

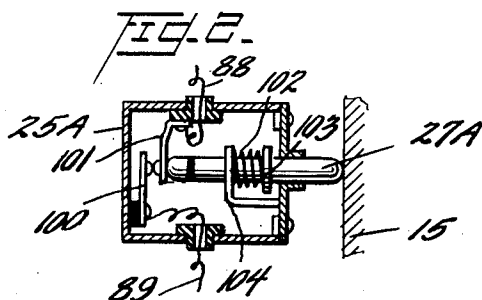
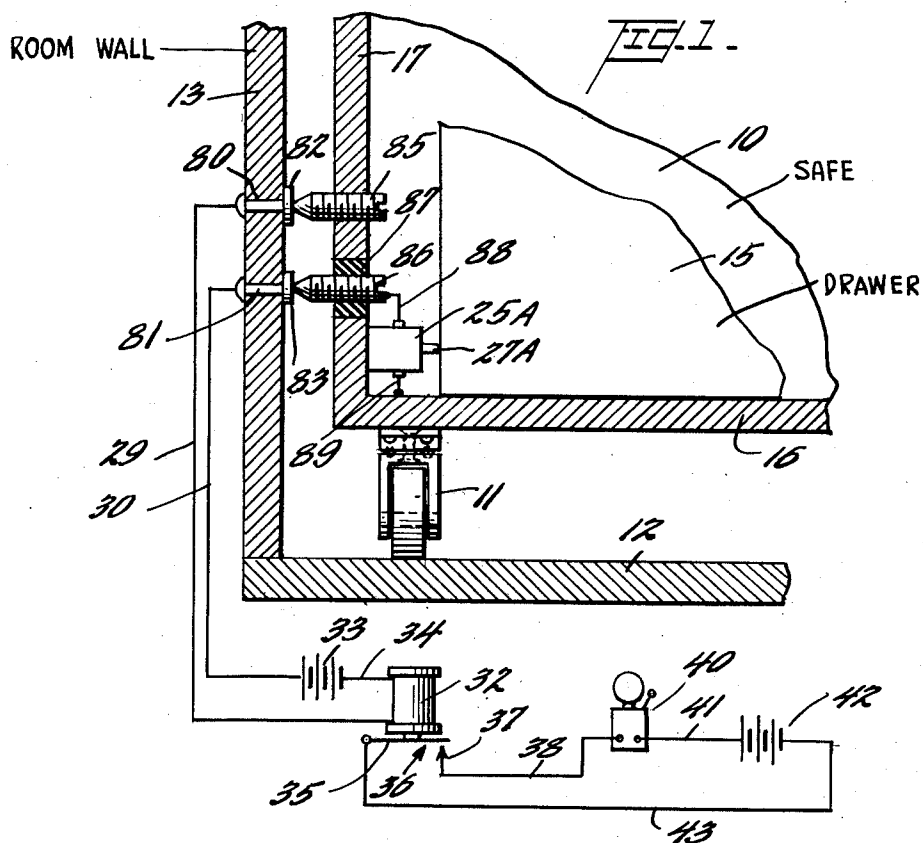
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BURGLAR ALARM SYSTEM

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BURGLAR ALARM SYSTEM

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3 Claims. (Cl. 340-276)

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This invention relates to burglar alarm systems and more particularly to such systems which are especially applicable to portable safes or cabinets for home or office use.

This application is a division of my copending application Serial No. 785,716, filed November 13, 1947, which application is a continuation-in-part of copending application Serial No. 608,668, filed August 3, 1945, now United States Patent 2,438,076, granted March 16, 1948.

The invention has for its general object the provision of a novel and improved alarm system embodying cooperating alarm actuating elements associated with the wall of the safe, cabinet, or other receptacle and an adjacent wall of the room, whereby such connections are difficult to detect except by careful inspection and also whereby movement of the receptacle for closer inspection will result in setting off the alarm.

Provision is also made for actuating the alarm upon opening the door of the receptacle or movement of certain containers within the receptacle.

Other objects and features of novelty will be apparent from the following specification when read in connection with the accompanying drawings in which certain embodiments of the invention are illustrated by way of example.

In the drawings:

Figure 1 is a fragmentary sectional view of the lower portion of a safe and the wall and floor of a room, together with a wiring diagram of an alarm system, showing a practical embodiment of my invention; and

Figure 2 is a sectional view of a switch of conventional construction utilizable in pursuing the invention.

In the embodiment shown in the drawings the receptacle to be protected comprises the portable safe 10 having wheels 11 which rest upon the floor 12 of the room in which the safe is installed. This safe is of a kind widely used in homes and small offices, and is generally not subject to protection by the intricate and expensive burglar alarm systems such as those used in banks and other financial institutions. One of the walls of the room is indicated at 13 and the safe 10 is adapted to be placed in fairly close proximity to this wall.

As already indicated, the alarm, in the preferred form of the invention, is adapted to be set off whenever the safe is moved with respect to the wall and also upon the opening of the door of the safe or the disturbance of certain of the contents thereof. In connection with the latter purpose, there is shown within the safe the

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drawer 15 which is representative in the exemplary embodiment of any sort of container movable within the receptacle 10. In this instance the container 15 rests upon the floor 16 of the safe and is spaced a short distance from the rear wall 17.

In this arrangement the room wall 13 is provided with insulated conductors 80 and 81 to which are connected the leads 29 and 30 of the alarm circuit. Contacts heads 82 and 83 are provided on these conductors 80 and 81 upon the inner face of the wall 13. Projecting through the rear wall 17 of the safe 10 is a threaded conductor 85 which makes intimate contact with the metal of the safe wall. A similar threaded conductor 86 passes through an insulated bushing 87 set in the wall 17. The projecting ends of the conductors 85 and 86 are adapted to be in normal contact with the points or heads 82 and 83 in the wall 13. These heads may be set flush with the surface of the wall or may project very slightly therefrom, but they should not be depressed within the wall since this would give rise to damage of the wall surface by movement of the safe in a direction parallel thereto. A switch 25A is installed within the safe and is provided with a pin or button actuator 27A adapted to be abutted by the rear end of the container 15 within the safe. A wire 88 connects the conductor 85 with one terminal of the switch 25A and a wire 89 grounds the other terminal upon the body of the safe and thus completes a circuit through the conductor 85 to the leads 29 and 30.

The two leads 29 and 30 extend from the wall contacts, the lead 29 being connected with one terminal of the relay 32 and the lead 30 being connected to the battery 33, a line 34 serving to connect the battery to the other terminal of the relay 32. The relay 32 controls an alarm circuit in which an armature 35 provides one part of an alarm switch 36, the other pole 37 thereof being connected by the wire 38 to a terminal of the alarm 40 which in this instance is a bell. A wire 41 connects the bell 40 to the battery 42 and this battery is connected to the armature 35 by means of the wire 43.

The switch 25A is of a well-known construction in which the button 27A is resiliently urged outwardly of the casing and the contacts separated when the button 27A is in projected position. Depression of the button 27A serves to join the contacts and complete the circuit between the conductors 88 and 89. A stationary contact 100 is connected to the lead 89, and a

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spring contact 101, which is normally sprung out of engagement with the contact 100, is connected to the lead 88. The plunger 27A is urged outwardly by means of a coil spring 102 compressed between the stop flange 103 on the plunger and a bracket 104 which also aids in guiding the movement of the plunger. These details are purely conventional and form no part of the divisional invention covered herein.

The leads 29 and 30 with their various connections constitute in effect a holding circuit which, when closed, energizes the relay 32 from the battery 33, thus holding the gravity-actuated armature in raised position keeping the alarm switch 36 open. Whenever the holding or relay circuit involving the lines 29 and 30 is broken, the relay 32 is de-energized, the armature 35 falls, closing the switch 36 by contact with the pole 37 and thus energizing the alarm, represented diagrammatically by the bell 40, by completing the circuit through the battery 42.

The holding or relay circuit may be broken by tampering with the safe 10 in any of several ways. Normally, the button 27A maintains the circuit through the switch 25A closed so that the relay is kept energized. However, the bodily movement of the safe 10 breaking the contacts at the points 82 and 83, or the movement of the container 15 within the safe breaking the circuit at the switch 25A, will serve to set off the alarm. It will be noted that the contacts 82 and 83 are not depressed within the wall 13 but are at least flush with the wall if not protruding slightly therefrom. Therefore, movement of the safe 10 away from the wall at any angle or along the wall parallel therewith, will break the holding circuit at the points 82 and 83.

Various changes and modifications may be made in the embodiment illustrated and described herein without departing from the scope of the invention as defined by the following claims.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. In an alarm system of the class described, a receptacle disposed closely adjacent the wall of a room; an alarm; an alarm restraining circuit including a source of current, an alarm restraining element, and a pair of inconspicuous contact points on said wall, all connected in series; the outer faces of said points being at least flush with the surface plane of the wall, a pair of conductor points projecting from the receptacle and registering with and respectively contacting the points in the wall; a horizontally sliding container within the receptacle; a normally closed switch within the receptacle bridging the conductor points and adapted to be actuated to open position by unauthorized displacement of said container in the receptacle; whereby upon dislodgement of the receptacle either in a direction parallel with the wall or in a direction away from the wall, or actuation of the switch, the restraining circuit is broken, the alarm restraining element de-energized, and the alarm released for actuation.

2. In an alarm system of the class described, a

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metallic receptacle disposed closely adjacent the wall of a room; an alarm; an alarm restraining circuit including a source of current, an alarm restraining element, and a pair of inconspicuous contact points on said wall, all connected in series; the outer faces of said points being at least flush with the surface plane of the wall, a pair of conductor points projecting from the receptacle and registering with and respectively contacting the points in the wall, one of said conductor points being in electrical conducting contact with the wall of the receptacle and the other conductor point extending through the wall of the receptacle and insulated therefrom; a horizontally sliding container within the receptacle; a normally closed switch within the receptacle, means electrically connecting the switch with the first of said conductor points and with the wall of the receptacle; and operating means for said switch adapted to be actuated to switch opening position by unauthorized displacement of said container in the receptacle; whereby upon dislodgement of the receptacle either in a direction parallel with the wall or in a direction away from the wall, or actuation of the switch, the restraining circuit is broken, the alarm restraining element de-energized, and the alarm released for actuation.

3. In an alarm system of the class described, a metallic receptacle disposed closely adjacent the wall of a room; an alarm; an alarm restraining circuit including a source of current, an alarm restraining element, and a pair of inconspicuous contact points on said wall, all connected in series; the outer faces of said points being at least flush with the surface plane of the wall, a pair of conductor points projecting from the receptacle and registering with and respectively contacting the points in the wall, one of said conductor points being in electrical conducting contact with the wall of the receptacle and the other conductor point extending through the wall of the receptacle and insulated therefrom; a horizontally sliding container within the receptacle; a normally closed switch within the receptacle, means electrically connecting the switch with the first of said conductor points and with the wall of the receptacle; and said switch having a resiliently projected button adapted to be retracted to switch-closing position by the container in its normal position and to be actuated to switch-opening position by unauthorized displacement of said container in the receptacle; whereby upon dislodgement of the receptacle either in a direction parallel with the wall or in a direction away from the wall, or actuation of the switch, the restraining circuit is broken, the alarm restraining element de-energized, and the alarm released for actuation.

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