July 10, 1934. J. PINCUS ET AL 1,965,946

ALARM DEVICE

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Fig. 1.

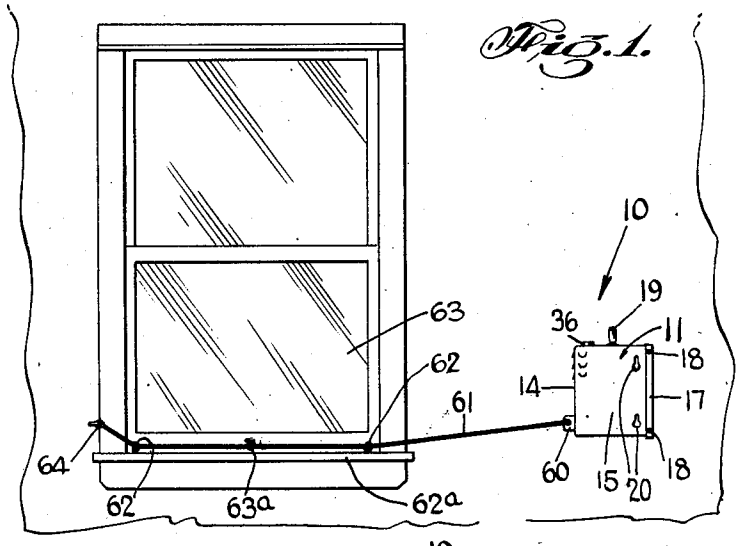


Fig. 3.

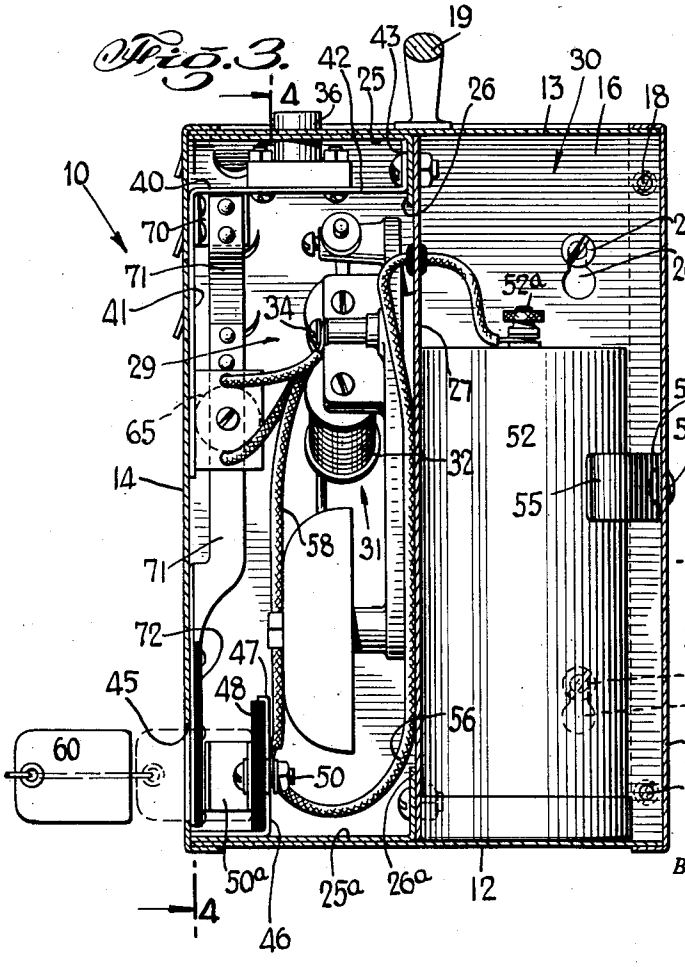
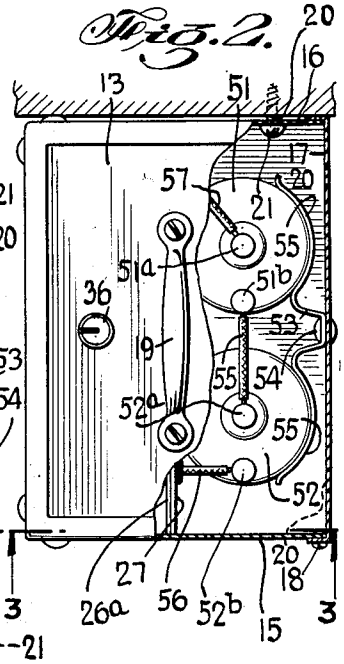


Fig. 2.



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Fig. 4.

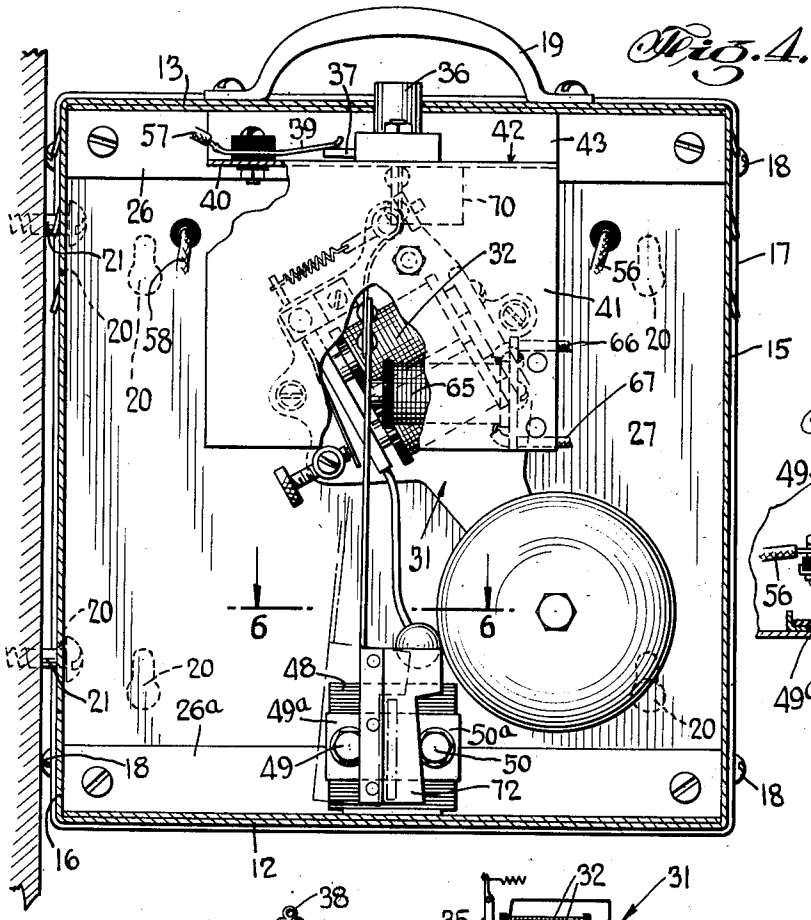
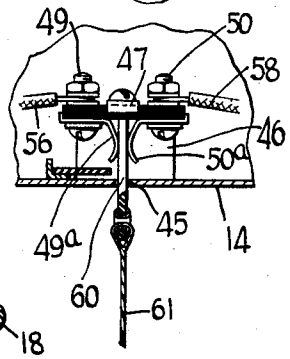


Fig. 5.



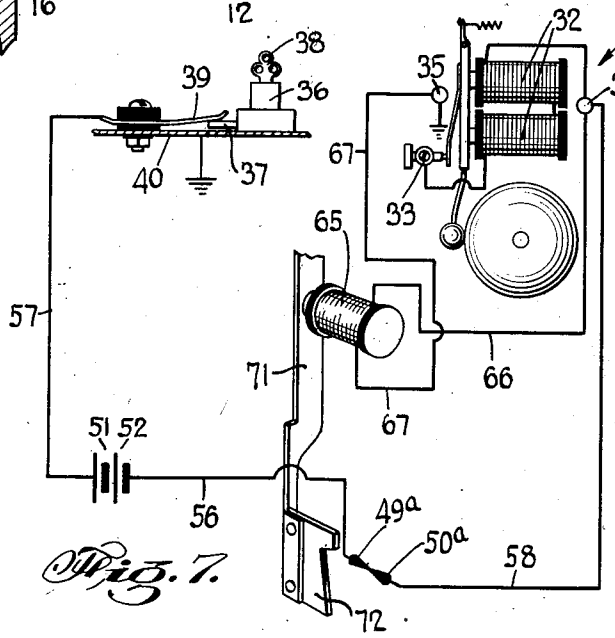
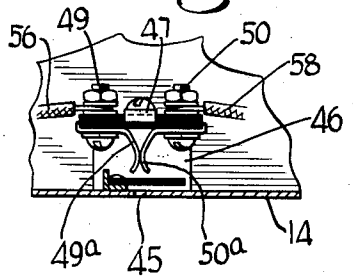


Fig. 7.

Fig. 6.



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UNITED STATES PATENT OFFICE

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ALARM DEVICE

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Application July 7, 1931, Serial No. 549,172

3 Claims. (Cl. 177—314)

This invention relates to alarms and is particularly directed to a portable alarm for signalling movement of an object such as a door, window or the like articles.

An object of this invention is to provide an alarm of the character described having means for signalling continuously upon being set off, and for preventing stopping of the signalling except by use of a proper key, whereby should the alarm be set off by a burglar opening a window, for example, and start ringing, the burglar will be unable to shut same off.

A further object of this invention is to provide a portable alarm of the character described which may be readily removably mounted in a plurality of positions on any suitable support such as a wall, which is adapted to be set off by movement of any one of a number of objects, which shall comprise comparatively few and simple parts, be relatively inexpensive to manufacture, and withal practical and efficient and positive in operation, to a high degree.

Other objects of this invention will in part be obvious and in part hereinafter pointed out.

The invention accordingly consists in the features of construction, combinations of elements, and arrangement of parts which will be exemplified in the construction hereinafter described, and of which the scope of application will be indicated in the following claims.

In the accompanying drawings, in which is shown one of the various possible illustrative embodiments of this invention,

Fig. 1 is a front perspective view of an alarm device embodying the invention, mounted on a wall adjacent the window adapted to actuate the alarm;

Fig. 2 is a top plan view of the alarm, with parts of the top wall broken away to show the interior construction;

Fig. 3 is an elevational, cross-sectional view taken on line 3—3 of Fig. 2;

Fig. 4 is a cross-sectional view taken on line 4—4 of Fig. 3;

Fig. 5 is a cross-sectional view taken on line 6—6 of Fig. 4, but with the resilient switch arms separated and in position before the alarm is set off;

Fig. 6 is a cross-sectional view taken on line 6—6 of Fig. 4; and

Fig. 7 is a diagram of the wiring for the alarm device.

Referring now in detail to the drawings, 10 designates an alarm device embodying the invention comprising a box 11 preferably made of sheet metal and having a bottom wall 12, a top wall 13, a front wall 14 and side walls 15 and 16. The rear of the box may be closed by a rear cover member 17 fitted over the rear end of the box and attached thereto by screws 18, or the like suitable fastening means. The box may be provided with a handle 19, of suitable construction, preferably attached to the top wall 13 of the box.

For mounting the box on a wall there are provided key hole shaped slots 20 in the side and rear walls, for screws 21 whereby the box 11 may be attached to a wall or support with either the side wall or the rear wall of the box facing the support.

Mounted within the box and attached to the inner surface of the upper wall 13 is an angle shaped member 25 having a wall portion contacting said inner surface, and a wall portion 26 extending downwardly therefrom. A member 25*a* symmetrically disposed to said member 25, may be attached to the inner surface of the bottom wall 12, and is likewise provided with a wall 26*a* projecting upwardly and aligned with said wall 26. A vertical transverse partition member 27 made of sheet metal may be attached to said wall portions 26, 26*a*, for dividing the box into two chambers 29 and 30.

Mounted on said partition wall 27 and disposed within the chamber 29 is a bell unit 31 of usual and well-known construction, and provided with a base forming a ground, electro-magnetic coils 32, terminals 33 and 34, and a grounded terminal 35.

Attached to the front wall 14 on the inner surface thereof is a member 40 made of sheet metal and having a wall portion 41 contacting said front wall, a wall portion 42 parallel to and somewhat spaced from, the top wall 13, and a wall portion 43 contacting and attached to said wall 26. Attached to the top wall portion 42 and extending through said wall 13 is a locking mechanism 36 having a bolt 37 adapted to be actuated by suitable key 38. The bolt 37 is adapted to contact a spring switch arm 39 mounted on and insulated from said wall portion 40.

For the purpose hereinafter appearing, the front wall 14 is provided with a vertical slot 45, adjacent the bottom thereof. Attached to the bottom wall 12, in alignment with said slot, is an angle-shaped member 48 having an upstanding arm 47; and attached to said arm 47 is a plate 48 made of insulating material and provided with a pair of spaced terminals 49 and 50. Attached to said terminals are switch portions 49*a* and 50*a* respectively, having spring fingers adapted to normally

contact one another. The switch members 49*a*, 50*a*, however, may be retained in separated position by means of a tab 60 made of insulating material and adapted to be inserted through the slot 45 and wedged between said switch members as shown in Fig. 5 of the drawings.

Mounted within the chamber 30 are a pair of dry battery cells 51 and 52 preferably retained against movement by means of a member 53 attached to the rear wall 17 in any suitable manner, for example, by rivet 54. Said member 53 is provided with curved spring arms 55 engaging the cells and pressing the same against the partition member 27. The cells 51 and 52 are provided with central terminals 51*a*, 52*a* and with terminals 51*b* and 52*b*. The terminals 51*b*, 52*a* are interconnected by a conductor wire 55. The terminal 52*b* is connected by a wire 56 to the switch terminal 49 mounted on a plate 48. The terminal 51*a* is connected by means of wire 57 to the switch blade 39, and the terminal 50 is connected by means of wire 58 to the terminal 34 on the bell device.

It will thus be seen that when the bolt 37 contacts the switch 39, said switch is grounded to the box. Said switch 39 being connected in series with the battery cells 51, 52, is connected through the switches 49*a*, 50*a* to the coils 32, which in turn are adapted to be grounded through the terminal 33. When tab 60 is inserted through slot 45 and wedged between the switch members 49*a*, 50*a*, the bell will not be actuated since the circuit is then broken. Attached to the tab 60 is a string 61 which may be passed through a pair of hooks 62 fixed to the window sill 62*a*, and a hook 63*a* fixed to the bottom of the window 63. The end 64 of the string 61 may be fixed or tied to any device so that when the window 63 is lifted, the string 61 may be pulled for extracting the tab and closing the switch 49*a*, 50*a*, to start the bell ringing. The ringing of the bell may be stopped by actuating the locking mechanism 36 by means of the key 38, in the possession of an authorized person. By use of the key, the bolt 37 may be retracted and disengaged from the switch 39, thus breaking the circuit through the electromagnetic coils 32 of the bell. The bolt 37 may again be projected by means of the key 38 after the tab 60 has been reinserted through the slot 45 for separating the switch members 49*a*, 50*a*.

Means is provided for preventing unauthorized stopping of the bell after the alarm has been actuated. To this end there is mounted on said wall portion 41 of the member 40, an electromagnet 65 provided with a coil having one end connected by wire 66 to the terminal 34 and the other end connected by wire 67 to the grounded binding post 35 of the bell. Thus when the string 61 is pulled, and the tab 60 withdrawn for closing the bell circuit, the circuit through the electromagnet 65 will also be closed for energizing the core thereof. Attached to said wall portion 41, above the electromagnet 65, is a lug 70 having a downwardly extending resilient metallic strip 71 to the bottom end of which there is attached an insulating plate 72 parallel to the front wall 14. In normal position, when the electromagnet 65 is not energized, the strip 71 is somewhat spaced from the core of said magnet and the plate 72 disposed to one side of the slot 45 for uncovering the same. However, when the electromagnet 65 is energized, the strip 71 is attracted to the core for bringing the plate 72 into overlying position with respect to the slot 45, whereby said plate is interposed between said slot and the switch members 49*a*, 50*a*, thus preventing the tab 60 from being inserted between said switch members. Obviously, upon opening the lock switch by means of the key 38, the magnet 65 is deenergized to permit the plate 72 to spring out of alignment with respect to said slot 45.

It will thus be seen that once the tab 60 has been withdrawn for example, by moving the window 63, the bell starts ringing and cannot be stopped by means of the tab 60. The ringing can only be stopped by use of the key 38 for actuating the lock switch 36, 39.

Obviously, the string 61 may be attached to any number of windows or other movable objects such as doors, pictures or furniture so that upon movement of any of such objects, the tab 60 will be withdrawn for setting off the alarm.

Also the string 61 may be arranged near a counter or cashier's window or the like, so that the tab 60 may be withdrawn thereby by foot or hand operation in case of hold-ups.

It will thus be seen that there is provided a device in which the several objects of this invention are achieved, and which is well adapted to meet the conditions of practical use.

As various possible embodiments might be made of the above invention, and as various changes might be made in the embodiment above set forth, it is to be understood that all matter herein set forth or shown in the accompanying drawings, is to be interpreted as illustrative and not in a limiting sense.

Having thus described our invention, we claim as new and desire to secure by Letters Patent:

1. An alarm device comprising a box having an opening, an electric signal device mounted within said box, means for supplying current to said signal device, a pair of resilient contacts adjacent said opening mounted within said box and normally in contact with one another and adapted to be separated by an insulating member inserted through said opening and between said contacts, said signal device, contacts and current supply means being connected in a circuit adapted to be closed upon removing said member from said opening, a member within the box movable between said opening and said contacts to prevent insertion of the insulating member through said opening for the purpose of separating the contacts, means for normally holding said member in retracted position to uncover said opening, electro-magnetic means forming part of said circuit for moving said member between said opening and contacts upon withdrawing the insulating member from said opening, to prevent reinsertion of said insulating member into said opening, and a key actuated switch within said circuit for breaking said circuit to permit said movable member to move back to normally retracted position and permit insertion of the insulating member into said opening and between said contacts.

2. Alarm apparatus comprising a box containing an electric bell, an electric circuit for said bell, a battery within said box for supplying electricity to said circuit, a pair of normally contacting resilient contacts mounted within said box and interposed in said circuit, said box having an opening adjacent said contacts, a tab made of insulating material adapted to be inserted through said opening and between said contacts for separating the same and opening said circuit, a member within said box, means for normally holding the same in position for uncovering said opening, an electro-magnet forming

part of said circuit and adapted when the circuit is closed to move said member into overlapping position with respect to said opening to prevent insertion of the tab into said opening, said electro-magnet being adapted to be energized upon withdrawing said tab from said opening and from between said contacts, and a key actuated switch interposed in said circuit and adapted to open said circuit for deenergizing said electro-magnet to permit said member to be moved back to normally retracted position and cause the bell to cease operation and permit the tab to be re-inserted through said slot and between said contacts.

3. An alarm device comprising a box having an opening, a pair of resilient contacts disposed adjacent said opening, an insulating tab adapted to be inserted through said opening to separate said contacts, an electric signal device within said box, an electric circuit for said signal device adapted to be opened upon inserting the tab in said opening and between said contacts, a member within said box adapted to be moved between said opening and said contacts, means for normally holding said member in retracted position to permit insertion of said tab into said opening and between said contacts, means controlled by said circuit for moving said member between said opening and said contacts upon withdrawing said tab from said opening, and a key actuated switch adapted to break said circuit and permit said member to be moved back to normal retracted position.

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