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H. WHIPPLE

2,237,644

BURGLAR ALARM

Filed Jan. 10, 1940

Fig. 1

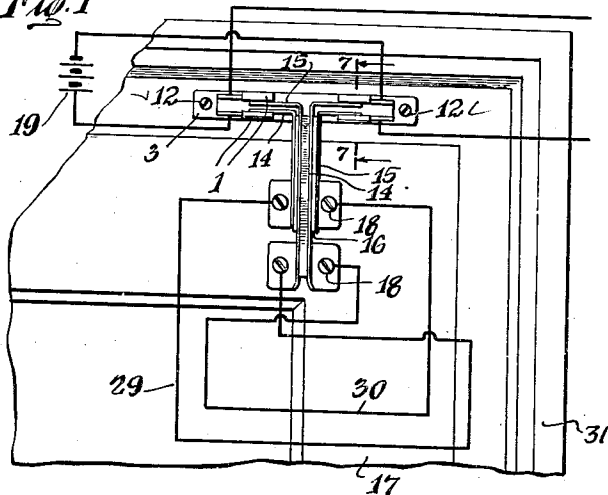


Fig. 2

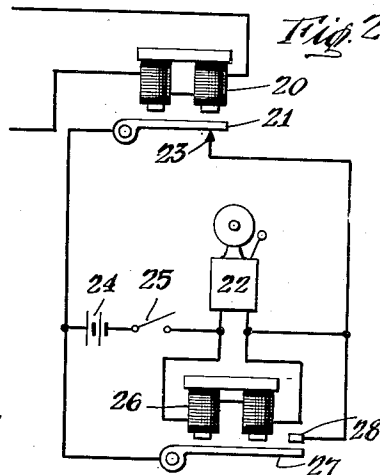


Fig. 3

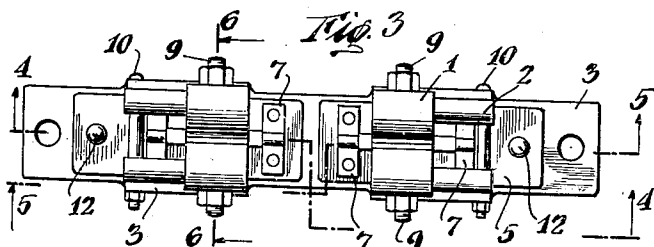


Fig. 6

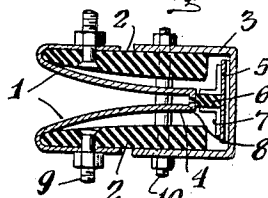


Fig. 4

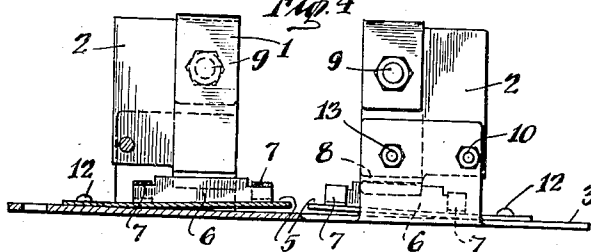


Fig. 5

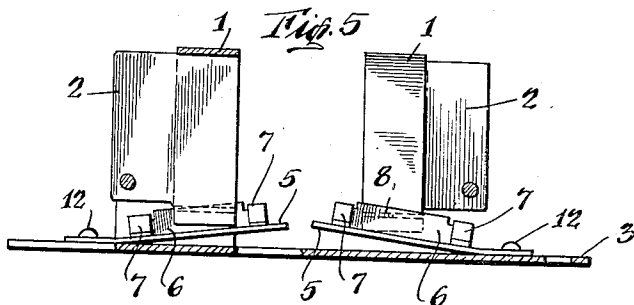
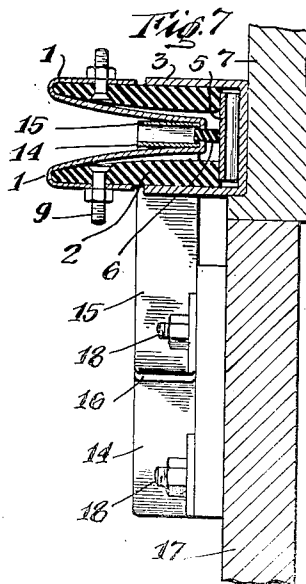


Fig. 7



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BURGLAR ALARM

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8 Claims. (Cl. 177—314)

This invention relates to electrically operated burglar alarms wherein an alarm is sounded, in the event that the electric source of supply is discontinued, or the circuit is opened from any cause.

One object of this invention is to provide an electrically operated alarm which may be attached to a door and door frame which operates to close the electric circuit, connected to the alarm, when the door is closed.

Another object is to provide automatic means in an alarm of this kind, to maintain the electric circuit, connected to the same, in open condition after the door has been opened, until manually closed.

Another object is to provide an alarm which may be operated from a plurality of locations or by several controlling loops in the same location.

Another object is to provide an alarm which is simple in design and easy to manufacture while at the same time is efficient and dependable in operation.

Another object is to provide a burglar alarm which can be used locally in an isolated installation or connected with a central station as desired, as shown and described the embodiment of the invention is adopted especially for use in isolated cases.

Another object is to provide a burglar alarm that can be used equally well on doors, windows, transom, etc.

Other objects and advantages of this invention will become more fully apparent as the description thereof proceeds.

Referring to the drawing:

Fig. 1 is a view of the alarm mounted on a door and door frame and is also, in part, a diagram of electrical connections of the alarm.

Fig. 2 is a diagram of connections of the alarm completing the partial diagram shown in Fig. 1.

Fig. 3 is a top view of the alarm portion secured to a door frame.

Fig. 4 is a side view of the alarm shown in section 4—4 Fig. 3.

Fig. 5 is a side view of the alarm shown in section 5—5 Fig. 3.

Fig. 6 is a sectional view of the alarm shown in section 6—6 Fig. 3.

Fig. 7 is a sectional view of the alarm shown in section 7—7 Fig. 1.

Similar numerals apply to the same parts throughout the several views.

This burglar alarm, while described as applying to a door, can be used equally well on windows or wherever it can be similarly applied.

The alarm, as shown, consists essentially of two general parts, one part designated herein-after as the frame member, to be mounted on the door frame, and the other part, cooperating with the first named part, designated as the door member to be mounted on the door. When these members are engaged, by closing the door, the circuit of the alarm is closed so the alarm cannot ring.

The frame member is provided with two reflexed clips 1 secured by screws 9 to two blocks 2 of insulating material, which are spaced and secured by a bolt 10 and screws 13, opposite to each other, on a U-shaped base 3 which in turn is screwed by screws 11 to the top of the door frame 31. The lower ends 4 of the clips are bent inwardly to normally contact each other as shown at 8 in Fig. 6. Below the clips 1 and blocks 2 and secured at one end by rivet 12 to the base 3 is provided a flat spring 5, having mounted thereon a tongue 6 of insulating material secured thereto by means of angle plates 7 secured to both the spring 5 and the tongue 6. The flat spring 5 is wider than the space between the blocks 2, so that in its upper normal position it bears resiliently against the bottom of the blocks 2 as a stop.

The tongue 6 extends above the spring 5 a sufficient distance to enter between the ends 8 of the clips 4 when separated as shown in Fig. 7. The angle plates 7, secure the tongue 6 to the spring 5, at each end of the tongue 6, thereby leaving a space between the angle plates 7 for the tongue 6 to enter between the clips 4 when separated as shown in Figs. 4 and 5.

The frame member, as described above, is applicable for one controlling circuit mounted on the door, for two similar circuits the above clips and parts are duplicated as shown in the drawing and may be mounted on a common base 3.

The door member consists substantially of two blades, one long blade 14 and a shorter one 15, spaced and insulated from each other by a strip of insulating material 16 to which they may be secured in any well known manner. One end of each blade is secured to the door by a screw 18 while the other end of the same is bent perpendicularly thereto so that the free ends of the blades 14 and 15 may enter between the clips 4, when the door is closed, and separate the clips 4 sufficiently to allow the tongues 6 to enter between the ends 8 of the clips 4 and maintain them thereby, until the spring 5 is pressed down manually against the base 3.

The clips 4 are separated as long as the door

17 is closed and remain so until manually released. After the spring 5 is pressed down, releasing the clips 4, so they come together at their ends 8, the tongue rests slightly against the ends 8 of the clips 4 and bears against the same with initial pressure, reset to enter between the clips as above stated.

The door members may be installed in duplicate as shown, to engage with a duplicate set of frame members, two double door circuits 29, 30 are desired.

Referring to the electrical connections, a battery 19, is connected to the upper right and lower left clip 1 of the frame member, the remaining clips are connected to a relay 20. Tracing the electric circuits through the various conductors, the current from the upper terminal of the battery 19 runs to the upper right clip 1, and then through the left blade 14 of the right pair of blades through the loop 30, back to the right blade 15 of the right pair of blades, to the lower right clip 1 to the magnet 20. From the magnet 20 the current runs to the upper left clip 1 and then through the right blade 15 of the left pair of blades through the loop 29 to the left blade 14 of the left pair of blades to the lower left clip 1 and back to the opposite terminal of the battery 19. The armature 21 of the relay 20 controls a circuit to an electric bell 22, the armature 21 being connected in the bell circuit through a contact 23 so that when the relay 20 is energized, the armature 21 is raised from the contact 23 and the bell circuit is opened and vice versa. A second battery 24 is connected in the bell circuit, to energize the same, and in this circuit is also interpolated a manually operable switch 25 to stop the bell 22 from ringing when the contact 23 and armature 21 are closed. Tracing the circuits through the various conductors responsive to the movements of the armature 21, the current from the right terminal of the battery 24, runs through the switch 25 to the bell 22, and then to the armature contact 23, through the armature 21 back to the opposite terminal of the battery 24. The current also runs from the right terminal of the battery 24 through the switch 25 to the magnet 26 to the armature contact 28 and through the armature 27 back to the opposite side of the battery 24.

In order to maintain the bell ringing after once started, a second relay 26 has its windings shunted across the bell terminals, and its armature shunted across the armature 21 and terminals 23, so that if the door 17 were opened, the circuit from the battery 19, to the relay 20, would be opened and the armature 21 would close the bell circuit, causing the bell to ring. When the armature 21 closes the bell circuit, the windings 26 are also energized and the armature 27 is raised against the contact 28 thereby closing the bell circuit independently of the armature 21. The bell will now ring continuously until the switch 25 is manually opened.

When the door 17 is opened the clips, which are separated by the blades 14 and 15 as explained when the door is closed, remain separated by reason of the automatic insertion of the tongue 6 between them, otherwise the clips 1 would come together at their ends 8 as the door is being opened and thereby maintain the relay 20 circuit closed so the alarm would not sound.

When this invention is used in connection with a central station the tongue 6 is not used and the clips 1 close the circuit at their ends 8 when the door is open.

It is readily understood that many changes and deviations might be made in the details of this invention as disclosed, but obviously these would all come within the scope thereof and would not depart from the spirit of this invention.

Having described one method of carrying out my invention, as required by the statutes, so that anyone skilled in the art to which it pertains could make and use the same, what I claim as my invention and wish to secure in Letters Patent is the following:

1. A burglar alarm including a pair of clips insulated from each other, to be secured to a door frame, a pair of blades insulated from each other, to be secured to the door of said frame in cooperative relation with said clips, effective to enter between the clips when the door is closed to separate the same, and means associated with the clips to maintain the same spaced, after being separated by the blades.

2. A burglar alarm including a pair of clips insulated from each other, to be secured to the door frame, means associated with the door of said frame, in cooperative relation with said clips, effective to enter between the clips when the door is closed to separate the same, and means associated with the clips to maintain the same spaced, after being separated by the first named means.

3. A burglar alarm including a pair of clips insulated from each other to be secured to a door frame, a pair of blades insulated from each other to be secured to the door of said frame in cooperative relation with said clips, effective to enter between the clips when the door is closed to separate the same, and a spring having an insulating member secured thereto to enter the clips to maintain the same spaced, after being separated by the blades.

4. A burglar alarm including a pair of clips, to be secured to a door frame, insulated from each other and normally in contact, closing an electric circuit, a pair of blades insulated from each other, to be secured to the door of said frame in cooperative relation with said clips, effective to enter between the clips, when the door is closed, to separate the same and maintain the electric circuit, and means associated with the clips to space the same and maintain the circuit open after the clips are separated by the blades and the blades are removed therefrom.

5. A burglar alarm including a pair of clips insulated from each other, to be secured to a door frame, a pair of blades insulated from each other to be secured to the door of said frame in cooperative relation with said clips, and connected to a control circuit on the door, said blades effective to enter between the clips when the door is closed to separate the same, and interpolate the said circuit between the clips and resiliently supported clips, means to enter between the clips to maintain the same spaced, after being separated by the blades.

6. A burglar alarm including a pair of reflexed clips insulated from each other bent perpendicularly at their free ends to normally contact each other and effective to be secured to a door frame, a pair of blades insulated from each other, to be secured to the door of said frame in cooperative relation with said clips, effective to enter between the clips when the door is closed to separate the same, and means independent of the blades co-acting with the clips to maintain the same spaced after being separated by the blades.

7. A burglar alarm, including contacts insulated from each other and interpolated in the circuit of an electric alarm and normally open

circuited, to be secured to a door frame, cooperating electric contacts insulated from each other to be actuated by the door of said frame in cooperative relation with said clips effective to close the circuit of the first named contacts, when the door is closed, and means associated with the first named contacts and responsive to the movements thereof to maintain the circuit thereof closed, independently of the cooperating electric contacts.

8. In a burglar alarm, an electric alarm circuit, including contacts, insulated from each other, to

be secured to a door frame, and normally touching each other to close said circuit, blades insulated from each other, mounted on the door of said frame, in cooperative relation with said contacts, to separate the clips, when the door is closed, an electric circuit, carried by said door and interpolated between the blades, effective to be connected in said alarm circuit when the door is closed and means to maintain the clips separated after the door has been opened.

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