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GAS DISCHARGING DEVICE

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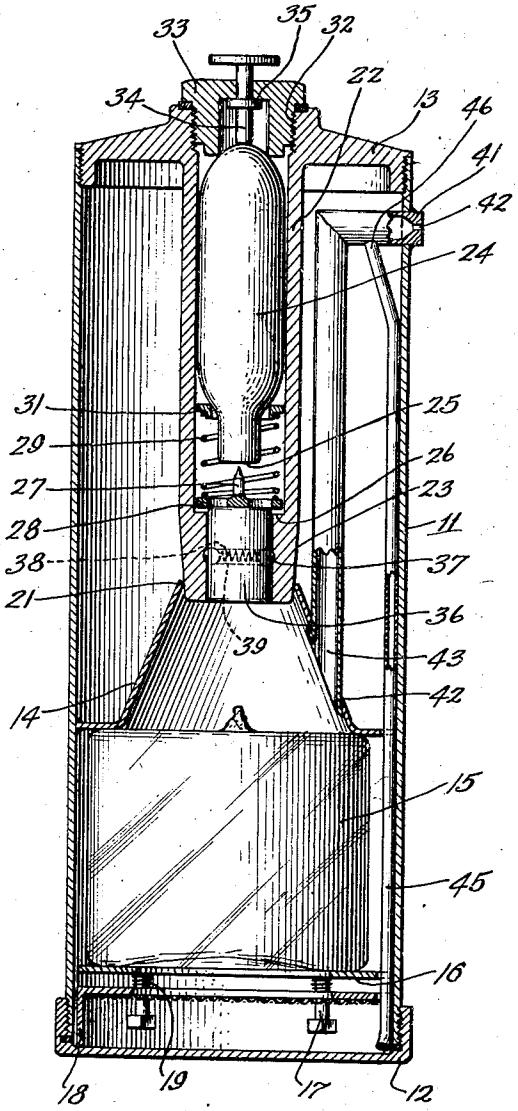

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GAS DISCHARGING DEVICE

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This invention relates to dispensers for liquid poisons or noxious fluids, and has for its object broadly the provision of such a device which may be employed in banks, and other locations where protection against daylight hold-up or night burglary is desired, to discharge in finely atomized condition a poison or lachrymating liquid substance.

An important object of the invention is the provision of a device of this character which will discharge the contents in a powerful, finely divided stream directed to the burglar or hold-up man.

Another object of the invention is the provision of a device of this kind, the parts of which will be of simple, durable construction, and which may be set off or discharged by a simple act of pressing upon an operating member to effect thereafter full automatic discharge of the poison or lachrymating material.

Numerous other objects and advantages of the invention will be apparent as it is better understood from the following description, which, taken in connection with the accompanying drawing, discloses a preferred embodiment thereof.

Referring to the drawing, the figure is a section taken vertically through a device embodying my present invention.

The embodiment of the invention at present preferred and shown on the drawing for the purposes of illustration, comprises an outer casing or shell 11 closed at its bottom end by a screw cap 12, and at its top end by a screw plug 13. The casing is of brass or other suitable material and is provided internally with a partition 14 extending across the casing at a substantial distance above its bottom. This partition provides a lower liquid containing space in which is mounted a frangible liquid containing container 15, which may be of glass or other material adapted to be disrupted or broken for the liberation of the poison liquid. The container 15 is supported upon a washer or hollow disc 16 carried upon bolts 17 from the top hollow surface of the collar 18 mounted in the bottom of the tubular casing body 11. Springs 19 are arranged upon the bolts 17 and between the disc 16 and the collar 18.

The partition 14 is provided with an upwardly extending conical central portion which is open at its top at 21. The plug 13 is preferably provided with an integral sleeve 22 which extends downwardly into the opening 21 of the partition 14. The lower end of the sleeve 22 is tapered, as indicated at 23, to permit of a tight fit between it and the partition 14. The sleeve 22 is adapted to contain mechanism or means for shattering the container 15, and also a cartridge or charge of gas under high pressure. This cartridge is indicated by reference character 24 and is provided with a reduced neck 25.

A shoulder 26 is arranged above the lower end of the sleeve 22. A perforated disc 28 rests upon the shoulder 26 and is provided with an upwardly extending piercing element or firing pin 27. A coil spring 29 is arranged between the perforated disc 28 and a collar 31 mounted upon the reduced lower end of the cartridge 24, this spring normally holding the cartridge in the elevated position shown on the drawing. The upper end of the sleeve 22 is threaded at 32 to receive a plug 33 through which extends a push pin 34 having a shoulder 35 engaging the upper end of the plug and pressed in the elevated position shown by the spring 29 acting through the cartridge.

A plunger 36 is provided in the present instance in the lower end of the bore in the sleeve. This plunger is held in the inoperative position shown by two balls 37 arranged in an aperture through the plunger and forced outwardly by a spring 38 located between the balls. The balls engage in a groove 39 in the sleeve itself and by this engagement prevent inadvertent dislodgment of the plunger.

An atomizing nozzle 41 having a restricted orifice 42 is mounted through the casing tube 11 near its top. A gas pipe or tube 43 communicates at its lower end within the conical portion of the partition 14 and at its upper end with the nozzle orifice. A second tube 45 is provided and has a lower open end communicating with the bottom of the liquid containing space, i. e. the bottom of the casing.

It communicates also at its top at 46 with the tube 43, the arrangement being such that when gas under pressure passes out through the nozzle it will draw up the liquid poison and discharge it through the nozzle in finely atomized condition.

The operation of the device is as follows: The discharging pin 35 is pushed down either by a blow or by pressure to cause the piercing member 27 to enter into the cartridge 24, breaking its seal and liberating the highly compressed gas or contents. This gas is preferably carbon dioxide. Upon being liberated, it first acts to force down the plunger 36 to break and destroy the glass container 15 therebeneath, thereby liberating its contents, the pieces of broken glass collecting on the screen below and the liquid collecting in the reservoir within the collar 18. Thereupon, the escaping gas under high pressure rushes through the tube 43, drawing up the liquid and discharging it through the restricted orifice 42. A highly satisfactory poison material is obtained by dissolving as large a quantity as possible of chloracetophenone in a solution of brom-ethyl-acetate.

The parts are preferably so dimensioned and proportioned that the glass container is normally held against the partition 14 by the springs 19 already described, these springs cushioning the liquid container against accidental fracture.

It will be manifest that a device embodying my invention can be arranged in or at a bank teller's cage or behind his front partition, with merely the nozzle in registration with an opening of the cage or the partition. Thus arranged, the device may be discharged by merely hitting the pin or release member 34 and without requiring subsequent movement or action by the clerk. Once released, the discharge continues until the liquid has all passed through the atomizing nozzle 41.

It is thought that the invention and many of its attendant advantages will be understood from the foregoing description, and it will be apparent that various changes may be made in the form, construction and arrangement of the parts without departing from the spirit and scope of the invention or sacrificing all of its material advantages, the form hereinbefore described being merely a preferred embodiment thereof.

I claim:

1. A device of the character described, comprising a casing providing a chamber for receiving a poison liquid or noxious fluid, a frangible container mounted within said chamber and containing said liquid, means normally inactive and mounted in said casing adjacent said container for breaking the same, a cartridge of compressed gas associated with said means and actuating the same upon release of the gas, and an atomizer operable by said gas upon release to discharge the liquid poison in atomized condition.

2. A device of the character described, comprising a casing, a frangible container for containing a noxious fluid mounted in the casing, means for breaking said container to liberate the liquid, an atomizer arranged for the discharge of the liquid after liberation, and a frangible cartridge containing a compressed gas for operating said breaking means and atomizing said liquid poison or noxious fluid.

3. A device of the character described, comprising a casing, a frangible container for containing a noxious fluid mounted in the casing, means for breaking said container to liberate the liquid, an atomizer arranged for the discharge of the liquid after liberation, a frangible cartridge containing a compressed gas for operating said breaking means and atomizing said liquid poison, and a piercing member for entering said cartridge to liberate said gas.

4. A device of the character described, comprising a casing, a partition in said casing forming a lower liquid containing space, a frangible container having a charge of poison liquid or noxious fluid arranged in the liquid containing space, a discharging device mounted in the space above said container and including a plunger normally held away from said liquid container, a gas cartridge containing a charge of compressed air mounted above said plunger, means for discharging said gas cartridge whereby the pressure of the gas released causes the plunger to break said frangible container, and an atomizing nozzle in said casing, said compressed air driving the liquid through the nozzle in atomized condition after breaking of said container.

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