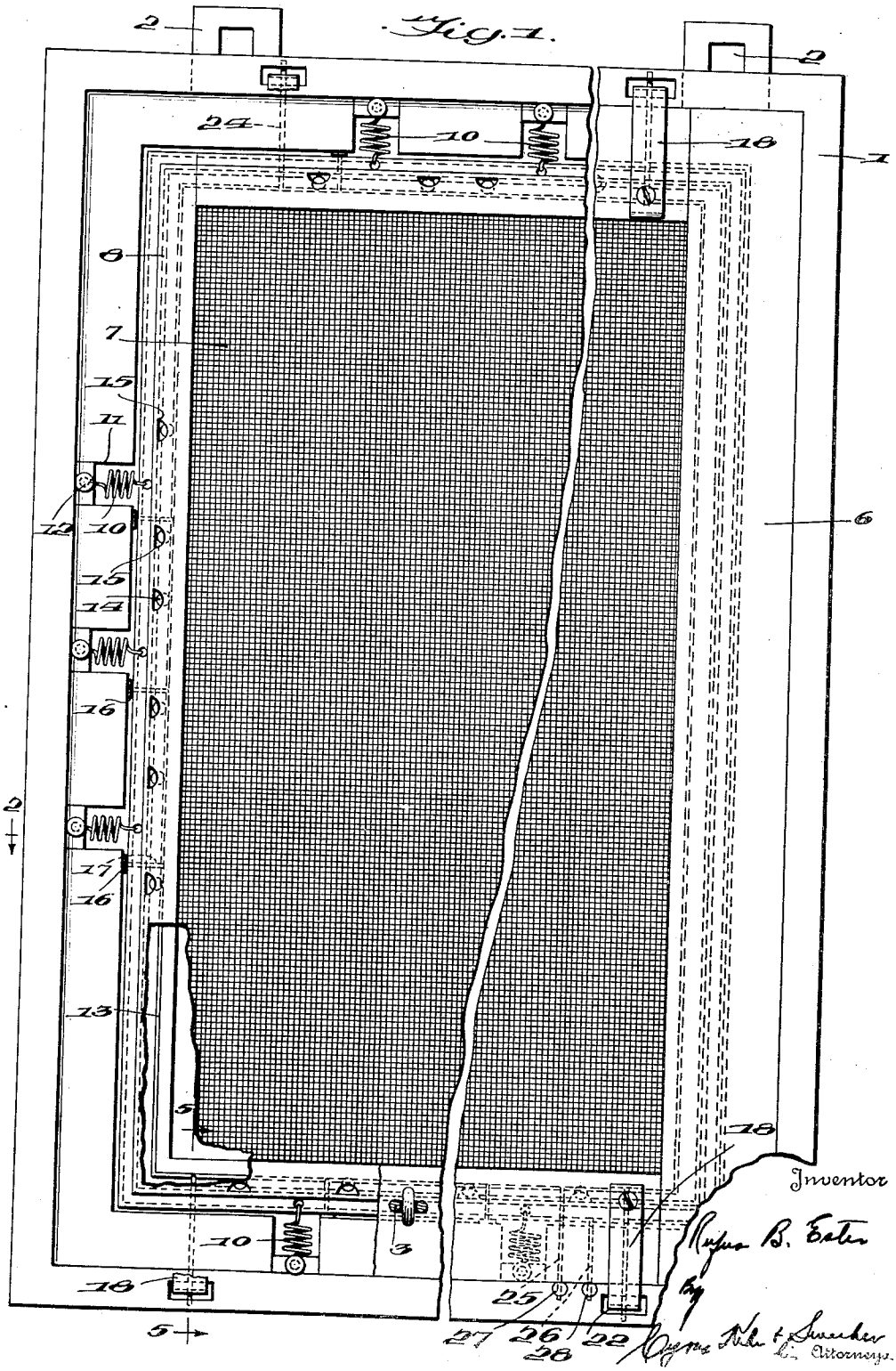
June 25, 1940. R. B. ESTES 2,205,945

BURGLAR ALARM

Filed June 11, 1938 2 Sheets-Sheet 1

Fig. 1.



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BURGLAR ALARM

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2 Sheets-Sheet 2

Fig. 2.

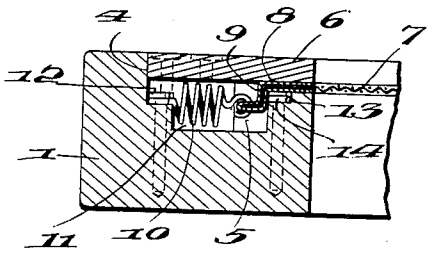


Fig. 3.

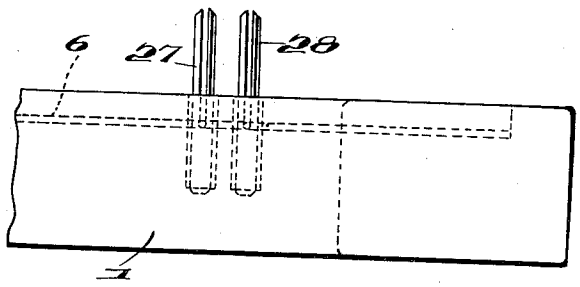


Fig. 4.

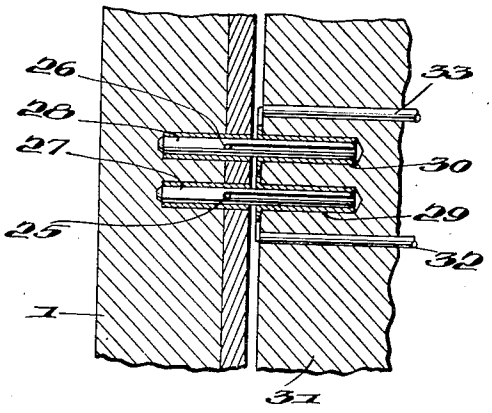


Fig. 5.

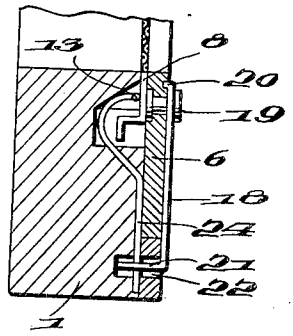


Fig. 7.

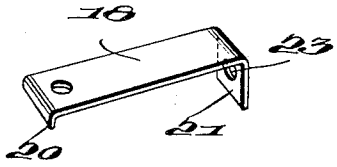
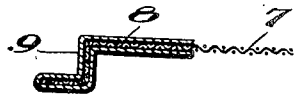


Fig. 6.



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2,205,945

BURGLAR ALARM

Rufus B. Estes, Knoxville, Tenn.

Application June 11, 1938, Serial No. 213,272

6 Claims. (Cl. 200—52)

This invention relates to an improvement in burglar alarms, and more particularly to an alarm used in connection with a window screen for residence and apartment use, whereby an alarm will be given if an unauthorized person should try to enter the building by opening the screen or cutting through the wire thereof.

The object of the invention is to provide for the closing of an electric circuit to an alarm device by any tampering with the screen, upon the application of pressure against the outside of the screen wire, upon the cutting through of the screen wire, or the bodily removal of the screen from the window frame.

A further object of the invention is to improve the construction of a burglar alarm of this character, whereby it can be manufactured and sold at comparatively small cost and economically, because of its simple design, thus enabling the average home owner to use a burglar alarm in the windows of his house for the protection thereof, with the assurance that the device will function, even when it has been in place for a substantial period of time.

In carrying out these objects, the invention utilizes the mounting of the screen wire resiliently in its screen frame with electrical contacts so arranged therebetween, as to close an electric circuit to the annunciator if the screen wire should be cut through or if the screen wire should be pressed outwardly or inwardly, or if the screen frame should be unfastened and moved outwardly from its mounting in the window frame for the purpose of removal. Provision is made by the mounting of the screen wire in its frame, whereby tampering with the wire itself or attempted removal of the screen will cause an alarm, which insures complete protection against an unauthorized entrance to a building at such a screened window or other opening with which this alarm is used.

I have illustrated one form of the invention in the accompanying drawings, in which:

Fig. 1 is a side elevation of a window screen from the inside of the building embodying this invention with parts broken away to show the interior construction thereof;

Fig. 2 is a horizontal sectional view through a side of the screen showing one of the spring mountings thereof;

Fig. 3 is a partial bottom edge view of the screen frame showing the electrical connections for the wires;

Fig. 4 is a transverse sectional view through the electrical connections between the screen frame and the window frame of the building;

Fig. 5 is a vertical sectional view through one of the screen frame connections substantially on the line 5—5 of Fig. 1;

Fig. 6 is an enlarged transverse sectional view through the binding frame of the screen wire; and

Fig. 7 is a perspective view of one of the spring detents.

Fig. 1 shows a window screen removed from a window opening without illustrating the window frame or sill. The window screen illustrated utilizes a frame 1, which may be constructed of wood or other suitable material and is shown as provided with the usual supporting hinges 2 at the top thereof to engage hooks to be provided on the cooperating window frame or casing for supporting the screen therein, the screen usually being held in place at the bottom by a hook designated 3 which is attached to the window screen and engages an eye in the window sill.

As shown in Figs. 1 and 2, the screen frame 1 is recessed on its inner side at 4, with a coacting groove 5 extending circumferentially in the frame 1. The recess 4 is covered by a plate 6 which may be constructed also of wood or of other suitable insulating material, which is preferably the same as the insulating material forming the screen frame 1.

The screen wire is designated by the numeral 7 and is adapted to extend vertically throughout the inner area of the screen frame. The peripheral portion of the screen wire is enclosed preferably in a metal edging 8 which is shown as formed of sheet metal, which should be of electrical conducting material, and having an offset shoulder 9, as shown in Fig. 2. The binding edge 8 of the screen wire is slidable laterally between adjacent portions of the screen frame 1 and its inner cover 6 for bodily movement of the screen wire relative to its supporting frame. The screen wire is held normally in a central position by a series of springs or other resilient means designated by the numeral 10 and which are connected with the peripheral portions of the binding 8 outwardly of the shoulder 9. Openings 11 are provided in the frame 1 to receive the springs 10, as illustrated, the outer end of each spring being attached to a nail or other fastening 12 for securing the same to the screen frame 1.

An electrical conducting wire 13 extends along the inner portion of the screen frame 1, adjacent the binding of the screen, and has nails or other contacting devices 14 attached thereto at intervals along the inner side of the shoulder 9

of the screen binding, normally in slightly spaced relation from the shoulder 9 out of contact therewith. However, upon the application of pressure to the screen wire 7, such as would be caused by the unauthorized pressing thereon or an attempt to cut out the wire, the adjacent portion of the binding 8, which is preferably flexible, will be drawn against the adjacent contact device or devices 14 to close an electrical circuit between the contact material of the binding 8 and the wire 13 to close an electrical circuit to the annunciator. Orifices 15 may be provided at intervals in the binding 8 to facilitate proper location and spacing of the contact device 14 relative to the adjacent portion of the shoulder 9.

Mounted in the outer portion of the groove 5, preferably adjacent each of the springs 10 is contact device 16 in position to be engaged by the outer edge of the screen binding 8, when pulled outwardly by the spring 10 upon bodily movement of the spring wire or release thereof, such as would be caused by cutting or other unauthorized tampering therewith. The contact devices 16 are connected at 17 with the wire 13, so as to close an electric circuit to the annunciator through the wire 13 upon either inward or outward movement of the screen binding 8, such as would be caused by the unauthorized tampering with the screen.

At intervals at the upper and lower portions of the screen frame, there are provided additional contact devices adapted to close an electric circuit if the screen frame should be opened relative to the window frame. Each of these contact devices comprises a contact strip of electrical contacting material designated 18, which should be of spring material also, so as to flex away from the screen frame upon removal of the latter from the window frame, such contact device normally being held in position by the pressure between the screen frame and window frame.

The contact strip 18 overlies the cover plate 6, as shown in Fig. 5, and is secured thereto by rivet, screw, or other fastening 19, which attaches said contact strip 18 to the screen binding 8 for an electrical connection therebetween. One end of the strip 18, adjacent the rivet 19, is turned inward as at 20 to engage in the cover plate 6, to hold said end of the contact strip in place.

The opposite end of the contact strip 18 is turned inward at 21 through an orifice 22 in the frame 1, being loosely received in said orifice for outward flexing relative thereto upon loosening of the screen frame from the window frame. The inturned end 21 has an opening 23 therein, as shown in Fig. 7, through which opening a contact wire 24 extends from its point of connection with the conducting wire 13, as shown in Fig. 5. Thus opening movement of the screen frame relative to the window frame will allow flexure of one or more of the contact strips 18 outwardly relative to the screen frame 1, causing engagement between the periphery of the opening 23 and the wire 24, closing the electric circuit between the wire 13 and the screen binding 8, thence to the annunciator for giving an alarm. Connected respectively with the conducting wire 13 and with the screen binding 8 are connecting wires 25 and 26, which extend to electrical contact plugs 27 and 28, respectively, carried by the screen frame 1 in positions to engage in sockets 29 and 30 mounted in the window casing, designated 31 in Fig. 4. Wires 32 and 33 are connected with the sockets 29 and 30 and extend to a circuit containing a source of electrical supply and an annunciator, such as a gong, bell, lights, etc., which annunciator will be energized upon the closing of a circuit through the screen wire connections described above for giving an alarm of the tampering with the screen.

The mounting of the screen wire 7 in the frame for slight bodily movement or yielding movement relative to the frame does not interfere with its effectiveness in screening against flies and other insects, rendering the screen completely fly-proof, in addition to its function as an alarm device.

I claim:

1. A circuit closure for a burglar alarm comprising a frame adapted to surround a building opening, a sheet of screen wire within said frame adapted to cover said building opening, a binding strip enclosing the peripheral edges of the screen wire and having an offset shoulder portion, said frame having a groove receiving said binding strip, a plurality of springs attached to the frame and to the binding strip for stretching the screen wire over the opening, and circuit closing means on opposite sides of said shoulder portion for closing an alarm circuit upon relative movement of a portion of the screen and frame.

2. A circuit closure for a burglar alarm comprising a frame adapted to surround a building opening, a sheet of screen wire within said frame adapted to cover said building opening, a binding strip enclosing the peripheral edges of the screen wire and having an offset shoulder portion, said frame having a groove receiving said binding strip, a plurality of springs attached to the frame and to the binding strip for stretching the screen wire over the opening, contact devices arranged respectively on opposite sides of the binding strip normally in spaced relation therefrom in position to contact with said binding strip upon movement thereof relative to the frame, and electrical conducting means connecting said contact devices together.

3. A circuit closer for a burglar alarm comprising a frame adapted to surround a building opening, a sheet of screen wire within said frame adapted to cover said building opening, a binding strip attached to an edge of the screen and extending laterally therefrom at an angle thereto, and contacts on respective opposite sides of the binding strip in position for engagement thereby.

4. A circuit closer for a burglar alarm comprising a frame adapted to surround a building opening, a sheet of screen wire with said frame adapted to cover said building opening, a binding strip attached to an edge of the screen and extending laterally therefrom at an angle thereto, and contacts on respective opposite sides of the binding strip in position for engagement thereby respectively upon movement of the binding strip in either direction, a conductor connected with said contacts adapted to close an alarm circuit, and resilient means attached to said binding strip tending to move the same in one direction.

5. A circuit closer for a burglar alarm comprising a frame adapted to surround a building opening, said frame having a recess therein, a sheet of screen wire within said frame adapted to cover said building opening, a binding strip extending along respective opposite edges of the screen wire in the recess embracing the wire and attached thereto, said binding strip at each edge of the screen having a laterally offset portion and an out-turned edge, resilient means attached to said out-turned edge tending to move the

same outwardly and stretch the wire, contacts on opposite sides of the laterally offset portion in positions for engagement thereby, and a conductor connected with said contacts adapted to close an alarm circuit when one of said contacts is engaged thereby.

6. A circuit closer for a burglar alarm comprising a frame adapted to surround a building opening, said frame having a recess therein, a sheet of screen wire within said frame adapted to cover said building opening, a binding strip extending along respective opposite edges of the screen wire in the recess embracing the wire and attached thereto, said binding strip at each edge of the screen having a laterally offset portion and an out-turned edge, a plurality of coiled springs connected at opposite ends with the frames and out-turned edge of the binding strip tending to move the same outwardly and hold the wire in place in the frame, contacts at the outer and inner sides of the laterally offset portion in positions for engagement thereby, and a conductor connected with said contacts adapted to close an alarm circuit when one of said contacts is engaged thereby.

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