

March 19, 1935.

F. H. STOTTS

1,995,082

BURGLAR ALARM

Filed Jan. 8, 1934

2 Sheets-Sheet 1

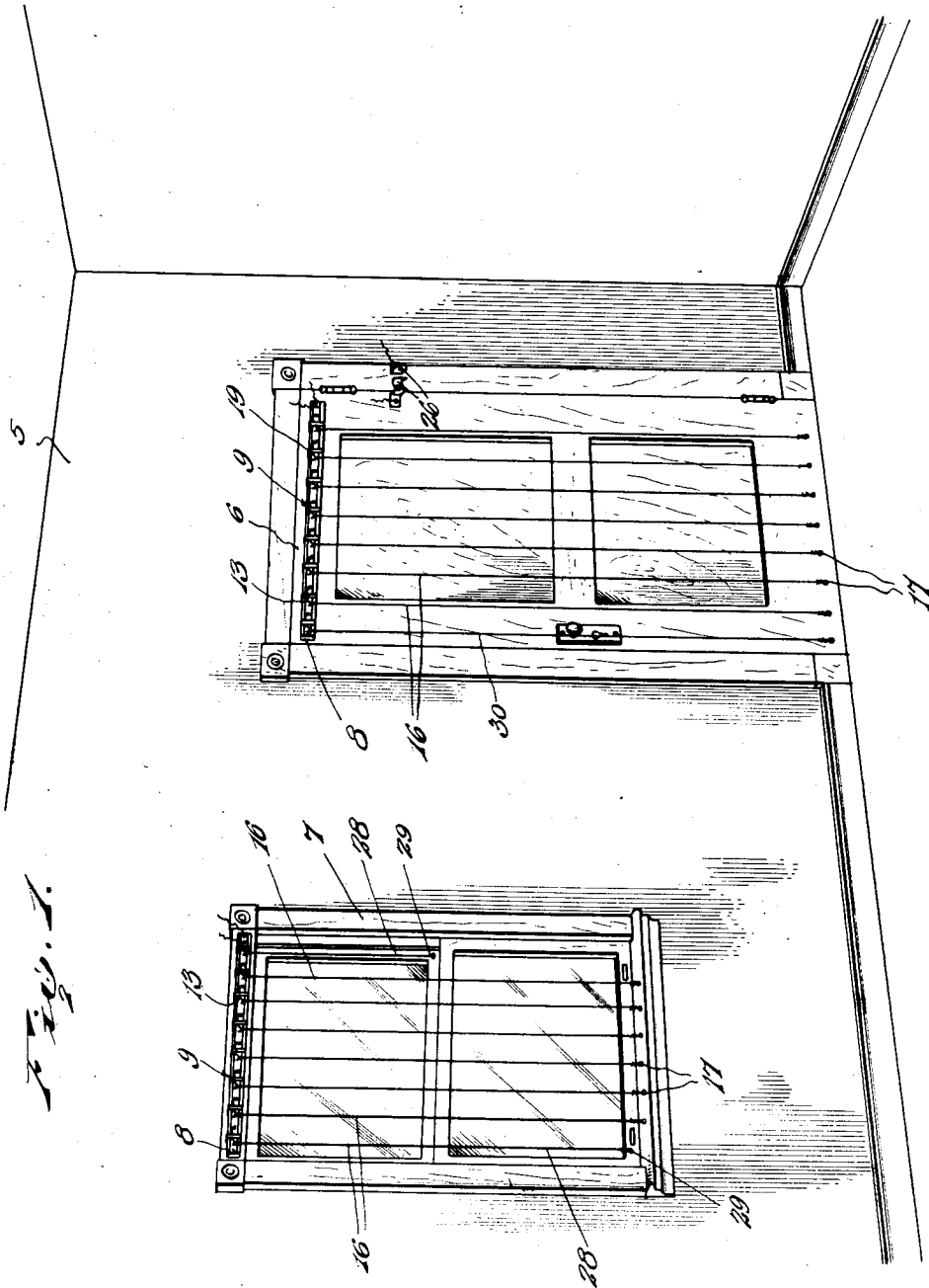


Fig. 1.

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2 Sheets-Sheet 2

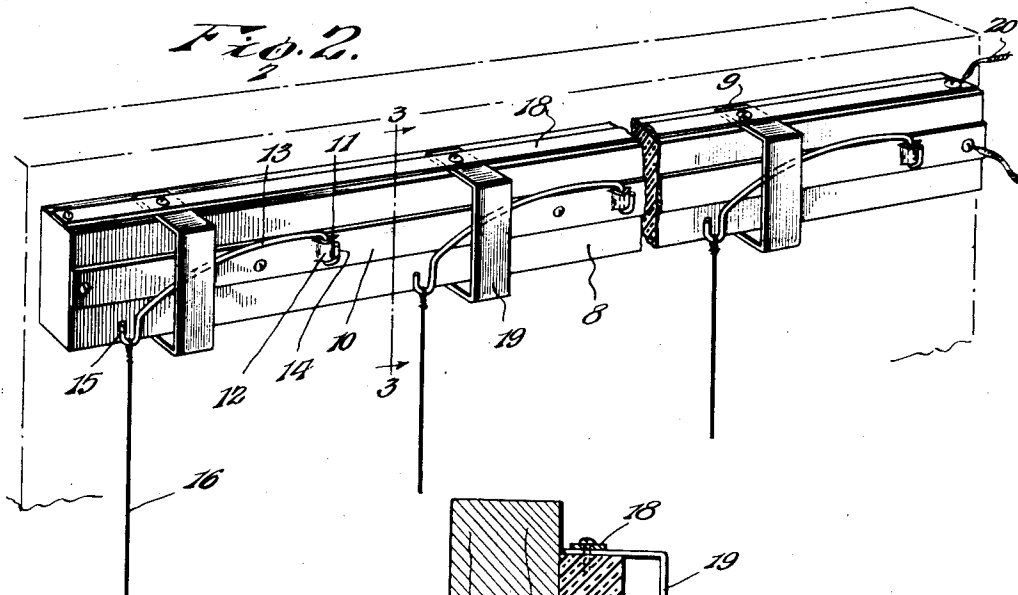


*Fig. 3.*

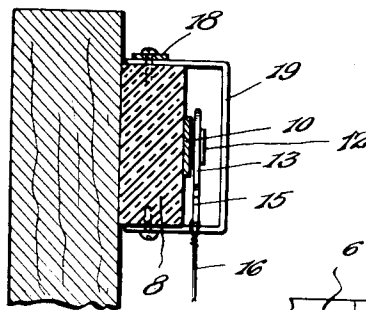
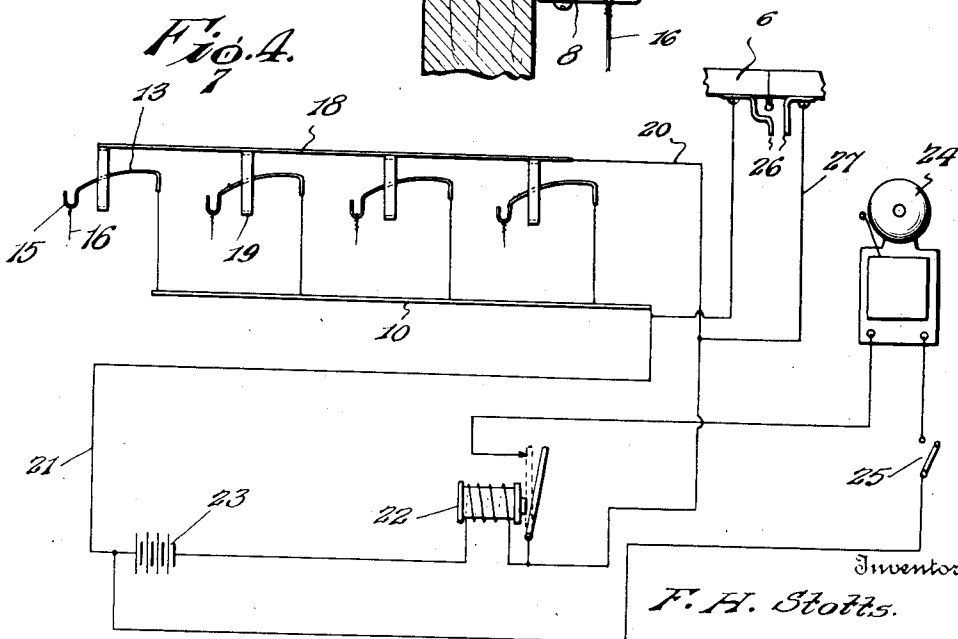


*Fig. 4.*



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## UNITED STATES PATENT OFFICE

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## BURGLAR ALARM

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Application January 8, 1934, Serial No. 705,801

2 Claims. (Cl. 200—52)

This invention relates to burglar alarms for installation in dwelling houses, banks, offices, factories, and other buildings and has for its object to provide a comparatively simple and thoroughly efficient device of this character which will automatically sound an alarm should an attempt be made to burglarize the building by forcing an entry through a door, window, or other closure thereof.

5 A further object of the invention is to provide a burglar alarm including a plurality of guard or detector wires positioned at suitable intervals across a door or window and operatively connected with an electrical switch so that should  
10 a burglar cut the panel of a door or the glass of a window in an effort to obtain access to the lock thereof, the guard or detector wires will be severed or otherwise actuated to operate the switch and sound an alarm.

15 A further object is to decrease the cost of installation by mounting the switch units on a carrying bar or support so constructed that any desired length thereof may be cut off to fit the width of the door or window to be protected and  
20 said bar, with the required number of switch units properly mounted thereon, quickly secured in position, thus eliminating the expense of individual installation and wiring of the several switch units.

25 A further object is to provide a burglar alarm which will operate either on a closed or open circuit and which will continue to ring until the switch is cut off.

30 A still further object of the invention is generally to improve this class of devices so as to increase their utility, durability and efficiency.

35 In the accompanying drawings forming a part of this specification and in which like numerals of reference indicate corresponding parts in all the figures of the drawings,

40 Figure 1 is a perspective view of the interior of a building equipped with a burglar alarm constructed in accordance with the present invention.

45 Figure 2 is a perspective view, partly broken away, of one of the switch-carrying bars and its associated parts,

Figure 3 is a vertical sectional view taken on the line 3—3 of Figure 2.

50 Figure 4 is a diagrammatic view of the electrical circuit.

55 The improved burglar alarm, forming the subject-matter of the present invention, is designed for installation in dwelling houses, offices, factories, and other buildings, and by way of illus-

tration is shown in connection with a dwelling house in which 5 designates one of the inner walls, 6 a door and 7 a window of conventional construction.

In carrying out the invention, I employ a carrying bar or support 8 formed of insulating material and of a sufficient length to carry a plurality of switches indicated at 9, these switches being  
5 mounted on the carrying bar before said bars are positioned over the doors and windows of the building to be protected. One of the carrying bars 8 is positioned over each door and window, as best shown in Figure 1 of the drawings, and  
10 each bar is provided with a central strip 10 of copper or other conducting material having incisions 11 formed therein and the metal between the incisions pressed outwardly to form sockets  
15 12 adapted to receive the adjacent ends of switch arms 13. The inner end of each switch arm is extended downwardly within the adjacent socket 12 and thence bent upwardly to form a  
20 hook 14 which serves to rigidly anchor the switch arm to the socket. Each switch arm is preferably formed of spring metal, the outer end thereof being depressed to form a hook 15 to which  
25 is secured, in any suitable manner, the adjacent end of a guard or detector wire 16, the lower end of which is fastened by a nail or similar fastening device 17 to the bottom of the door 6 or to the  
30 window frame so as to anchor the detector wires in proper position across the inner faces of the closures. Secured to the upper edge of each carrying bar 8 is a metal strip 18 and fastened to  
35 said strip and to the lower edge of the bar 8 are metal contacts preferably in the form of loops 19, the intermediate portions of which are spaced from the conductor strip 10, as best shown in Figure 3 of the drawings. Secured to the ends of the strips 10 and 18 are wires 20 which are connected in an electric circuit 21 including a relay  
40 22, battery 23, and signal bell or alarm 24 so that, when the arm 13 of any selected switch engages either the upper or lower end of the adjacent loop 19, the circuit will be closed through the battery and relay and cause the bell 24 to ring thereby sounding an alarm which will continue to ring until the occupant of the house or building manually opens the switch 25. The construction of the relay is such that when any  
45 switch arm 13 is closed, the coil of the relay will be energized and through the medium of its armature close the circuit through the bell and said bell will continue to ring until manually shut off, as previously stated.

Mounted on the door 6 and door jamb, respec-

tively, are contacts 26 connected in an auxiliary circuit 27 with the main circuit 21 so that should the door be moved to open position the contacts 26 will interengage and sound an alarm. In connection with the windows of the building, I preferably provide each sash thereof with an auxiliary guard or detector wire 28, the upper end of which is connected with one of the switch arms 13, while the lower end thereof is connected with the sash, as indicated at 29, so that should an attempt be made either to raise the lower sash of the window or lower the upper sash, a longitudinal pull will be exerted on the adjacent auxiliary detector wire and operate the switch arm to close the circuit and sound an alarm. The carrying bars 8 for the windows are secured to the upper portion of the window frame by screws or similar fastening devices while the carrying bars for the doors are secured to the upper portion of the doors and are movable therewith, as will be readily understood. Each door is also preferably provided with an auxiliary detector wire 30 which may be connected with the door knob so that should the door knob be turned, a pull will be exerted on the detector wire to close the switch arm at the upper end thereof and sound an alarm.

As many controlling switches and detector wires may be positioned across the inner face of a door or window as is found most desirable in actual practice, but it is preferred to have said wires arranged close enough together so that should a burglar attempt to cut the panel of the door or the glass of the window in an effort to release the lock, the wires will either be severed or distorted out of their normal position and in either event the controlling switches will be actuated to close the circuit and sound an alarm.

It is proposed to make the carrying bars or strips 8 in relatively long lengths and to install the controlling switches and their associated parts thereon prior to positioning the bars over the doors and windows of a building thereby saving time in installing the alarm and consequently saving the cost of mounting and wiring each individual switch. In other words, inasmuch as the controlling switches are already mounted on the carrying bar, it is merely necessary for the workman to cut or sever a sufficient length of the bar to agree with the width of the door or window to be protected and then fasten the carrying bar above the door or window with screws or similar fastening devices, as previously stated, and as these bars, with the switches thereon, can be kept in stock, it necessarily follows that the installation of the system in a house may be materially expedited and a material saving in time and labor effected.

In operation, assuming the detector wires or guards to be positioned at the rear of the doors and windows of a building, as shown in Figure 1, should a burglar attempt to effect an entry through either a door or window of the building, as for instance by cutting the panel of the door around the lock, or cutting the glass of the window, the adjacent detector wires will either be severed or pressed outwardly to an abnormal position. Should a detector wire be severed the resiliency of the switch arm 13, connected therewith, will cause said arm to move upwardly and engage the upper end of the contact loop 19 and close the circuit through the bell to sound an alarm and should the detector wire be pressed outwardly or moved to an abnormal position, the

downward pull on the detector wire will cause the arm 13 to engage the lower end of the loop 19 and likewise close the circuit through the bell, it, of course, being understood that under normal conditions the contact arms 13 are in neutral position. Should an attempt be made to raise or lower the sashes of the window or to open the door by turning the knob thereof, the auxiliary detector wires 28 and 30 will have a downward pull exerted thereon thus causing the contact arms to engage the lower portion of the switch loops and close the circuit to sound an alarm, and, as previously stated, the alarm will continue to ring until the occupant of the house manually opens the switch 25.

The device is extremely simple in construction and capable of being installed at a minimum expense, and will produce maximum results with practically no attention on the part of the occupant of the house or other building in which the system is installed.

Having thus described the invention, I claim:

1. In a burglar alarm, a carrying bar, the bar being angular in cross section to provide opposed side faces and an outer face, a conductor strip extending longitudinally upon one side face of the bar for the full length thereof, a conductor strip extending longitudinally upon the outer face of the bar for the full length thereof out of contact with the first strip and in insulated relation thereto, U-shaped loops of conductive material straddling said bar with the bridge portion of each loop extending across the outer face of the bar in spaced relation to the second strip, the arms of each loop being secured against the side faces of the bar with one arm in contacting engagement with the strip, and spring-biased contacts formed from strands extending longitudinally of the bar through the loops transversely thereof between the second strip and bridge portions of the loops, each contact having one end anchored to the second strip and of its own resiliency urged toward a position for engaging one arm of the companion loop, the other end portion of each contact being adapted for engagement by a pull wire whereby the contacts may be held out of normal engagement with the last mentioned arms of the loops by tensioning the wires and move into engagement therewith of their own resiliency when released, the contacts being also movable into engagement with the other arms of the loops by abnormal pull upon the wires.

2. In a burglar alarm, a carrying bar, conductor strips extending longitudinally of said bar for the full length thereof and spaced transversely from each other, loops extending transversely of said bar with their intermediate portions extending across one strip in spaced relation thereto and their end portions secured to the bar and insulated from said strips, one end portion of each loop engaging the other strip, and spring-biased contacts extending longitudinally of said bar through said loops in spaced relation to the loops, each contact having one end anchored to the first strip and biased toward a position for engagement with its companion loop, the other end portion of each contact being adapted for engagement with a pull wire whereby upon tensioning the wires the contacts may be drawn to a set position out of engagement with the loops, release of the pull wires permitting return of the contacts into engagement with the loops.

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