

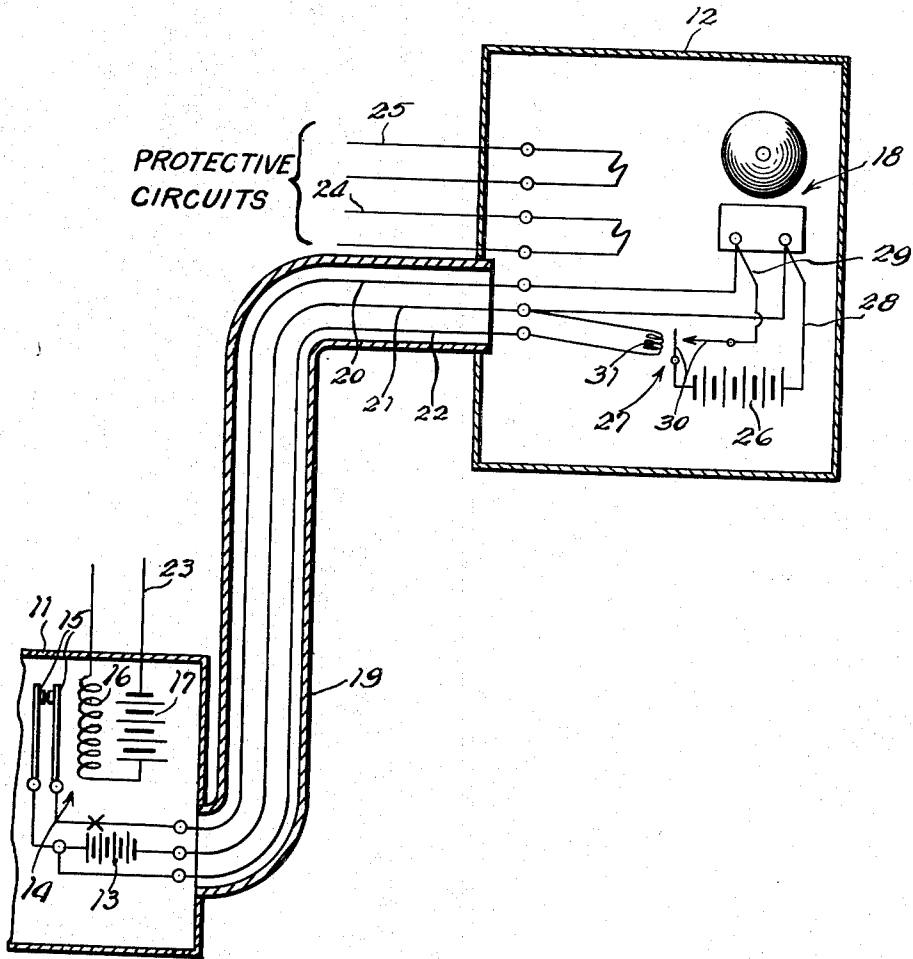
Aug. 17, 1954

F. E. POULSON

2,686,909

ELECTRIC BURGLAR ALARM SYSTEM

Filed Dec. 28, 1949



INVENTOR.
Frank E. Poulson.
BY.
Thos. Okey Mucklenberg.
Attys.

UNITED STATES PATENT OFFICE

2,686,909

ELECTRIC BURGLAR ALARM SYSTEM

Frank E. Poulson, Chicago, Ill., assignor to Certified Burglar Alarm Systems, Incorporated, Chicago, Ill., a corporation of Illinois

Application December 28, 1949, Serial No. 135,414

5 Claims. (Cl. 340-276)

1

The present invention relates to an alarm system and has special reference to a burglar alarm system which gives a warning signal in case of unauthorized entry to the premises protected thereby.

More particularly this invention relates to a burglar alarm system in which severing of the cable containing the leads supplying current to the alarm signal will itself result in setting off the alarm.

The present burglar alarm system preferably comprises an inside instrument box having a relay or other circuit control means and a source of energy such as a battery, and an outside signal box having a bell, siren, or other warning signal therein. The signal is connected to the energy source and relay by conductors extending between the two boxes, so that whenever the relay contacts are closed the signal is actuated.

The relay winding is in series with a source of energy and one or more protection circuits suitably arranged to guard doors, windows, and frequently the walls of premises and also the instrument and signal boxes. As long as the protection circuits remain closed the relay winding is energized and the relay is held up. However, whenever any of the protection circuits are broken or crossed, such as by an unauthorized person attempting to enter the premises, the relay contacts close and the signal sounds.

While such a system is generally sufficient protection, it may be rendered inoperative by anyone locating and severing conductors connecting the inside control instrument and outside signal boxes. To overcome this deficiency the signal box of the present system is provided with an auxiliary protection circuit including a source of energy, control means, such as a relay, and the alarm signal. The winding of this last relay is connected to the source of energy in the inside instrument box by conductors in the cable, one of which may be one of the conductors connecting the source of energy in the instrument box to the signal. Normally the relay contacts in the signal box are held up, but when the cable and conductors are severed, these contacts close and the alarm sounds.

An object of the present invention is to provide an effective burglar alarm system of wide application.

Another object is to provide such a burglar alarm system which will sound a warning signal if any of the protection circuits are broken or crossed.

A still further object is to provide a burglar alarm system in which the alarm signal will be

2

actuated if the conductors ordinarily furnishing current to the signal are severed.

Further objects and advantages will be apparent from the following description and claims when considered with the accompanying drawing, in which the single figure is a wiring diagram of a burglar alarm system embodying the present invention.

Referring more particularly to the drawing, the burglar alarm system there disclosed comprises an instrument box 11 and a signal box 12. The instrument box, which is normally situated inside the building or premises to be protected, preferably has therein a source of energy, such as a battery 13 and a relay 14 comprising contacts 15 and a winding 16. Other suitable circuit control means may be employed in place of the relay 14. A second source of energy, such as a battery 17 for the various protection circuits is also arranged in the instrument box or may be located elsewhere in the protected premises.

The signal box 12 is situated outside the premises where the alarm may be most easily heard when actuated, such as over the front door to the premises. A warning signal of any suitable type may be employed, that shown being a bell 18. A siren would be equally suitable, and a visual signal may be used in place of or in addition to the audible signal.

A cable 19 extends between the instrument and signal boxes and has therein a plurality of conductors, three being shown for purposes of illustration and numbered 20, 21, and 22. As shown in the figure, two of the conductors 20 and 21 connect the bell 18 in circuit with the relay contacts 15 and the battery 13. Thus, whenever the contacts 15 are closed, the bell 18 will be sounded.

The winding 16 of the relay 14 is connected in series with the battery 17 and the usual protection circuits 23, 24, and 25 provided for the various doors, windows, boxes, and walls desired to be protected. These protection circuits are connected in series so that a break in any one will prevent the flow of current in the circuit 23 leading into the instrument box. As thus arranged, the winding is energized and normally holds the relay up until one of the protection circuits is broken, when the contacts 15 will close. A sealed and protected master switch is usually provided by means of which the alarm system may be rendered inoperative when not required for protection purposes.

With a system as above described it is possible to render the alarm inoperative by severing the cable 19 and the conductors therein, thereby pre-

venting energization of the bell 18. To prevent this, a monitor warning circuit may be provided in the signal box. Such circuit preferably includes a battery 26 or other suitable source of energy and circuit control means such as a relay 27 located in the outside signal box. Conductors 28 and 29 connect the relay contacts 30 and the battery 26 with the signal. Thus whenever the contacts 30 are closed the bell or other signal will be energized and actuated. The winding 31 of the relay 27 is preferably connected to the battery 13 by one of the conductors connecting this battery to the bell, such as the conductor 21, and a second conductor 22. The relay winding 31 normally holds up the relay 27. However, severance of the cable 19 and either of the conductors 21 or 22 or crossing of these conductors will result in the closing of the contacts 30 and sounding of the bell 18.

While the cable 19 is shown as having three conductors therein, a greater number may be provided so that the conductors connecting the bell 18 to the battery 13 may be independent of those connecting the relay coil 31 to the battery 13. In either construction, severance of the cable 19 and the conductors therein will result in the alarm being sounded.

In any event the arrangement shown is simple and extremely useful because it is necessary to disrupt one of the two conductors 20 and 21 of the bell circuit to disconnect the bell 18. By using one of these conductors with conductor 22 as the circuit for the control 27, the possibility of opening this circuit when cable 19 is cut is thereby greatly increased and the ability of defeating the effectiveness of control 27 is thereby decreased.

While I have shown a particular embodiment of my invention, it will be understood that I do not wish to be limited thereto since many modifications may be made, and I therefore contemplate, by the appended claims to cover any such modifications as fall within the true spirit and scope of my invention.

I claim:

1. An alarm system of the character described comprising in combination an instrument box having therein a portion of a protection circuit including energization means a source of energy for a warning signal and a relay having the winding thereof in said protection circuit biased to closed position and normally maintained in open position by energization of a protection circuit, a signal box having a warning signal therein, a cable extending between said boxes having a plurality of conductors, certain of said conductors connecting said signal in circuit with said energy source and said relay, said signal box having therein in circuit with said signal a source of energy and a solenoid switch for being moved to open position when energized, said switch means being connected to the source of energy in said instrument box by conductors in said cable for normally maintaining said switch means in open position.

2. An alarm system of the character described comprising in combination a protection circuit including energization means, an instrument box having therein a battery for a warning signal and a relay biased to closed position with the winding thereof in said protection circuit, a signal box having a warning signal therein, a cable extending between said boxes having a plurality of conductors, with certain of said conductors connecting said signal in circuit with said bat-

tery and said relay, said signal box having therein a second battery and a relay biased to closed position in circuit with said signal, said last relay having its winding connected to the battery in said instrument box by conductors in said cable for normally maintaining said last signal circuit open.

3. An alarm system of the character described comprising in combination a protection circuit energization means, an instrument box having therein a battery for warning signal and relay biased to closed position with the winding thereof in said protection circuit, a signal box having a warning signal therein, a cable extending between said boxes having at least three conductors therein with a pair of said conductors connecting said signal in circuit with said battery and said relay, said signal box having therein a second battery and a relay biased to closed position in circuit with said signal, said last relay having its winding connected to the battery in said instrument box by one of said pair of conductors and an additional conductor in said cable for normally maintaining said signal circuit open.

4. An alarm system of the character described comprising in combination an instrument box having therein a portion of a protection circuit having energization means, an energy source for a warning signal and circuit control means biased to closed position and arranged to be maintained in open position by energization of said protection circuit, a signal box having a warning signal therein, a cable extending between said boxes having a plurality of conductors, certain of said conductors connecting said signal in circuit with said energy source and said circuit control means, said signal box having therein a source of energy and circuit control means biased to closed position in circuit with said signal, the circuit control means in said signal box being connected to the source of energy in said instrument box by conductors in said cable for normally maintaining said circuit control means in open position.

5. An alarm system of the character described comprising in combination an instrument box having therein a portion of a protection circuit having energization means, an energy source for a warning signal and a relay having the winding thereof in said protection circuit biased to closed position and normally maintained in open position by energization of said protection circuit, a signal box having a warning signal therein, a cable extending between said boxes having a plurality of conductors, certain of said conductors connecting said signal in circuit with said energy source and said relay, said signal box having therein a source of energy and circuit control means biased to closed position in circuit with said signal, the circuit control means in said signal box being connected to the source of energy in said instrument box by conductors in said cable for normally maintaining said circuit control means in open position.

References Cited in the file of this patent

UNITED STATES PATENTS

70	Number	Name	Date
	585,171	Arnold	June 29, 1897
	1,365,693	Hess	June 18, 1921
	1,881,832	Miranda	Oct. 11, 1932
	1,920,742	Chapman et al.	Aug. 1, 1933
75	2,353,452	Fruh	July 11, 1944