

- [54] **DOOR KNOB BURGLAR ALARM**
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[57] **ABSTRACT**

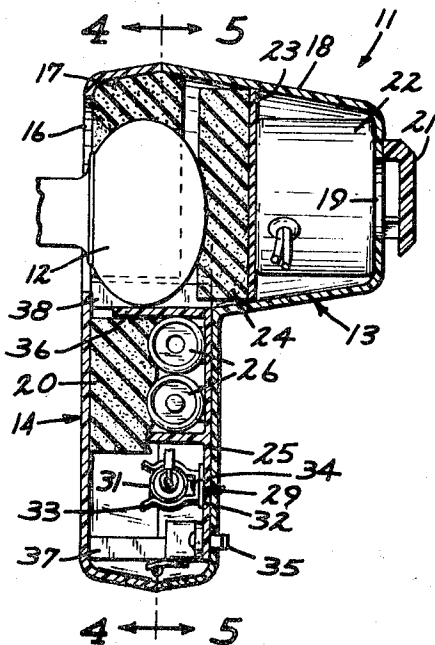
An alarm device designed for temporary placement over a conventional doorknob in frictional engagement therewith. A pair of normally open mercury switches are operatively connected through batteries to an annunciating buzzer, and unauthorized rotation of the doorknob in either direction closes one of the switches to actuate the buzzer.

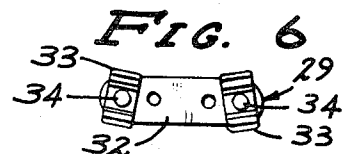
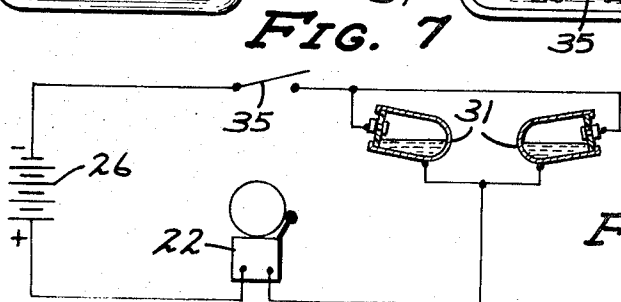
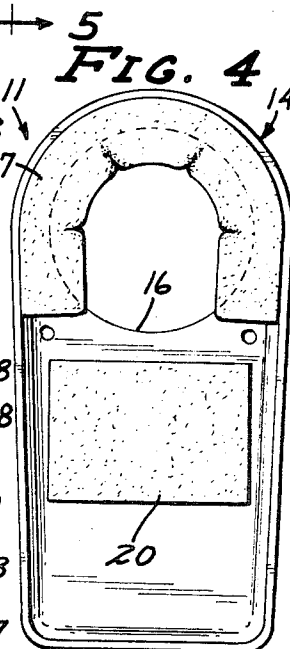
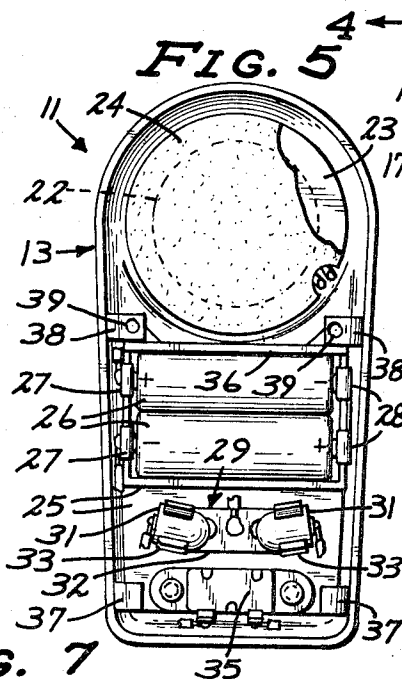
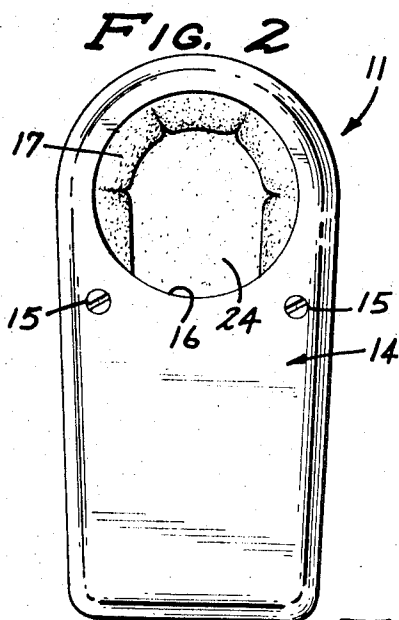
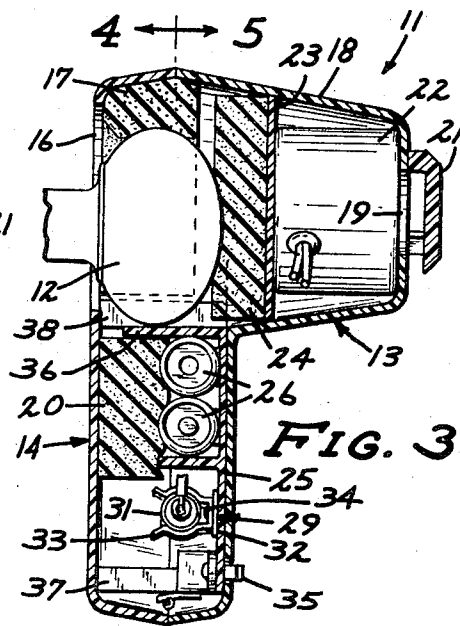
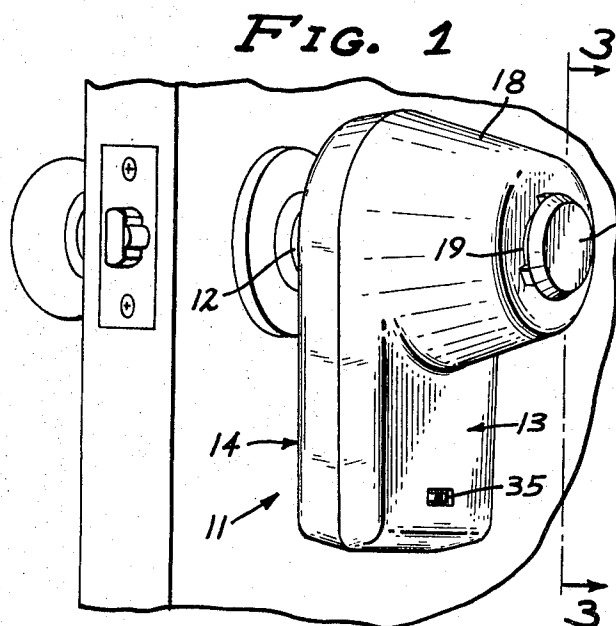
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4 Claims, 7 Drawing Figures





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DOOR KNOB BURGLAR ALARM

BACKGROUND OF THE INVENTION

The invention relates generally to alarm devices, and is specifically directed to devices that can be temporarily placed on conventional doorknobs to sense and announce unauthorized rotation thereof.

Alarm devices adapted for placement on doorknobs are not broadly new. Existing devices of which I am aware, however, either involve additional mechanisms for attaching the device to a doorknob, which is highly inconvenient to the user; or they include resetting mechanisms which must be reset or at least checked for proper operation before each use.

My invention is embodied in an improved alarm device capable of immediate operation upon simple placement thereof on a conventional doorknob. Removal of the alarm device is effected by simply lifting it from the doorknob. Thus, the improved device is easily usable in day to day operation without the inconveniences heretofore encountered with prior devices.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a front perspective view of a burglar alarm device employing the inventive principle, the device being mounted on a doorknob for operating therewith;

FIG. 2 is a rear elevation of the burglar alarm device;

FIG. 3 is an enlarged vertical sectional view of the burglar alarm device mounted on a doorknob, part thereof being broken away;

FIG. 4 is an elevation of one section of the device housing, taken generally along the line 4—4 of FIG. 3;

FIG. 5 is an elevation of a second section of the device housing, taken generally along the line 5—5 of FIG. 3;

FIG. 6 is a plan view of a switching means bracket for the burglar alarm device, showing in particular the adjustment feature thereof; and

FIG. 7 is a schematic representation of an electric circuit used in the burglar alarm device.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to FIGS. 1—6, in which like numerals represent like elements, the burglar alarm device employing the inventive principle is represented generally by the numeral 11. In FIGS. 1 and 3, device 11 is shown mounted in an operable position on a doorknob 12.

The several elements of device 11 are carried in a housing comprising a front section 13 and a rear section 14 which are held together by a pair of screws 15. With particular reference to FIGS. 2, 3 and 4, rear section 14 is a tray-shaped member having an opening 16 that provides access to receptacle sized to receive a conventional doorknob, such as the one represented by the numeral 12. An arcuate section of foam rubber 17 is affixed to the inner face of rear section 14, as shown in FIGS. 3, 4 to define the receptacle in part and frictionally engage doorknob 12. That portion of foam rubber 17 which is immediately adjacent opening 16 may be rounded as shown to facilitate the placement of device 11 over doorknob 12.

With specific reference to FIGS. 3 and 5, front section 13 of the burglar alarm housing has a rear facing portion which conforms in size and shape to rear sec-

tion 14, and which is also tray-shaped to define an enclosure with rear section 14 for the control elements of device 11. Front section 13 also includes a cup-shaped projection 18 with an opening 19 that is covered by a protective cap 21 which may carry a decorative emblem or nameplate, if desired.

As shown in FIG. 3, an alarm annunciator 22, which is preferably a buzzer, is disposed in cup-shaped projection 18 and held in place by a circular backing member 23. Backing member 23 may be formed from stiff cardboard or the like and is press fit into place. Affixed to backing member 23 is a thickness of foam rubber 24, which operates in conjunction with the arcuate foam rubber member 17 to frictionally engage doorknob 12.

With continued reference to FIGS. 3 and 5, there is disposed in the tray-like portion of front section 13, a holder 25 which carries the control elements for device 11. That portion of holder 25 immediately adjacent the cup-shaped projection 18 defines a box-like receptacle which receives and carries a pair of batteries 26, which, preferably, are pen-light batteries rated at 1½ volts each. The usual conductors 27, 28 are disposed at opposite ends of the receptacle to render batteries 26 operable, and a sponge rubber pad 20 is affixed to the inner surface of rear section 13 in position to maintain batteries 26 within the receptacle.

Disposed immediately below batteries 26 is a retaining clip 29, which is affixed to holder 25 and carries a pair of conventional mercury switches 31, 31. As best shown in FIG. 5, mercury switches 31, 31 are each angularly disposed with respect to a horizontal (no alarm) position for a purpose to be described in detail below. FIG. 6 is a view of the retaining clip 29 without mercury switches 31, 31, showing with particularity the structure for effecting angular adjustment thereof. As shown, clip 29 comprises a backing plate 32 to which a pair of individual clips 33 are attached by means of rivets 34. It will be readily seen that rotation of clips 33 permits the angular position of mercury switches 31, 31 to be altered.

Returning to FIG. 5, there is disposed immediately below retaining clip 29 and mercury switches 31, 31 a conventional slide switch 35. Switch 35 is also affixed to the holder 25, with the slidable member thereof projecting through the face of front section 13, as best shown in FIGS. 1 and 3. Switch 35 is connected to render operable or inoperable the control elements and electrical circuit with which it is connected, as will be described in further detail below.

As best shown in FIG. 3, holder 25 includes a shell-like projection 36 which acts as a barrier between doorknob 12 and the control elements, and pairs of projections 37, 38, which offer alignment to the proper merger of front section 13 and rear section 14. The projections 38 include a pair of threaded holes 39, 39, which receives screws 15, 15.

FIG. 7 is a schematic representation of the electrical control circuit for device 11. As shown, batteries 26 are connected to mercury switches 31 through slide switch 35. Each mercury switch 31 includes the usual droplet of mercury which is movable by gravity from end to end of the switch to render it open or closed. As shown, with the mercury droplets in the lowermost position, switches 31 are open and thus normally preclude completion of the circuit through buzzer 22 back to

batteries 26. It will be appreciated that movement of either switch 31 to cause the mercury droplet therein to move to the opposite end will complete the electrical circuit and cause the buzzer 22 to be actuated, assuming that switch 35 is closed. The degree of movement required to so move a mercury droplet is, of course, dependent on the angular position of the associated clip member 33, the adjustment of which is described above.

In operation, device 11 is placed over a conventional doorknob 12 with the foam rubber portions 17 and 24 in proper frictional engagement therewith. Slide switch 35 is kept in an open position until placement of the device 11 over doorknob 12 in a vertical position is assured. At that point, slide switch 35 is closed, which will permit device 11 to announce the unauthorized rotation of doorknob 12 through closure of either of the mercury switches 31 and subsequent operation of buzzer 22. It will be appreciated that the amount of rotation necessary to cause closure of a mercury switch 31 is a function of its angular position with respect to the no alarm position of the alarm housing. When device 11 is not needed, slide switch 35 is moved to its open position and the device 11 simply lifted from doorknob 12.

From the foregoing, it is apparent that device 11 is simply and easily used in day to day operation, without the complex attachment and removal of more elaborate burglar alarm devices.

I claim:

1. An alarm device for placement on a door knob or the like, comprising:
 - a. an alarm housing having a receptacle formed therein, the receptacle being sized to fit over a door knob and lined at least in part with a

predetermined thickness of resilient, material disposed for frictional engagement with the door knob to permit movement of the alarm housing with rotational motion of the door knob;

- b. electric circuit means disposed within the alarm housing and comprising

1. battery means;
2. annunciator means;
3. first and second mercury switch means for closing the circuit between the battery means and the annunciator means, each of said mercury switch means occupying a normally open position with the alarm housing in a no-alarm position;
4. the first mercury switch means being disposed for closing movement in response to rotation of the housing in a first direction;
5. the second means being disposed for closing movement in response to rotation of the housing in an opposite direction;
6. each of said mercury switch means being angularly adjustable to determine the rotational position at which it closes;
7. and an on-off switch disposed to override the first and second mercury switch means and render said annunciator means inoperable.

2. The alarm device defined by claim 1, wherein the annunciator means comprises a buzzer.

3. The alarm device defined by claim 1, wherein the resilient, material comprises foam rubber.

4. The alarm device defined by claim 1, wherein each of said first and second mercury switch means is carried by a supporting clip which is rotatably mounted on a backing plate secured to the housing.

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