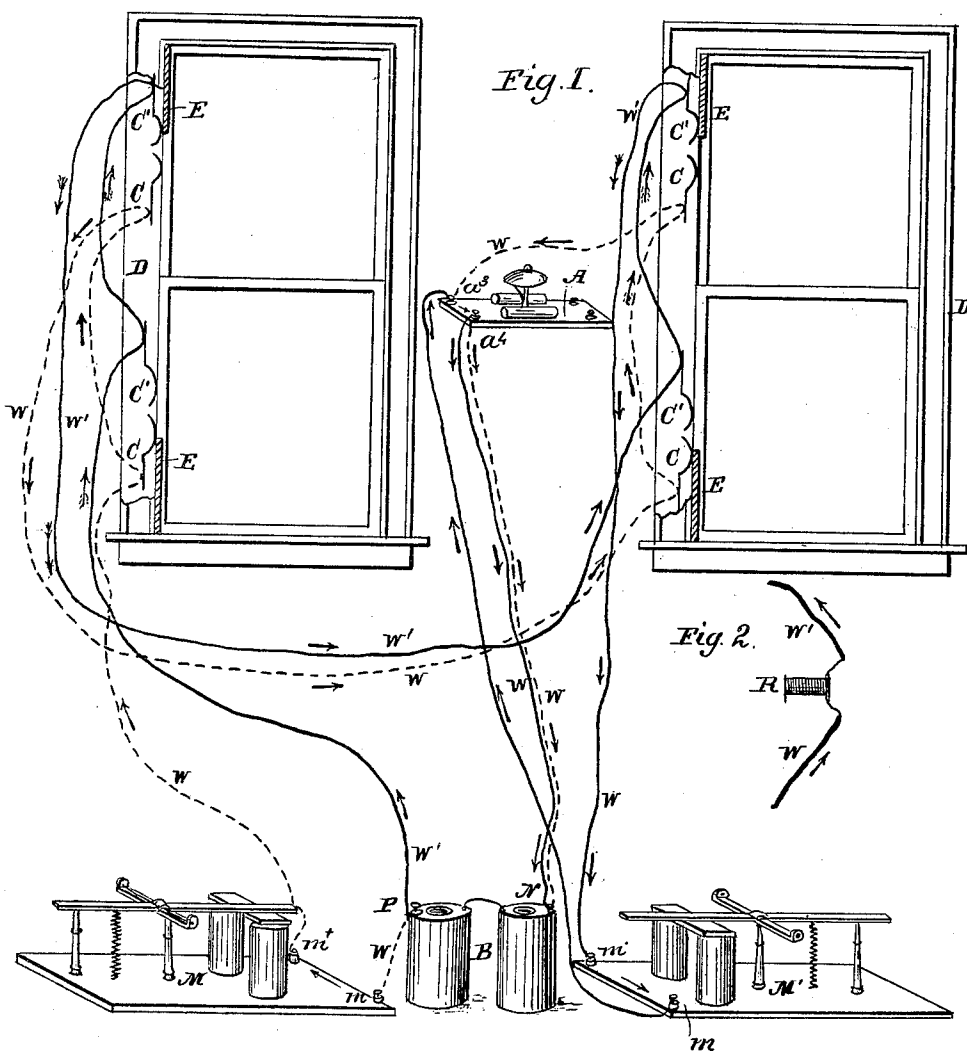


W. B. GUERNSEY.

Burglar Alarm.

No. 108,257.

Patented Oct. 11, 1870.



Witnesses:
Octavio Smith
Wm. H. Brewster, Jr.

Inventor:
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UNITED STATES PATENT OFFICE.

WILLIAM B. GUERNSEY, OF JERSEY CITY, NEW JERSEY.

IMPROVEMENT IN ELECTRO-MAGNETIC BURGLAR-ALARMS.

Specification forming part of Letters-Patent No. 108,257, dated October 11, 1870.

To all whom it may concern:

Be it known that I, WILLIAM B. GUERNSEY, of Jersey City, in the county of Hudson and State of New Jersey, have invented a new and useful Improvement in Alarms, of which the following is a specification:

My invention combines the advantages and avoids the disadvantages of the two varieties of electro-magnetic alarms, which are distinguished as the continuous-circuit system and the open-circuit system. To this end I employ a continuous circuit, or a circuit capable of being made continuous at will, arranged with resistances, so that the current which is allowed to pass will not possess sufficient electro-motive power to affect the alarm, but having such arrangements at windows or doors, and other places to be guarded, as will on any tampering therewith "short-circuit" the current past or around the said "resistances" to an extent sufficient to actuate the alarm.

Figure 1 shows in perspective two electro-magnets with separate conductors connected with a common battery, each conductor passing through an alarm, and through suitable connection devices, which may be located in the frames of windows, or at any desired points, in such a manner that the opening of a door or window, or the performance of any act which it is desired to detect, will connect one conductor with the other, and avoid both electro-magnets. For this purpose the magnet of one conductor is located near the positive pole, and that of the other near the negative pole of the battery. Fig. 2 illustrates a modification in which one magnet is dispensed with, and a simple resistance-coil is introduced in such a manner that the act to be detected will close a short circuit, avoiding the resistance, and thus sounding the alarm. This more simple form of the apparatus is applicable to places where a single window, door, or other object is to be protected.

P represents the positive, and N the negative, pole of a battery, B. Of the full lines W, and the dotted lines W', each represents a continuous conductor passing through the alarm A through one or the other of the magnets M M', and one or other of the connection-springs C C', which are arranged in pairs in the frames of the windows D in such a manner that the opening of either window will,

through the medium of the connecting-plates E, unite the two conductors.

It will be seen that there are two wire conductors, leading about the house or premises to be guarded, from the positive pole P of the battery shown to and through the bell or alarm, and thence returning to the negative pole N of the said battery. One of these conductors, W, indicated by a dotted line, leads direct from the battery to and through one of the resistance-magnets M, entering at the binding-screw *m* and leaving from the binding-screw *m*^x, and thence to each of the four connecting-springs shown at C C C C at the two windows, thence from the last of said springs to the binding-screw *a*³ of the bell, and so through the bell-magnet, and out at the binding-screw *a*⁴, and on to the other pole of the battery. But the other conductor W', marked with a heavy line in the drawing, leads to its connecting-springs C' C' C' C' first, and then to and through its own resistance-magnet M'. From this magnet the said conductor leads to and through the bell-magnet to the battery in the same manner and direction as the other. The severing of either of the said conductors would deprive one of the said resistance-magnets of its magnetism, consequently releasing its armature, and such release can easily, by known means, as by use of "local" battery, or of clock-work or other contrivances, be made to sound an alarm. It will also be seen that the movement of either sash shown, to an extent sufficient to make contact between the two spring-connections in either frame by the metal strips E shown upon each sash, will, by allowing a current to pass through the bell-magnet unimpeded by the said resistances, cause the bell to ring. In other words, the bell-magnet having small resistance is not influenced by a current which has first been obliged to pass through a much greater resistance, but is readily influenced by the short circuit when the resistances are eliminated.

Where but a single place is to be protected—as, for example, for the vault-door of a bank—the apparatus may be simplified by dispensing with one of the resistance-magnets, and employing instead a simple resistance, R, Fig. 2, so arranged that the opening of the door or window, or the doing of any act which the

alarm is to detect, will short-circuit the conductor by forming a connection between the wires across or independently of the resistance.

Various other modifications will readily be suggested which will accomplish the object without departing from the essential principles of the invention, the design being to obtain an alarm in which the signals shall be given by the closing or making of connection between two different conductors, or between two parts of the same conductor, as is done in the open or interrupted circuit alarms, while at the same time there is or may be a continuous circuit in the said conductor or conductors which, by proper arrangements, may be made to give notice to the person in charge of said alarm of any injury, accidental or malicious, which may have happened to his instrument or its belongings.

I claim as my invention—

1. The combination, in an electro-magnetic alarm, of a continuous circuit or circuits with a sufficient resistance or resistances, and an alarm

or alarms when the said combination is so arranged that the severing or interrupting of said circuits, or either of them, shall cause the said alarm or alarms to sound; and also that the short-circuiting or diverting the course of the electrical current in said circuit or circuits around or past the said resistance or resistances shall sound an alarm—this, when the whole arrangement is properly combined with a sufficient battery, and with connections or contrivances at points to be guarded, which will, upon the doing of certain acts, or the happening of certain things, short-circuit the said electrical current or currents past or around the said resistance or resistances, and so give the desired alarm.

2. In a burglar or fire alarm, the combination of an open and a closed circuit, substantially as set forth.

W. B. GUERNSEY.

Witnesses:

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