

J. P. SNYDER.

Electro-Magnetic Burglar-Alarm.

No. 107,301.

Patented Sept. 13, 1870.

Fig. 1

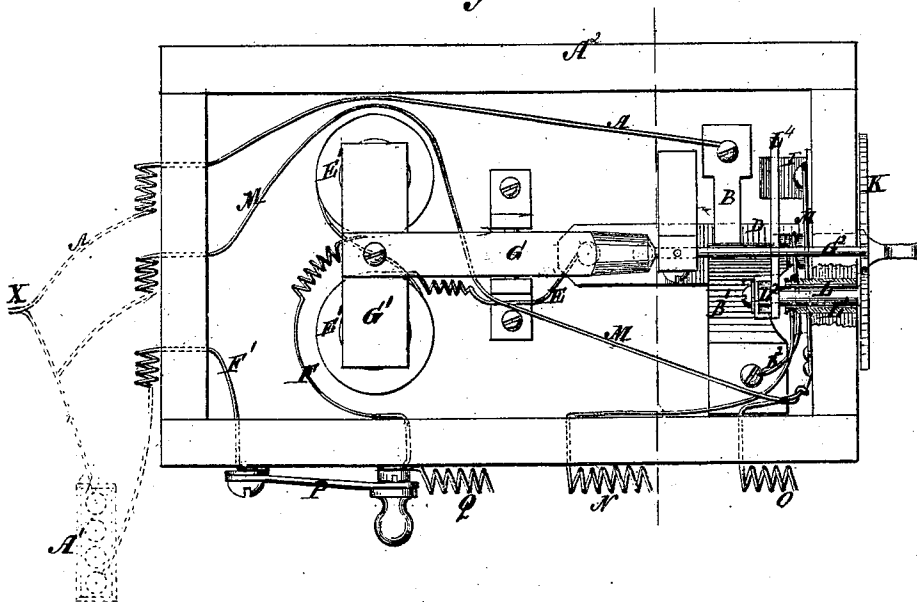
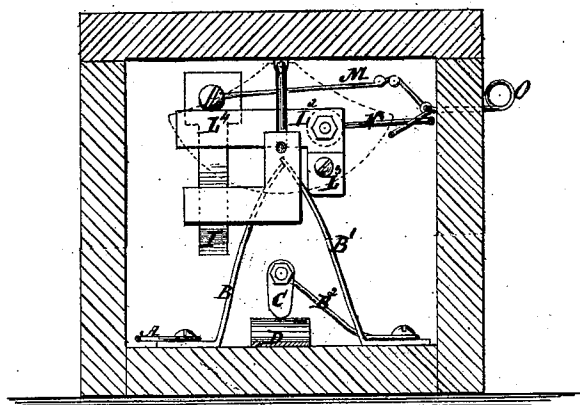


Fig. 2



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UNITED STATES PATENT OFFICE.

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IMPROVED AUTOMATIC CIRCUIT-CLOSER FOR ELECTRO-MAGNETIC BURGLAR-ALARMS.

Specification forming part of Letters Patent No. **107,301**, dated September 13, 1870.

To all whom it may concern:

Be it known that I, JAMES P. SNYDER, of the city of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Automatic Electro-Magnetic Indicator; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification.

This invention relates to improvements in magnetic apparatus for sounding alarms in buildings when windows or doors are opened by burglars for unlawfully entering them; and consists in an improved arrangement of apparatus for setting a secondary current in action by means of the current first set in action by the movement of the door or window, which secondary current cannot be broken again except by the person in charge, so that the burglar, having once set the alarm in action, cannot stop it to prevent exposure thereby.

Figure 1 is a plan view of my improved apparatus, and Fig. 2 is a transverse sectional elevation of the same.

Similar letters of reference indicate corresponding parts.

A is a wire connecting one pole of a voltaic battery, A¹, with a flat spring, B, secured to the bottom of a box or case, A², near one end. B¹ is another spring, attached to the bottom of said box in front of spring B, and having a tendency to spring away from the top of said spring B. This spring is connected to the other pole of the battery through the medium of the wire B², switch C, spring D, wire E, coils E¹, wires F¹, and switch P.

G is a lever, attached to an armature, G¹, which will be attracted when this circuit is closed and a current established through it by causing the spring B¹ to bear against B. The end of this lever G, opposite the armature, is provided with a rod, G², which projects through a notch in the end of the box, and falls into a notch in a plate, K, pivoted eccentrically on the outside of the end of the box. When the lever is raised the plate will swing around on its spindle or support L, which projects through a tube, L¹, into the inside of the box, where a bell-crank, L², is connected to it, so as to turn with

it. The short arm of this bell-crank has a block of non-conducting substance, L³, attached to it. This block bears against the spring B¹ when the plate K is held up by the lever G², and presses it against a spring, B, so that the above-described circuit will be complete. At the same time the long arm L⁴ projects along the side of the end of the box, in front of a spring, I, attached to the said end, and projecting downward and outward from it, so that when the lever G² is raised and the plate K and arm L⁴ fall the latter will strike against the spring I, and a new circuit will be opened through spring B¹, arm L⁴, spring I, and a wire, M, the latter connecting spring I with the wire A, the falling of the plate K releasing the spring B¹ from B, and bringing the arm L⁴ against the top of spring B¹. A wire, N, connects the tube L¹ of the spindle L with an electro-magnetic alarm, (vibrating armature.) A wire, O, connects the wire M with the alarm, and a wire, Q, is connected with the alarm at one end, and with switch P and wire F at the other end.

The operation is as follows: The wire A, leading from the battery to the spring B, is separated between the battery and spring B at any point, as at X, which may be considered a window or door, where, if attempts be made to raise the window or open the door, the two separated ends will be brought into contact, whereby an electrical circuit will be established (the switches being closed and the plate K being held up by the rod G² of the lever G) through the wire A, springs B B¹, switch C, springs D, wires E F¹, and switch P to the opposite pole of the battery.

During this circuit of the electricity the armature G¹ will be attracted by the magnet, and the rod G² raised out of the notch in plate K, letting it fall, by which the springs B and B¹ become separated, cutting off this circuit, and the arm E¹, falling against the spring I and against the top of spring B, opening another circuit through wire M, spring I, arm L⁴, tube L¹, wire N, through the alarm-switch P and wire F, and back to the battery, which will keep the alarms in action until stopped by the attendant by replacing plate K or breaking the connection at switch P, whether the connection at X be broken again or not.

In the ordinary indicators for electrical purposes and alarms the making and breaking of the circuit and sounding of the alarm is only continued while such circuit is closed at the point where it was first made; but this indicator automatically establishes another circuit the instant that the first is established, which cannot be broken again by breaking the first, the said second circuit passing from one pole of the battery to the other one, and, through the magnet, causing a continuous ringing of a bell with a vibrating armature.

It is manifest that instead of arranging the springs B B¹ so as to spring away from each other, and the bell-crank L² and block L³ to hold them together when set for closing the first circuit, and allowing them to separate when the plate K falls, I may arrange the springs to bear against each other by their own action, and place a T on the end of the spindle, to strike against each spring and separate them when the plate K falls. The same results may be produced by this arrangement,

which does not differ from the other except in the order of the arrangement of the springs and the action of the attachment to the spindle L on them.

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

1. The combination of springs B B¹, bell-crank L², and springs I, as and for the purpose described.

2. The combination of the springs B B¹, connected with the battery and the magnet, as described, the dropping plate K, lever G G², bell-crank L², and spring I, the said spring I and the crank L² being connected with wires M and N, and through them with the alarm and the battery, all substantially as specified.

The above specification of my invention signed by me this 5th day of May, 1870.

JAMES P. SNYDER.

Witnesses:

GEO. W. MABEE,
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