159159

DESCRIPTION

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention pertains to a body shield mounted irritant dispensing device for attaching stock irritant spray canisters to be used for protection, peace keeping, riot, crowd control and security purposes.

2. Description and Objectives of the Invention

Government officers, peace officers, prison officers or military officials uses hand held protective polycarbonate or ballistic body shields or barriers to protect themselves and the public from injuries or harm during civil unrest, unlawful assemblies, riots or crowd control. Officers are also heavily body padded or protected by helmet, vests, gloves, elbow, shins, shoulder, knee guards and individually armed with baton, sidearm, tear-gas gun, mace or pepper spray canisters.

As each riot official is equipped with a protective shield, the said shield is usually carried by one hand as a baton usually readily occupies the master hand. Other weaponry or protective equipment or accessories are secured or oriented on the official's pockets or body harness' holsters. During any attack or engagement, which usually is untimely or rapid, reaction and counter action timing is vital for protective and control purposes. Hence, the official may have to quickly select the appropriate weaponry to meet his operational means and achieve such by only his master hand. Imagine having to holster a drawn baton and remove a irritant spray canister from his belt and shun his shield by exposing the official's body to squirt an attacking rioter armed with a rod or offensive object. It may be operationally dangerous to expose the body by such means during heated engagement. Moreover, a body shield taking blows from rioters is much effective and protective with 2 hands on the handles of the shield, blocking against the blows of objects either thrown or struck against.

The invention, the body shield irritant dispensing device allows the official to load one of his many irritant spray canisters on irritant dispensing device readily mounted on the shield. The activator is secured on the handle that can be easily activated by a tap of a thumb or pull of a

lever of the shield- bearing arm. The master hand is free for reloading of spray canisters onto the irritant dispensing device or for carrying other weaponry or providing additional support on the shield during blocking of an attack. Without shunning or deviating or exposing the official, the official can discharge irritant spray from the irritant dispensing device through its nozzle adapter inconspicuously located in the center of the shield at the attacker or attackers in close proximity.

With the above concerns in mind, it is an objective of the present invention to provide an irritant dispensing device, which has a fool proof, easy method of use during hostile crowd control environment or situation.

It is a further objective of the present invention to protect the shield-bearer from unnecessary exposure to harm from striking rioters or projectiles thrown by rioters.

It is yet a further objective of the present invention to allow the shield-bearer to rapidly and easily load and reload a spray canister by one hand during duress or stress or in engagement on the irritant dispensing device, with the immediate control of the shield by the shield-bearing hand.

It is still a further objective of the present invention to be mounted and secured on the friendly side of the shield or barrier.

It is another objective of the present invention to provide the official another mode of defending himself and his team during any retrograde maneuver by discharging irritant spray from the shield.

It is yet another objective of the present invention to provide a spray squirt nozzle adapter to disperse irritant spray or propellant with an effective range of two to six metres in a conical pattern or jet-stream pattern, depending on the appropriate selected nozzle adapters.

It is still another objective of the present invention to allow the option of one hand suppressive and control short blasts of irritant spray or full automatic discharge by one hand press and release of the activator.

It is a further objective of the present invention to provide confidence and tactical advantage to the official or shield-bearer in the line of hostility.

It is yet a further objective of the present invention to withstand struck at blows on the outside of the shield without disengaging or dislodging the irritant spray canister from the irritant dispensing device.

It is still a further objective of the present invention to prevent the irritant spray canister from disengaging or dislodging from the irritant dispensing device when the shield is dropped onto the ground from its vertical standing position.

It is another further objective of the invention to allow those skilled in the art to achieve a not more than 2 seconds timing to completely remove or dislodge a canister from the irritant dispensing device by one hand either bare or wearing thickly padded protective glove. Further, to allow those skilled in the art to achieve a not more than 2 seconds timing to load and insert a fresh canister onto the irritant dispensing device for ready to use.

Other objectives and advantages of the invention will become apparent to those skilled in the art upon further reference to the detailed description below.

SUMMARY OF THE INVENTION

This invention pertains to a thumb or lever-actuated irritant dispensing device mounted on any riot, crowd control, police or protective body shield or barrier. The body shield irritant dispensing device comprises of a spring loaded base for one-hand rapid action loading and unloading of aerosol spray canister of irritant spray, mace, tear-gas or irritant. A factory stock irritant spray canister can be inserted or loaded on the irritant dispensing device for activation. The body shield irritant dispensing device is bolt mounted on the friendly side said body shield or barrier and can be activated by hand of the shield-carrying arm of shield bearer. Once the irritant spray canister is loaded, its valve stem shall sit securely on the irritant dispensing device's actuator. A cable (depending on the option of activation methods), is attached to the actuator, once activated by suppressive or full auto option, it activates and discharges the irritant inside the irritant spray canister to a tube linked squirt nozzle adapter mounted on the wall of the said shield or barrier. The irritant is thus dispensed from the nozzle adapter in a conical or "shotgun" pattern or area away from the said shield to its intended target. Once the spray canister is irritant empty or requires an operational or combat reload, the empty canister can be rapidly removed and

discarded by the non-shield or barrier carrying hand whilst the shield or barrier is still actively handled in engagement. A fresh spray canister can be rapidly reloaded by the same non-shield or barrier carrying hand whilst the shield or barrier is still actively handled in engagement. The irritant dispensing device's spring- loaded base enhances the rapid loading and reloading of the spray canisters, even the shield bearer is wearing thickly padded protection gloves. The users of the body shield irritant dispensing device has further options of setting and controlling the different spray effects by simply selecting and attaching the appropriate external threaded nozzle outlets.

BRIEF DESCIPTION OF THE DRAWINGS

FIG. 1 shows a front and elevation views of the body of present invention (Not Mounted);

FIG. 2 illustrates a cross sectional view of the device of FIG. 1 by Manual Push Mechanism;

FIG. 3 illustrates a cross sectional view of the device of FIG. 1 by Manual Pull Mechanism;

FIG. 4 demonstrates the loading of a stock irritant spray canister onto the device of FIG. 1 in a plan view;

FIG. 5 features accessories of nozzles for the device of FIG. 1;

FIG. 6 depicts the device of FIG. 1 mounted on the body shield;

FIG. 7 shows the operation effect of the device of FIG. 2.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT AND OPERATION OF THE INVENTION

FIG.1 shows the front view of main body 10 of the body shield irritant dispensing device, not yet mounted on the body shield. The main body 10 is designated as a loading and unloading fixture for a stock irritant or irritant spray canister 80 in FIG. 4. Firstly, prior to loading of the irritant spray canister 80 onto the main body 10, the latter has to be mounted horizontally on the "friendly" side of the body shield 86 in FIG. 4 by countersunk bolts, just above the handle 60 of the body shield 86 as clearly shown in FIG.6. The composition of the main body 10 should be made of aluminum or thermal plastic or any other durable material so as to withstand the prevalent riot environment that the body shield 86 encounters. The base plate 27 is secured via a spring coil 26 which is fastened to bolt 29 in the middle of the end plate 30. The unobstructed spring coil 26 allows the base plate 27 to be tilted to an angle so that a stock irritant spray canister 80 can be seated onto the base plate 27 and at the same time, compressed down the end plate 30. This allows the valve stem 81 to be slotted through the opening of the canister housing 31. Once the stock irritant spray canister 80 is aligned with the mounting plate 20, the compression should

be released so that the canister plate 27 may "spring" back and push the canister seal ring 82 securely onto the fitting canister housing step 34 in FIG. 2 and 3. At the same time, the valve stem 81 will set its place directly under the valve stem inlet 53 of FIG. 2 and 3, respectively. The introduction of the spring base plate 27 is to allow rapid loading and unloading of stock irritant spray canister 80 within 2 seconds by the operation of one hand, which is usually heavily gloved by the user. Further it acts as a shock absorber when the body shield 86 is struck by hard objects or the body shield falls onto the ground.

The main body 10 also acts as a dispenser of the loaded or set in placed irritant spray canister 80 by means of optional modes of activation as illustrated in FIG. 2 and 3. The main body is versatile to allow the user to select his preferred activation shown respectively in FIG.2 and FIG.3.

After having the stock irritant spray canister 80 loaded onto the main body 10 of the body shield irritant dispensing device, the Manual Push Mechanism activation as shown in FIG. 2 can be attached to the main body 10 to dispense irritant. The thumb-push mechanism consists of a button activator rod 50 placed inside a tubular activator housing 49. The button activator rod 50 is supported by an activator spring coil 52 and its end is in contact with a spring rod 47 in which its end is in contact with the plunger 22 of the main body 10. The spring rod 47 runs inside a metal flexible hose 48, the flexible hose 48 protects spring rod 47 from damage and maintains its stiffness when pressured. When the button activator rod 50 is depressed by the user's thumb, the spring rod 47 is pressured against the plunger 22, which triggers a downward force of the actuator 35 which seals and compresses the valve stem 81 of the stock irritant spray canister 80 which discharges the irritant spray through the L-channel of the actuator 35 to a threaded adapter 40.
The pressurised irritant spray will travel through the hose or tube 41 that is attached to the tightly fitted nozzle sleeve 96 of the external threaded nozzle adapter outlet 43 to a awaiting angle nozzle adapter 44 that is readily mounted directly over the bored hole 90 of the body shield in FIG. 6. The angle nozzle adapter 44 compensates the angle of attack of the spray at the face region whilst being mounted at chest level height on the body shield 86.

In FIG. 3, users may prefer the Manual Pull Mechanism activation to dispense irritant from the main body 10 of the irritant dispensing device. By turning the main body 10 with the end plate 30 nearer to the handle 60 of the body shield 86, it can accommodate a pull activation. A typical bicycle brake 62 is clamped onto the handle 60 where the shield bearing arm and hand is

supposed to grip. To activate, the user merely press the lever of the bicycle brake 61 towards the handle 60. It will cause the wire cable 64 that is running through the cable guide ring 25 and the cable retainer with step 24 to pull the swivel bar 66 towards the cable retainer with step 24. This swivel action places the activator nipple 67 in contact with the plunger 22, and triggers a downward force of the actuator 35 which seals and compress the valve stem of the stock irritant spray canister 80 which discharges the irritant spray through the L-channel of the actuator 35 to an threaded adapter 40. The pressurised spray will traveled through the hose or tube 41 that is attached to the tightly fitted nozzle sleeve 96 of the external threaded nozzle adapter outlet 43 to a awaiting angle nozzle adapter 44 that is readily mounted directly over the bored hole 90 of the body shield in FIG. 6. The angle nozzle adapter 44 compensates the angle of attack of the spray at the face region whilst being mounted at chest level height on the body shield 86.

FIG. 5 shows 3 units of external threaded nozzle outlets 43 which are presented to allow different spray patterns or angle of dispensing of the irritant or spray. Having a consistent straight through hole 91 of a external threaded nozzle outlet 43 would effect a jet line of liquid propelled irritant streaming a point target at a longer distance of 2 to 6 metres.

The second external threaded nozzle outlet 43 with a countersunk hole 92 at its end would effect a conical pattern effect covering a wider target area. The use of this second external threaded nozzle outlet 43 with a countersunk hole 92 would be preferred to be used for compressed gas propellant.

Lastly, the external threaded nozzle outlet 43 with a consistent straight through main hole 94 that branches into 8 smaller angle holes 95 would effect a wider area of the intended target zone with liquid propellant.

All external threaded nozzle outlets 43 are designed to fit into a universal angle nozzle adapter 44 which is mounted on the "friendly side" of the body shield 86. The angle nozzle adapter 44 does not protrude out to the other side of the body shield 86 and remains concealed and has a low profile look to provide an element of surprise. It also protects the external threaded nozzle outlet 43 from damage or malfunction when blows are struck at the body shield 86 or when the body shield 86 is dropped face-down onto the ground. FIG. 7 clearly demonstrates the sectional view of body shield irritant dispensing device at work using the manual push mechanism activation of FIG. 2.

CLAIMS

I claim:

1. An irritant dispenser device comprising:

a) a main body, said main body comprising:

i) a mounting plate;

ii) spring loaded base plate;

iii) actuator;

b) a external threaded nozzle outlet, said external threaded nozzle outlet of different hole boring setting to achieve the desired spray effect, whereby activating said actuator dispenses said irritant from said external threaded nozzle outlet;

c) an activator, said activator that provides a preferred manual push or pull mechanism that is clamped onto the handle of the body shield.

2. The irritant dispensing device of claim 1 wherein the said mounting plate comprising;

a) plunger plate, said plunger plate secures the actuator by a hex bolt;

b) end plate, said end plate secures the said spring loaded base plate.

c) spring coil, said spring coil compressed by a base plate pushing onto the end plate.

3. The irritant dispensing device of claim 1 wherein the said activator is selected as a said manual push mechanism comprising;

a) a tubular activator housing,

b) a metal flexible hose with spring rod, said metal flexible hose with spring rod connected to said tubular activator housing.

4. The irritant dispensing device of claim 1 wherein the said activator is selected as a said manual pull mechanism comprising;

a) a typical bicycle brake lever, said bicycle brake lever is clamped onto the said handle of the said shield;

b) a wire cable, said wire cable that runs through the cable guide ring and cable retainer with step of said mounting plate;

c) a swivel bar, said swivel bar that depresses when said typical bicycle brake lever is pulled thus activated the said actuator.

5. The irritant dispensing device of claim 1 comprising of said spring loaded base plate preferably welded or permanently affixed to said mounting bracket.

6. The irritant dispensing device of claim 3 and 4 wherein said spring loaded base plate is to load and secure said spray canister of irritant.

7. The irritant dispensing device of claim 1 further comprising of said actuator preferably slotted and secured by a hex bolt affixed to the said plunger plate.

8. The irritant dispensing device of claim 1, 2, 3 and 4 wherein said mounting bracket is mounted by bolts on the friendly side of any body shield or barrier.

9. The irritant dispensing device of claim 1 wherein said activator is secured to the handle of the protective shield or barrier.

10. The irritant dispensing device of claim 3 and 4 wherein said spray canister of irritant is loaded between said spring loaded base plate and said actuator.

11. The irritant dispensing device of claim 1 wherein said actuator further comprising a cylindrical valve stem canister housing that fits onto said valve stem of said spray canister.

12. The irritant dispensing device of claim 1 wherein said cylindrical valve stem housing further comprising of a valve that dispenses said irritant by tube therethrough along the axis to said external threaded nozzle outlet.

13. The irritant dispensing device of claim 3 and 4 wherein said base plate is to securely contain the base of said spray canister, whereby said canister upon depression onto said spring loaded base plate will stay intact upon removing hand.

14. A method of dispensing an irritant from a readily hand held body shield or barrier mounted with the said irritant dispensing device and said irritant spray canistert, said method comprising the steps of:

a) Shield bearing arm is bearing the handle of the shield with its thumb on the said activator;

b) Aim the front center of the shield whereby said external threaded nozzle outlet is positioned towards the desired targets;

c) Depressing or levering the respective said activator by shield bearing hand; and

d) Dispensing the irritant from the said spray canister loaded on said irritant dispensing device mounted on the shield, to its desired target/s.