon la revendication 2, dans lequel la fenêtre d'observation comprend une découpe (29) dans la paroi latérale (15) du logement (12) pour permettre à un utilisateur de voir un marquage sur le réservoir aérosol remplaçable (30).

4. Atomiseur selon la revendication 3, dans lequel la découpe (29) constitue de 5 % à 90 % de la paroi latérale (15), et de préférence de 10 % à 50 % de la paroi latérale (15).

5. Atomiseur selon la revendication 3 ou 4, dans lequel la fenêtre d'observation comprend un élément transparent (24) dans la paroi latérale (15) du logement (12) pour permettre à un utilisateur de voir un marquage sur le réservoir aérosol remplaçable (30).

6. Atomiseur selon la revendication 5, dans lequel l'élément transparent (24) constitue de 1 % à 100 % de la paroi latérale (15), et de préférence de 1 % à 50 % de la paroi latérale (15).

7. Atomiseur selon l'une quelconque des revendications 2 à 6, dans lequel la fenêtre d'observation a une aire de 1 cm^2 à 30 cm^2, et de préférence de 3 cm^2 à environ 25 cm^2.

8. Atomiseur selon l'une quelconque des revendications précédentes, où l'atomiseur (10) a une longueur inférieure à environ 12 cm.

9. Atomiseur selon l'une quelconque des revendications précédentes, comprenant en outre une articulation (28) autour de laquelle la fermeture (25) est configurée pour pivoter entre ses positions ouverte et fermée.

10. Atomiseur selon l'une quelconque des revendications précédentes, comprenant en outre un mécanisme de loquet (40) configuré pour maintenir la fermeture (25) dans sa position fermée, le mécanisme de loquet (40) comprenant une partie de loquet (102) configurée pour venir en prise avec une région du logement (12) définissant l'ouverture inférieure (32), un actionneur de loquet (38) positionné pour permettre à un utilisateur de sortir la partie de loquet (102) d'une mise en prise avec le logement (12), et un mécanisme à ressort configuré pour solliciter la partie de loquet (102) vers sa position en prise.

11. Atomiseur selon la revendication 10, dans lequel le mécanisme à ressort comprend une paire de bras élastiques (48).

12. Atomiseur selon l'une quelconque des revendications précédentes, dans lequel la fermeture (25) comprend en outre un élément élastique (34) attaché à la surface tournée vers l'intérieur (31) de la ferme-

ture (25), dans lequel l'élément élastique (34) est configuré pour solliciter un réservoir aérosol à corps remplaçable (30), lorsqu'il est inséré dans l'atomiseur (10), en direction de l'extrémité supérieure du logement (12).

13. Atomiseur selon la revendication 12, dans lequel l'élément élastique (34) est configuré pour assister l'ouverture sur ressort de la fermeture (25) lorsqu'elle est déverrouillée par l'utilisateur.

14. Atomiseur selon la revendication 12, dans lequel l'élément élastique (34) comprend un ressort à lame (34).

15. Atomiseur selon la revendication 14, dans lequel l'élément de verrouillage (51) pivote dans un plan qui est parallèle au plan de la fermeture (25) lorsque la fermeture est dans une position fermée.

16. Atomiseur selon l'une quelconque des revendications précédentes, comprenant en outre un réservoir aérosol remplaçable à corps remplaçable (30) disposé au sein du logement (12).

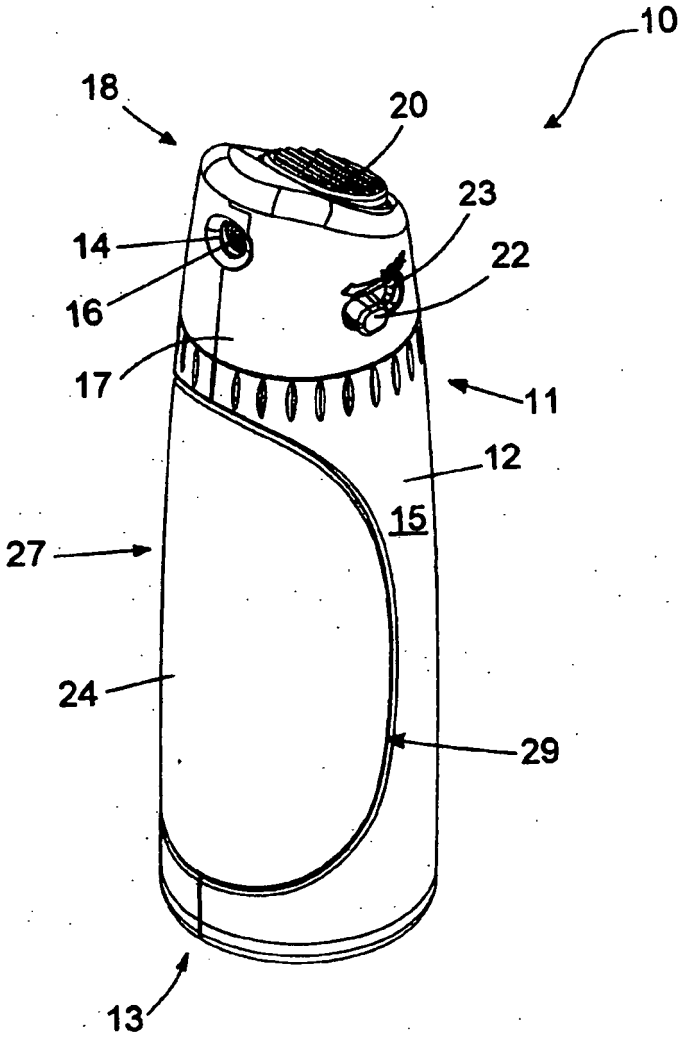


FIG. 1

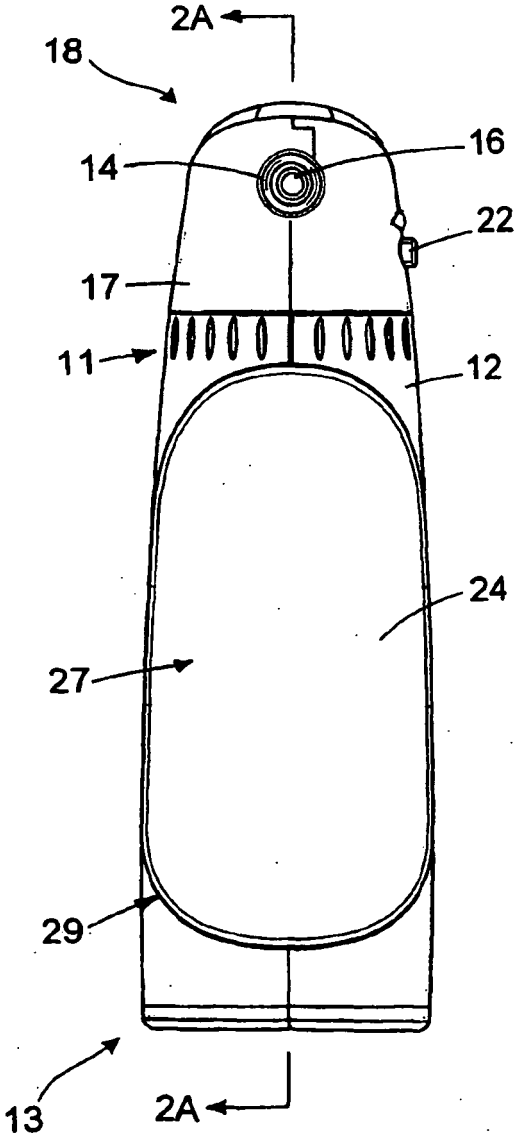


FIG. 2

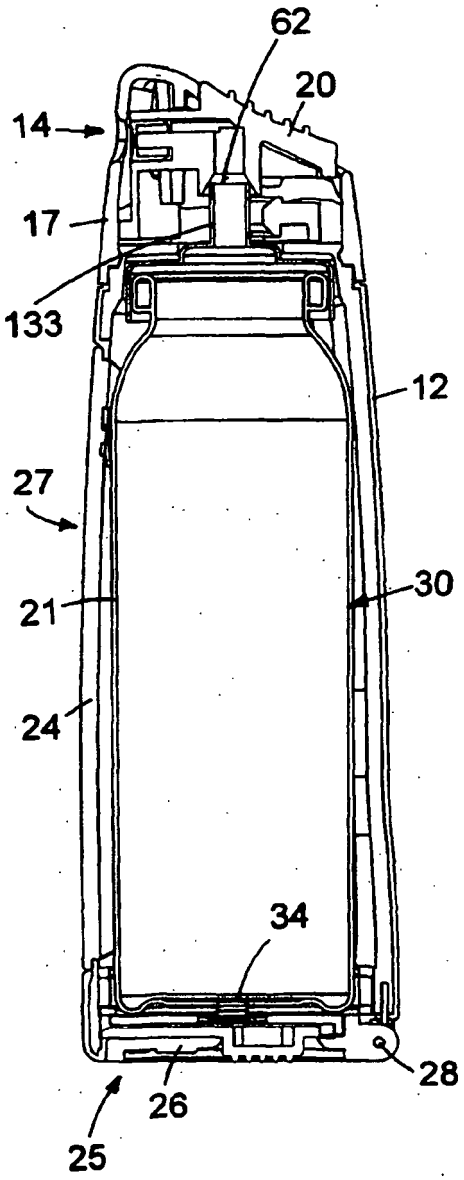


FIG. 2A

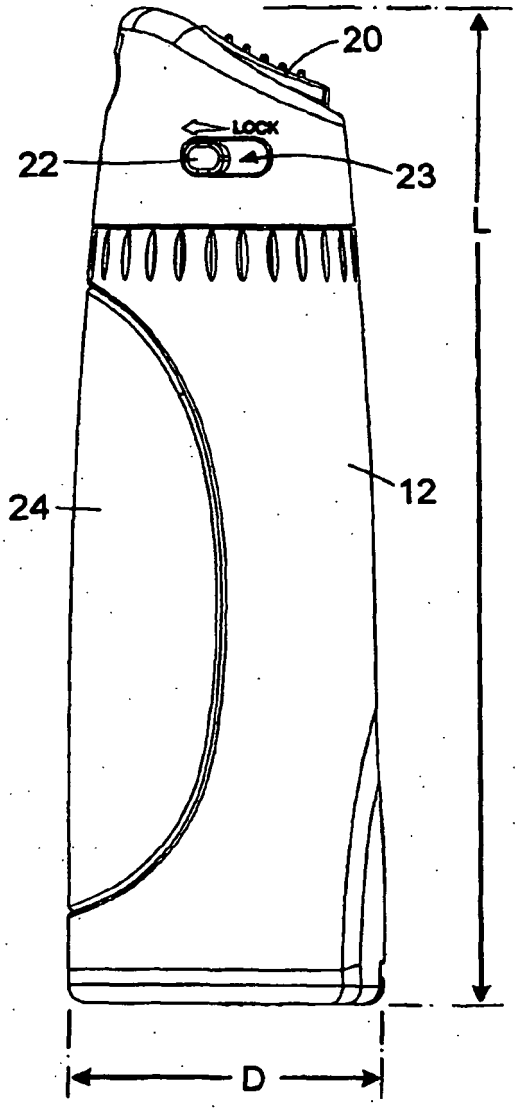


FIG. 3

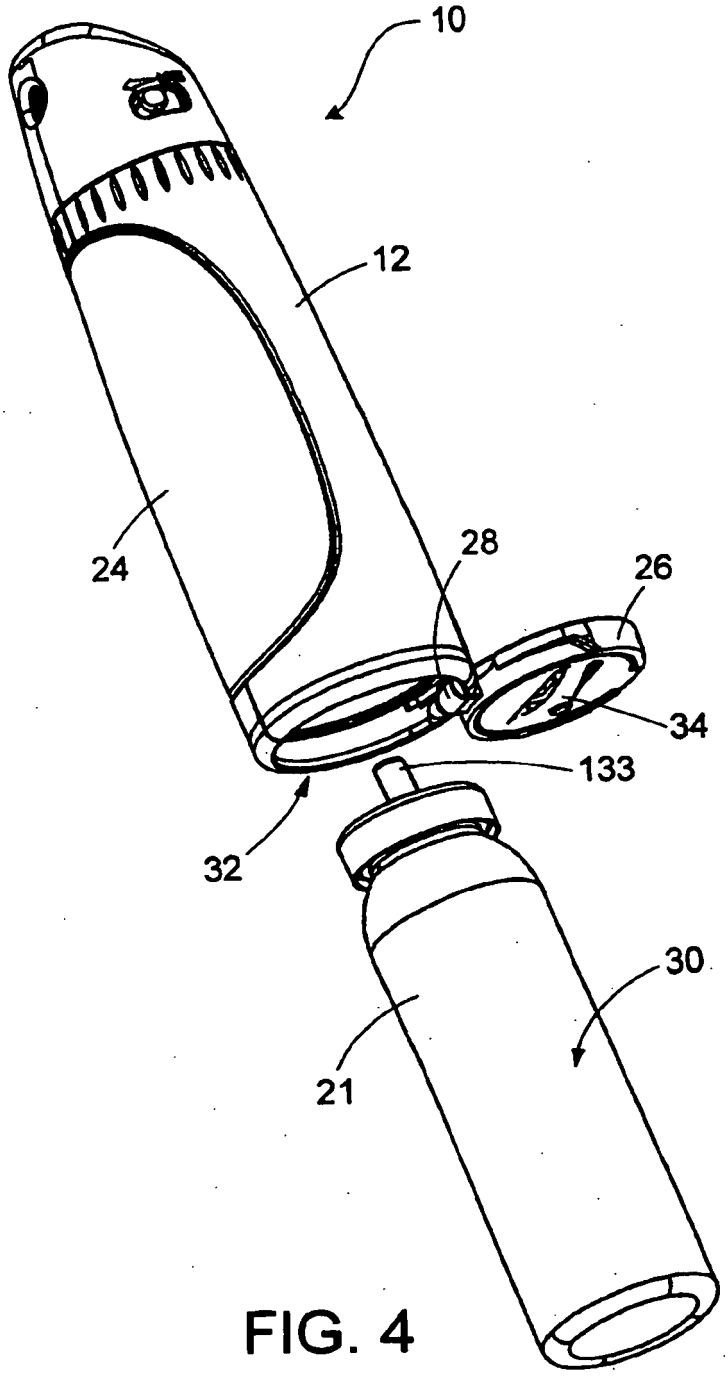


FIG. 4

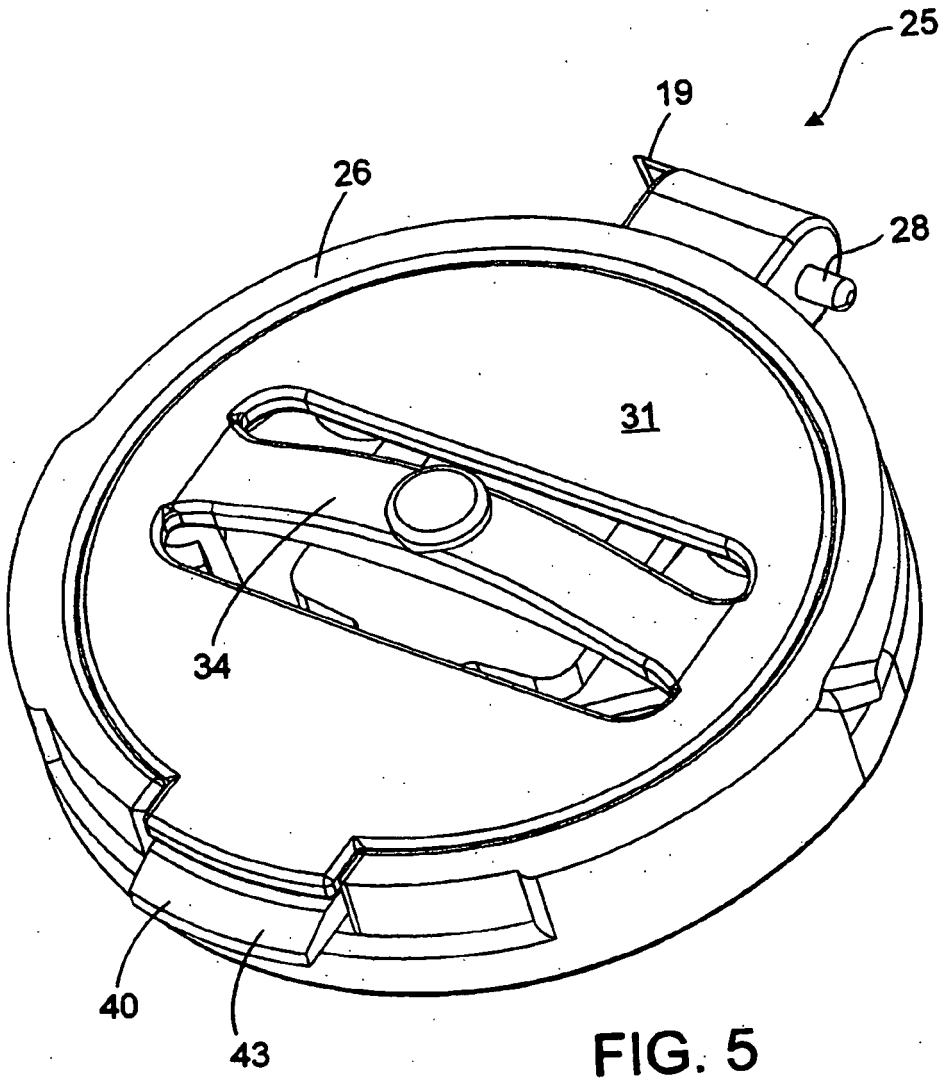


FIG. 5

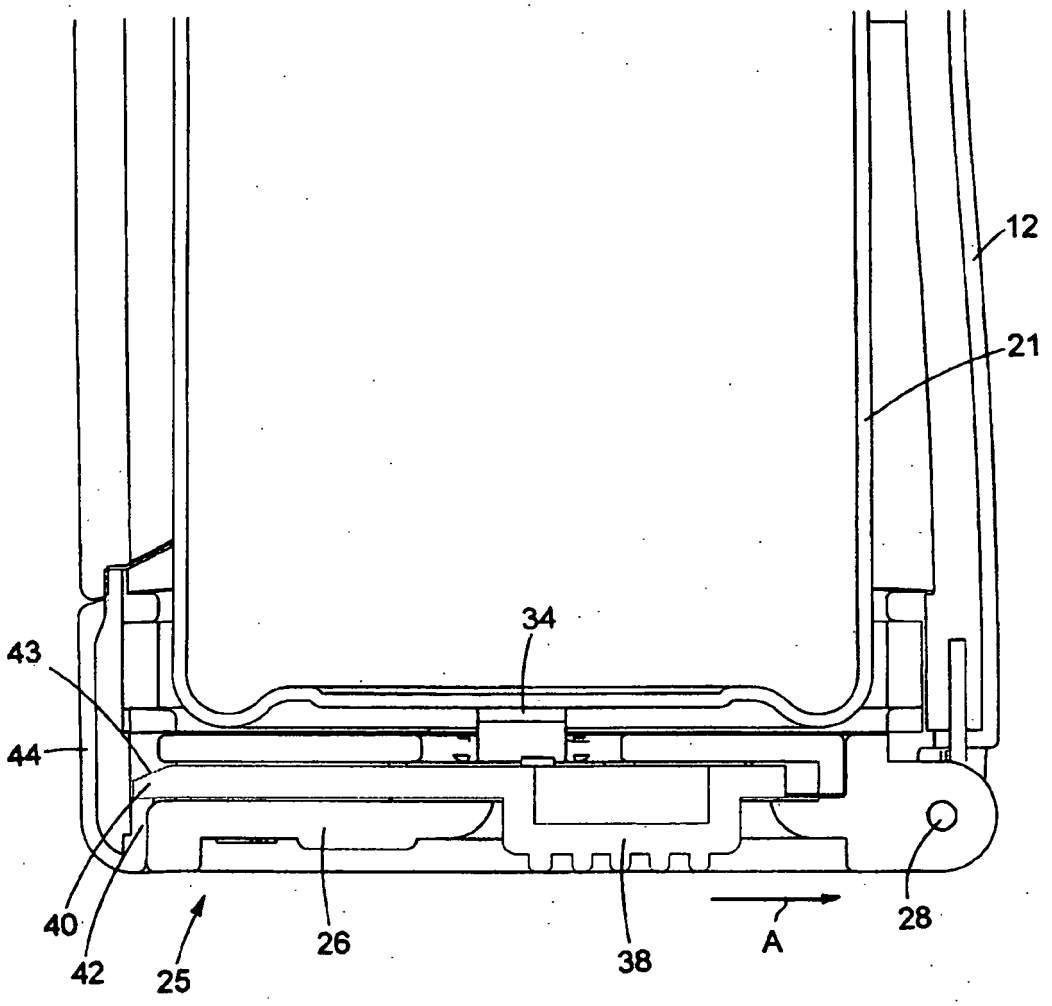


FIG. 6

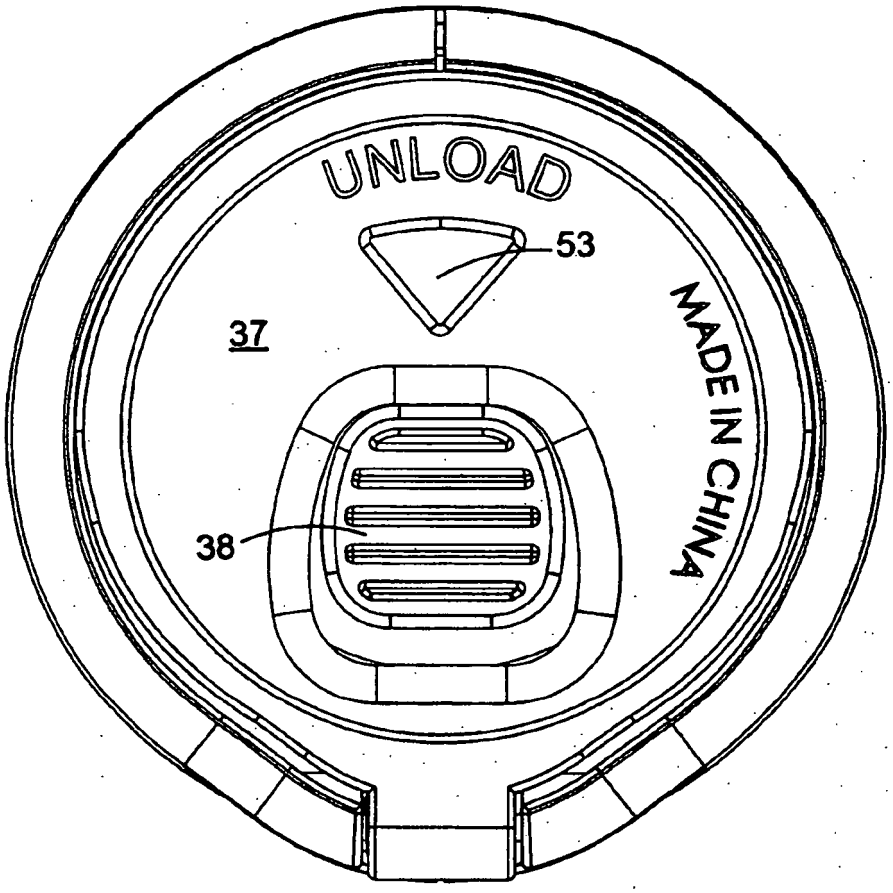


FIG. 7

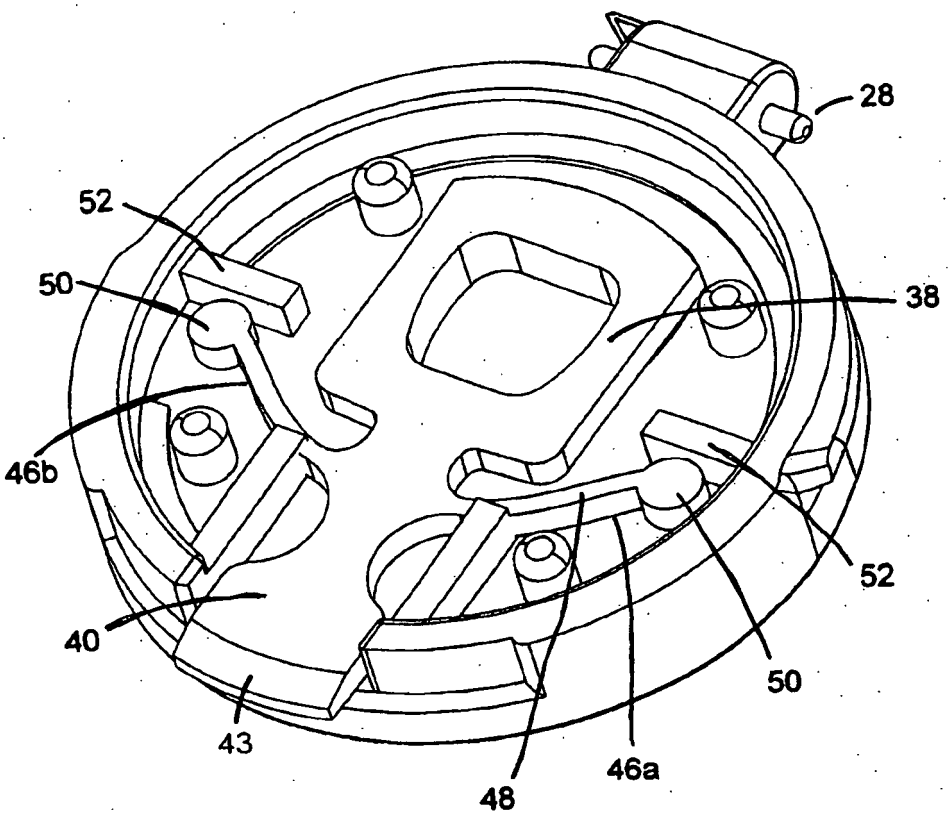


FIG. 8

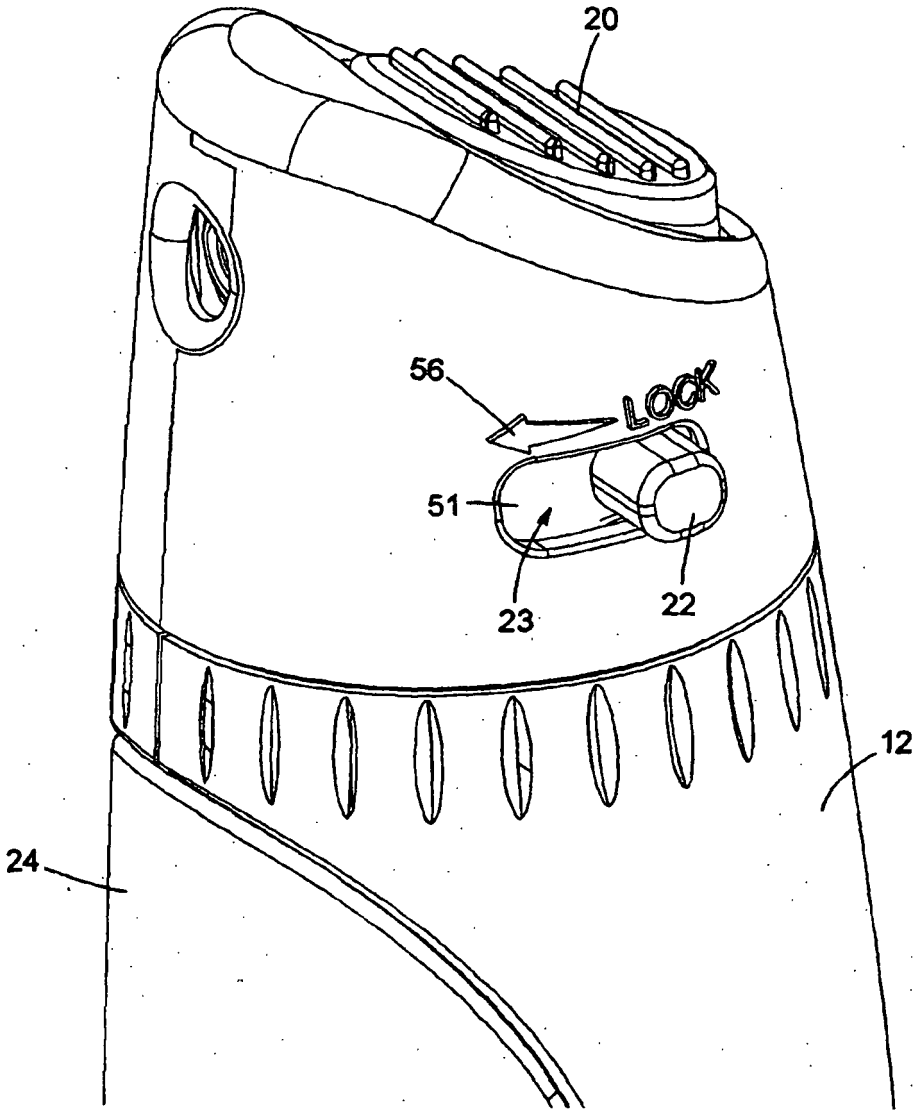


FIG. 9

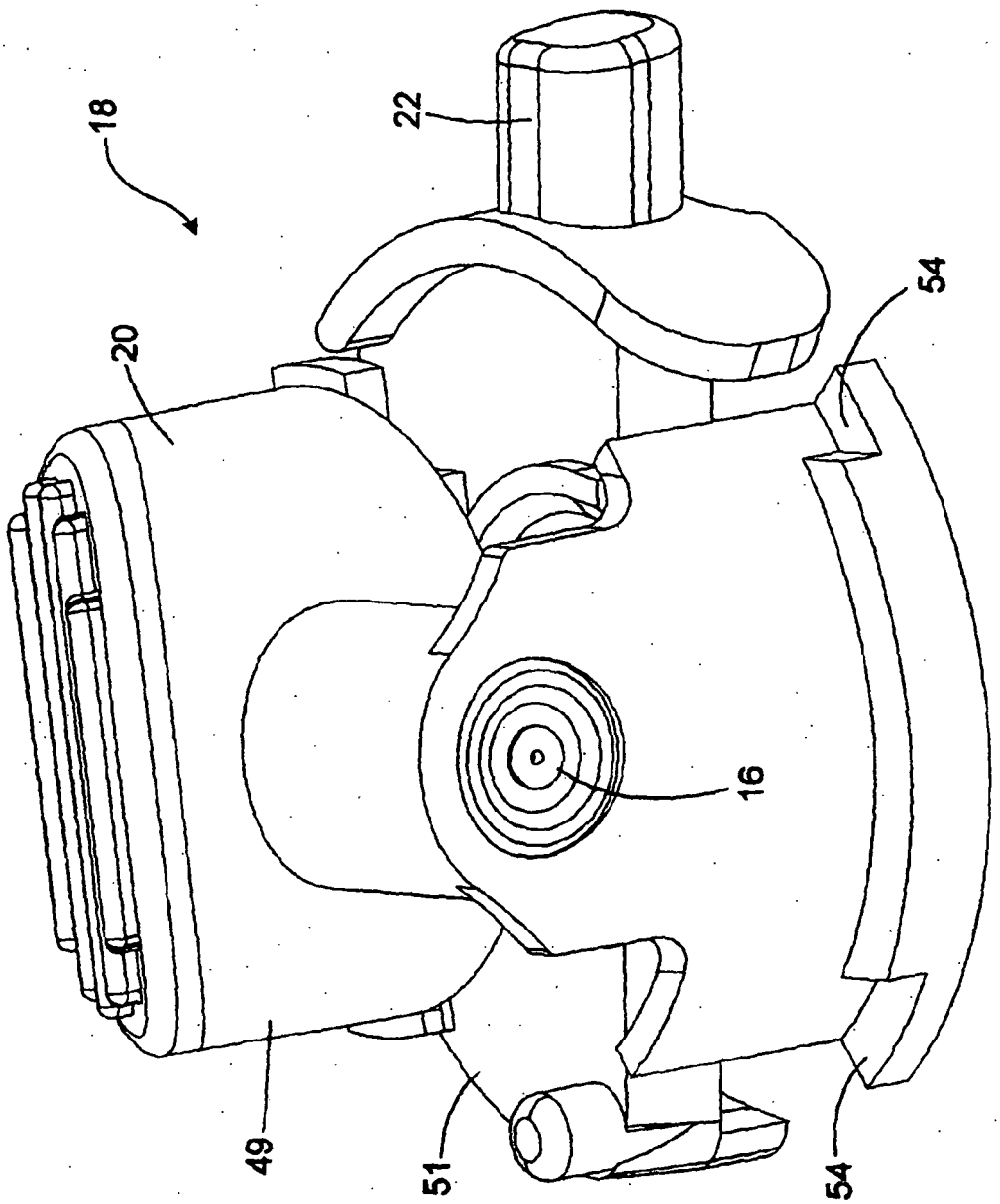


FIG. 10

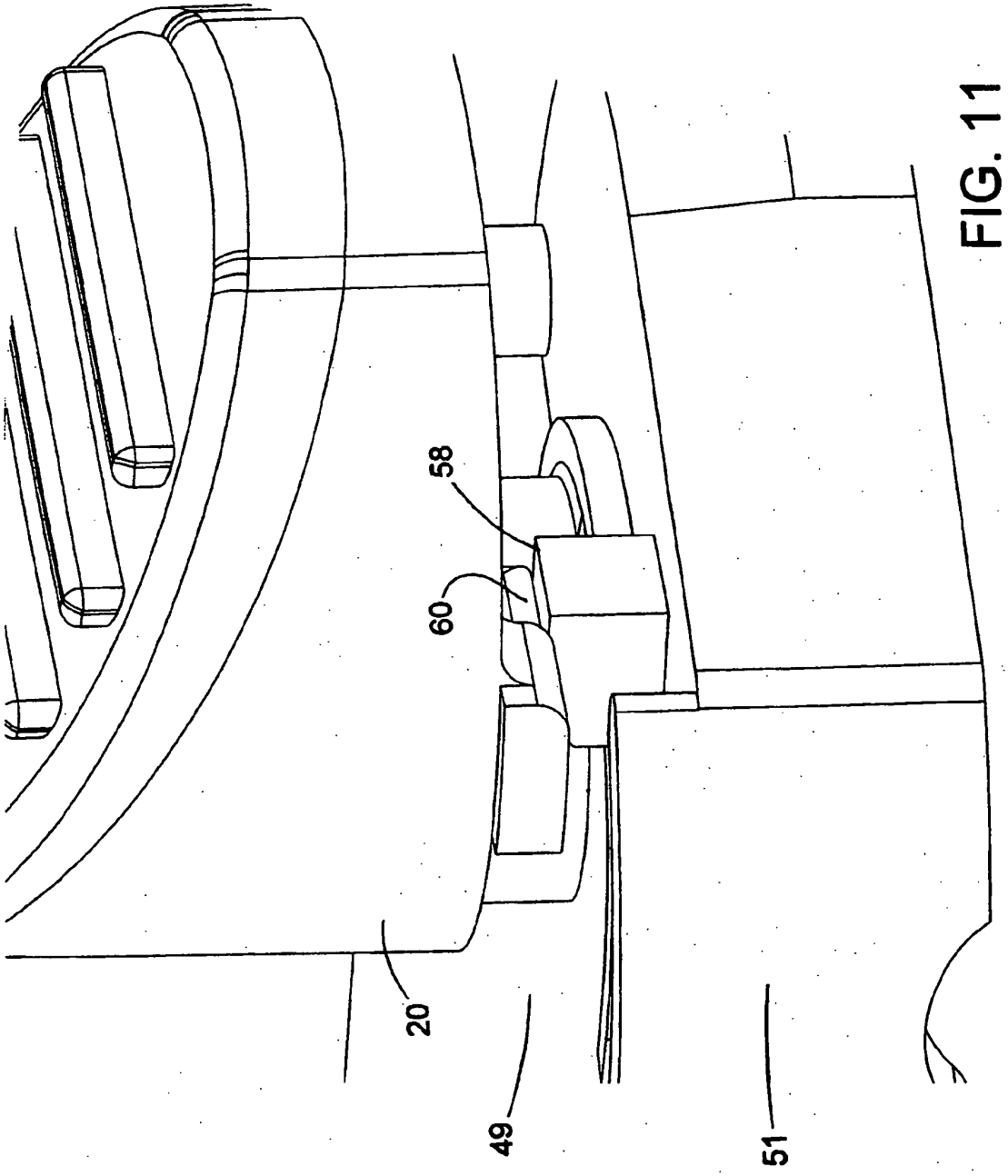


FIG. 11

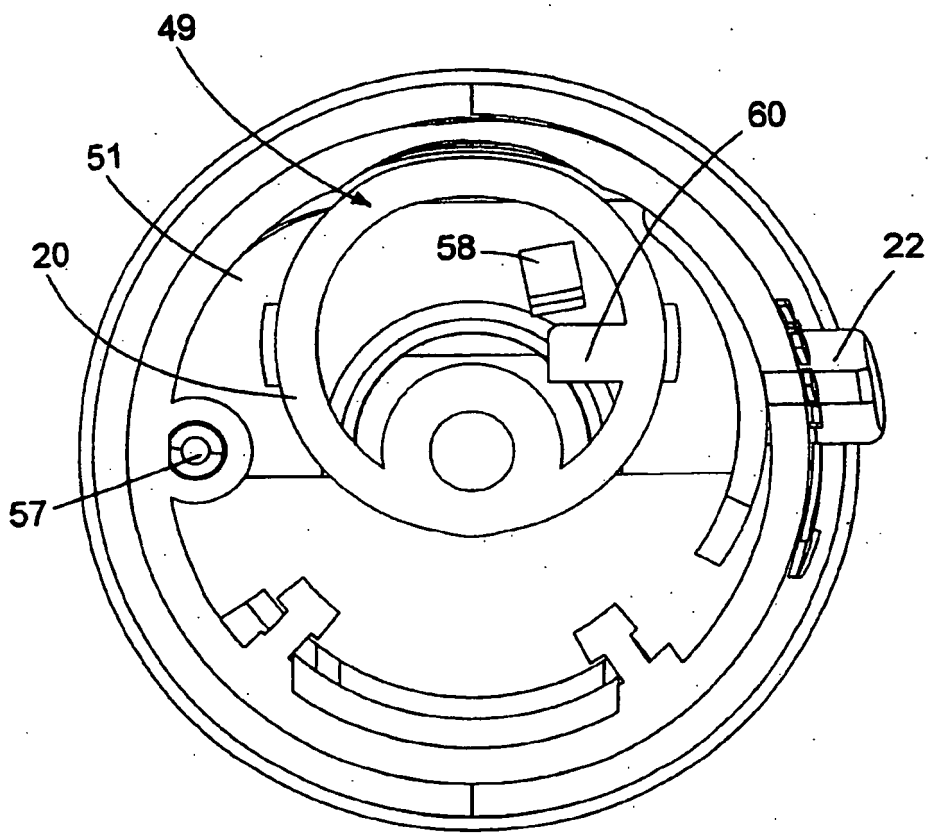


FIG. 12

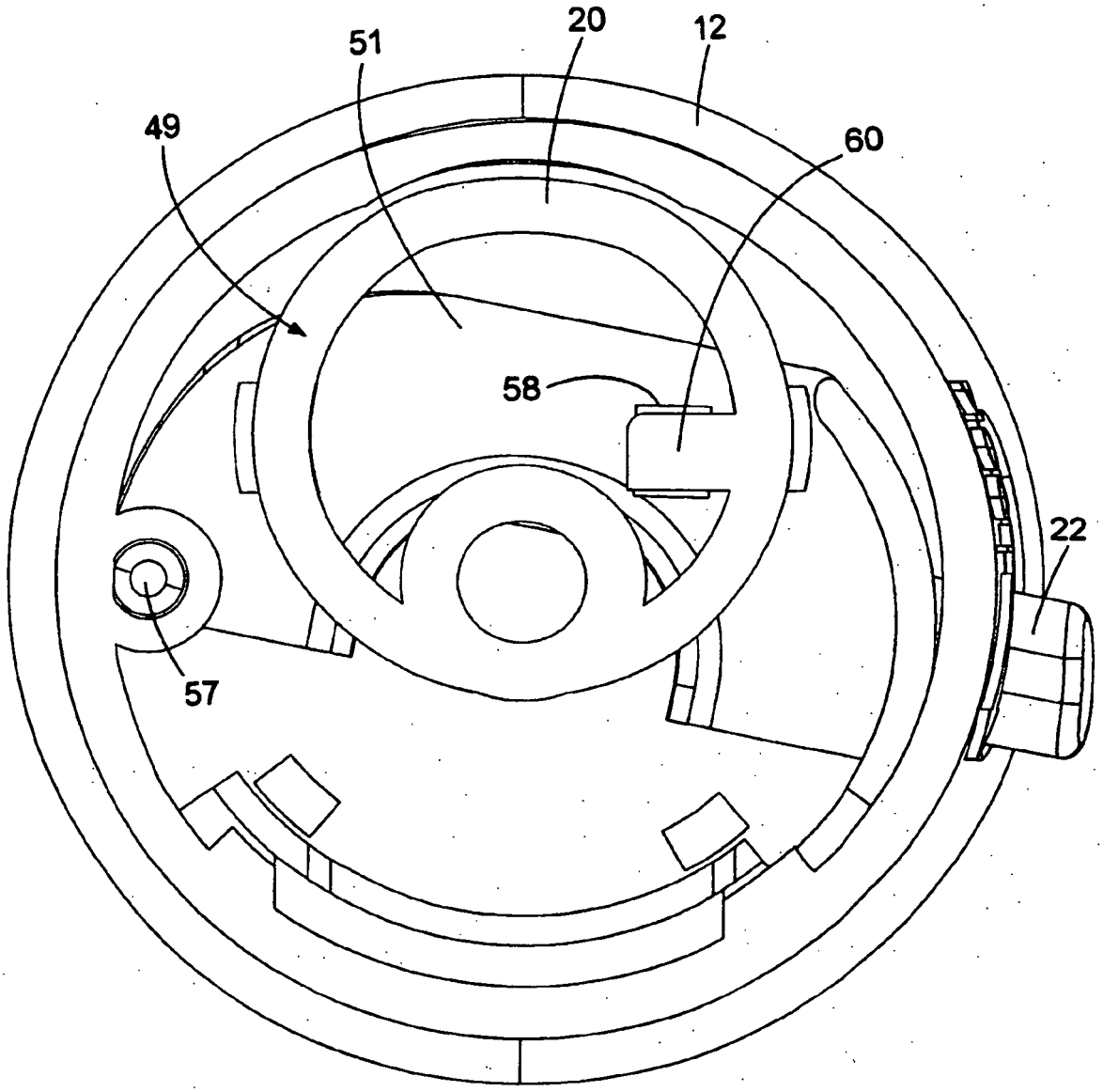


FIG. 13

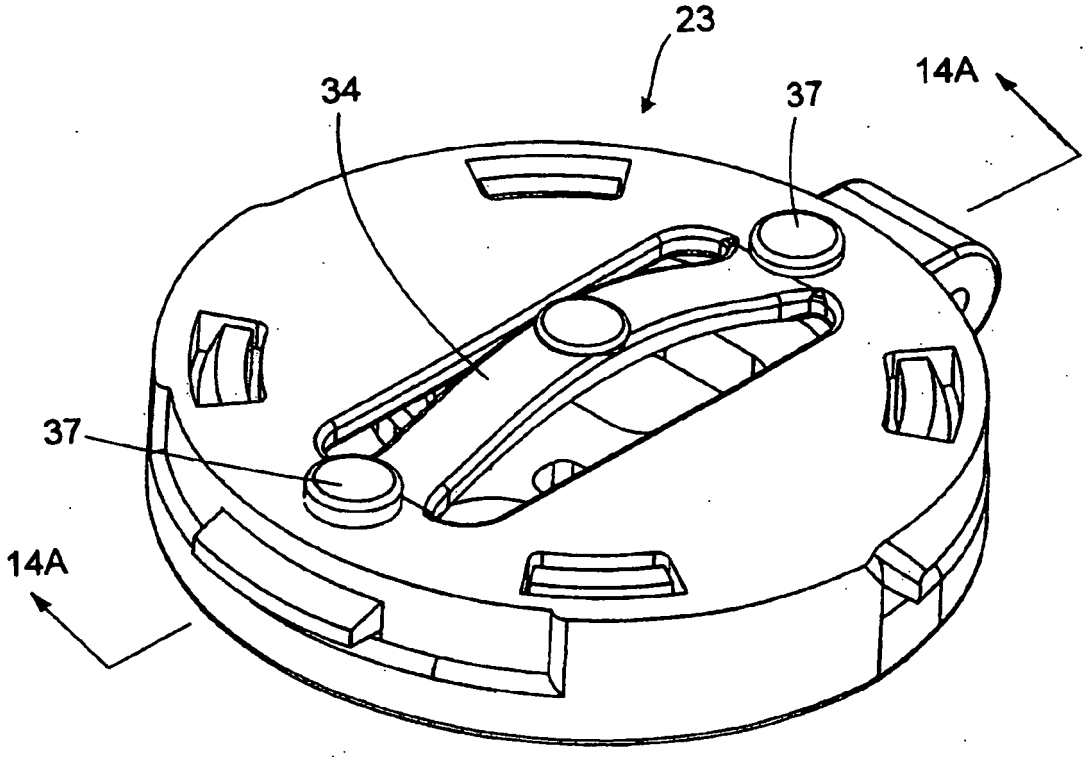


FIG. 14A

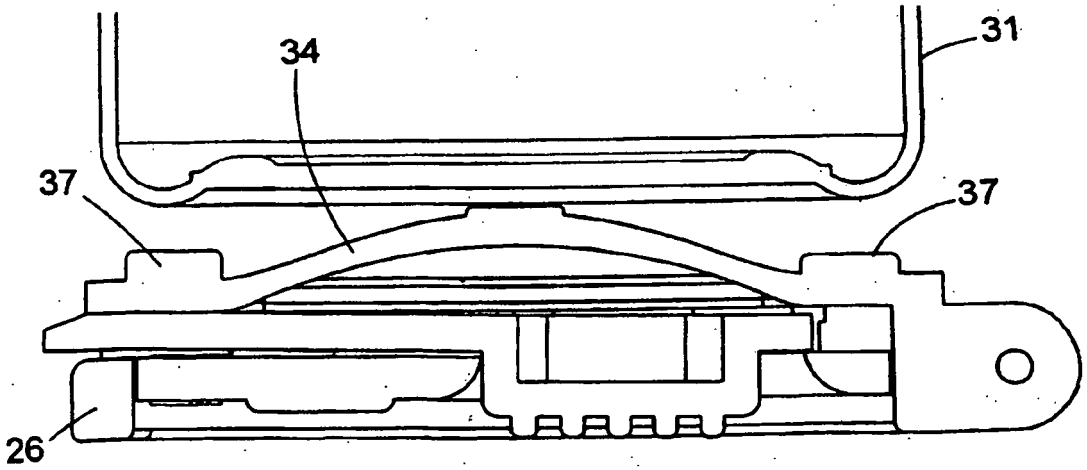


FIG. 14B

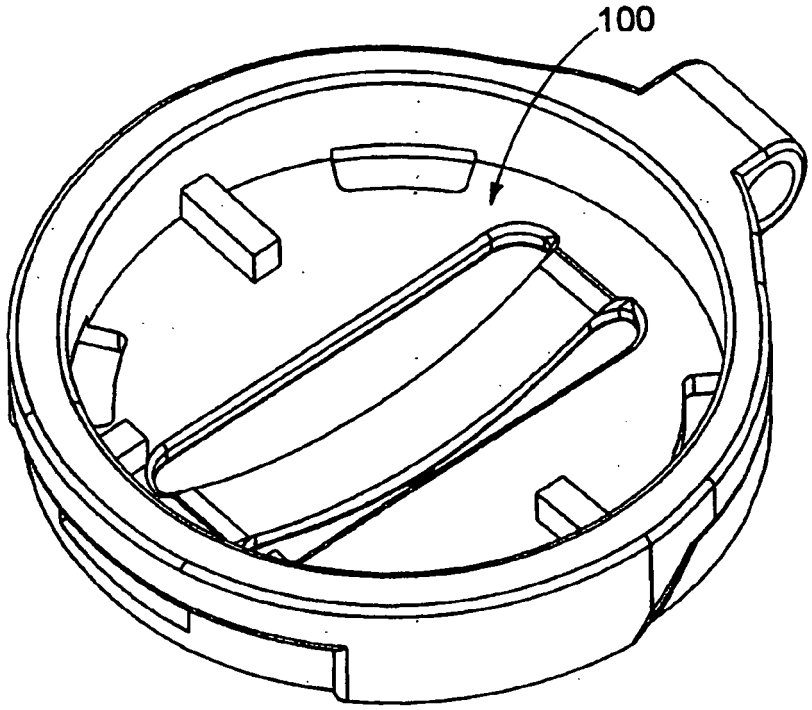


FIG. 15

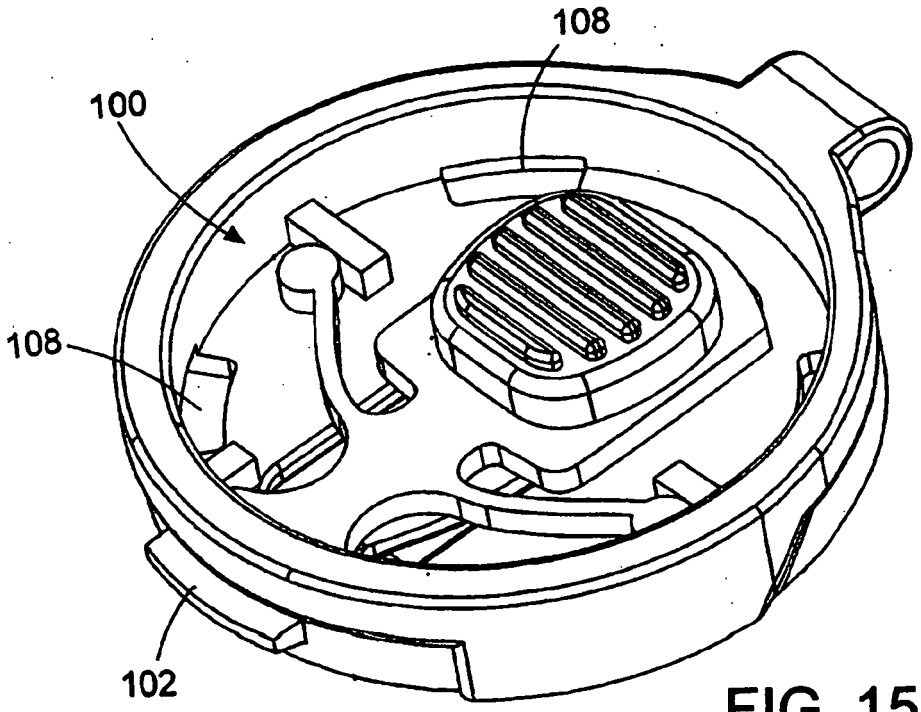


FIG. 15A

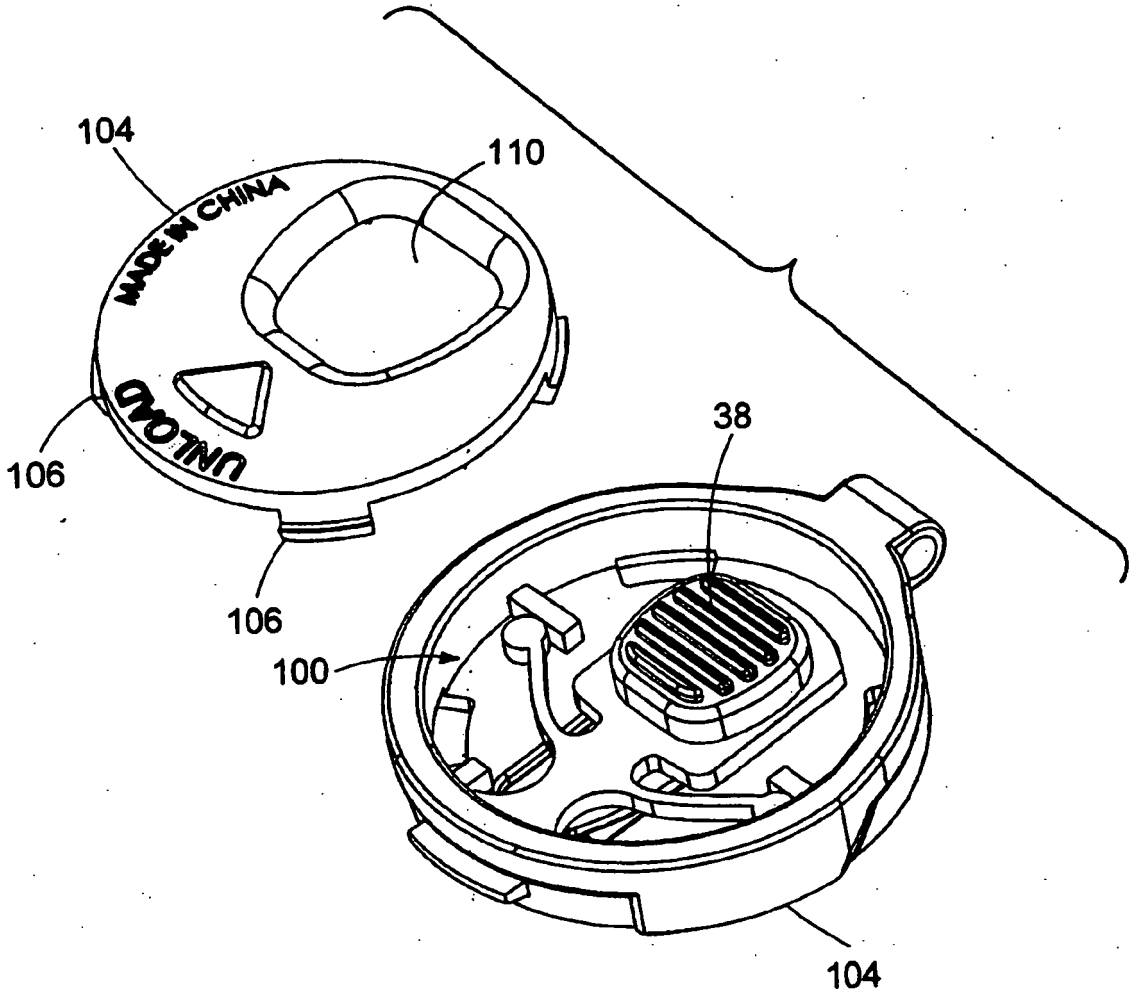


FIG. 15B

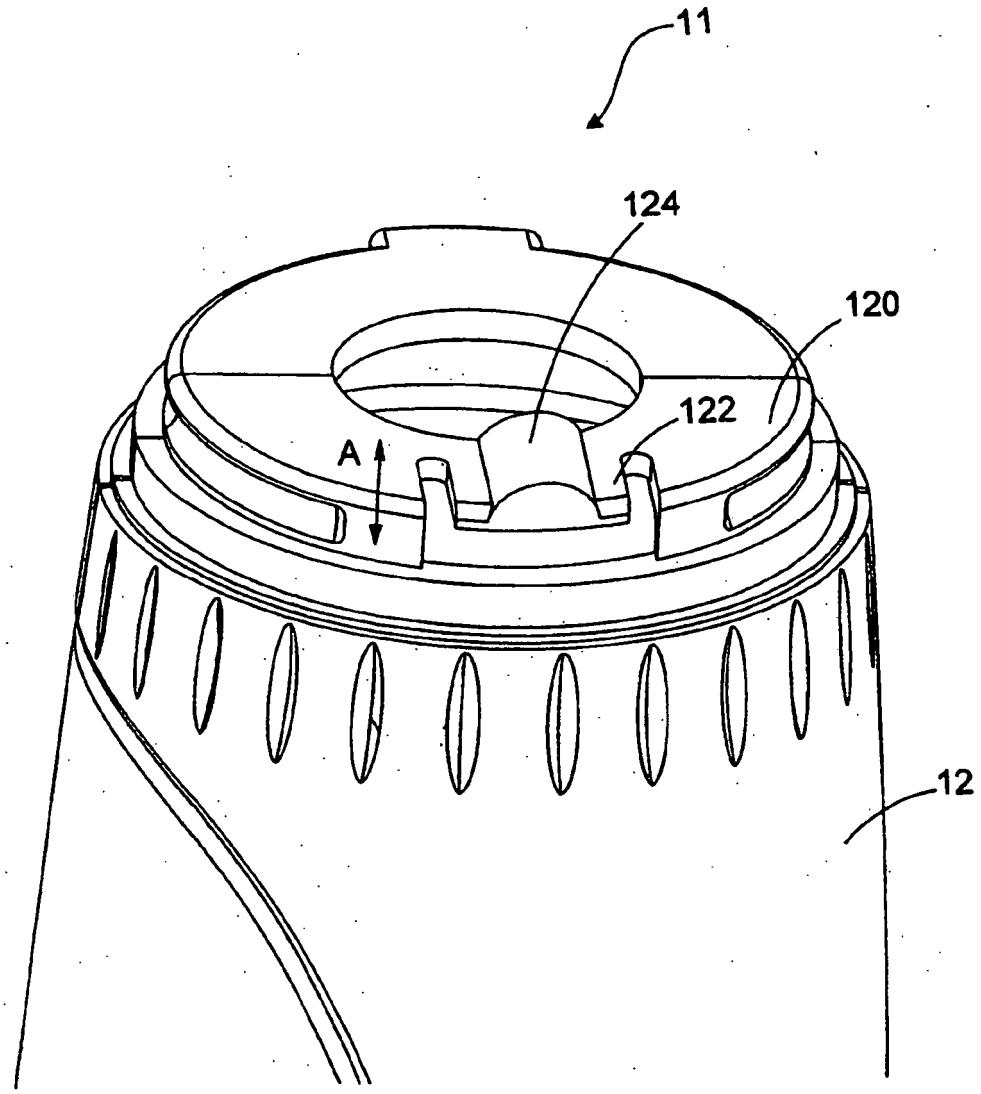


FIG. 16

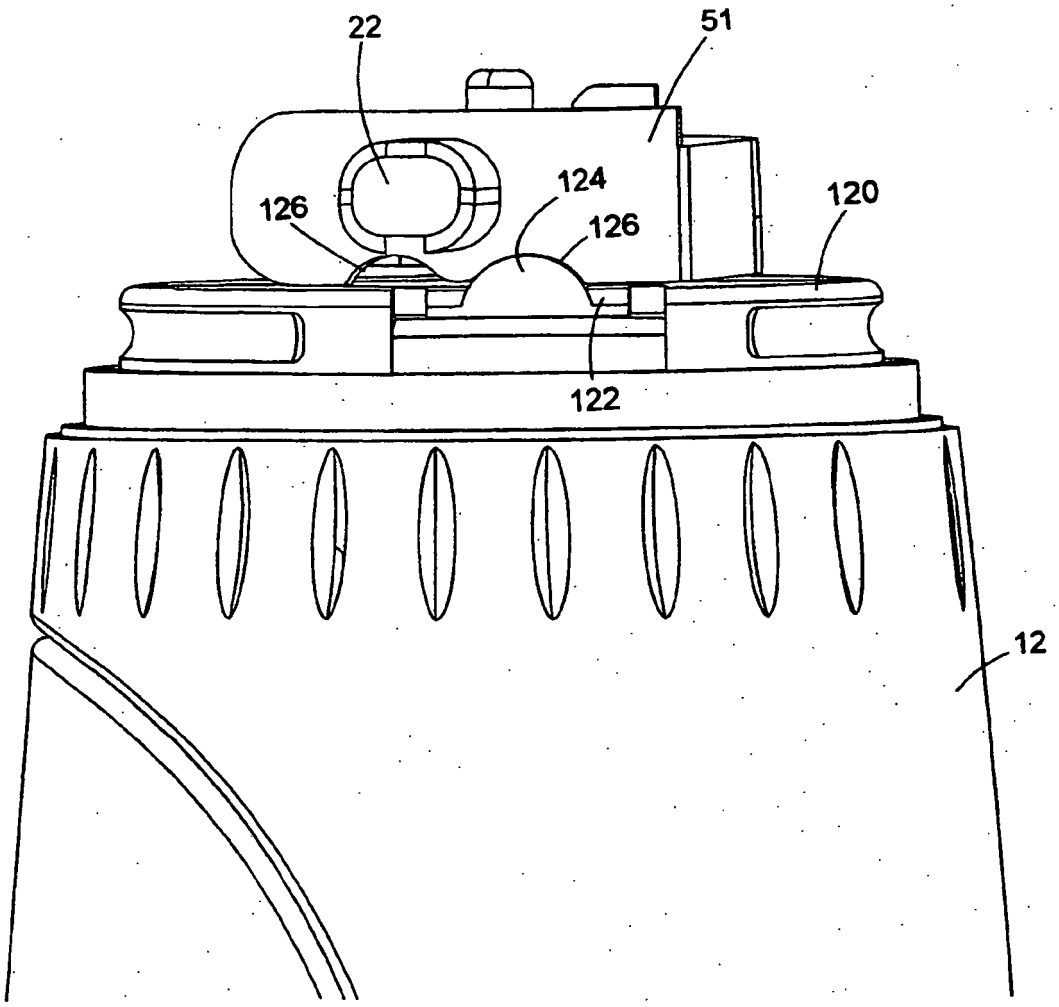


FIG. 17

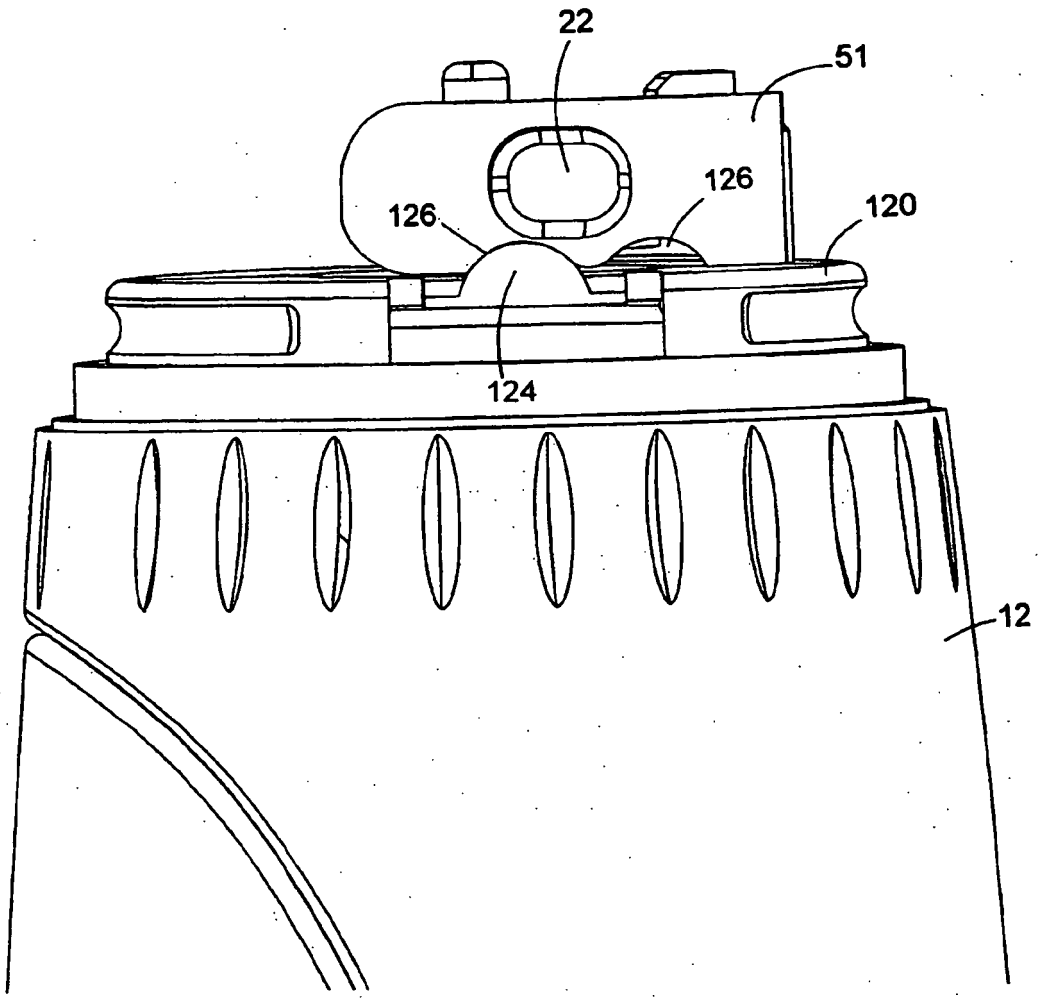


FIG. 17A

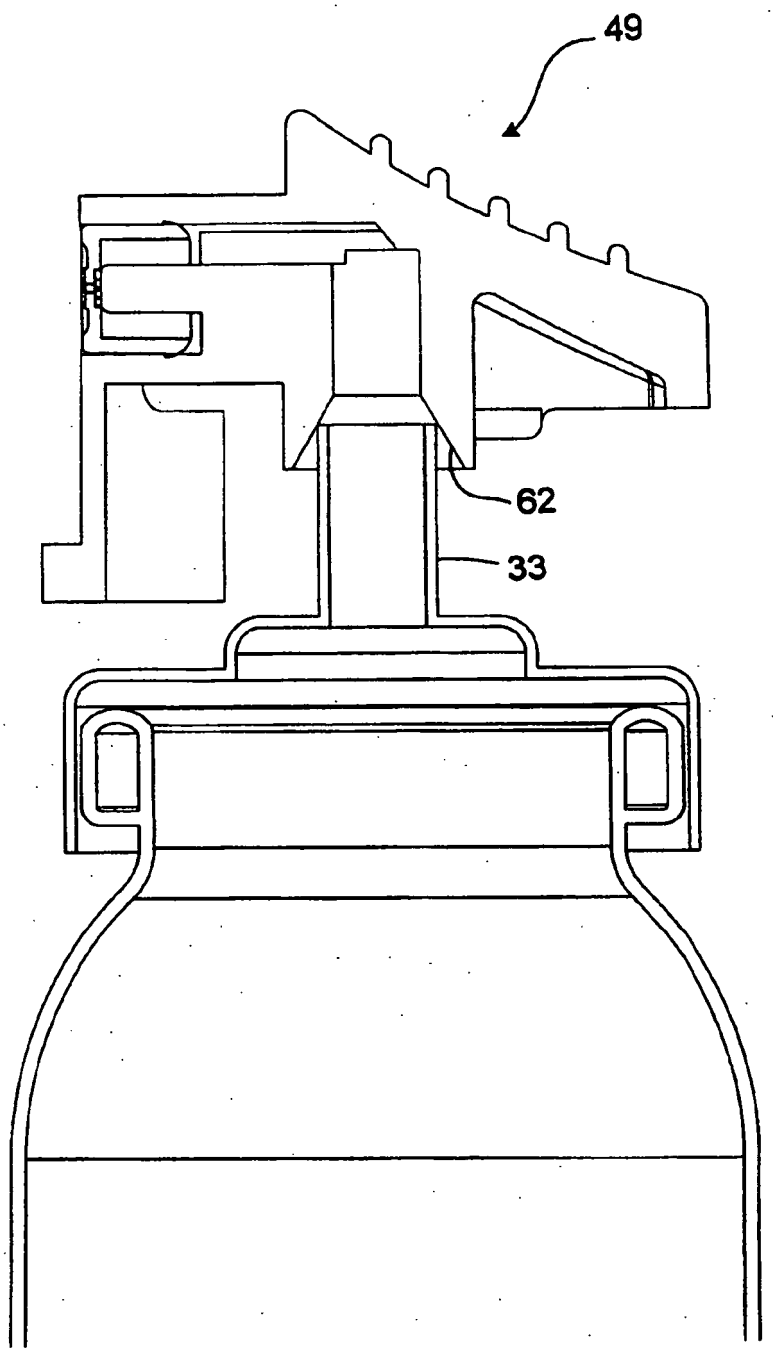


FIG. 18

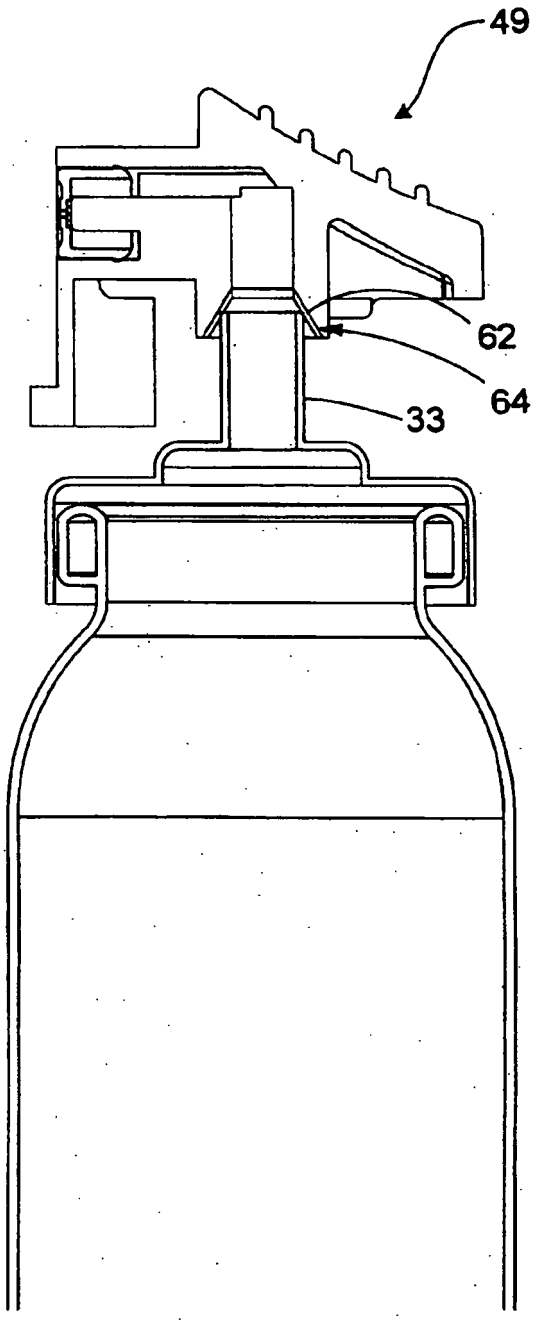


FIG. 18A

REFERENCES CITED IN THE DESCRIPTION

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