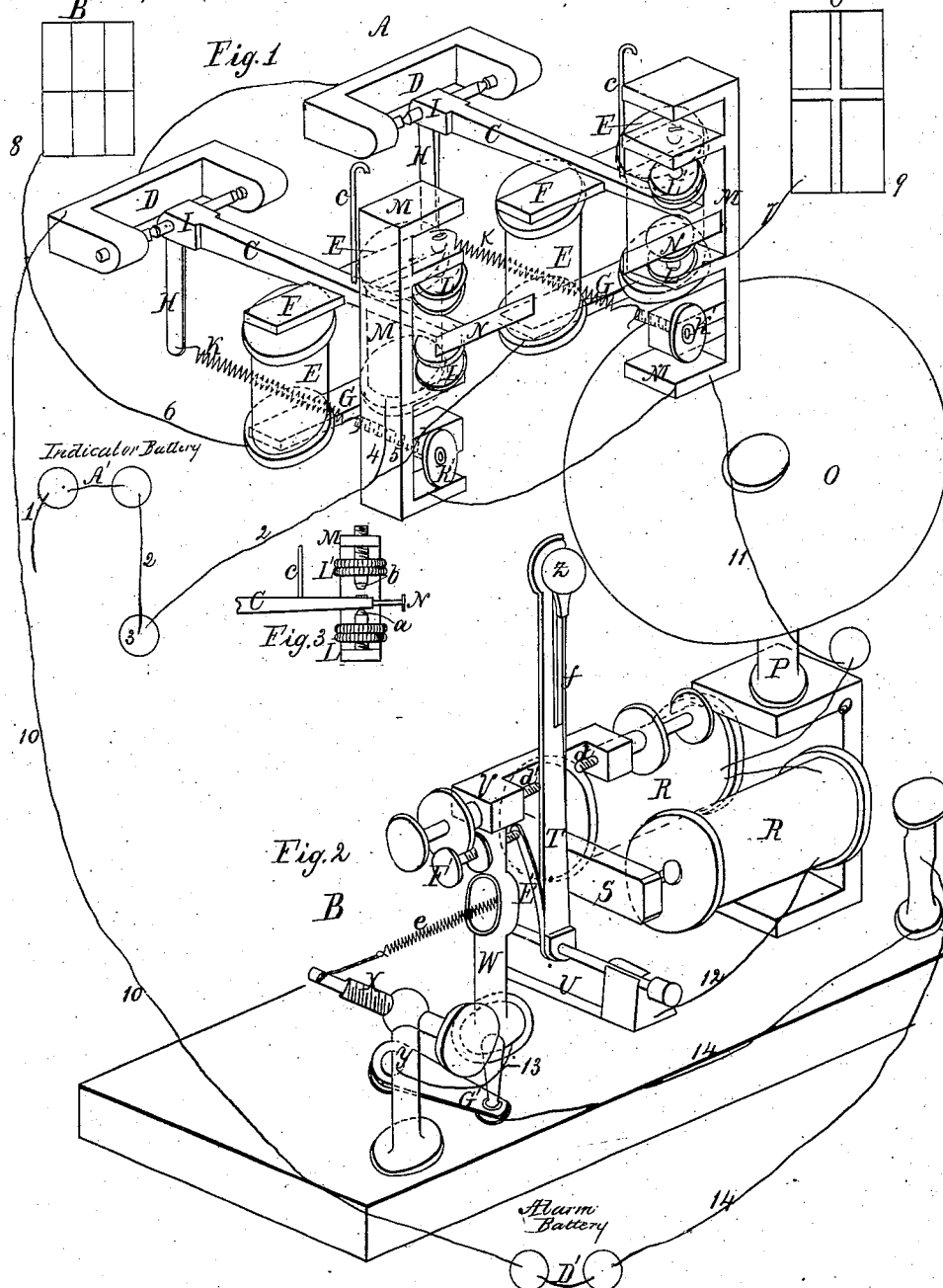


W. E. Facer
Burglar Alarm.

N^o 113,036.

Patented Mar 28, 1871.



Witnesses
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United States Patent Office.

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Letters Patent No. 113,036, dated March 28, 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, WILSON E. FACER, of the city and county of Philadelphia and State of Pennsylvania, have invented a new and useful Electro-Magnetic Indicator and Burglar-Alarm; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing and to the letters of reference marked thereon.

The invention consists in the use and application of any desired number of electro-magnets, with their armatures and levers, each set of magnets being connected by a wire leading through that section or portion of the building which that set is intended to represent or protect, the operation being not only to indicate or locate the disturbance, but also to give an alarm, when a door or window is opened, by ringing the bell attached to the instrument, which continues ringing after the said door, window, &c., is closed, until stopped.

On reference to the accompanying drawing making part of this specification—

Figure 1 is a view of the indicator;

Figure 2 is a view of the alarm; and

Figure 3 shows the method of adjusting the stroke of the armature-levers.

Similar letters refer to similar parts in the several views.

The indicator A and the alarm B are fixed to the same frame or stand, which is placed at any convenient point of a building.

C C, figs. 1 and 3, are vibrating armature-levers in the frames D D.

E E are electro-magnets or coils placed under the armatures F and on the tie-pieces G, one pair of magnets to each armature.

H H are levers or arms which depend from the hubs or centers of vibration I of the armature-lever C, whose outer ends are connected with the adjusting-screws L L, figs. 1 and 3, of the frames M, above and below the levers, at or near their outer ends; they also make the contact for the battery-circuit which rings the alarm-bell, and to that end the point of contact *a* of the lower screw L is insulated, while the upper one L' has a platina or other contact point, *b*.

c c are rods which project upwardly from the armature-levers. They serve for depressing the armatures F to within the attraction of the magnets after the current has been broken by the opening of a door or window, and formed again by closing the same.

N N are indicator plates on the outer ends of the armature-levers, figs. 1 and 3.

The automatic burglar-alarm, fig. 2, consists of the bell O mounted on the post P of the electro-magnet frame Q.

R R are electro-magnets fixed horizontally to the frame Q. Their armature S is fixed to the vibrating bell-lever T in the frame U.

The bell-lever has its stroke regulated by the insulated screws *d d'* of the recessed piece V of the post W, a spiral spring, *e*, one end of which passes through an opening formed in the post W, being attached to the bell-lever T, while the other end is fixed to the tightening-screw or pin X of the post Y.

The connection of the hammer Z with the bell-lever T is by means of a spring, *f*. When the lever is thrown forward it strikes against the projecting end of the forward screw *d*. By being suddenly brought to a stand the spring is thrown forward, bringing the hammer Z against the bell O. By the time the spring reacts the lever is returned to its original position by the spiral spring *e*. The vibration of the lever causes the bell to make separate distinct sounds.

The number of sets of electro-magnets and attendant parts of the indicator must correspond with the number of sections into which the house is divided, each set being connected with its own section by a wire, which is branched off to form connections with the windows, doors, &c., in that section; as shown in the accompanying drawing, wire number 1 leads from the indicator-battery A' to the ground; wire number 2 leads through the post number 3, when it afterward divides into as many branches, 4, 5, as there are sets of electro-magnets, with which they connect; from these electro-magnets the wires marked 6 and 7 lead to the several sections B' C', which their respective sets of electro-magnets represent, from which the wires marked 8 and 9 lead to the ground. As long as the doors and windows or other openings to be protected remain undisturbed the battery current continues to flow; each set of electro-magnets, E E, holds down its respective armature-lever C C and their armatures F, the ends of the same bearing upon the tips of the lower or insulated screw L, which keeps open or broken the battery D', known as the alarm-battery.

When a door or window is opened at any particular section of the house the current which flows through the electro-magnet of that section is broken and its armature released, when the armature-lever instantly flies out of the reach of its electro-magnet's influence by means of the spiral spring K acting on the depending arms or levers H, and forms contact by bearing against the platina end of the upper adjusting-screw L', and completes the current of the alarm-magnet by means of the wire number 10, which connects directly with the bell or alarm-battery D'; the wire number 11 connects with the electro-magnets R of the alarm; wire number 12 connects the electro-magnets with the automatic break, composed of the bell-lever T, the

equalizing-spring E', and the contact-screw F'; wire number 13 connects the post W with the switch G'; and the wire number 14 completes the circuit by connecting the switch G' with the battery D' of the alarm. The electro-magnets R attract their armature S and the bell-lever T, thereby causing the hammer Z to strike and ring the bell O. When the spring E' breaks contact with the screw F', the current is broken, and the electro-magnets cease to attract their armature S; then the spiral spring c returns the bell-lever F, and brings the equalizing-spring E' again in contact with the screw F', which again forms the current.

The bell-lever continues to vibrate and the bell O to be sounded until the person in charge breaks the current by turning the switch G', which severs the connection of the wire number 13 with the wire number 14 leading to the battery E'.

To again form the current of the indicator the door or window which caused the alarm by being opened must be closed, and the armature-lever C of that section must be depressed by means of the rod c until its armature F comes within the influence or attraction of the electro-magnets E of that section.

The indicating-plates N on the ends of the armature-levers designate or locate the disturbance by being marked with the name or number of the section.

When a section is disturbed its plate raises with the end of its armature-lever, and is thereby readily distinguished from the others.

The tension of spring K, which raises the armature-lever C by means of the depending arm H, is regulated by the adjusting-screw K'.

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

1. The armature-lever C, frame D, electro-magnets E E, armature F, depending arm or lever H, adjusting and raising-spring and screw K, adjusting-screws L L', and the indicator-plate N, as shown.

2. The indicator A and burglar-alarm B, when constructed, arranged, and operated as shown and described.

3. The bell-lever T, spring f, and the hammer Z, as shown and described.

In testimony whereof I hereunto sign my name to this specification in presence of two subscribing witnesses.

WILSON E. FACER.

Witnesses:

FRANCIS D. PASTORIUS,

JOHN YILLE.