Jan. 6, 1970 M. BRENNER 3,488,651

PORTABLE ALARM

Filed Dec. 8, 1966

Fig. 1

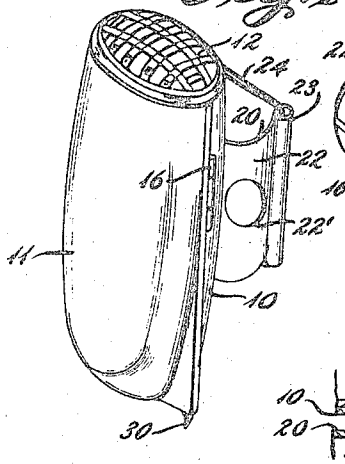


Fig. 2

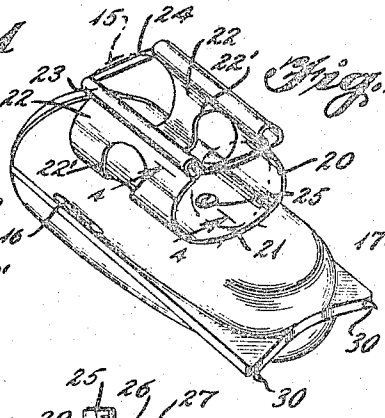
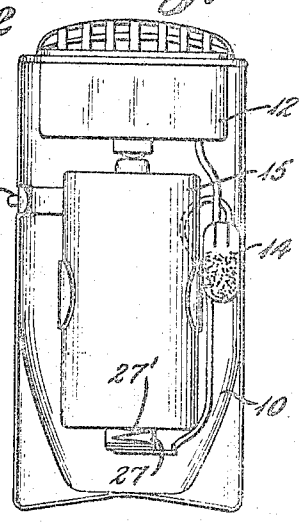


Fig. 3



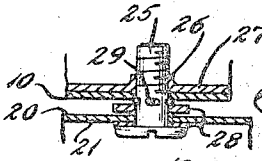


Fig. 4

Fig. 5

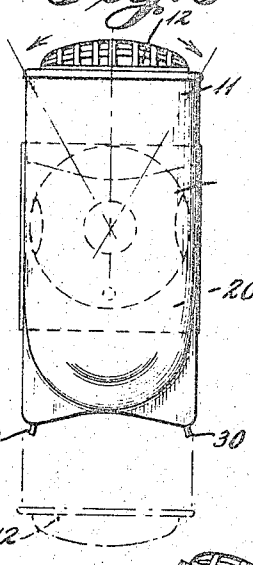


Fig. 8

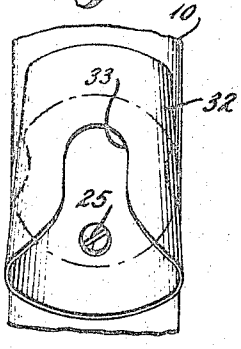


Fig. 6

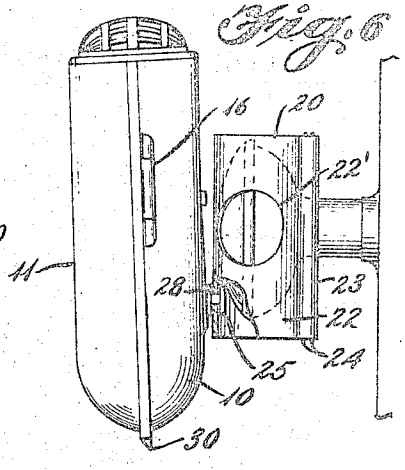
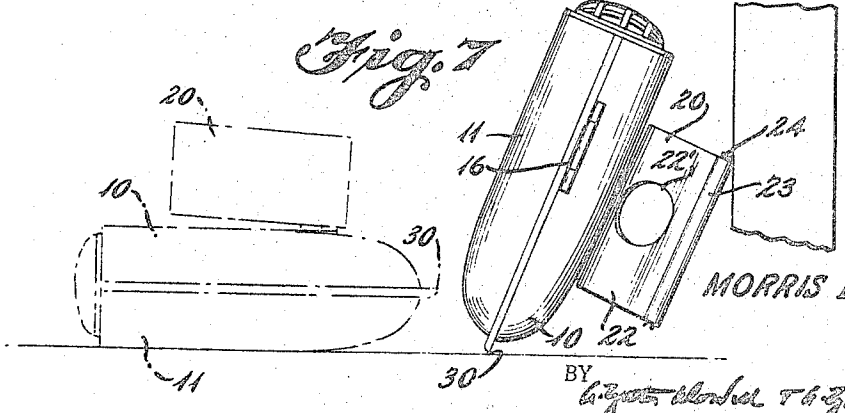


Fig. 7



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PORTABLE ALARM

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ABSTRACT OF THE DISCLOSURE

A security alarm includes an electrical signal within a housing having a switch which operates when the position of the housing is significantly changed and a doorknob mounted pivotally attached away from the housing center of gravity. With the device mounted and the housing center of gravity above the pivot any slight movement of the doorknob will cause operation of the signal. Alternately, the mounting cooperates with feet on the housing to support the same substantially upright adjacent to a door so that it may be dislodged from the upright position b ythe door in order to operate the signal.

This invention relates to security, and more particularly to an alarm which is especially adapted for use in various locations in the home or away from home.

Various alarms have been used. However, many of these are relatively complex and expensive or require substantial time for installation by one having special skills. There has been a need for a relatively simple, compact alarm which may be easily carried by the traveler in his luggage for use in his lodging, as well as in various places in the home.

Accordingly, it is an object of the present invention to provide a relatively simple and inexpensive, compact, lightweight alarm which is easily positioned for use in a minimum of time and without requiring any special tools or skills.

A further object of the invention is the provision of an alarm which may be easily slipped over a doorknob in order that any attempt to gain entry by turning of the knob will immediately warn the occupant.

A further object is the provision of an alarm which is adapted to be mounted on a doorknob or adjacent to a door or window in order that opening of the door or window will operate the alarm in order to warn the occupant.

These and other objects of the invention will become apparent from the following description in conjunction with the accompanying drawing in which:

FIG. 1 is a perspective of an embodiment of the invention;

FIG. 2, a perspective illustrating the opposite side;

FIG. 3, an enlarged plan of the interior of the housing;

FIG. 4, an enlarged section on the line 4—4 of FIG. 2;

FIG. 5, a front view illustrating the operative and inoperative positions when the device is applied to a doorknob;

FIG. 6, a side elevation illustrating the mounting of the device on a doorkknob;

FIG. 7, an elevation illustrating the mounting of the device in front of a closure and its position when dislodged; and

FIG. 8, an elevation of a modified form of mounting member.

Briefly stated the present invention includes a housing having a signal means therein with a switch which is operative when the housing is in a range of positions but otherwise inoperative, and a mounting which is pivotally connected to the housing, the mounting adapted to slip over a doorknob or cooperate with the housing to support

it with the switch in inoperative position, in which dislodgment of the housing and shifting of its position to operate the signal results from any turning of the doorknob or substantial movement of the closure adjacent to which the device is positioned.

With further reference to the drawing, the alarm includes a housing having a body **10** and a cover **11**. Mounted on the body is an alarm device **12** such as a horn or light. The illustrated horn is connected to a switch **14** of the type which is operative wihtin a range of positions, that illustrated being of the known mercury type. The switch and signal are connected by suitable leads to a source of power such as a replaceable battery **15**.

The cover is secured to the body **10** by a hinge **16** at one side and the releasable latch **17** at the opposite side in order that the interior of the housing may be examined and the battery **15** replaced if necessary.

It will be observed that when the device is in the upright position as illustarted in FIG. 3, switch **14** is open, but that if the device is substantially horizontal as indicated in FIG. 2, or inverted as indicated in broken lines in FIG. 5, the switch **14** will be closed.

Connected to the body of the housing is a clamp-type mounting or positioning means **20**. The connecting means illustrated is substantially C-shaped, having a central web portion **21** and said portions **22**, and comprised of flexible material such as thin sheet metal. Portions **22** preferably have openings **22'** to receive the sides of a knob for more secure mounting thereon. In order to assist in holding the edges **23** in proper relationship, an elastic band **24** is illustrated which passes through the rolled or beaded edges **23**. As indicated in FIG. 6, the edges **23** may be spread to receive doorknobs of various sizes. The beaded edges facilitate pushing the clamp onto a knob, the sides opening and then snapping into position as the openings **22'** receive the knob.

The mounting means **20** is connected to the housing preferably substantially along the longitudinal center line of the housing's back portion **10** and spaced substantially from its center of gravity when its components are in place. It will be appreciated that in the illustrated device the signal **12** is of substantial weight and hence the center of gravity of the housing is substantially closer to the end of the housing having the signal **12** than of the remote end.

The illustrated connecting means provides a pivot and includes bolt **25** which is retained in a boss **26** of the member **27** which holds the spring contact **27'** for one end of the battery **15**, the bolt passing through the rear wall of the housing **10**.

In the clamping member **20** the bolt passes through the web thereof along its longitudinal center line but spaced substantially from its lateral center as indicated more particularly in FIGS. 2 and 6. Washers **28** are preferably provided on both sides of the web **21** in order to assure free movement. The bolt has a portion **29** of its thread distorted in order that when it is fastened it will resist tightening beyond the point at which there is adequate space for free pivotal movement of the mounting means on the bolt.

While the C-shaped mounting means is a preferable form, other types may be used, such as a conical mount as indicated in FIG. 8, which is also adaptable to be received by doorknobs of various sizes.

With the apparatus described, even though the housing rotates freely about the bolt **25** when the same is positioned on a doorknob, as illustrated in FIG. 6, there is sufficient friction in the mounting to insure displacement of the center of gravity of the housing with only slight turning of the knob.

In the use of the device on a doorknob the mounting means is positioned over the knob with the major por-

tion of the doorknob preferably above the pivot bolt **25**, as indicated in FIG. 6. The housing is similarly positioned as in FIG. 6 such that its center of gravity is substantially directly above the pivot means. In such position any turning of the doorknob will cause the center of gravity of the housing to move to the side of the pivot means, thereby overbalancing the housing and causing it to rotate to the position indicated in broken lines in FIG. 5, in which the switch **14** will be closed and continuously operate the signal.

The signal cannot be turned off except by moving the housing to a position in which the switch is inoperative or by removing the cover and breaking the circuit such as by removing the battery.

The device may also be operated by being placed on a surface as indicated in FIG. 7. In this arrangement the mounting means cooperates with spaced prongs **30** on the lower end of the housing to mount the housing in relatively upright position. In such position the device is placed against a door or other movable closure and if the latter is opened the housing will be tilted back until it falls as indicated in broken lines in FIG. 7, thereby closing the switch to the alarm. The prongs **30** tend to engage the surface in order to prevent sliding of the device in substantially upright position.

In the modification of FIG. 8 mounting member **32** is of conical shape and has a slot **33** which is received over the shaft of the doorknob.

When the device is not being used, as for example when it is being stored or carried in luggage, the battery **15** may be conveniently carried in the mounting means.

Accordingly it will be observed that the device provides a relatively simple, compact, lightweight alarm which may be conveniently carried without danger of inadvertently producing a signal and which may be used in various ways on a doorknob or adjacent to an enclosure in order to provide an instant alarm to the user.

What is claimed is:

1. A portable alarm for mounting on a doorknob, comprising a housing, signal means in the housing including position sensitive switch means, an elongated generally C-shaped mounting means removably mountable in fixed position on a doorknob, pivot means connecting said housing to said mounting means, said pivot means being connected to said housing in a position remote from the center of gravity of said housing but permitting relative motion between said housing and said mounting means, said switch means being open and said signal means being inoperative when said housing is in a first position with its center of gravity balanced substantially vertically above said pivot means regardless of the position of the mounting means, said signal means becoming operative when the housing is in a second position with its center of gravity in a position other than balanced substantially vertically above the pivot means, the turning of the doorknob initially producing rotary motion of the mounting means and of the housing, as a unit, about the axis of the doorknob, whereby the housing may be positioned with its center of gravity in a vertical plane above the pivot means with the signal means inoperative and turning of the doorknob will cause the center of gravity of the housing to move to the side of the pivot means thereby overbalancing the housing, and causing its center of gravity to rotate to a position below the pivot means, thereby closing said switch means and operating the signal means.

2. The invention of claim **1** in which said switch means includes a mercury switch and a battery mounted within said housing.

3. The invention of claim **1** in which the sides of the mounting means have openings permitting protrusion of a portion of the doorknob in order more securely to mount said mounting means on a doorknob and permitting spring-like closing action of said mounting means on the knob.

4. The invention of claim **1** in which the sides of said mounting means terminate in beaded portions to facilitate reception of a doorknob therebetween.

5. The invention of claim **1** in which said mounting means is connected to the housing by a pin rigidly mounted on said housing, said pin extending through the web of said mounting means.

6. The invention of claim **1** in which said mounting means is of such length that in one position it terminates substantially away from an end of said housing, and said housing has support means at said end, whereby said housing and mounting means cooperate to permit support of said alarm on a relatively flat horizontal surface.

7. The invention of claim **6** in which the support means at the end of said housing are pointed and adapted to engage a surface on which placed, in order to reduce the possibility of the housing sliding across the surface when it is pushed.

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