(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 0 801 286 A1

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
15.10.1997 Bulletin 1997/42

(51) Int. Cl.[6]: **F41H 9/10**

(21) Application number: **96105676.9**

(22) Date of filing: **11.04.1996**

(84) Designated Contracting States:
AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
Designated Extension States:
AL LT LV SI

(71) Applicant: **Guardian Royalty Corporation**
Sharon, Pennsylvania 16146 (US)

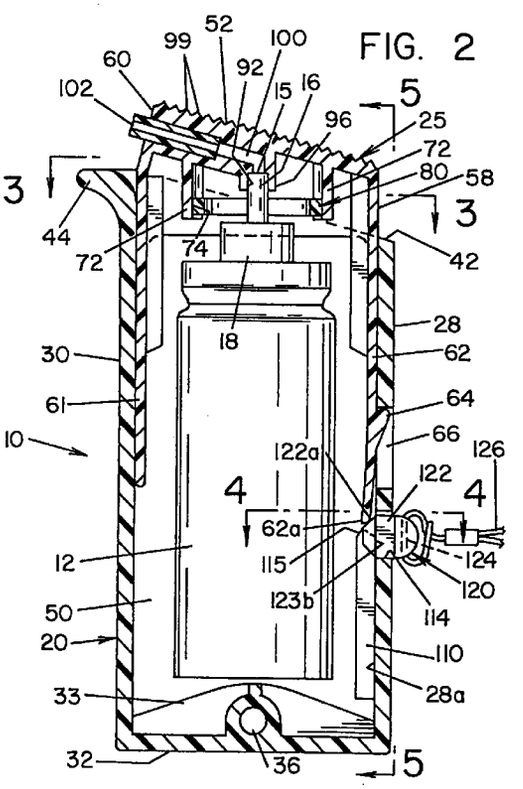
(72) Inventor: **Winner, Kevin D.**
Sharon, PA 16146 (US)

(74) Representative: **Hennicke, Albrecht, Dipl.-Ing.**
Patentanwälte Dipl.-Ing. Buschhoff
Dipl.-Ing. Hennicke
Dipl.-Ing. Vollbach,
Kaiser-Wilhelm-Ring 24
50672 Köln (DE)

(54) Holder for personal protection devices

(57) An automatic disarming device for use with a portable personal protection apparatus is disclosed which disarms the protection device when taken from an authorized user thereby preventing the device from being used against the authorized user. The automatic disarming device includes a housing for supporting the personal protection apparatus, an operating mechanism on the housing for actuating the personal protection apparatus, and a removable arming member which renders the operating mechanism inoperative when separated from the housing.

FIG. 2



EP 0 801 286 A1

Description

The present invention relates to the art of personal protection devices and, more particularly, to an improved holder for a personal protection device which has a disarming feature to prevent the unauthorized operation of the device.

BACKGROUND OF THE INVENTION

The present invention is particularly applicable to aerosol and electric shock type personal protection devices and will be described with particular reference thereto; however, the invention has much broader application and may be used with a variety of other aerosol products, protective devices and security products when it is desired to protect against unauthorized activation thereof.

Many consumer products are provided or are packaged in aerosol containers, the contents of which are dispensed by depressing an actuating valve on the container. Typical examples of products packaged in this manner are perfumes, colognes, breath fresheners, hair sprays, insect repellents and the like. Another type of product provided in an aerosol container is a personal security self-defense spray which can be easily carried by a user in a pocket or handbag. Such devices contain substances such as oleoresin capsicum (pepper spray) or various tear gas compositions such as CN or CS gas which can temporally disable an assailant. One of these products is a pepper composition sold under the trademark BODYGUARD by Guardian Products of Phoenix, Arizona.

Several problems are attendant to the use of aerosol containers and particularly those which serve as dispensers for personal defense products. Aerosol products of this type must be convenient to use so that they can be carried in a pocket or purse and be quickly and easily retrieved and actuated. It is also desirable to protect the aerosol canister so that it is not unintentionally or inadvertently actuated. The device should also be designed so that when retrieved, it can be quickly oriented by feel with the discharge nozzle properly aimed. The device further should be rendered ineffective or inoperative when it has been taken away from the authorized user or removed from a stored position or location without the permission of the user to prevent it from being accidently discharged or used against the authorized user.

Various containers or holders for security devices can be found in the prior art. United States Patent No. 5,366,118 shows an actuator for an aerosol container which has a locking feature to prevent the unintentional or inadvertent release of the contents of the aerosol container. However, the dispenser does not include a disabling feature to prevent an unauthorized user from discharging the contents of the aerosol container.

United States Patent No. 5,310,086 shows a canister holder which disarms the canister when the canister support is removed from the canister holder, but is not a reusable holder and is difficult to rearm after being disarmed.

Untied States Patent No. 5,111,968 discloses a hand-held tear gas canister and personal security device having an elongated ridge or rib on the outer surface of the canister or on a holster to facilitate orientation of the canister. The dispenser does not include a disarming mechanism.

United States Patent No. 4,872,084 discloses a typical electric shock type personal protection device which applies a non-fatal shock to an assailant to temporarily disable or disorient the assailant. The device does not include a disarming and rearming mechanism.

United States Patent No. 4,454,966 shows a case for enclosing an aerosol dispenser. The case conforms to the form of the aerosol and is designed particularly to conform to the actuator of the aerosol dispenser to permit operation of the dispenser while the dispenser is contained within the case. The case lacks a mechanism for disarming the aerosol canister.

United States Patent No. 4,449,474 discloses a personal security device which comprises a trigger-actuated aerosol canister contained in a two-piece telescoping housing. A mechanism for disarming the security device is not disclosed.

United States Patent No. 4,301,947 shows a device which fits over a tear gas canister and provides a guiding tunnel over the discharge button so that by feel alone, the device may be properly grasped and actuated by depressing the button. The device does not include a disarming mechanism.

United States Patent No. 3,863,814 discloses a safety cap for aerosol cans which has a central split cylinder having hooked ends. The hooked ends are locked beneath the can bead by a ring which may be slid downwardly on the cylinder to lock the device. Release of the hooked ends is effected by upwardly sliding the ring and depressing the cap to outwardly flex the hooked ends. Upon retraction of the hooked ends, the cap can be lifted from the can. The device is intended primarily as a safety cap for aerosol cans. The device does not include a disarming and rearming mechanism.

United States Patent No. 3,450,313 discloses a spring metal holding clip for aerosol containers having an end that is made to fit snugly in the annular recessed top of the container to resist upward displacement. The plastic cap fits around the top portion of the container and has a slot through which the spring clip extends. With the clip in this position, the user, by touch, can properly direct the spray nozzle. A mechanism for disarming the cap to prevent release of the container contents by an unauthorized person is not disclosed.

United States Patent No. 3,445,046 shows a holster for holding an aerosol container which holster has an opening for discharging of fluid from the container. An access opening to a valve actuator on the container is provided along with means to hold or clip the holster on the belt which also allows quick detachment. No disarm-

ing mechanism is shown.

As indicated above, there are various types of holsters, containers, and the like for various types of aerosol and electric shock devices, particularly those of the personal defense type. However, none of these includes a disarming arrangement. In view of the current designs of dispensers, there exists a need for an improved dispenser or holder which is structurally simple, easy to manufacture, convenient to use, easy to orient and aim by feel, and which includes a locking feature to minimize the possibility of inadvertent activation and which also can be quickly and easily armed and disarmed.

SUMMARY OF THE INVENTION

The present invention relates to an apparatus for disarming personal protection devices which renders such devices inoperable when they are used by unauthorized persons. The disarming mechanism can also be a safety feature for a variety of types of personal protection devices.

In accordance with the present invention, there is provided a disarming device for a portable personal protection apparatus which includes a housing enclosing the protection apparatus, an operating mechanism on the housing which is displaceable relative to the housing for displacing an actuator mechanism, and an arming mechanism removably supported on the housing wherein removing the arming mechanism disables the operating mechanism.

In accordance with the present invention, the operating mechanism is easily and rapidly armed and disarmed by respectively inserting and removing the arming mechanism from the housing.

In accordance with another aspect of the present invention, the housing has an interior compartment which replaceably houses an aerosol canister, electric shock mechanism or other type of protective apparatus. The housing may also include an exterior gripping surface that can be comfortably grasped in the hand of the user.

In accordance with still another aspect of the present invention, the disabling mechanism includes a catch member which prevents movement of the operating mechanism when the arming mechanism is removed from the housing.

In accordance with yet another aspect of the present invention, the housing includes a secondary arming mechanism to enable the operating mechanism when the arming mechanism is removed from the housing.

In accordance with another aspect of the present invention, the operating mechanism includes a locking mechanism.

It is therefore the principal object of the present invention to provide an improved housing for personal protection devices.

Another object of the present invention is the provision of an improved arrangement for easily disarming a personal protection device when the device is removed from the authorized user or from its storage location.

Yet another object of the present invention is the provision of an improved protection device housing for arming and disarming a protective device.

Still another object of the present invention is the provision of a protection device housing which includes a novel secondary arming mechanism to allow the authorized user to arm the protection device after such device has been disarmed by the primary disarming mechanism.

A further object of the present invention is the provision of a protection device housing of the foregoing character adopted to accommodate an electric shock mechanism or a chemical spray or aerosol container.

Another object of the present invention is the provision of an improved aerosol or spray housing which facilitates quicker and more efficient orientation and actuation of the aerosol or spray container.

Yet another object of the present invention is the provision of an aerosol or spray housing which replaceably contains a conventional aerosol or spray container and which holder is provided with an improved locking mechanism to prevent the inadvertent or unintentional actuation of the contained aerosol or spray container.

BRIEF DESCRIPTION OF THE DRAWINGS

The foregoing and other objects and advantages of the present invention will become more apparent from the following description taken together with the accompanying drawings of which:

Figure 1 is a perspective view showing a housing according to the present invention;

Figure 2 is a sectional elevation view taken along line 2-2 in Figure 1 and showing an aerosol or spray container in the holder;

Figure 3 is a plan view in section taken along line 3-3 in Figure 2;

Figure 4 is a detail plan view in section taken along line 4-4 in Figure 2;

Figure 5 is a rear elevation view of the housing taken along line 5-5 in Figure 2;

Figure 6 is a sectional elevation view similar to Figure 2 showing the housing with the cap depressed in an actuated position;

Figure 7 is a sectional view, partially in section, showing the housing in a disarmed position by the removal of the disarming member;

Figure 8 is an elevation view similar to Figure 7 showing the housing with the cap held against depression in the disarmed position;

Figure 9 is a section view similar to Figure 8 showing manual rearming of the holder;

Figure 10 is an exploded view of the component parts of the housing and aerosol or spray container;

Figure 11 is an elevation view partially in section, showing an alternative embodiment of the present

invention; and,

Figure 12 is an elevation view similar to Figure 11 showing the housing in the disarmed mode by the removal of the disarming member.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now to the drawings wherein the showings are for the purpose of illustrating preferred embodiments of the invention only and not for the purpose of limiting same, Figures 1-10 show a housing 10 in accordance with the present invention and which, in this embodiment, encloses a removable aerosol container 12 containing a material under pressure to be dispensed therefrom. The aerosol container 12 contains and dispenses various types of products including personal defensive sprays. As shown in the drawings, the container is typically cylindrical in shape and the contents thereof are released at nozzle 15 when the stem or actuator 16 is depressed to open valve 18. The pressurized contents of the container are released as long as the stem 16 is maintained in its depressed position. The general construction of the aerosol container, as described above, is conventional and well known.

Housing 10 includes an elongated body 20 having opposite side walls 24 and 26, rear wall 28 and front wall 30. Bottom wall 32 extends across the lower end of the housing and includes internal ribs 33 closely adjacent to the bottom of container 12. The walls 24 and 26 are shown as being slightly outwardly convex and along with the rear and front walls define a grip which may be conveniently grasped by the fingers of the user with the thumb extending around one side. An aperture 36 is shown extending transversely through the bottom wall to provide a convenient means for attaching a key ring.

The upper open end of the housing is defined by a peripheral edge 42 which inclines downwardly in the direction from front wall 30 toward rear wall 28. Edge 42 projects forwardly at the upper end of wall 30 to Create a lip 44 beneath which the first finger of the user normally rests when the device is grasped. Lip 44 may include grooves, not shown, to improve the grip of the user on housing 10. The lip is configured so that it can be oriented by fee so that when properly grasped, the pressurized contents of the container 12 are discharged towards an assailant and slightly upwardly and away from the user. A recess 46 intercepts edge 42 and extends downwardly in side wall 24. A horizontal land 48 is provided along a portion of edge 42 immediately adjacent recess 46 and serves as a stop for downward movement of a radial projection 82 of a locking ring member 80 associated with a cap 25 of housing 10 as described in greater detail hereinafter.

Referring now in particular to Figures 2-4, body 20 defines an interior chamber 50 which replaceably receives container 12. The interior surfaces of opposite walls 24 and 26 are spaced apart to allow easy insertion and removal of the container and are slightly convex to retain the container snugly in chamber 50 and still allow the container to be removed and replaced. The cap 25 includes a cap portion 52 having opposite side walls 54 and 56, rear wall 58 and front wall 60. The cap further includes a pair of opposed legs 61 and 62 extending downwardly from walls 70 and 58, respectively, and which are slidably engagable along the interior sides of front and rear walls 30 and 28, respectively, of housing 10. The cap is retained in place by a detent 64 on leg 62 which, in the assembled position, is received within slot 66 which extends axially in housing wall 28. Preferably, the cap and the housing are fabricated from a suitable material such as molded plastic and the downwardly extending legs 61 and 62 have some flexibility so that assembly of the cap and the housing is easily accomplished as legs 61 and 62 will flex inwardly as the cap is inserted into the housing allowing detent 64 to become engaged in slot 66. In this position, and as will be described hereinafter, cap 25 may be pushed downward relative to housing 20, guided by the position of the detent 64 within slot 66.

The interior of the cap has downwardly projecting bosses 72 which together define a seat 74 which supports locking ring member 80 relative to the cap. Ring member 80 has a radial projection 82 which extends outwardly through a slot 84 in side wall 54 of the cap. Slot 84 permits the locking ring to be rotated from a locked position to an unlocked position as respectively shown in Figure 3 in solid and broken lines. Ring member 80 may also include a protrusion 85 to frictionally engage with one of the bosses 72 or 74 to prevent locking ring member 80 from loosely rotating from the locked and unlocked positions. The cap also includes an axially extending bore 92 which is circular in cross-section and is adapted to align with and receive the outer end of valve stem 16 of container 12. Bore 92 is defined by an annular boss 96 having a lower end which, in the normal assembled position, is concentrically positioned within locking ring 80. In the assembled position, the upper end of the stem 16 abuts or is closely adjacent the bottom of bore 92 so that downward movement of the cap 25 will depress stem 16 and act as a trigger to trigger valve 18 to release the contents of container 12. The upper surface 52 of the cap forwardly inclines and has a plurality of transversely extending ridges 99 to enhance operation by making surface 52 easily identifiable by touch.

The device may be disassembled by pressing detent 64 inward slightly to deflect leg 62 to permit the cap to be withdrawn from the housing. A suitable aerosol container 12 is placed in the interior chamber 50 of the housing with the bottom of the canister of the container resting against inner side of bottom wall 32. In this position, the central valve stem 16 projects axially upward. The cap is then be repositioned with respect to the housing by aligning legs 60 and 62 against the interior surfaces of walls 30 and 28 and pressing the cap into the housing to bring the detent 64 into engagement with slot 66. In the normal stored position, locking ring

80 will be in the position shown in Figure 1 with the projection 82 engaging the land surface 48 located on the upper edge 42 of the housing. The engagmeent of the projection against the land 48 will prevent downward movement of the cap and thereby minimize the possibility of inadvertent or unintentional actuation of the aerosol canister.

Holder 10 also includes a disarming or stopping mechanism which can minimize relative movement between cap 25 and housing 10. As best illustrated in Figures 2, 4, 6 and 7, inner surface 28a of rear wall 28 includes a pair of vertically extending catch members 110 located below slot 66. Catch members 110 are laterally spaced apart and parallel to one another and each catch member includes a catch notch or stop 112 at the top of the catch member. Catch notch or stop 112 includes two sloped surfaces, namely surface 113 which extends upwardly and inwardly from inner surface 28a of rear wail 28 and surface 115 which slopes downwardly and inwardly from inner end 113a of surface 113. Housing 20 further includes a pair of openings 114 through rear wall 28 below slot 66. Openings 114 are positioned laterally between the two catch members 110 and partially overlap the upper ends of members 110 and thus notches 112 as illustrated in Figure 7. The two openings 114 insertably receive a removable disarming member 120 which serves to disable the stopping mechanism. Disarming member 120 functions as a key because the protection device cannot be operated in a normal manner when the key is removed. Disarming member or key 120 includes a pair of laterally spaced apart protrusions 122 which are aligned with and sized to fit into openings 114. Each protrusion, when inserted through opening 114, extends beyond inner surface 28a of wall 28 and has a downwardly sloped upper surface 122a which extends from inner surface 28a so as to be co-planar with sloped surface 115 of the adjacent catch member 110 for the purpose set forth hereinafter. At the end of protrusion 122 is a clasp member 123 which includes an abutment surface 123b which abuts against inner surface 28a when the disarming member is inserted into openings 114. The clasp member secures disarming member in openings 114. The clasp member also includes sloped sides 123a to facilitate insertion into openings 114. Protrusions 122 are preferably made of a flexible plastic so that the protrusions flex laterally inward when the disarming member is inserted and removed from openings 114. Key member 120 includes a hole 124 receiving a wrist strap or tether line 126 therethrough. The wrist strap or tether line is connected to the authorized user's wrist.

As best illustrated in Figure 2, when removable disarming member or key 120 is inserted into openings 114 the inclined surfaces 122a thereof engage the lower end 62a of cap leg 62. The authorized user, prior to depressing cap 25, inserts his/her wrist into wrist strap 126 and grasps housing 10 such that lip 44 is facing away from the user and toward the intended target. Once the user has properly aimed the housing, locking ring member 80 is moved to the unlocked position to allow radial projection 82 to move into recess 46 when cap 25 is depressed. When cap 25 is depressed, leg 62 is cammed inwardly by surfaces 122a and 115 and slidably moves downwardly thereof as shown in Figure 6. During this movement, cap 25 pushes valve stem 16 downwardly, opening valve 18 of container 12, and discharging the fluid in the contianer through passage 100 and discharge nozzle 102.

Figures 7 and 8 illustrate the disarming of housing 10. Housing 10 is disarmed by removing arming member 120 from rear wall 28. The arming member can be easily removed by pulling on wrist strap or tether line 126. The holder will also be automatically disarmed if it is physically taken from the user. As the holder is grabbed away, the wrist strap will remain on the user's wrist, thereby pulling the arming member from the housing rear wall. As will become apparent hereinafter, once the arming member is removed from the housing, the assailant who has taken the holder will not be able to actuate the spray canister.

Figures 7 and 8 best illustrate how the removal of arming member 120 from rear wall 29 of housing 10 disarms the security device. When the arming member is removed, the lower end 62a of cap leg 62 is released from the position shown in Figure 2 and moves against inner surface 28a of rear wall 28 so as to be vertically above catch notch 112 of catch member 110. When cap 25 is then depressed, the edge 62a of leg 62 contacts upwardly sloped surafce 113 and is cammed into catch notch 112. Notch 112 prevents cap 25 from pushing valve stem 16 to discharge fluid from the container.

The security device can be rearmed by the authorized user by inserting disarming member 120 into the housing at opening 114. Once the disarming member is inserted into the housing, the lower edge of leg 62 will once again be deflected by protrusion 122 to the position shown in Figure 2 thereby allowing cap 25 to push valve stem 16 to discharge the container fluid as described above.

Figure 9 illustrates the manner in which the contents in the container can be discharged even when the disarming member has been removed from rear wall 28. In this respect, the user can place his or her finger B through slot 66 to deflect the lower edge 62a of leg 62 from catch notch 112 and subsequently depress cap 25 to release the fluid in container 12. Thus, when key 120 is removed from housing 10, only an authorized user who knows how to manipulate leg 62 through slot 66 can operate the protection device. To an unauthorized user such as an assailant, the device is inoperative.

Figures 11 and 12 illustrate another embodiment of the invention whereby an electric shcok device or stun gun is encased in housing 160. The general construction of a stun gun is well known to those in the art. As is well known, a stun gun operates by discharging a high voltage, low current charge on an assailant thereby temporarily rendering the assailant immobile. The charge is

transferred to the assailant by touching the assailant with electrodes 140. The electrodes are energized by depressing trigger 142 which pivots on pin 141 and causes the back surface 142a of trigger 142 to contact switch button 144.

A disarming mechansim is incorporated in housing 160 as shown in Figures 11 and 12. Specifically, a leg member 150 is vertically slidably supported adjacent the inner surface 152a of front wall 152 of holder 160. Leg member 150 includes a head 156 at the upper end thereof and a downwardly extending portion 154 having a lower end 154a. Head 156 has an upper sloped surface 157 and a base surface 158 and is biased in a upward direction by spring 162 acting against base surface 158 to maintain sloped surface 157 in contact with trigger 142. The lower end of spring 162 is supported by spring support 164. Housing 160 includes a pair of openings 170 only one of which is visible in Figures 11 and 12. Openings 170 correspond in shape and size to openings 114 on housing 20 as previously described and shown. The openings 170 receive a removable arming member 120 which is structured as described hereinabove. Attached to inner surface 152a of front wail 152 is a pair of catch member 180 only one of which is visible. The catch members are similar to catch members 110 described herein and in this respect include an upward sloped surface 182 defining a catch notch 186 with inner surface 152a of front wall 152, and a sloped surface 184 extending downwardly and inwardly from the upper end of surface 182. When arming member 120 is inserted into openings 170, as seen in :Figure 11, protrusions 122 extend into the interior of housing 160, whereby surfaces 122a and 184 from a continuous downward and upwardly sloped surface from the inner surface of front wall 152.

As illustrated in Figure 11, when trigger 142 is depressed in the direction of arrow A, the trigger surface 142b engages head 156 and displaces leg 150 downwardly. As the leg is pushed downwardly, the lower edge 154a of portion 154 moves toward and is deflected inwardly by surfaces 122a and 184 away from catch notch 186 to allow trigger 142 to contact switch button 144 and activate the stun gun. The stun gun is disarmed by removing member 120 from housing 160 as shown in Figure 12 and as described herein with regard to Figures 7 and 8. In the disarmed mode, trigger 142 is prevented from contacting switch button 144. In this regard, as trigger 142 is depressed, lower edge 154a of elongated section 154 moves toward catch members 180 and contacts upwardly sloped surfaces 182 thereof Sloped surfaces 182 directs edge 154a into notch 186 which prevents leg member 150 from moving further downward. This in turn prevents further movement of trigger 142 toward switch button 144. The stun gun is rearmed by inserting arming member 120 into openings 170 in housing 160. Front wall 152 includes a slot 190 which enables the stun gun to be activated when arming member 120 is removed from housing 160. The slot in the housing is sized to allow the user to insert his/her finger into the slot and deflect leg portion 154 inwardly to prevent end 154a from entering notch 186 when trigger 142 is depressed. Preferably, leg portion 154 includes a detent 192 extending into slot 190 to facilitate such deflection of portion 154.

The invention has been described with reference to preferred embodiments and it is apparent that many modifications may be made with respect to the preferred embodiments and that other embodiments can readily be devised without departing from the principles of the invention. Therefore, it is to be distinctly understood that the foregoing descriptive matter is intended merely as illustrative of the invention and not as a limitation thereof.

Claims

1. An actuating device for use with a portable personal protection device having an actuator, said actuating device including housing means defining a compartment for substantially enclosing said protection device, trigger means operatively connected to said actuator, and in sliding engagement with said housing means, and stop means for limiting relative movement between said trigger means and said housing means.

2. An actuating device according to claim 1, including disabling means for disabling said stop means.

3. An actuating device according to claim 2, wherein said disabling means is digitally operable.

4. An actuating device according to claim 2 or 3, including key means for operating said disabling means.

5. An actuating device according to any one of claims 1 to 4, wherein said housing includes a catch member and said stop means comprises a portion of said trigger means.

6. An actuator according to claim 5, wherein said key means comprises a key member for diverting said portion of said trigger means away from said catch member.

7. An actuator according to any one of claims 1 to 6, including bypass means for bypassing said stop means.

8. An actuator according to claim 7, wherein said bypass means is digitally actuatable.

9. An actuator according to any one of claims 1 to 8,. wherein said portable personal protection device is a canister of fluid.

10. An actuator according to any one of claims 1 to 8,

wherein said personal protection device is an electrical shock device.

11. An actuating device for use with a portable personal protection apparatus comprising housing means for at least partially enclosing said personal protection apparatus, trigger means for triggering said protection apparatus, stop means for restricting movement of said trigger means and disabling means for disabling said stop means.

12. An actuating device according to claim 11, wherein said disabling means is digitally adjustable between a first position for disabling said stop means and a second position for enabling said stop means.

13. An actuating device according to claim 11 or 12, including key means for controlling said disabling means.

14. An actuating device according to claim 13, wherein said key means is removably attached to said housing.

15. An actuating device according to any one of claims 11 to 14, wherein said stop means comprises a catch member on said housing for catching a first portion of said trigger means.

16. An actuating device according to claim 15, wherein said disabling means comprises key means for preventing said catch member from catching said first portion of said trigger means.

17. An actuator for a portable personal protection apparatus comprising:

a) housing means for substantially enclosing the personal protection apparatus;

b) trigger means incorporated in said housing means and displaceable relative thereto for actuating said personal protection apparatus, said trigger means moveable between a first position and a second position, said second position actuating said personal protection apparatus; and,

c) arming means supported on said housing means for enabling and disabling said trigger means, said arming means including an arming member removably supported on said housing means, said arming means preventing movement of said trigger means to said second position when said arming member is removed from said housing means.

18. A portable personal protection apparatus as defined in claim 17,wherein said housing means includes a bottom wall and sidewalls integral therewith defining an interior compartment for said personal protection apparatus.

19. A portable personal protection apparatus as defined in claim 17 or 18, wherein said housing means is in sliding contact with said trigger means.

20. A portable personal protection apparatus as defined in any one of claims 17 to 19, wherein said trigger means includes at least one leg disposed adjacent to said side wall.

21. A portable personal protection apparatus as defined in any one of claims 17 to 20, wherein said housing means includes catch means for engaging said trigger means for preventing movement of said trigger means to said second position when said arming member is removed from said housing means.

22. A portable personal protection apparatus as defined in claim 21 wherein said catch means is disposed on said side wall for engaging said at least one leg when said arming member is removed from said hou sing means.

23. A portable personal protection apparatus as defined in any one of claims 17 to 22, including locking means for controlling movement of said trigger means, said locking means being moveable between a first setting and a second setting, said first setting preventing movement of said trigger means to said second position.

24. A portable personal protection apparatus as defined in claim 23, wherein said locking means includes a locking ring rotatably connected to said trigger means and having a projection moveable between a first location and a second location, said first location corresponding to said locking means first setting and said second location corresponding to said locking means second setting.

25. A portable personal protection apparatus as defined in any one of claims 17 to 24, wherein said personal protection apparatus is a canister of fluid.

26. A portable personal protection apparatus as defined in any one of claims 17 to 24, wherein said personal protection apparatus is an electrical shock device.

27. A portable personal protection apparatus as defined in any one of claims 17 to 26, including bypass means incorporated in said housing means for allowing movement of said trigger means to said second position when said arming member is removed from said housing means.

28. A portable personal protection apparatus as defined in claim 27, wherein said bypass means diverts said at least one leg away from said catch means when said arming member is removed from said housing means.

29. A portable personal protection apparatus as defined in claim 27 or 28, wherein said bypass means includes opening means in said sidewall of said housing for access to said at least one leg.

FIG. 1

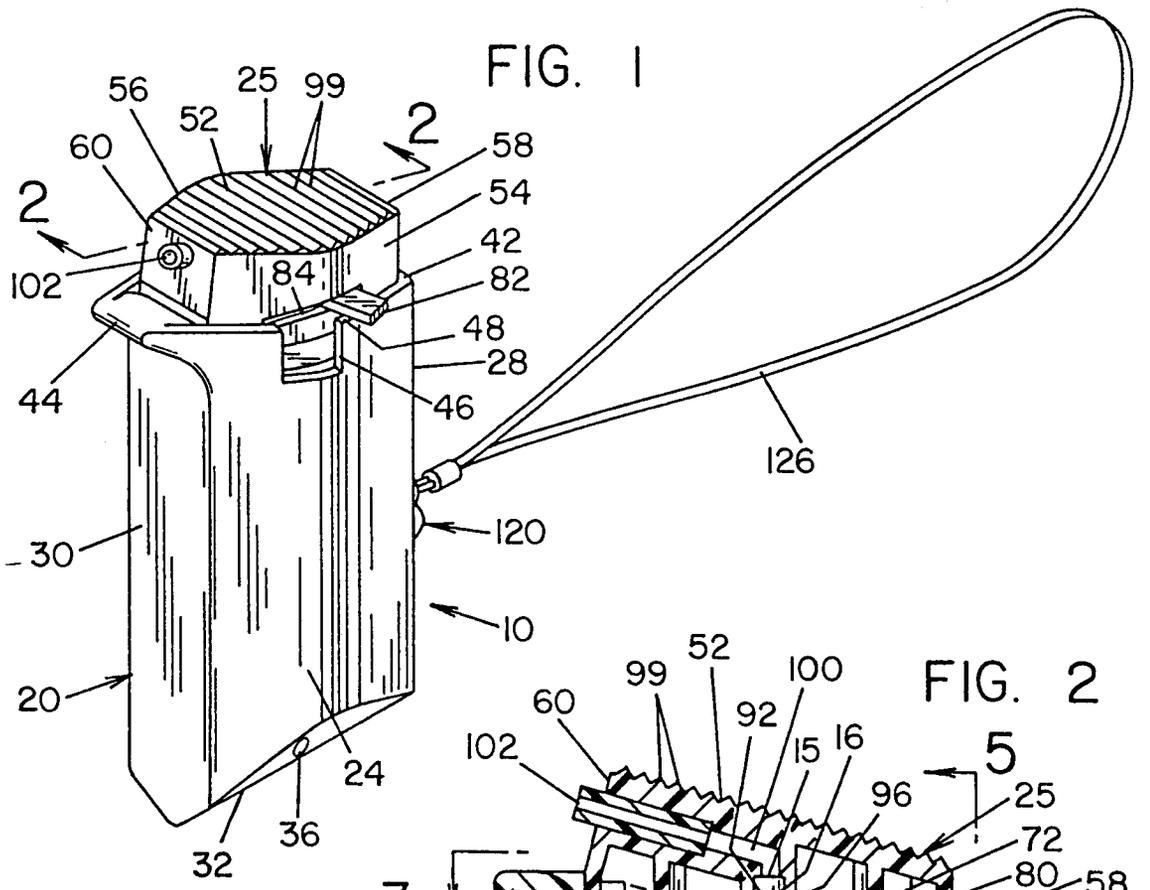

56
25
99
52
60
2
58
54
2
42
102
84
82
48
28
44
46
126
120
30
10
20
24
36
32

FIG. 2

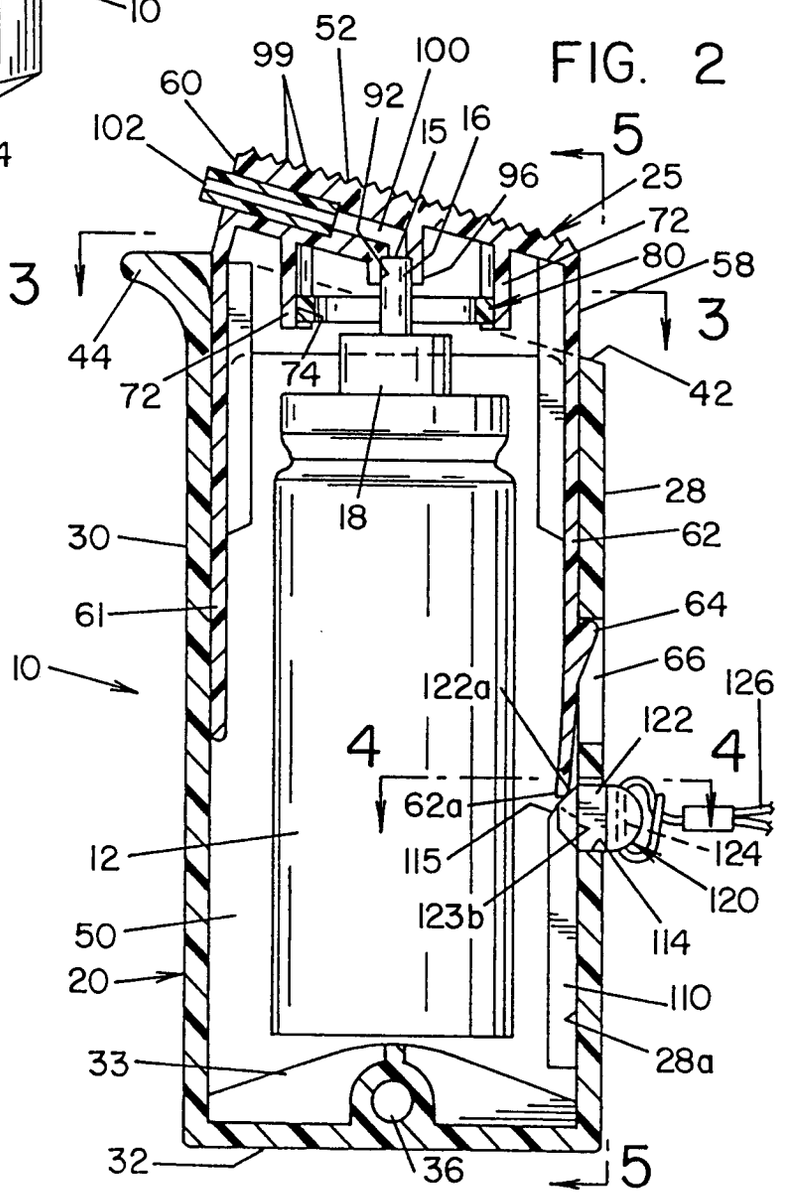

99
52
100
60
92
102
15
16
5
96
25
72
3
80
58
3
44
74
42
72
18
28
30
62
61
64
10
66
122a
126
122
4
4
62a
124
12
115
120
123b
50
114
20
110
33
28a
32
36
5

FIG. 3

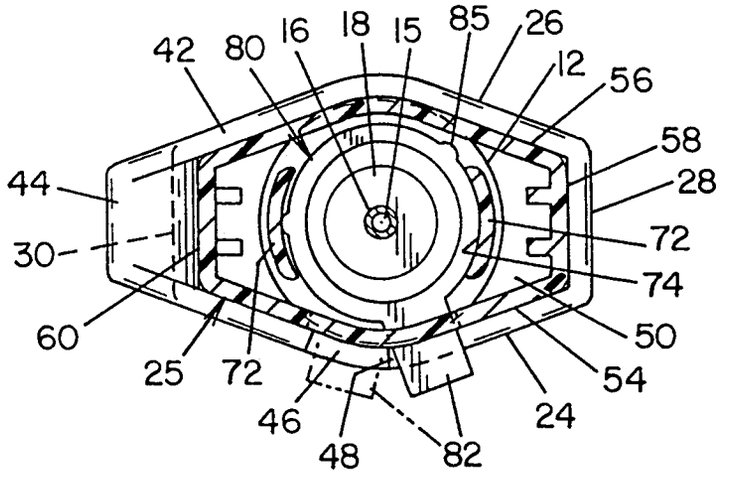
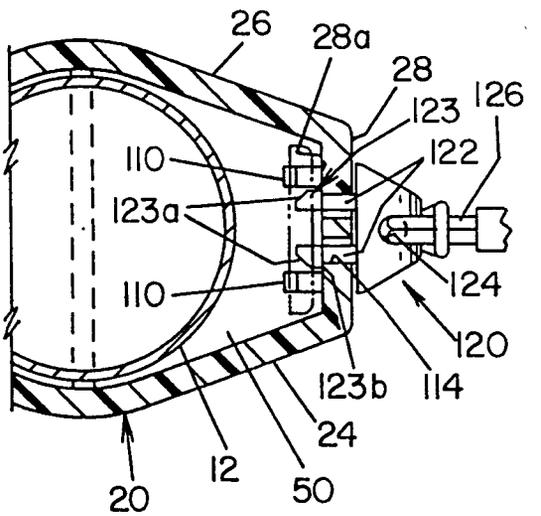


FIG. 4



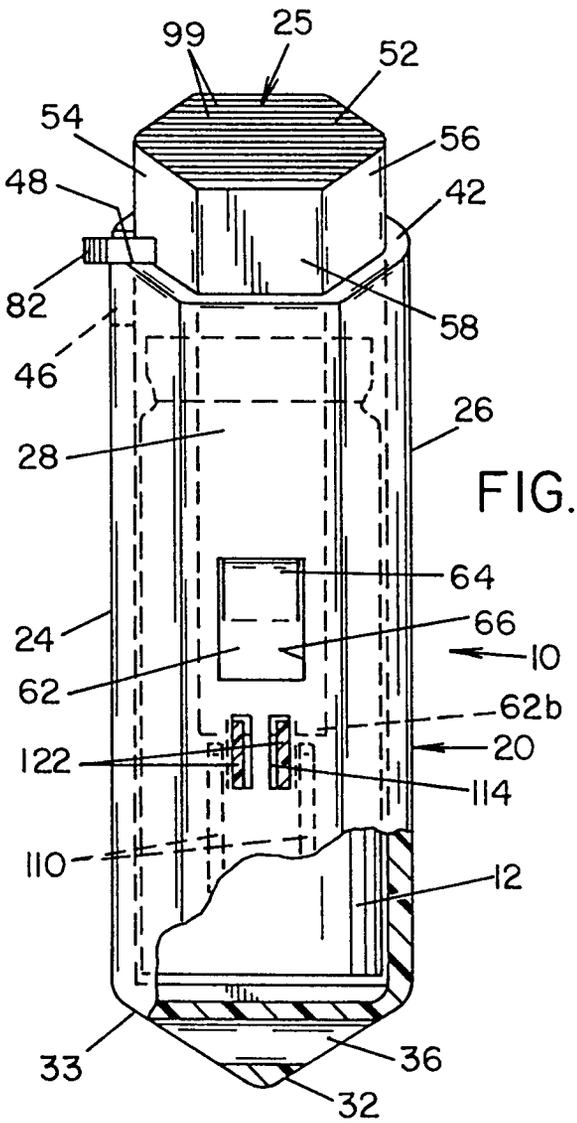


FIG. 5

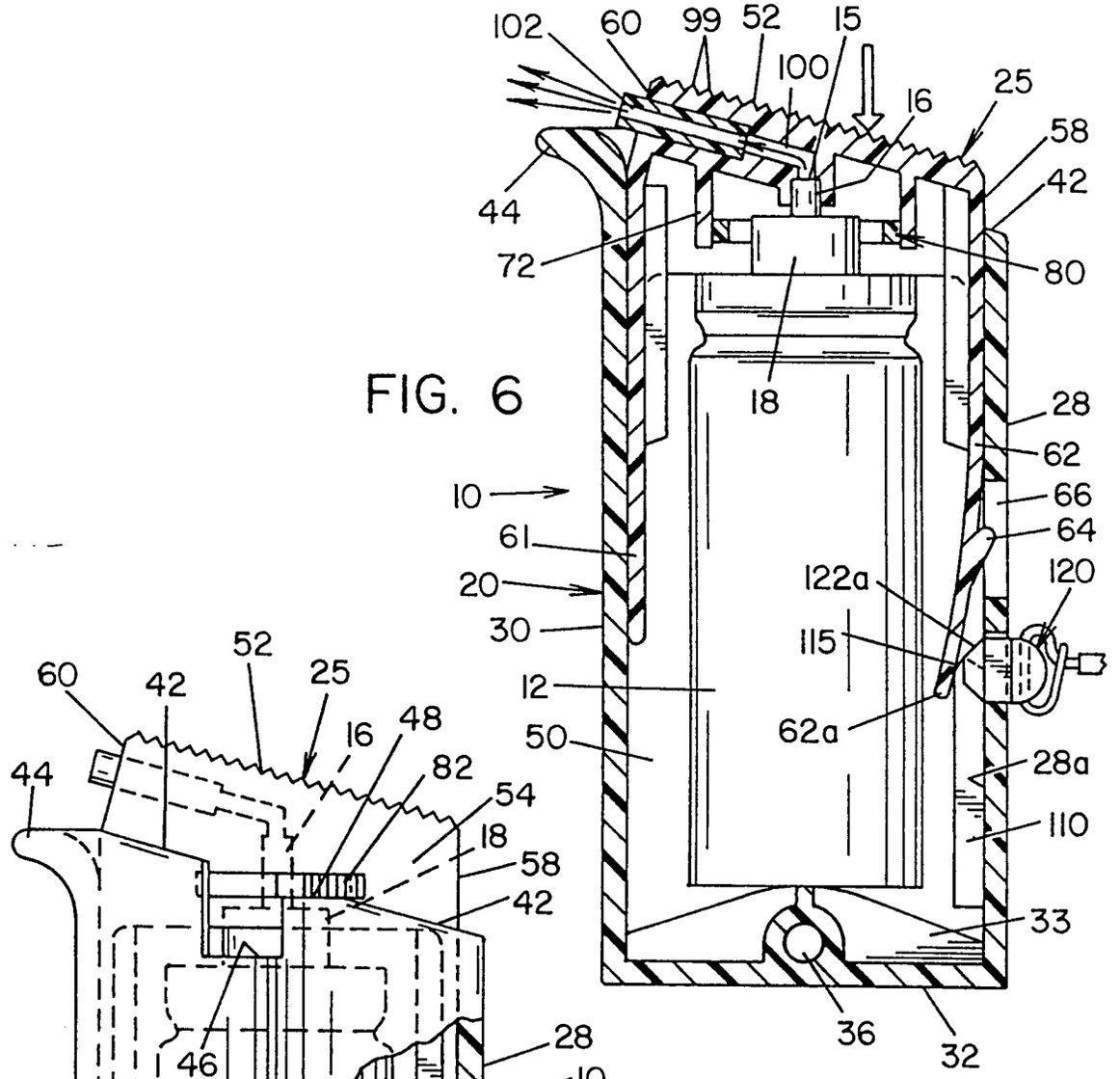

102
60
99
52
15
100
16
25
58
42
44
72
80
18
28
62
66
64
10
61
20
30
122a
120
115
12
62a
50
28a
110
33
36
32

FIG. 6

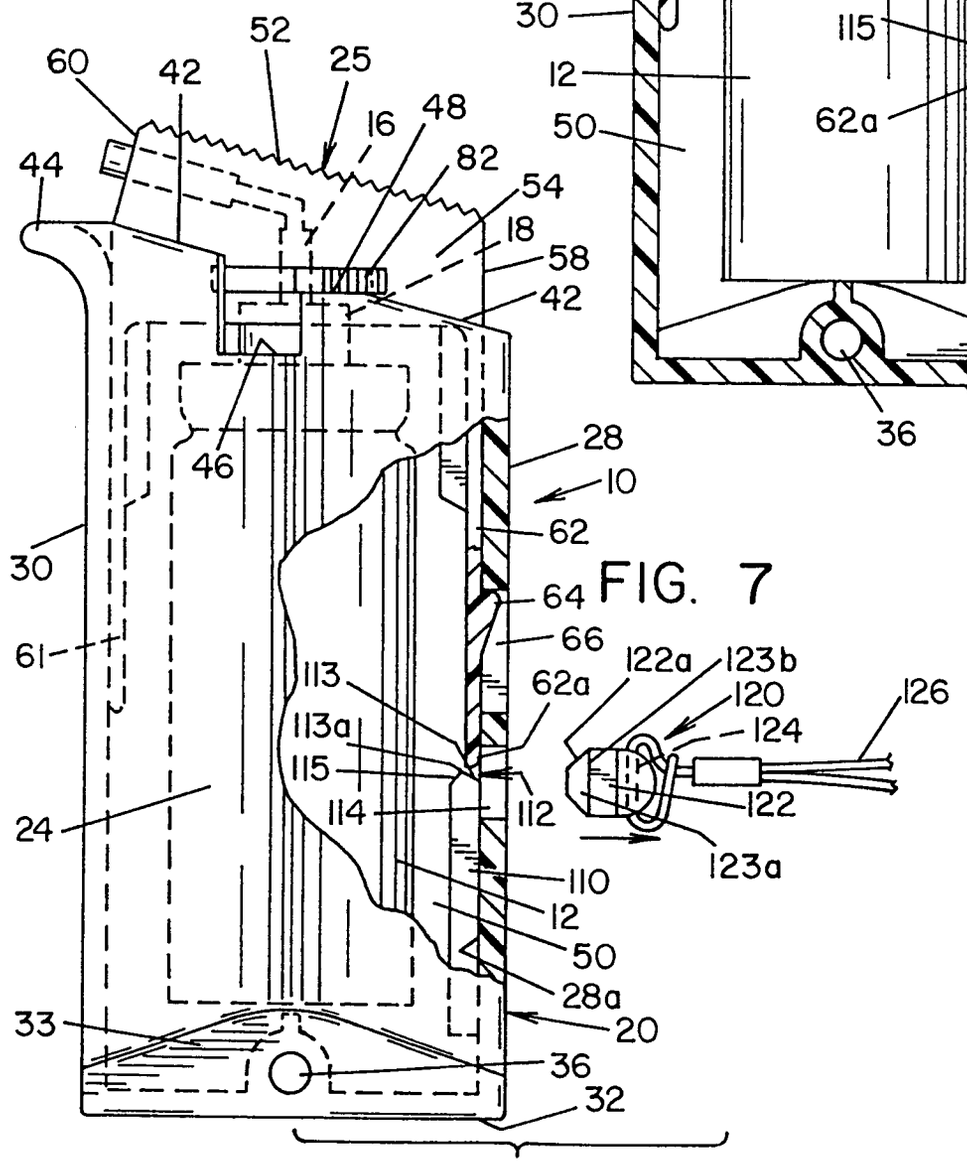

60
42
52
25
16
48
82
54
18
58
42
44
46
28
10
62
30
64
66
61
113
122a
123b
62a
120
126
113a
124
115
114
112
122
24
123a
110
12
50
28a
33
20
36
32

FIG. 7

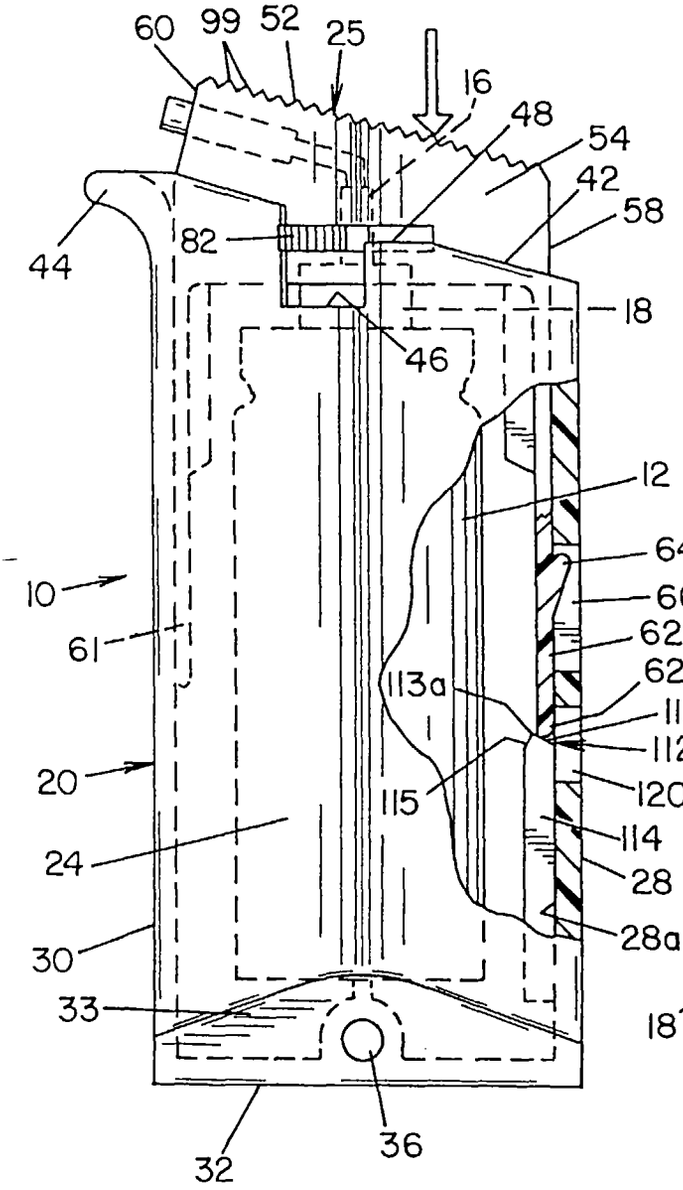

60
99
52
25
16
48
54
42
58
44
82
18
46
12
64
66
62
62a
113a
113
112
120
10
61
20
115
114
24
28
28a
30
33
32
36

FIG. 8

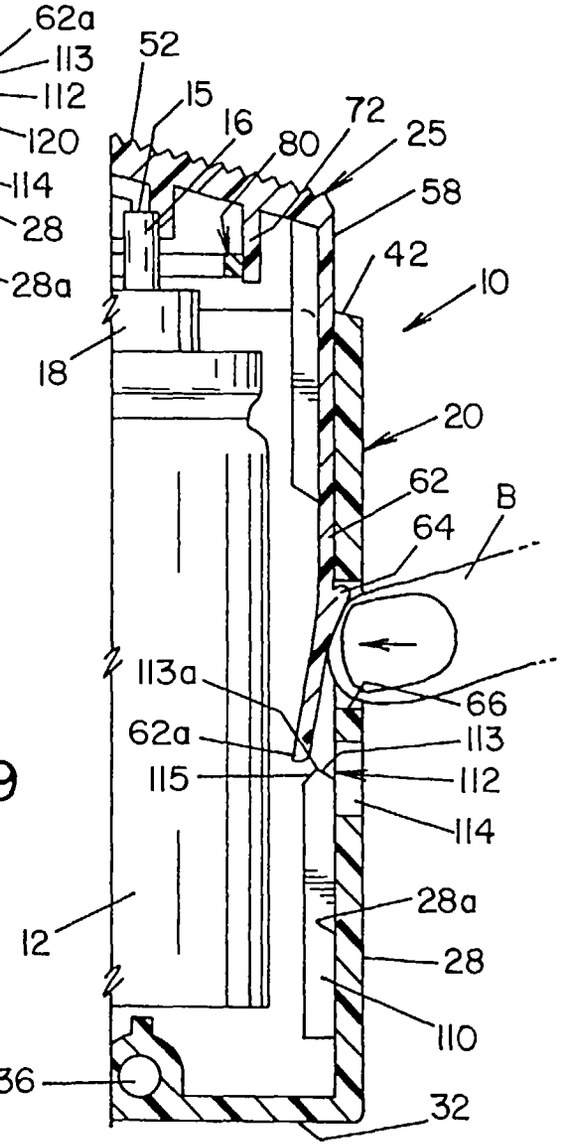

52
15
16
72
80
25
58
42
10
18
20
62
B
64
113a
66
62a
113
115
112
114
12
28a
28
110
36
32

FIG. 9

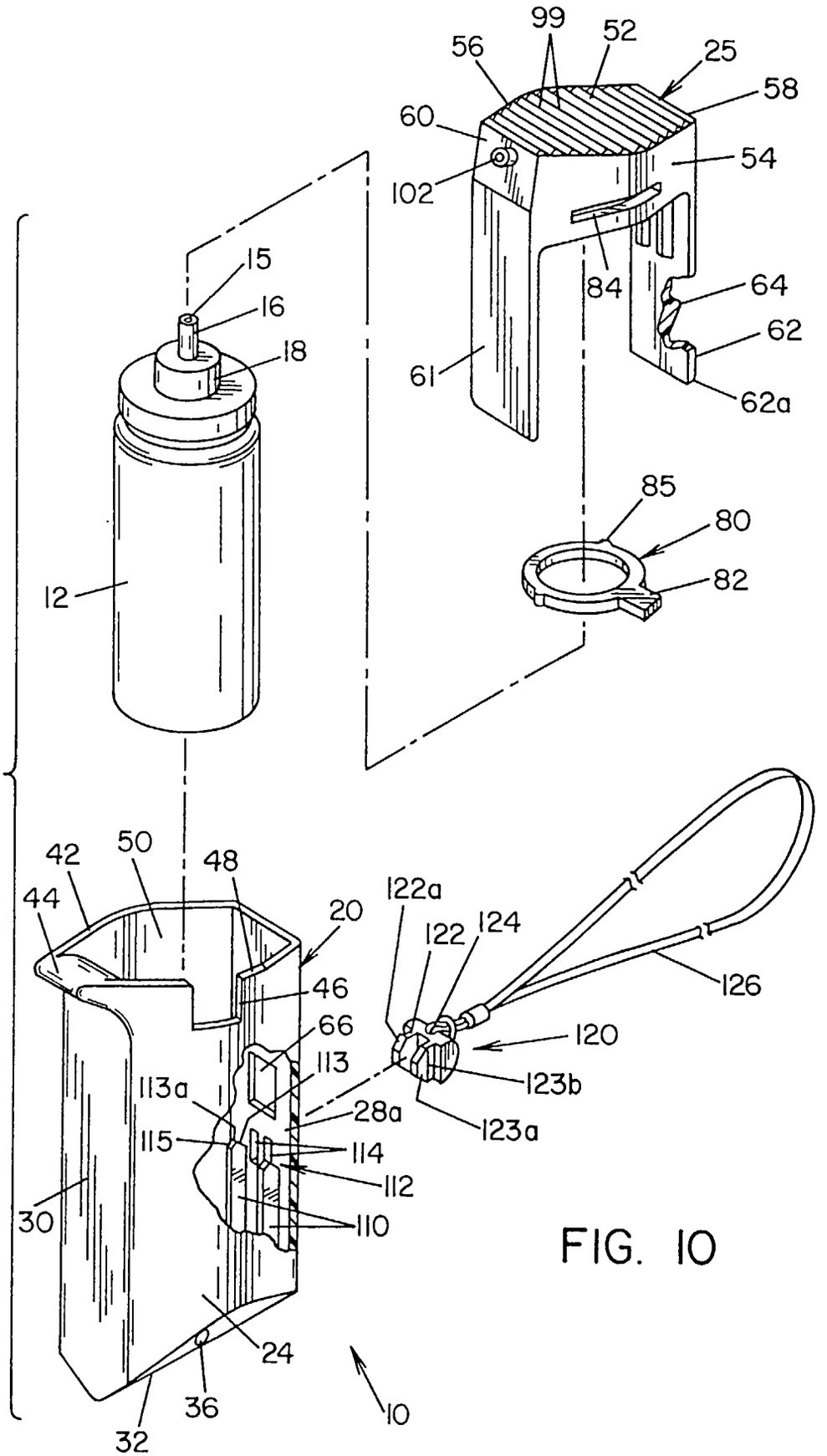

99
56
52
25
58
60
54
102
84
64
62
61
62a
15
16
18
12
85
80
82
42
50
48
44
20
122a
122
124
126
46
66
120
113
123b
113a
28a
123a
115
114
112
30
110
24
36
32
10

FIG. 10

FIG. 11

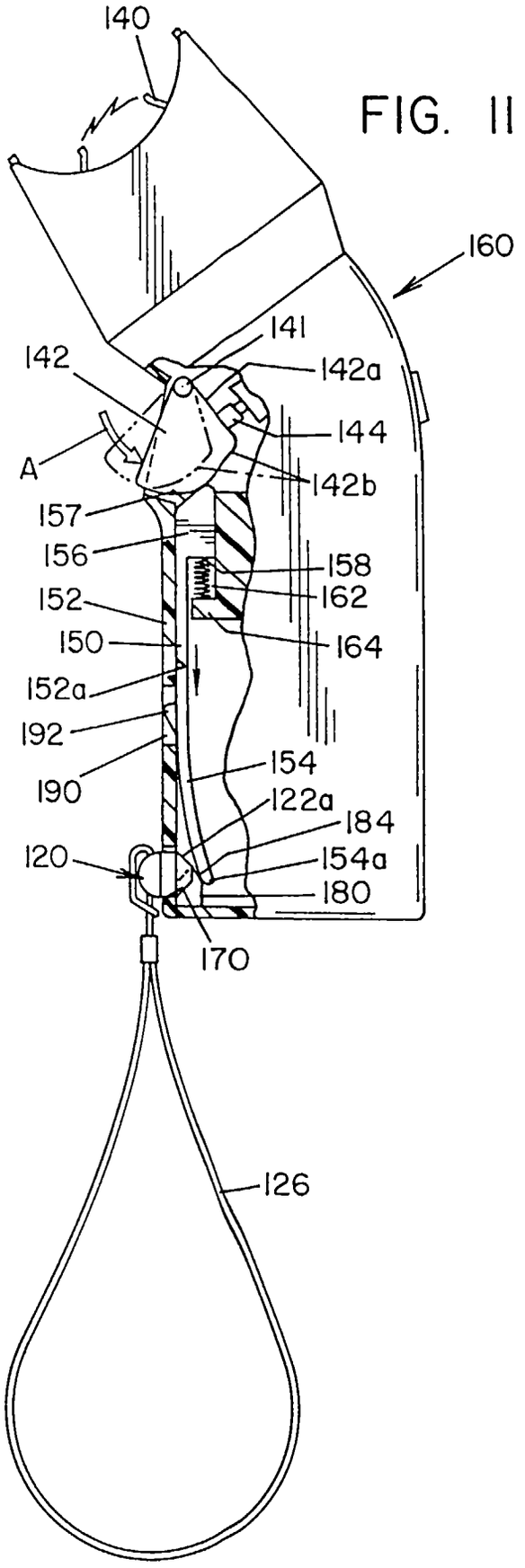
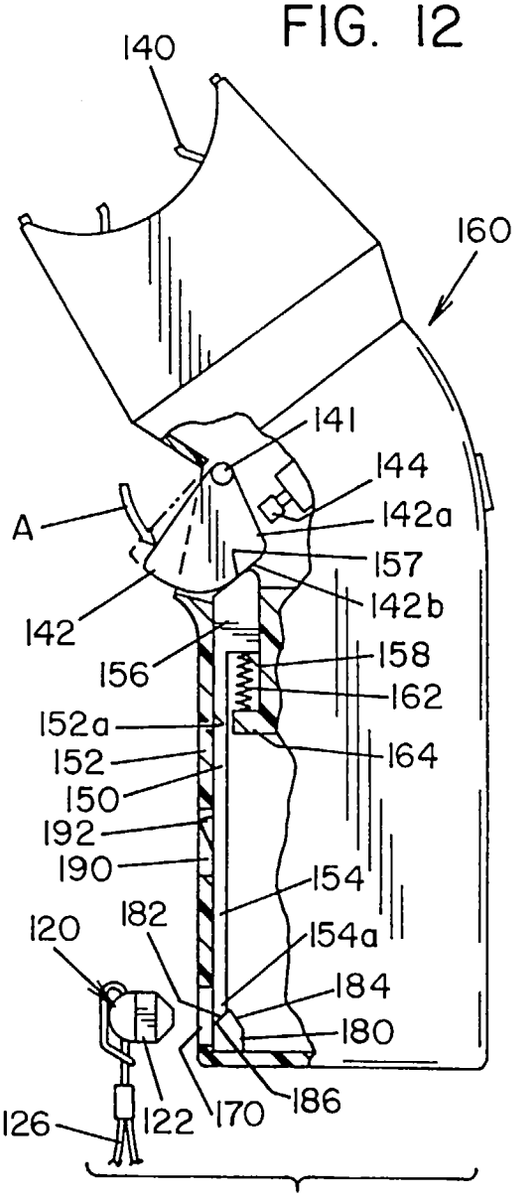

140
160
141
142
142a
144
A
142b
157
156
158
162
152
150
164
152a
192
190
154
122a
184
120
154a
180
170
126

FIG. 12


140
160
141
144
A
142a
157
142b
142
156
158
162
152a
164
152
150
192
190
154
120
182
154a
184
180
186
126
122
170

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 96 10 5676

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X,D	US-A-5 310 086 (JULINOT) * column 3, line 21 - column 6, line 42; figures 1-3 *	1,9, 11-14,17	F41H9/10
X,D	US-A-5 366 118 (CIAMMITTI) * column 3, line 24 - column 6, line 9; figures *	1,9,11, 12	
X,D	US-A-4 454 966 (HICKS) * column 2, line 9 - column 3, line 15; figures 1,2 *	1,9,11, 12	
A	US-A-5 379 179 (GRAVES) * column 2, line 65 - column 6, line 22; figures *	10	

TECHNICAL FIELDS SEARCHED (Int.Cl.6)

F41H
G08B
B65D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	3 September 1996	Triantaphillou, P

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

EPO FORM 1503 03.82 (P04C01)