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Peters

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[54] **MONEY SPRAY APPARATUS FOR THEFT IDENTIFICATION**

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[52] **U.S. Cl.** **109/25,** 109/29, 109/32

[51] **Int. Cl.**.....**E05g 3/00**

[58] **Field of Search**.....109/25, 29, 32, 24, 109/20; 235/7

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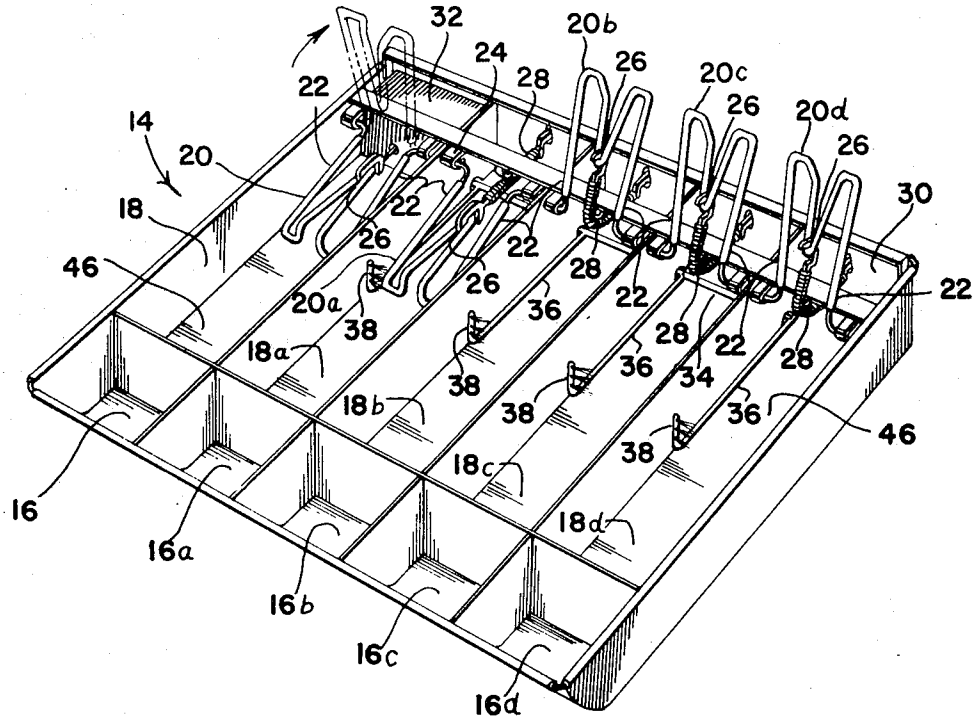
Primary Examiner—Dennis L. Taylor

Attorney—Oldham & Oldham

[57] **ABSTRACT**

A device for marking contents of a cash register drawer when unauthorized removal of such contents is attempted. An aerosol container of a dye is housed within the cash drawer tray and discharges its contents into a manifold which leads to spray nozzles in the individual compartments of the tray. An actuating lever contacts the nozzle of the aerosol container and is connected to a rod which is biased by a compression spring to move the lever, depressing the nozzle and releasing the spray. A spring clip on the rod normally holds the spring in compressed position preventing release of the spray. The spring clip is connected by a wire to the paper holding finger or fingers of one of the compartments of the cash drawer tray. Lifting of the paper holding fingers of this compartment releases the spring clip, permitting the spring to move the rod and release the spray material.

10 Claims, 8 Drawing Figures



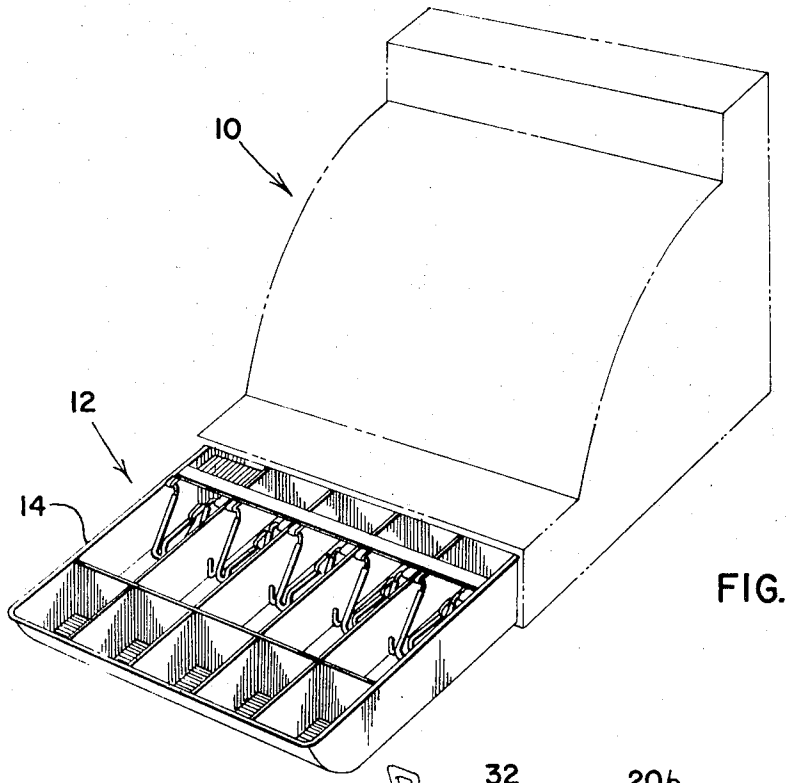


FIG. 1

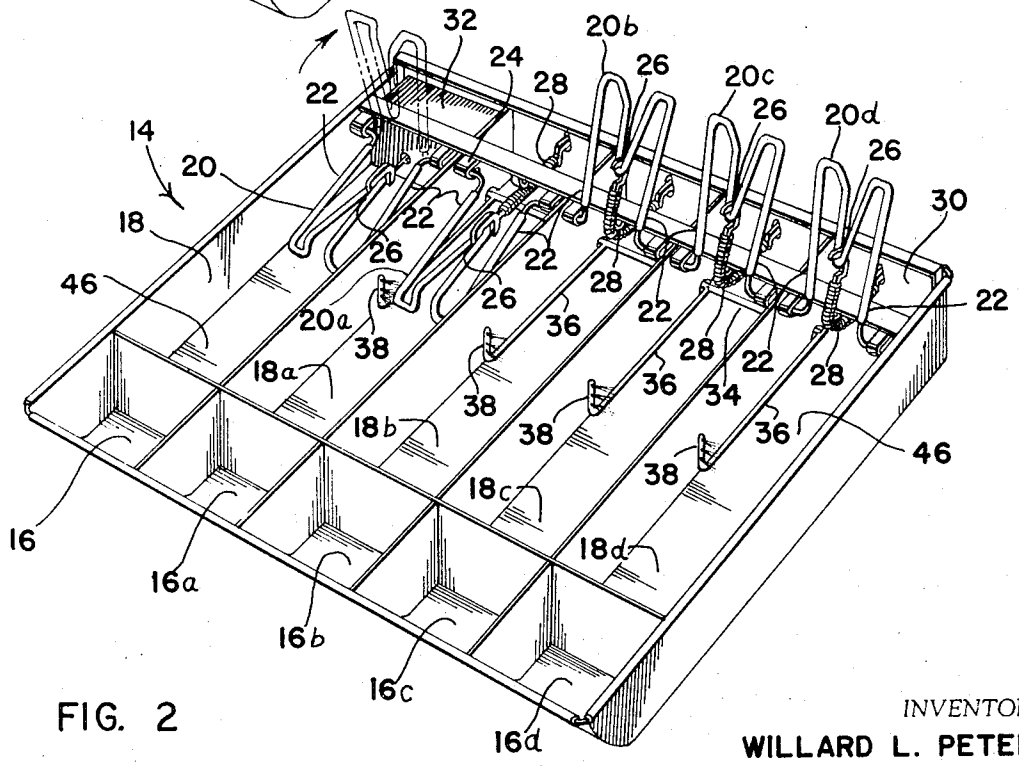


FIG. 2

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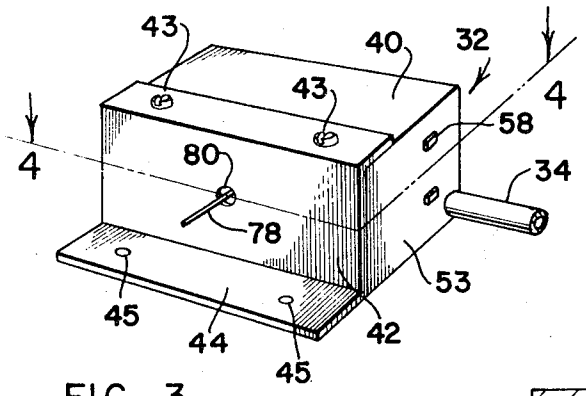


FIG. 3

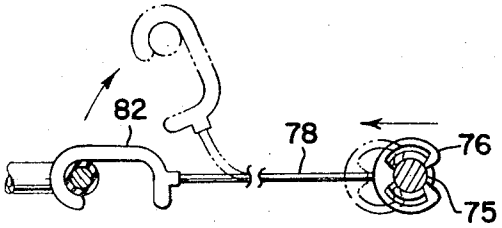


FIG. 5

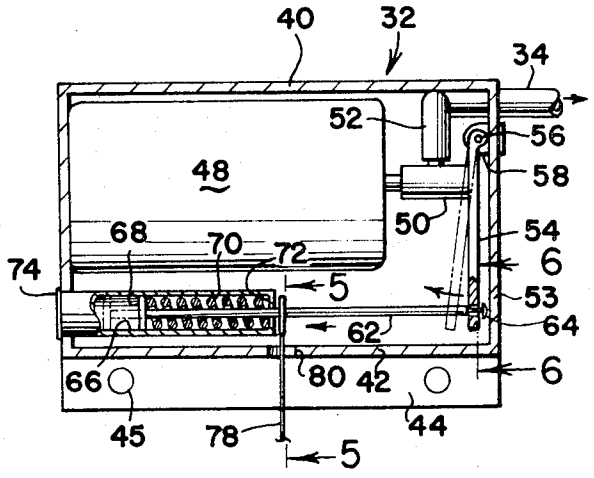


FIG. 4

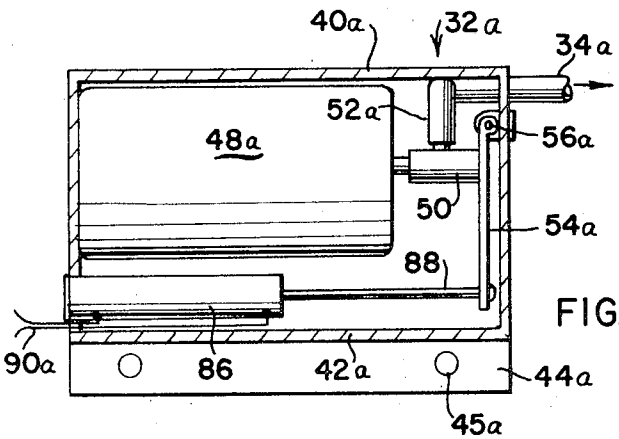


FIG. 7

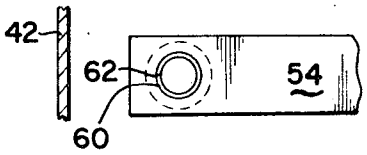


FIG. 6

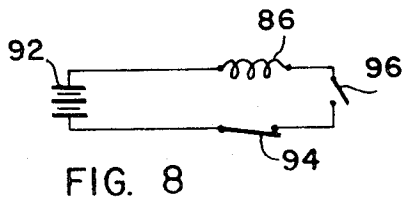


FIG. 8

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MONEY SPRAY APPARATUS FOR THEFT IDENTIFICATION

The present invention relates to a device for spraying an indelible dye or other marking fluid on the contents of a cash register drawer in the event of an attempted theft of the contents. The markings provide means for identifying the stolen currency and thus aid both in the recovery of the currency and in the apprehension of the thief.

It is the primary object of the present invention to provide a device for spraying a marking material on the contents of a cash register drawer upon unauthorized removal of such contents.

It is also an object of the invention to provide such a marking device which is inconspicuous when installed in the cash register drawer so that the thief is unaware of the presence of the device and does not attempt to deactivate the device.

Another object of the invention is the provision of a marking device for a cash register drawer which is fast acting.

A further object of the invention is the provision of a device for marking for identification of the contents of a cash register drawer which may easily be installed in existing equipment.

Yet another object of the invention is the provision of a marking device for a cash register drawer which is of simple construction and reliable operation.

The above and other objects of the invention which will become apparent in the following detailed description are achieved by providing a contents marking device for a cash register drawer which consists, essentially, of an aerosol container of a dye or other marking fluid housed in an inconspicuous location in a cash register drawer, a distribution manifold for receiving the fluid from the aerosol container and distributing the fluid to individual nozzles in separate compartments of the container, and an actuating mechanism for the aerosol container which consists of an actuating lever for contacting the nozzle of the container, a rod connected to one end of the lever and biased by a compression spring to move the lever to its actuating position, a spring clip on the rod to normally hold the spring in its compressed position, and a connection to the currency holding fingers of one of the compartments of the cash register drawer for releasing the spring clip when the fingers are raised.

For a more complete understanding of the invention and the objects and advantages thereof reference should be had to the following detailed description and the accompanying drawings wherein there is shown a preferred embodiment of the invention.

In the drawing:

FIG. 1 is a perspective view of a cash register showing the drawer thereof in its open position;

FIG. 2 is a perspective view of the tray of the cash register drawer of FIG. 1, showing the contents marking device of the present invention installed in the tray;

FIG. 3 is a perspective view of the spray container and actuating mechanism housing of the assembly of the present invention;

FIG. 4 is a transverse sectional view taken along the line 4—4 of FIG. 3;

FIG. 5 is a plan view of the spring clip and flexible connection to the currency holding fingers of the cash register drawer tray;

FIG. 6 is a fragmentary sectional view taken along the line 6—6 of FIG. 4;

FIG. 7 is a transverse sectional view similar to that of FIG. 4, but showing a second embodiment of the invention; and

FIG. 8 is a schematic showing of the control circuit employed with the embodiment of FIG. 7.

The cash register **10** of FIG. 1 may be a conventional cash register which has a cash drawer **12** fitted with a compartment tray **14**. The tray **14** is divided into a first series of small compartments **16–16***d* for receiving various denominations of coins and to a second series of larger compartments **18–18***d* for receiving various denominations of paper currency. Each of the large compartments **18–18***d* is equipped with currency holding fingers **20–20***d*, respectively. As is shown in FIG. 2, these fingers **20–20***d* may be substantially M-shaped having side legs **22** which are received in brackets **24** on the side walls of the compartments and a center section **26**. A spring **28** is connected to the mid-point of the center section **26** of each of the fingers **20** and to the rear wall **30** of the tray to bias the fingers downwardly against the floor of the tray **46** thus clamping the paper currency in the compartment. The tray thus far described is of conventional construction.

Housed within the rear portion of one of the compartments **18** is an enclosure **32** which, as will be described in more detail below, contains an aerosol container and an actuating mechanism therefor. A distribution manifold **34** extends along the back of the tray **14** and has a lateral conduit **36** in each of the compartments **18***a*–**18***d*. The lateral conduit **36** extends along the bottom wall of the compartment, closely adjacent one of the side walls thereof, and terminates in an upwardly extending nozzle or discharge member **38**, with spray openings in its side.

The enclosure **32** is shown in greater detail in FIGS. **3** and **4** and consists of a main portion **40** and a cover plate **42** which is bolted to the main portion **40** by the screws **43** and which includes a flange **44** having holes **45** to receive screws connecting the enclosure **32** to the floor **46** of the cash drawer tray **14**. The aerosol container **48** is received within the main portion **40** of the enclosure **32** and has a nozzle **50** at one end which is connected by a flexible tube **52** to the end of the distribution manifold **34**. The aerosol container **48** is of conventional construction and of the type which is activated by pressing the nozzle **50** toward the body portion of the container **48**. The container **48** is filled with an indelible dye of any other suitable marking fluid. The dye provides a means for subsequently identifying the stolen currency. A dye which is invisible under normal light but visible under ultra-violet light may be employed to prevent detection by the thief.

Adjacent the end wall **53** at the valve end of the aerosol container **48** there is provided an actuating lever **54** which is hinged by a pin **56** carried on lugs **58** bent from the wall **53**. The actuating lever **54** contacts the end of the valve **50**. The end of the actuating lever **54** opposite the hinge connection **56** has a hole at **60** to receive the end of a rod **62** loosely. The rod has a peened over end **64** to retain it in engagement with the hole **60** in the actuating rod **54**. The rod **62** extends generally at right angles to the actuating lever **54** and has its opposite end slidably received in a tube **66**. The

end of the rod within the tube **66** is provided with an enlarged annular portion **68** and a compression type coil spring **70** surrounds the portion of the rod **62** within the sleeve, the spring being retained between the annular portions **68** of the rod **62** and the end portion **72** of the sleeve **66**. The opposite end of the sleeve **66** is flanged so that it is retained against the opposite end wall of the main portion **40** of the enclosure **32**. The rod **62** has an annular groove **75** on which is received a spring clip **76**. The groove **75** is located so that when the clip is in place, the spring **70** is compressed and the actuating rod **54** is held away from the aerosol valve **50**. When the spring clip **76** is released, in a manner to be described below, the spring **70** expands moving the rod **62** into the sleeve **66** thus pulling the actuating rod against the valve **50** and releasing the fluid from the container **48**. A wire or other flexible member **78** is attached to the spring clip **76** and extends through a hole **80** in the cover plate **42** of the enclosure **32**. The opposite end of the wire or flexible member **78** is connected to a hook **82** which is received at the mid-point of the center section **26** of the paper holding finger **20** of the compartment **18**. The length of the wire or flexible member **78** is such that when the paper holding finger **20** is raised the wire **78** is pulled taught, pulling the clip **76** off of the rod **62**. Thus it can be seen that when the device is installed in the cash drawer tray **14**, lifting of the paper fingers **20** will actuate the spray mechanism, marking the currency in each of the compartments of the tray **14**.

A second embodiment of my invention which employs a solenoid release for the aerosol container in place of the compression spring arrangement described above is illustrated in FIGS. **7** and **8**. Components of the second embodiment which correspond to those of the first embodiment are identified by the same reference numeral with the suffix "*a*" added.

A solenoid **86** is housed within the enclosure **40***a* adjacent to the aerosol container **48***a*. The movable rod **88** of the solenoid **86** is connected to the free end of the nozzle actuating lever **54***a*. When, as is shown in FIG. **7**, the solenoid **86** is deenergized, the rod **88** is fully extended and the actuating lever **54***a* does not contact the nozzle **50***a* of the aerosol container **48***a*. Energization of the solenoid causes the rod **88** to move into the solenoid, moving the lever arm **54***a* so as to depress the aerosol nozzle **50***a* and release the dye fluid into the manifold **34***a* which, as in the previously described embodiment, leads to individual spray nozzles in the compartments of the cash drawer tray.

One possible actuating circuit for the solenoid **86** is shown schematically in FIG. **7**. It will be understood that other circuit arrangements well known to those skilled in the art may be used to achieve the desired result. The circuit includes a current source **92** which is in series connection with the solenoid **86**, a normally closed switch **94**, and a normally open switch **96**. The switch **94** is a manually controlled switch which is preferably located at an inconspicuous place on the cash register. This location should be known only to the authorized users of the register. The switch **94** permits the actuating circuit to be de-energized allowing normal use of the cash drawer. The second switch **96** is adapted to close upon the occurrence of an action of unauthorized entry to the cash drawer or unauthorized removal of the contents of the drawer. For example, the switch **96** may be connected to one of the currency holding fingers **20** so that lifting of the finger closes the switch **96**. Alternatively, the switch **96** may be housed in the cash register in such a manner that opening of the drawer **12** closes the switch **96**.

All of the components shown in FIG. **8** could be located in the cash drawer.

Preferably, the compartment **18** which houses the enclosure **32** is baited, for example by placing one large denomination bill on the top of a stack of paper, so that the thief is encouraged to raise the paper fingers **20** of the first compartment **18** before he attempts to remove the currency from the other compartments. A suitable cover plate **84** may be provided across the top of the back portions of each of the compartments **18**–**18***d* so that the enclosure **32** is not readily visible. The device is thus substantially completely concealed.

Slide contacts could be used between the cash register and the cash drawer to transmit power to the cash drawer from an external power source.

Since only a minimum amount of modification of the structure of the drawer is required to install the marking device of the present invention, the device may be easily installed in existing equipment. To do so, it is merely necessary to provide two holes in the floor **46** of the tray **14** to receive the screws which mount the enclosure **32** and a hole through each partition to receive the distribution manifold **34**.

While only the best known embodiment of the invention has been illustrated and described in detail herein, it will be understood that the invention is not limited thereto or thereby. Reference should therefore be had to the appended claims in determining the true scope of the invention.

What is claimed is:

1. Apparatus for applying a marking to the contents of a compartmented cash register drawer upon attempted unauthorized removal of such contents, comprising:

an aerosol container of a marking fluid, the container having a valve which releases fluid from the container when depressed;

a manifold connected to the container valve for receiving fluid therefrom, the manifold extending into at least one compartment of the drawer;

at least one nozzle connected to the manifold for spraying the fluid onto the contents of the compartment; and

actuating means for opening the valve of the container upon attempted unauthorized removal of the contents;

the aerosol container being located in the drawer, and means including a lever arm pivotally mounted at one end in the drawer and contacting the valve of the container, and means for moving the lever about its pivot to depress the valve and including a compression spring, connecting means connecting the spring to the free end of the lever arm for biasing the arm into its valve actuating position, and releasable means normally retaining the spring in its compressed position whereby the valve is closed; and

the connecting means comprising a rod attached at one end to the free end of the lever arm and having

an enlarged collar at its second end for retaining the spring, a tubular sleeve slidably receiving the second end of the rod and having an inwardly directed flange for retaining the opposite end of the spring, the releasable means including a spring clip engaging the rod and contacting the flanged end of the sleeve to hold the spring in compressed position, and means for releasing the clip from the rod upon attempted unauthorized removal of the drawer contents.

2. Apparatus according to claim 1 wherein paper currency holding fingers are provided for certain of the compartments, the fingers being hingedly connected to the compartment walls, and the means for releasing the clip comprising a flexible member attached at its first end to the clip and at its second end to one of the fingers whereby lifting of the finger pulls the clip from the rod.

3. A device for marking the contents of a cash register drawer in the event of unauthorized removal of such contents, comprising:

a container housed in the drawer for holding a quantity of marking fluid under pressure and having a valve for releasing the fluid when depressed;

a tube connected to the container valve and extending to at least one point immediately adjacent at least some of the contents of the drawer, the tube having a nozzle for spraying the marking fluid onto the adjacent contents;

actuating means operative to open the valve upon unauthorized removal of certain of the contents of the drawer;

the drawer being provided with spring loaded currency holding fingers in at least certain of the compartments, the actuating means being connected to and operated by one of the fingers, and the actuating means comprising a spring biased member adapted to depress the valve of the container and a retaining member for holding the spring biased member in an inoperative position, the retaining member being connected to the finger to release the retaining member upon upward movement of the finger.

4. The device according to claim 3 wherein the actuating means comprises a lever arm contacting the container valve, a rod connected at its first end to one end of the lever arm and having a collar at its second end and an annular groove intermediate the ends of the rods, a tubular sleeve slidably receiving the second end of the rod and having a radially inwardly directed flange at the end of the sleeve through which the rod projects, a spring container between the collar and the inwardly directed flange for moving the rod into the sleeve to move the lever arm against the valve and release fluid; a spring clip releasably engaging the rod at the annular groove to hold the rod in a position whereby the spring is compressed and the valve closed; and means for releasing the spring clip from the rod upon the unauthorized removal.

5. The device according to claim 4 wherein the aerosol container, lever arm, and sleeve are housed within an enclosure which is mounted at the rear of one of the compartments of the drawer.

6. The device according to claim 4 wherein the means for releasing the spring clip comprising a flexible member connected at its first end to the clip and at its second end to the finger.

7. Apparatus for applying a marking to the contents of a compartmented cash register drawer upon attempted unauthorized removal of such contents, comprising:

an aerosol container of a marking fluid, the container having a valve which releases fluid from the container when depressed;

a manifold connected to the container valve for receiving fluid therefrom, the manifold extending into several compartments of the drawer;

individual nozzle means connected to the manifold and positioned in individual compartments for spraying the fluid onto the contents of the compartments; and

actuating means for opening the valve of the container upon attempted unauthorized removal of the contents,

the actuating means including a lever arm pivotally mounted at one end in the drawer and contacting the valve of the container, and electrical means for moving the lever about its pivot to depress the valve including a solenoid having the end of its movable member connected to the free end of the lever to move it for valve opening action, and controllable power supply means connecting to the solenoid to energize the same.

8. Apparatus for applying a marking to the contents of a cash register drawer having several compartments provided therein upon attempted unauthorized removal of such contents, comprising:

an aerosol container of a marking fluid, the container having a valve which releases fluid from the container when depressed;

a manifold connected to the container valve for receiving fluid therefrom, the manifold extending into several of such compartments;

individual nozzle means connected to the manifold and positioned in individual compartments for spraying the fluid onto the contents of the compartments; and

actuating means for opening the valve of the container upon attempted unauthorized removal of the contents of a compartment;

the actuating means including a lever arm pivotally mounted at one end in the drawer and contacting the valve of the container, and means for moving the lever about its pivot to open the valve.

9. Apparatus according to claim 8 wherein the manifold comprises a first tube means connected to the aerosol container valve and extending along the rear wall of the compartments, at least one second tube means connected to the first tube means and extending forwardly along a compartment dividing wall to a point intermediate the front and rear walls of the compartment, and a nozzle tube means connected to the forward end of the second tube for discharging marking fluid into the compartment.

10. The device according to claim 8 wherein the actuating means further comprises a solenoid operatively connected to the lever arm for moving the arm to depress and open the valve, and circuit means for energizing the solenoid connected thereto.

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