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ABSTRACT

The invention discloses a protection device including a pistol shaped housing having a handle grip and having a hollow barrel open at one end; a removable closure cap, having an outlet opening, and fitted to the barrel for closing its open end; a triggering mechanism operable for moving a repellent fluid container placed in the barrel towards the closure cap for ejection of repellent fluid through the outlet opening in the closure cap.

3 Claims, 5 Drawing Figures
SIMULATED PISTOL SPRAY PROTECTION DEVICE

The present invention relates to protection devices.

It is an object of the invention to provide an economical protection device for use by persons against attackers. According to the invention, a protection device includes in combination:

a. a pistol shaped housing having a handle grip and a hollow barrel open at one end, the housing being provided with at least one locking aperture in the barrel near its open end;

b. a removable closure cap comprising a disc with a central discharge hole, the disc having a diameter greater than the internal diameter of the barrel of the housing for abutting against the open end of the barrel of the housing, a guide tube having a diameter smaller than the disc and extending from the disc, the guide tube being adapted to be inserted into the barrel of the housing; a number of longitudinal cut-outs provided in the guide tube extending from its open end towards the disc; at least one outwardly extending clip element provided externally at the open end of the guide tube to engage with the locking aperture in the barrel of the housing, when the guide tube is inserted into the barrel of the housing; and an operating tube extending from the discharge hole in the disc inside the guide tube, and being adapted to abut against a biased discharge mechanism of a fluid repellent container fitted in the barrel; and

c. a triggering mechanism comprising a slide element slidably mounted in a guide in the housing; and a centrally pivoted lever mounted in the housing; the slide element being adapted to be moved in the guide to abut against one end of the lever so as to pivot the lever causing its other end to move a repellent fluid container placed in the barrel against the action of its biased discharge mechanism towards the closure cap and against the operating tube for ejection of repellent fluid through the discharge hole in the disc of the closure cap.

The invention will now be described by way of example with reference to the accompanying schematic drawings.

In the drawings,

FIG. 1 is a sectional view through a pistol shaped protection device in accordance with the invention;

FIG. 2 is a front view of the device seen along arrow II in FIG. 1;

FIG. 3 is a sectional view, on a larger scale of a part of the closure cap;

FIG. 4 is a front view of the cap seen along arrow IV in FIG. 3; and

FIG. 5 is a sectional view through a fluid repellent container in accordance with the invention.

Referring to FIGS. 1 and 2, the pistol-shaped protection device 10 has a grip 12 and a barrel 14. It is constructed of two identical complimentary parts 10.1, 10.2 which are fitted together (e.g., glued or welded, depending on the material used) so as to form a hollow interior.

A trigger plate 16 is slidably mounted in two pairs of recesses 18.1, 18.2 provided in the parts 10.1, 10.2. The plate 16 is slidably towards a lever 20, pivotably mounted on a pin 22.

A repellent fluid container 24 is mounted in the barrel 14. The closure cap 26 includes a disc 28 and a cylinder 30 having cut-outs 32 situated on either side of clip tongues 34, which are adapted to engage into holes 36 provided in the barrel 14. Centrally the cap 26 has a thin-walled tube 38. At its free end the tube 38 has a number of longitudinal cut-outs 40, as is shown in more detail in FIGS. 3 and 4.

Referring now to FIG. 5, the repellent fluid container 24 is constructed of a cylindrical body 42 (e.g. of suitable plastic) open at one end over which an aluminium neck 44 is crimped. The neck 44 opens into an opening 46. Around the opening 46 a rubber valve seat 48 is fitted. A cylindrical valve body 50 is fitted in the neck 44, and a valve 52 is slidably mounted in the body 50. At one end the valve 52 has a recess 54 and at its other end a recess 56 is provided into which a coil spring 58 is fitted. The spring 58 also abuts against the collar 60 of the valve body 50. A tube 62 is fitted to the collar 60 and extends up to the closed end of the cylinder 42. A rubber washer 64 fits tightly and sealingly around the valve body 50.

In normal inoperative position the spring 58 urges the valve 52 against the rubber valve seat 48 so that no fluid can escape through the hole 46. The cap 26 is removed from the barrel 14 and in use, the repellent fluid container 24 is placed into the barrel. Thereafter the cap 26 is replaced. Now the tube 38 fits into the recess 54 of the valve 52 (See FIG. 3).
When an attack is to be made, the person holding the device 10 pulls the trigger plate 16 and slides it in the direction of arrow 66. Thereby the lever 20 pivots about the pin 22 as shown by arrow 68 which causes the container 24 to be moved towards the cap 26 as shown by arrow 70.

Now the tube 38, abutting against the valve 52 causes it to be moved against the action of the spring 58. The valve 52 therefore lifts off the valve seat 48. Due to the pressure in the cylinder 42 fluid will now flow along the tube 62 as shown by arrows 72, around the valve 52, over the end of the valve 52, through the slots 40 into the tube 38 and out of the closure cap 26 from where it will appear in the form of a jet. When the plate 16 is released, the spring 58 will press the valve 52 again onto the valve seat 48.

Another feature of the invention is the provision of a hole 74 in the valve body 50. If only air or gas passed through the tube 62, a suction effect will be provided at the hole 74 and liquid will be sucked through it and ejected. This would happen particularly if the device 10 is pointed downward.

The pressure in the container 24 may be as a normal type of aerosol pressure. The repellent fluid should be irritating, in particular on the eyes, but non-lethal. It also may have a staining effect (e.g., providing a red colouring).

I claim:

1. A protection device including in combination:
   a. a pistol shaped housing having a handle grip and a hollow barrel open at one end, the housing being provided with at least one locking aperture in the barrel near its open end;
   b. a removable closure cap comprising a disc with a central discharge hole, the disc having a diameter greater than the internal diameter of the barrel of the housing for abutting against the open end of the barrel of the housing; a guide tube having a diameter smaller than the disc and extending from the disc, the guide tube being adapted to be inserted into the barrel of the housing; a number of longitudinal cut-outs provided in the guide tube extending from its open end towards the disc; at least one outwardly extending clip element provided externally at the open end of the guide tube to engage with the locking aperture in the barrel of the housing when the guide tube is inserted into the barrel of the housing; and an operating tube extending from the discharge hole in the disc inside the guide tube, and being adapted to abut against a biassed discharge mechanism of a fluid repellent container fitted in the barrel; and
   c. a triggering mechanism comprising a slide element slidably mounted in a guide in the housing; and a centrally pivotted lever mounted in the housing; the slide element being adapted to be moved in the guide to abut against one end of the lever so as to pivot the lever causing its other end to move a repellent fluid container placed in the barrel against the action of its biassed discharge mechanism towards the closure cap and against the operating tube for ejection of repellent fluid through the discharge hole in the disc of the closure cap.

2. A protection device as claimed in claim 1 in which the clip element is of triangular shape.

3. In combination, a protection device and a repellent fluid container fitted in the protection device and having a biassed discharge mechanism, the protection device including in combination:
   a. a pistol shaped housing having a handle grip and a hollow barrel open at one end, the housing being provided with at least one locking aperture in the barrel near its open end;
   b. a removable closure cap comprising a disc with a central discharge hole, the disc having a diameter greater than the internal diameter of the barrel of the housing for abutting against the open end of the barrel of the housing, a guide tube having a diameter smaller than the disc and extending from the disc, the guide tube being adapted to be inserted into the barrel of the housing; a number of longitudinal cut-outs provided in the guide tube extending from its open end towards the disc; at least one outwardly extending clip element provided externally at the open end of the guide tube to engage with the locking aperture in the barrel of the housing, when the guide tube is inserted into the barrel of the housing; and an operating tube extending from the discharge hole in the disc inside the guide tube, and abutting against the biassed discharge mechanism of the fluid repellent container fitted in the barrel; and
   c. a triggering mechanism comprising a slide element slidably mounted in a guide in the housing; and a centrally pivotted lever mounted in the housing; the slide element being adapted to be moved in the guide to abut against one end of the lever so as to pivot the lever causing its other end to move the repellent fluid container placed in the barrel against the action of its biassed discharge mechanism towards the closure cap and against the operating tube for ejection of repellent fluid through the discharge hole in the disc of the closure cap.

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