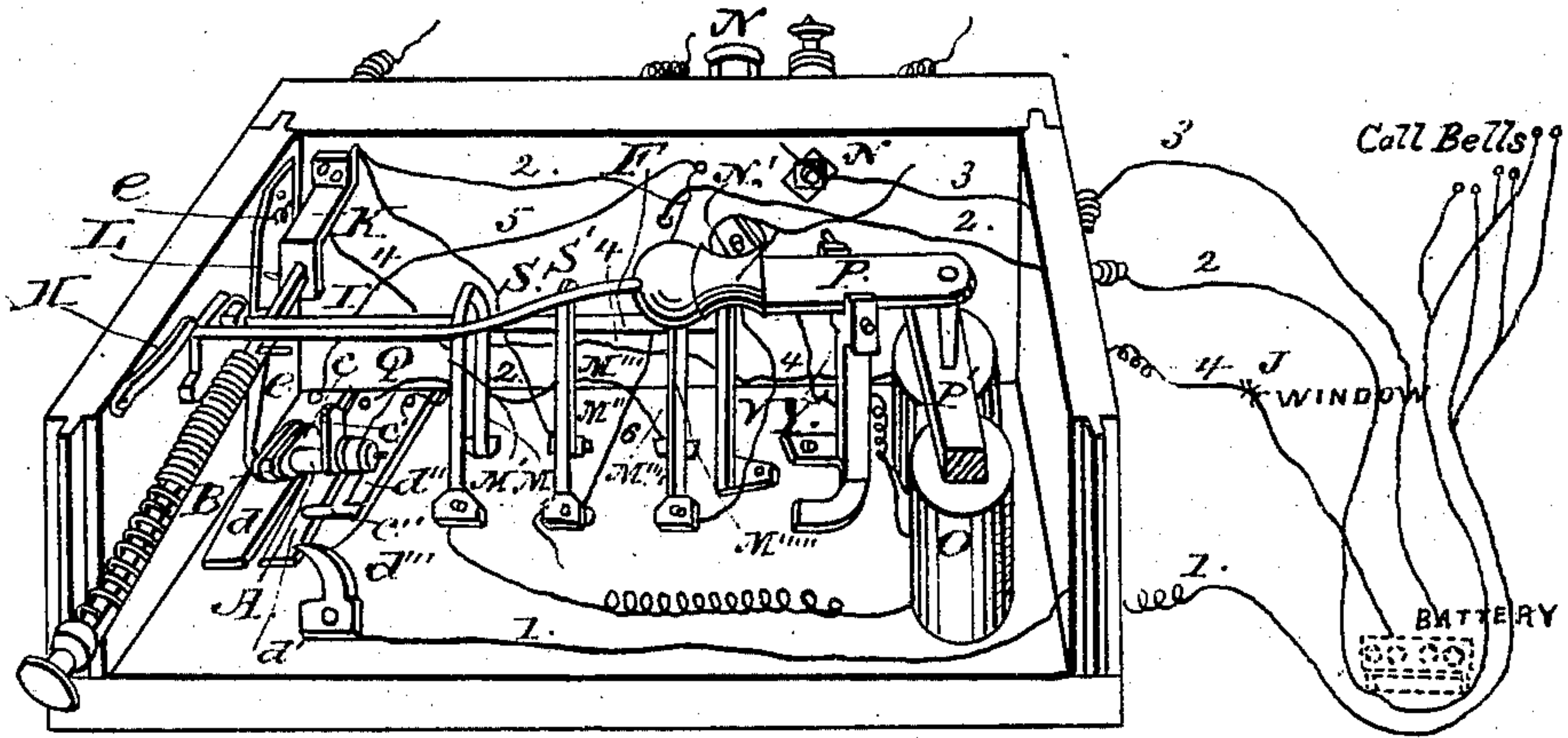


## Burglar Alarm.

**No. 113,589.**

Patented April 11, 1871.

*Fig. 1.*



*Fig. 2.*

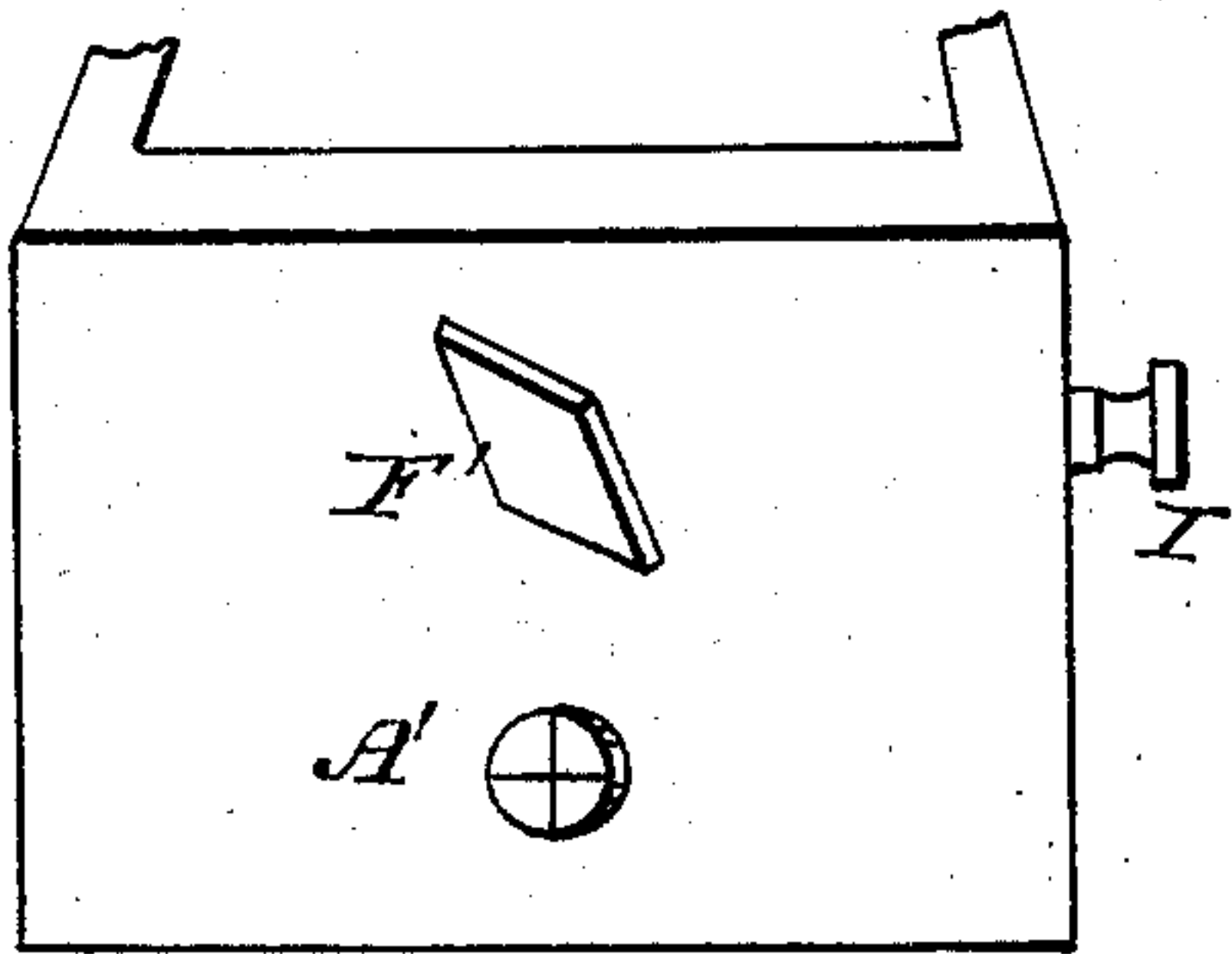
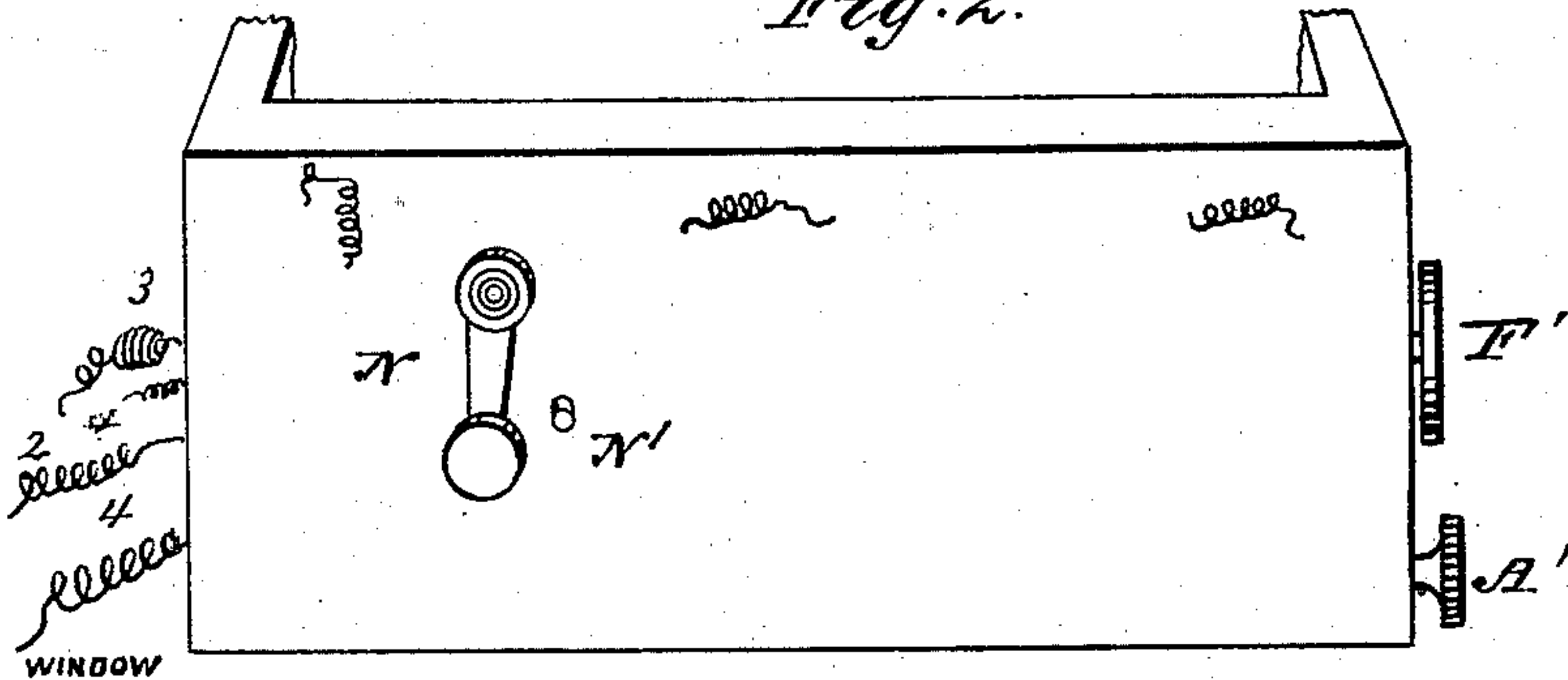
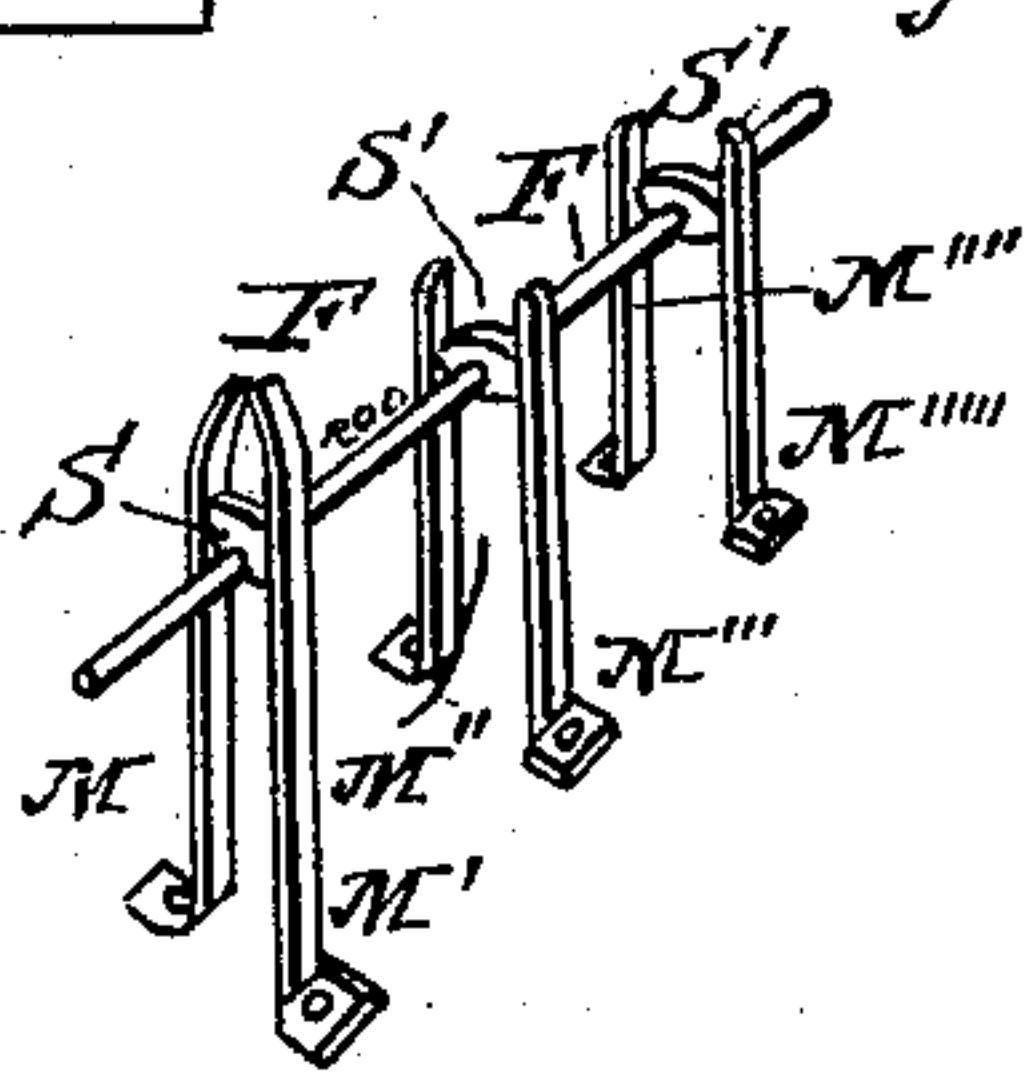


Fig. 4



*Witnesses*

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{  
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# United States Patent Office.

JAMES P. SNYDER, OF BROOKLYN, NEW YORK.

Letters Patent No. 113,589, dated April 11, 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, JAMES P. SNYDER, of the city of Brooklyn, in the county of Kings and State of New York, have made certain novel and useful Improvements in the Mode of Constructing an Electro-Magnetic Indicator and Automatic Changer, Closer, and Distributer of Electric Currents for Burglar-Alarms, and for analogous uses; and I hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing which is lettered to correspond with and form a part of the specification; and

In order that the public may fully understand the nature of my said improvements, and to enable those skilled in the mechanic arts to construct and operate the same, I will describe them as follows, to wit:

Figure 1 is a perspective view of my apparatus showing the interior working parts of the same.

A is a short longitudinal shaft or metallic rod, which passes through the front end of the case containing the apparatus.

The said case constitutes the bearing upon which the shaft A revolves when operated by the knob A', or other device.

B is a metallic plate secured to the shaft A, parallel with and alongside of the metallic arm c, which is separated a short distance from a similar arm, c'; that arm also forms a part of the revolving shaft A, and stands at a right angle to the arm c.

Further to the right, upon the same shaft or axis, is another arm, c'', placed upon the opposite side of the rod A to the other two arms; this arm is in the form of the letter T.

Letters d d' d'' are flat transverse horizontal springs, the back ends thereof being secured to the bottom of the case, while the front ends are a little elevated, in order to allow the same to be operated by the arms c c' c''.

When revolving with the shaft A, the spring-plate d'' is slightly turned upward at the front end or point, so that the under or convex side of its point will press against the convex surface of the vertical curved spring-plate d''', the base of which is firmly fastened to the bottom of the box or case, leaving the curved top free to be acted upon by the spring d'' when forced down by the arm c'.

The downward tapering spring e is secured to the inside of the front end of the case, and passes obliquely downward until its outward curved point e' presses against the revolving plate B with sufficient force to hold the revolving axle A, with its arms c c' c'' at any required position to produce the requisite electrical connection between the said arms and springs d, d', d'', and d'''.

F is a horizontal shaft or rod that passes through the front end of the case, which constitutes its front end bearing, while the other end is supported upon the standard V.

On the outer side of the front end of the box, se-

cured to this rod or shaft, is a diamond-shaped index, F'.

The shaft F is provided with an eccentric plate, G, having its upper edge formed like the segment of a circle, while the lower edge is perfectly straight.

The lower front edge is made to project beyond the circle so as to form a rectangular arm, T, which stands at an angle of forty-five degrees, more or less.

The lower edge of plate G terminates at the back end in a sharp angular point.

H is a pawl, provided with a square notch to receive and hold the projecting arm T on eccentric G when the same is revolved with the shaft F, by which means the said shaft and its appendages are held in their proper position.

I is a transverse rod passing loosely through the side of the box or case into a metallic support, K.

This adjustable rod is wound with a spiral spring, which is secured at the back end by a pin or other device, while the front end of the spring (around rod I) is secured in its place by the front side of the box.

This transverse rod I is provided with a stop or pin, L, at the lower part of the back end thereof.

This pin is one of the principal points of novelty in this application, as it controls, in a measure, the action of the shaft F with its many connections, by being brought in contact with the pointed back end of eccentric G when operated by the rod I and spiral spring.

M M' M'' M''' M'''' M''''' are upright or vertical springs, arranged in pairs on each side of the shaft F, which is provided with blocks s s' tapering from their centers to the point, thus making a double wedge-shaped block that revolves with the shaft F.

The first block s (to the left) separates the upright springs M M'.

This double wedge-shaped block is made of rubber or other non-conducting substance, and arranged upon the shaft F so as to force the curved ends of the springs M M' apart when the shaft F is turned in one position; and by changing the position thereof as well as that of the rubber block s, the tops of these springs come in contact with each other.

The vertical springs M'' M''' M'''' M''''' are arranged in a similar manner to M M', being connected by metallic conducting double wedge-shaped blocks s' s' upon the revolving rod F when the blocks are in a horizontal position, and disconnected when the said wedge-shaped blocks s' s' are in a vertical position.

N N' are a switch and crank.

O is a magnet.

P is a lever attached to the armature.

P', the fulcrum, being at Y, near the magnet O.

To the left end of this lever P is a horizontal rod, Q, the end of which rests upon the eccentric G directly under the pawl or catch H, which is prevented from falling too low by the rod Q.

1 2 3 4 5 6 are connecting-wires.



Figure 2 shows the back of the box.

N N' are the switch and connecting-knob.

F' is the index, more clearly shown at fig. 3.

A' connects with A, fig. 1.

Figure 3 is an end view of the front end of the box or case, showing the index F' and knob A', as well as the handle of the regulating-rod I.

Figure 4 is a perspective view of the vertical springs M M' M'' M''' M'''' M''''' with separating-blocks s s' s'.

Having thus described the various parts of my apparatus I will next describe the *modus operandi*, which is as follows, to wit:

The wire 4, leading from the battery to the spring e, fig. 1, is separated at any point, (as at the door or window J\*;) and if an attempt is made to open the same the two separate ends of this wire will be brought in contact with each other, when an electrical circuit is produced, (the switch N being closed upon its knob N', and the arm c being in contact with the spring d,) through the wire 4, spring e, plate B, arm c, spring d, wire 5 to alarm-switch N, wire 3, to the opposite pole of the battery.

The alarm will continue to sound while the connection is complete at the point J\*, unless the communication becomes broken at the switch N, or the rod A should be turned, thereby breaking the connection of the metallic arms c c' c'' with the springs d d' d''.

If the arm c' should be brought in contact with the spring d', the switch N being closed and the eccentric G being locked by the pawl H, then, if the detached ends of wire 4 should be brought in contact, as at J\*, an electric circuit will be established through said wire spring e, plate B, arm c', spring d', vertical springs M M', electro-magnet O, switch N, wire 3 to the opposite pole of the battery.

During this circuit of electric current the armature P' is attracted to the magnet O, and the rod Q which is attached to the lever P will cause the pawl H to rise, thereby setting the eccentric G free, so that the pointed or sharp end thereof will rise and strike the stop or pin L.

By this action of the eccentric G the rod or shaft F is turned upon its axis, by which means the vertical springs M M' will be separated by the non-conducting wedge-shaped block of rubber s upon shaft F arranged between said springs, by which means the circuit will be changed, and the wedge-shaped metallic block s arranged upon the shaft F between the vertical springs M'' M''' brings said springs in immediate connection with each other, so that another independent circuit is established through the wire 2, springs M'' M''', wire 6, alarm-switch N, wire 3, to the battery.

This circuit will remain closed and the alarm will continue to sound, and the index F' on the outside of the case will show where the connection was made until the rod I is drawn out far enough to raise the eccentric G, by the action of the pin L, until said eccentric is caught and held by the pawl H; or the circuit can be broken by simply turning switch N off the knob N'.

By turning the rod or shaft F another quarter of a circle, and by bringing the arm c'' in contact with the springs d', d'', and d''', the switch N being closed upon the knob N', and the eccentric G being held in position by the pawl H, and if the two detached ends of the wire 4 be brought in contact at the point J\*, an elec-

trical circuit will be immediately established that will cause the rod or shaft F to turn and the springs M and M' to separate; while the springs M'' M''' M'''' M''''' will be brought in connection with the metallic double wedge-shaped blocks s' s' upon the shaft F, thus automatically establishing any number of circuits through the medium of the wires 4 1 2, springs d'' d''' M'' M''' M'''' M''''' switch N, wire 3, and battery; and a number of alarms may be sounded at the same instant, and these circuits will continue closed until broken by the switch N being turned off the pin N', or by drawing out the rod I with stop L so as to raise the eccentric, or its equivalent G, until the pawl H receives and holds the eccentric G and double wedge-shaped blocks or shaft F in an upright position, thereby relieving springs M M' M'' M''' M'''' M''''' from contact with the rod F.

I am aware that ordinary indicators for electrical purposes and alarms, and that the making and breaking of the circuit and sounding the alarm is only continued while such circuit is closed or connected at the point where it was first made.

But the novelty of my present improvement consists in an arrangement of an apparatus which may be operated in a similar manner; or that it may be set so as to automatically establish a second independent circuit that will sound an electro-magnetic alarm continuously; or a number of circuits may be established through electro-magnetic alarms placed at different points, substantially as above, arranged so that their circuits cannot be broken except by the person having charge of the instrument, thereby obviating the necessity of pressing-knobs or connecting-switches to operate the extra alarms. Therefore,

What I claim as my improvements, and desire to protect by Letters Patent of the United States, is—

1. The combination of the arms c c' c'', springs d, d', d'', and d''', plate B, and spring e, for the purpose of changing and distributing circuits, all constructed, arranged, and operating in the manner and for the purpose of making more perfect connections, in the manner and for the purpose specified.

2. The non-conducting double wedge-shaped block s, and conducting metallic wedge-shaped blocks s' s', rod F, and vertical springs M M' M'' M''' M'''' M''''' combined and arranged so as to produce the several circuits in a perfect manner, as well as preventing the corroding of metals.

3. The pawl H, eccentric G, combined with the rod I and stop-pin L, thereby relieving the lever P of any existing lateral strain which would occur if the rod was dropped into a notch in the eccentric G.

4. Counteracting the resistance of the coil of wire which surrounds the magnet O by means of the springs M M' and non-conducting block s, all arranged substantially for the purpose set forth.

5. The mode of regulating and adjusting the eccentric G and bar or shaft F, by means of the adjustable-rod I, with spiral or other spring and stop-pin L, all constructed, arranged, and operating in the manner and for the purpose set forth.

In testimony whereof I hereunto subscribe my name in the presence of two witnesses.

JAMES P. SNYDER.

Witnesses:

JAMES P. McLEAN,  
ANNE S. McLEAN.