

(No Model.)

A. STROMBERG.
CIRCUIT CLOSER FOR BURGLAR ALARM SYSTEMS.

No. 530,975.

Patented Dec. 18, 1894.

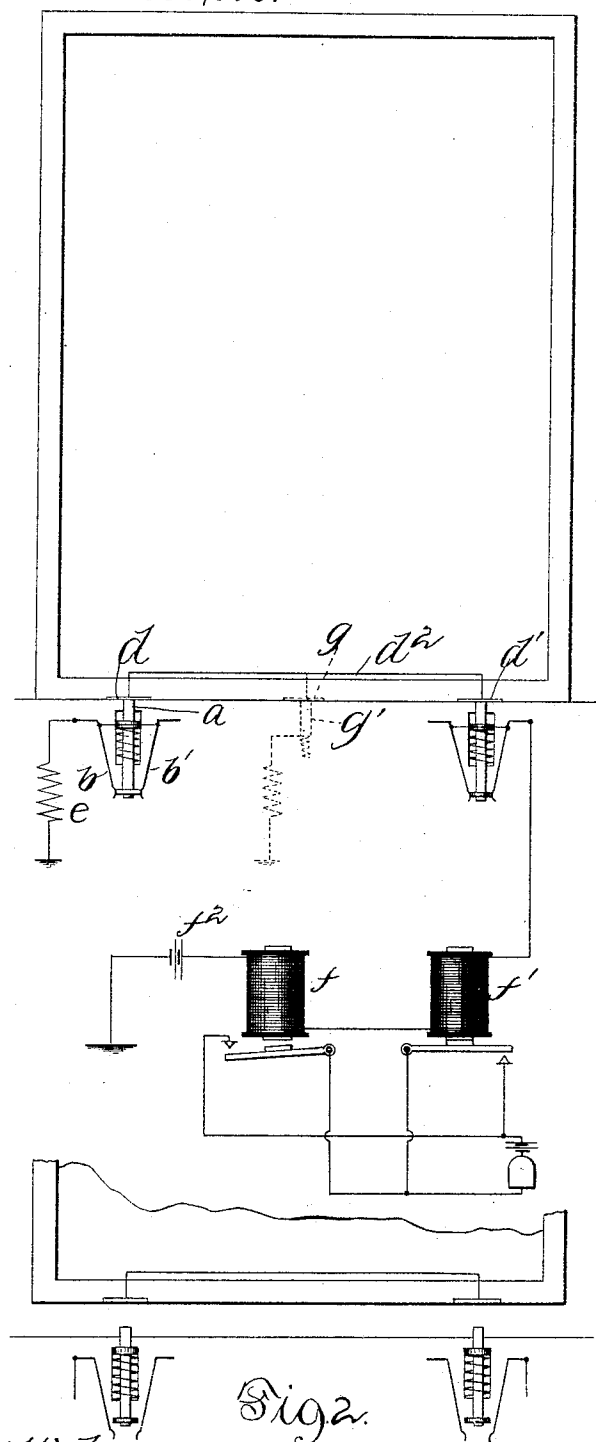


Fig. 1.

Fig. 3.

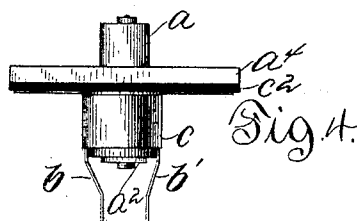


Fig. 4.

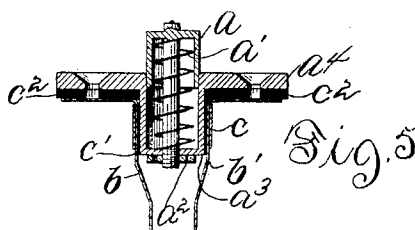


Fig. 5.

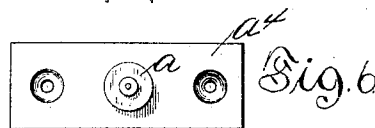


Fig. 6.

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UNITED STATES PATENT OFFICE.

ALFRED STROMBERG, OF CHICAGO, ILLINOIS.

CIRCUIT-CLOSER FOR BURGLAR-ALARM SYSTEMS.

SPECIFICATION forming part of Letters Patent No. 530,975, dated December 18, 1894.

Application filed May 24, 1894. Serial No. 512,339. (No model.)

To all whom it may concern:

Be it known that I, ALFRED STROMBERG, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Circuit-Closers for Burglar-Alarm Systems, (Case No. 14,) of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to a circuit closer for burglar alarm systems, and its object is the provision of a circuit closer to be used in connection with the covering of an opening to be protected, whereby the removal of the covering will result in the opening of the circuit.

Heretofore, it has been proposed to provide a circuit closer in connection with the covering of an opening, as, for instance, the sash of a window, so that so long as the sash remains closed the movable element of a switch is maintained in position to complete an electric circuit, the movable element assuming an alternative position to open the circuit when the sash is opened. The objection to this construction has been that an instrument may be inserted between the sash and the movable element and the movable element maintained depressed while the sash may be opened without opening the circuit.

My invention herein, in its preferred form, comprises a movable element adapted to be depressed when the sash, or other covering, is closed to make contact with a circuit terminal and close the circuit, the movable element at the same time making contact with a circuit terminal upon the sash to complete the circuit. If the contact between the movable element and either of the circuit terminals be interrupted, the circuit will be opened.

My invention will be understood by reference to the accompanying drawings, in which—

Figure 1 is a diagrammatic view of a window equipped after the manner of my invention, the sash being shown in its closed position. Fig. 2 shows the sash partially opened. Fig. 3 shows the manner of applying my in-

vention to a door. Fig. 4 is a side view of the circuit closer. Fig. 5 is a sectional view thereof. Fig. 6 is an end view thereof.

Like letters refer to like parts in the several figures.

The circuit closer comprises a plunger a pressed outward by a spring a' , the end a^2 of the plunger being adapted, when pressed inward, to make contact with a pair of spring contacts $b b'$, which are electrically connected by means of a metallic ring c which surrounds the same. A ring of insulation c' rests between the springs $b b'$ and the guide a^3 in which the plunger moves, the lower ends of the springs being likewise insulated from the plate a^4 by strips $c^2 c^2$ of insulating material. The plunger a is thus normally insulated from the springs $b b'$.

As shown in Fig. 1 the plunger is located on the window frame beneath the lower edge of the sash, and is depressed, when the sash is closed, to make contact with springs $b b'$. At the same time the end of the plunger makes contact with a metallic plate d provided upon the sash. The circuit is shown completed through two such plungers, the plate d' being connected with the plate d by conductor d^2 . Between the springs $b b'$ and ground is located a resistance e . The central office apparatus comprises electro-magnets $f f'$, in circuit with a battery f^2 , the magnet f being adapted to close a local circuit to sound an alarm when an abnormally large current flows, and the magnet f' to close the local circuit when the current flow ceases.

If the sash be raised, the circuit will be opened by the movement of the plunger out of contact with the springs and the plate on the sash. If it be attempted to ground the circuit, the resistance will be cut out and give the alarm. If it be attempted to maintain the plunger depressed, the circuit will be opened between the plunger and the plate on the sash. If it be attempted to maintain the plunger in electrical connection with the plate on the sash, the ascent of the plunger will break the connection with the springs, thereby opening the circuit. Instead of providing two such plungers in connection with the sash, but one may be employed, the circuit being

completed through a pair of co-acting contacts *g g'* (indicated in dotted lines) when the sash is closed.

As shown in Fig. 3, the plungers, when applied to a swinging covering, as a door, may best be located upon the edge upon which the hinges are provided.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination with the covering of an opening, of a plate carried thereon and connected in circuit, a plunger adapted to make contact with said plate and to be depressed when said covering is closed, and contact springs adapted to be engaged by said plunger in the depressed position thereof, said springs being connected in circuit, substantially as described.

2. The combination with the covering of an opening, of a pair of electrically connected plates carried thereon, a pair of plungers adapted to make contact with said plates respectively, and to be depressed when said covering is closed, and contact springs adapted

to be engaged by said plungers in the depressed positions thereof, substantially as described.

3. The combination with the covering of an opening, of a plate carried thereon and connected in a protective circuit, a plunger adapted to make contact with said plate and to be depressed when said covering is closed, contact springs adapted to be engaged by said plunger in the depressed position thereof, a resistance connected between said springs and ground, a local circuit at the central office containing a battery and a signal device, an electro-magnet thereat adapted to close said local circuit when the protective circuit is opened, and an electro-magnet adapted to close said local circuit when said resistance is cut from the circuit, substantially as described.

In witness whereof I hereunto subscribe my name this 11th day of May, A. D. 1894.

ALFRED STROMBERG.

Witnesses:

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