July 2, 1968 T. L. GRIZZLE 3,390,819

THIEF DETECTOR

Filed Dec. 12, 1966

Fig. 1

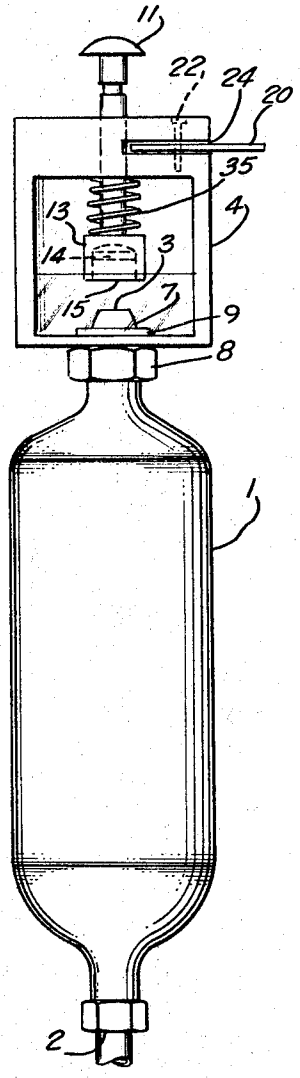
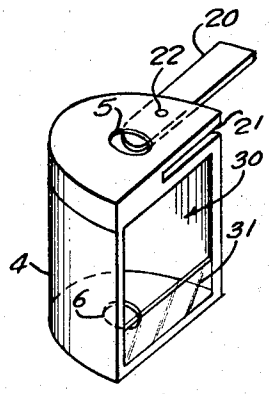


Fig. 2



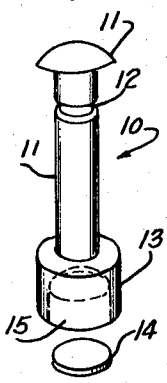


Fig. 3

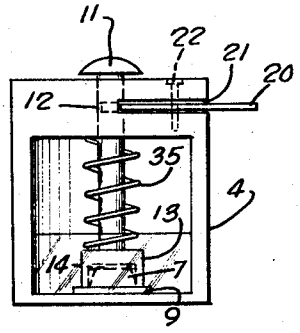
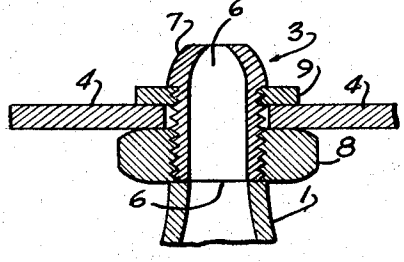


Fig. 4

Fig. 5



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THIEF DETECTOR

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ABSTRACT OF THE DISCLOSURE

This invention relates to a device for use in a secured area to mark, for later identification, anyone forcibly gaining access to said area. The device comprises a reservoir of powder communicating with a source of compressed gas. The reservoir communicates with the compressed gas through a valve which may be activated to release the gas into the powder, and blow the powder over the secured area and any person in the immediate vicinity.

The invention described herein may be manufactured and used by or for the Government for governmental purposes without the payment to me of any royalty thereon.

Accordingly, it is an object of this invention to provide a thief detector for use in doorways, cabinets, vending machines, lockers, and safes which when triggered by an unauthorized entrance releases a cloud of marking powder covering the immediate vicinity.

It is another object to provide a thief detecting system actuated by a source of compressed gas comprising a plurality of powder dispensing reservoirs, each reservoir dispensing a cloud of marking powder responsive to movement of a valve trigger.

It is a further object to provide a thief detector having a trigger actuated spring valve which, responsive to external force dispenses compressed gas into a powder chamber, blowing the powder into the atmosphere proximate to said chamber.

These and other objects will be apparent with reference to the drawings and following description wherein:

FIG. 1 is a front view of the device of this invention with the valve open;

FIG. 2 is a perspective view of the powder reservoir and valve trigger;

FIG. 3 shows the reservoir valve and seal;

FIG. 4 is a sectional view of the reservoir with the valve closed; and

FIG. 5 is a detailed view of the reservoir connection.

The thief detector comprises a canister or tank **1** having a conventional filing valve **2** and a threaded exit opening **3** located at the end adjacent to the powder reservoir **4**. The reservoir **4** has a valve receiving hole **5** and a beveled fitting receiving hole **6**. Tank **1** is attached to reservoir **4** at a beveled conduit fitting **7**; the fitting **7** is welded to tank **1**, as an extension of hole **3**. Lock nut **8** is threadedly received on fitting **7** as a base for reservoir **4**. Fitting **7** is then extended through hole **6**, and lock nut **9** is threadedly attached to fitting **7**, securing reservoir **4** to tank **1**, as shown in FIG. 5.

Hole **6** in tank **1** may be a ⅛ inch opening and will coincide with the diameter of the hole of conduit fitting **7**.

The valve **10** comprises a stem having a head **11**, a trigger locking groove **12**, and a hollow plunger **13**.

The plunger **13** contains a resilient seal **14** disposed within recess **15**. Recess **15** is designed to receive the beveled fitting **7** so that when fitting **7** is inserted in recess **15**, seal **14** is forced into the exit hole of fitting **7** and seals the tank **1**.

The valve **10** is designed so that when plunger **13** is forced to receive fitting **7**, sealing the exit hole **6** in tank **1**, locking groove **12** registers with trigger **20** for locking of the valve as shown in FIG. 4.

Trigger **20** is pivotally mounted in slot **21** in reservoir **4** by the trigger retaining pin **22**.

When tank **1** is sealed by valve **10**, and valve **10** is locked through the action of trigger **20** in groove **12**, as shown in FIG. 4, the reservoir **4** may be charged with powder and tank **1** charged with compressed gas.

A powder found useful is gentian violet, due to the fact that it forms an insoluble purple dye on contact with water as when a thief tries to wash it off.

The tank may be charged to 14 p.s.i. with compressed air for most purposes.

Reservoir **4** is designed to have a single open side **30**. This opening is used for both filling and expelling powder. Baffle plate **31** is disposed to partially cover opening **30** and facilitate a turbulent flow of powder laden air when the valve is triggered.

A spring **35** connects plunger **13** with the reservoir **4** and normally urges the plunger **13** away from the fitting **7**, unsealing hole **3**.

In operation the tank **1** is charged with air through valve **2** after valve **10** is locked in a closed position as shown in FIG. 4. A conventional thief detecting powder is then placed in reservoir **4** and the detector is anchored in a secure area. Trigger **20** is then attached to a movable ingress means in the area, such as a window or door, so that movement of said means will cause said trigger **20** to pivot about pin **22** releasing valve **10**, and unsealing tank **1**. Compressed air then rushes into reservoir **4**, blowing the powder in a cloud over the immediate vicinity of the secured area.

The reservoir herein disclosed may be used singly with its own tank or a plurality of reservoirs may be used with a common source of compressed gas.

It will be apparent to those skilled in the art that the detector herein disclosed may be subject to mechanical modifications and substitutions without departing from the scope of the invention. The concept of this invention is intended to include all obvious modifications and substitutions.

I claim:

1. A thief detector for dispensing detecting material in a cloud responsive to the release of a charge of compressed gas into said detector comprising:

(a) a hollow chamber for containing the material having a port for admitting compressed gas into said chamber, and an opening for expelling the material in a cloud over the area proximate to said detector, the port being disposed at the bottom of said chamber and the opening being disposed at a side of said chamber, so that when the chamber contains the detecting material the material is adjacent the port;

(b) a biased stem valve slidably mounted in said chamber, said valve having an open and a closed position, the stem of said valve terminating in a resilient seal, the seal registering on said port for selectively closing and opening to seal said port, or admit a charge of compressed gas into said chamber through said port, said bias normally urging said valve into an open position to admit the gas into said chamber;

(c) a trigger, rotatably mounted on said chamber and releasably engaging the end of said valve stem opposite the seal when said valve is closed to lock said valve in a closed position, said trigger normally engaging said valve to close the port so that no com-

pressed gas is admitted into said chamber, the selective release of said trigger allowing said biased stem valve to open for admitting compressed gas into the chamber; and

(d) baffle means mounted in the lower portion of the opening of said chamber adjacent the port for deflecting the charge of compressed gas admitted through the port so that when the gas carrying the material exits the chamber the material is dispensed from the chamber in a turbulent cloud.

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