JOHN G. BUTLER.

Improvement in Electro-Magnetic Burglar-Alarms.

No. 114,406. Patented May 2, 1871.

Fig. 2.

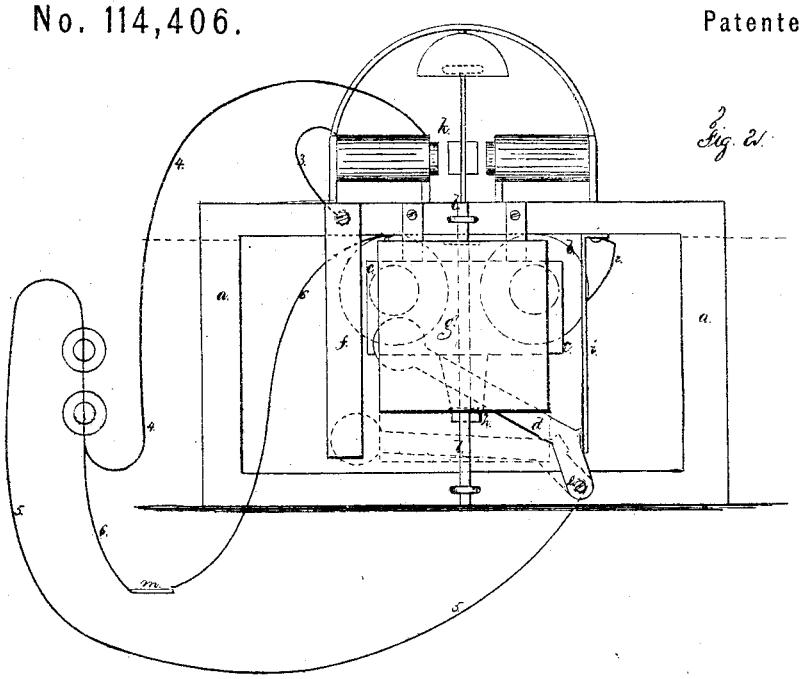
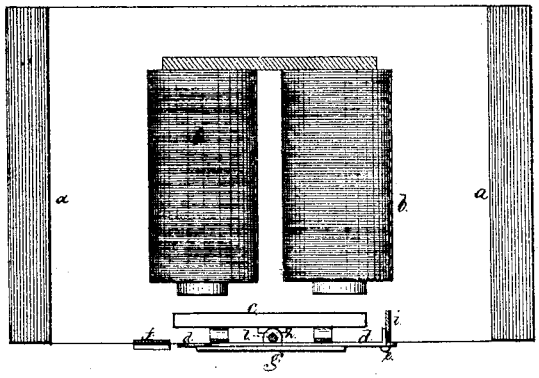


Fig. 1



Witnesses:

Geo. D. Walker.

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JOHN G. BUTLER, OF GLEN'S FALLS, NEW YORK.

Letters Patent No. 114,406, dated May 2, 1871.

IMPROVEMENT IN ELECTRO-MAGNETIC BURGLAR-ALARMS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, JOHN G. BUTLER, of Glen's Falls, in the county of Warren and State of New York, have invented an Improvement in Electrical Alarms, and the following is declared to be a correct description of the same.

Heretofore electrical alarms have been constructed so that when the circuit is closed by opening a door or window, in the case of a burglar-alarm, the alarm will be sounded until the circuit is broken by the closing of the door or window.

The object of my invention is to provide an alarm that is operated by an electrical current, and that will continue to give the alarm after the cause is removed until reset by the attendant.

I provide an automatic switch that, when set for use, makes a circuit to the battery, electro-magnet, and door or window to be guarded, and when this circuit is closed by the opening of the door or window the magnet changes the switch, which opens a new circuit independent of the door, so that the alarm continues to sound after the door or window is closed.

In the drawing—

Figure 1 is a plan of the apparatus partially in section, and

Figure 2 is an elevation, showing the electrical connections.

a a is a suitable case for holding the apparatus;

b is an electro-magnet; and

c, the swinging armature.

d is a switch, hung on a center at *e* in such manner that its weight will cause it to rest against the spring arm *f* when not otherwise sustained.

The armature *c* is provided with a catch, *h*, which when the armature is not attracted by the magnet sustains the switch *d* in a position where it does not touch the spring *f*, but is in contact with a spring arm, *i*. This arm *i* is connected to the magnet *b* by the wire 2.

The spring arm *f* connects with one pole of the battery by the wires 3 and 4 through the alarm apparatus. The battery has another wire, 5, to the switch *d*, and a wire, 6, from the magnet to the battery, takes in the door or window to be guarded.

A plate, *g*, is provided, which slides on the rod *l*, the switch *d* passing between this plate and rod, so that the switch and plate move together.

The object of this plate *g* is to indicate, by a number on its surface, the particular magnet disturbed, the falling of the plate bringing the number in sight through an opening in the case *a*.

The apparatus is set by raising the plate *g* and switch *d*, thereby placing the switch *d* in contact with arm *i*, and it and the plate *g* are sustained by the catch *h* on the armature.

A door at *m* being opened, a circuit is established through 6, magnet *b*, wire 2, arm *i*, switch *d*, and wire 5 to the battery, which causes the magnet to attract its armature and thus withdraw the catch from under the switch, which latter is instantly caused by its weight to move away from contact with *i* and connect with the spring *f*, thus making a new circuit through wire 3, alarm *k*, wire 4, battery wire 5, and switch *d*, which causes the alarm to sound; and, although the door may be instantly closed, the alarm continues, as the last-named circuit does not include the door.

By this construction the first pulsation of electricity caused by a momentary opening of door or window brings an alarm into action that does not cease until the apparatus is reset.

It will be evident that this device may be applied for other purposes than a burglar-alarm, and that the parts can be varied from the arrangement described.

I claim as my invention—

The automatic switch, in combination with the spring arms *i* and *f*, and electro-magnet, arranged and operating in the manner and for the purposes set forth.

Signed by me this 24th day of February 1871.

JOHN G. BUTLER.

Witnesses:

GEO. D. WALKER,

CHAS. H. SMITH.