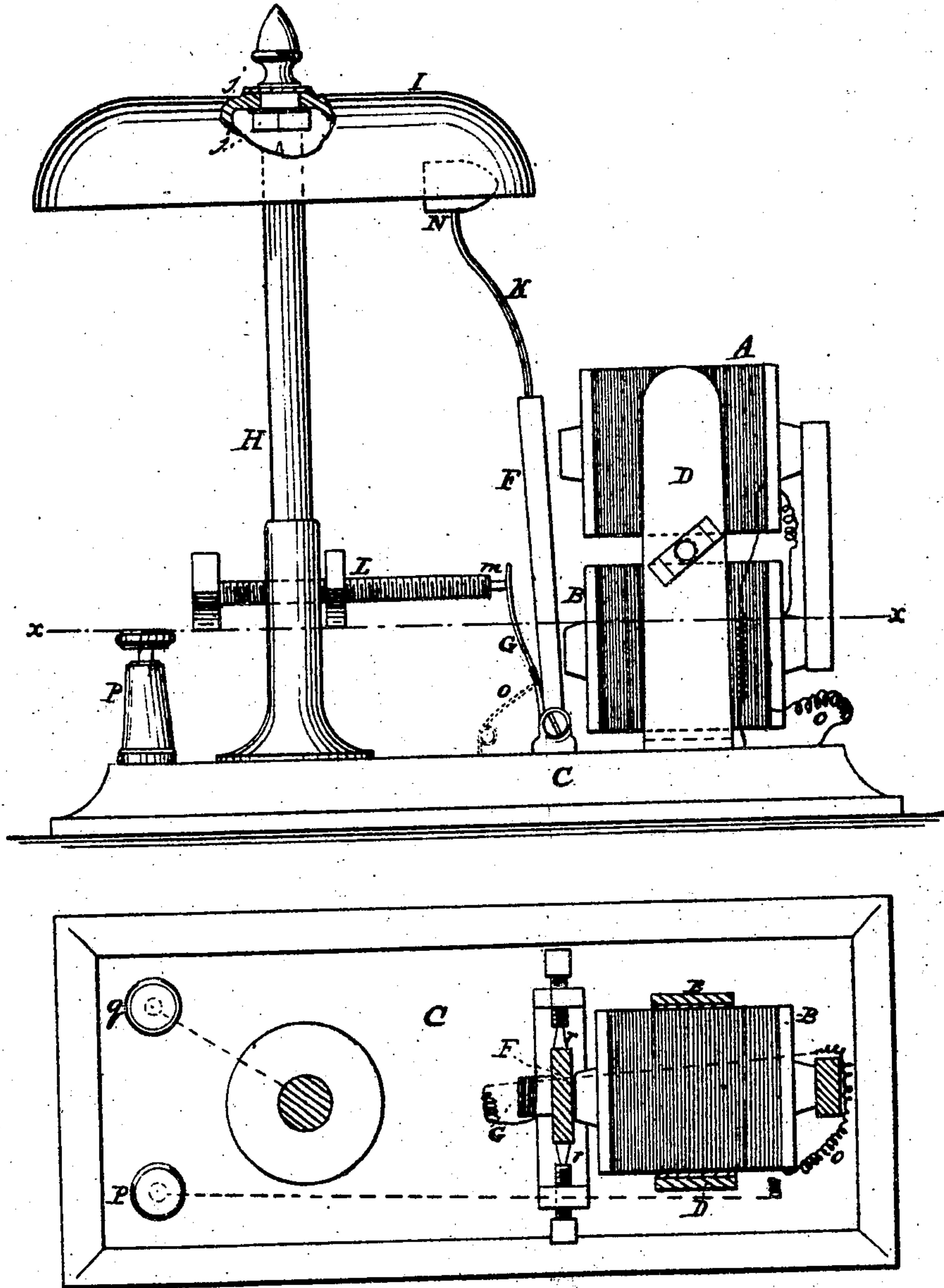


J.C. Butler.

Electro-Magnetic Alarm.

Nº 92,260.

Patented Jul 6. 1869.



Witnesses.

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JOHN G. BUTLER, OF NEW YORK, N. Y.

Letters Patent No. 92,260. dated July 6, 1869.

IMPROVEMENT IN ELECTRO-MAGNETIC 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 New York city, in the county and State of New York, have invented a new and useful Improvement in Electro-Magnetic Alarm; 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 drawings, forming a part of this specification.

This invention relates to improvements in magnetic instruments for making signals or giving alarms, as, for instance, when connected with the doors and windows of a dwelling by the wires of a battery; and consists in the novel construction and arrangement of parts as hereinafter more fully described.

In the accompanying plate of drawings—

Figure 1 represents a side elevation of the instrument, partly in section.

Figure 2 is a horizontal section, looking from the line *x x* of fig. 1.

Similar letters of reference indicate corresponding parts.

A and B represent the magnet, which is elevated above the base C by the two clamps D E.

These clamps may be made of either metal or wood, and insulated as seen in the drawing.

F represents the armature, and

G is a flat spring attached to the back side of the armature.

H is a metallic pillar, standing near the armature, to the upper end of which the bell I is attached. A gong for sounding the alarm or giving a signal may be employed instead of a bell.

The bell is insulated from the pillar, as seen in the drawing at *j j*.

K is the shank of a bell-hammer, attached to the top end of the armature.

L is a screw which passes through the pillar H, against the point *m* of which rests the back of the armature-spring.

The bell-hammer N is arranged in, and sufficiently near the bell, that the bell may be struck upon the forward movement of the armature.

One end of the magnet-wire *o* is attached to the thumb-screw P. The other end is attached to the armature-spring G.

The position of this wire is seen in red color in the drawing, and is dotted in fig. 2, to show its position in the base A.

A wire from the battery also connects the metallic pillar with a second thumb-screw, *q*.

Upon connecting the thumb-screws with a voltaic battery, the circuit is completed. The electricity passing along the wires, around the magnet, causes the armature to be attracted, and causing thereby a stroke to be given by the bell-hammer on the bell.

The connection with the battery being broken as soon as the armature-spring is separated from the point *m* of the screw L, the magnet loses its attraction, and the armature falls back, as it is so balanced on its pivots *r r*, near its lower end, by its connection with the bell-hammer, that it falls back by the force of gravity, thus bringing into connection the armature-spring and the point *m*, and perfecting the connection with the battery, and the armature is again attracted, and again the bell is struck. This action is continued as long as the connection with the battery is maintained.

The effect of the magnet is aided, in giving and continuing the motion of the bell-hammer, by the elasticity of the armature-spring.

When the current of electricity is passed through the spindle of an armature, as is done in some cases, a stoppage of the alarm will occur, when, from friction or from any other cause, a non-conducting substance is formed.

This difficulty is entirely overcome by this arrangement, the wire being connected directly with the armature-spring.

This instrument is adapted to use for various purposes, but especially as a burglar-alarm in dwellings and other buildings.

Having thus described my invention,

What I claim as new, and desire to secure by Letters Patent, is—

1. The connection of one end of the electro-wire directly with the armature-spring, substantially as and for the purposes set forth.

2. The combination of the spring G with the wire *o*, set-screw L, and armature F, carrying the bell-hammer, substantially as described, for the purpose specified.

3. Connecting the electric wire with any portion of the bell-hammer armature, as herein described, for the purpose specified.

The above specification of my invention, signed by me, this 20th day of January, 1869.

JOHN G. BUTLER.

Witnesses:

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ALEX. F. ROBERTS.