D. H. WHILLDIN.

ELECTRO MAGNETIC ALARMS

No. 184,679. Patented Nov. 21, 1876.

Fig. 1.

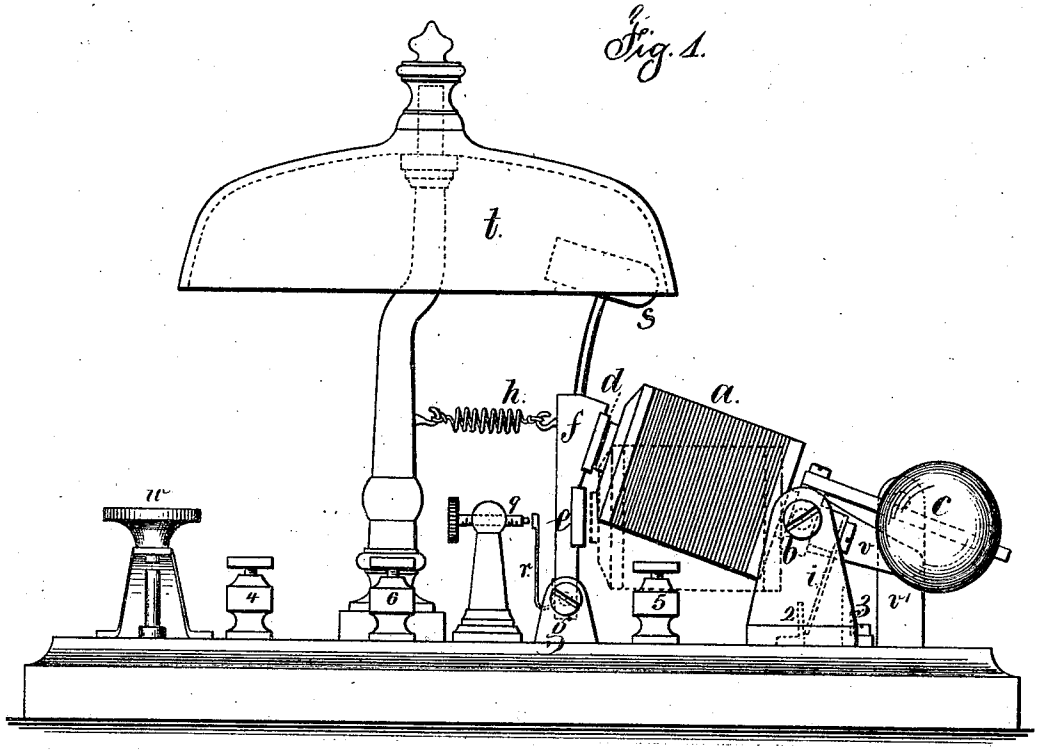
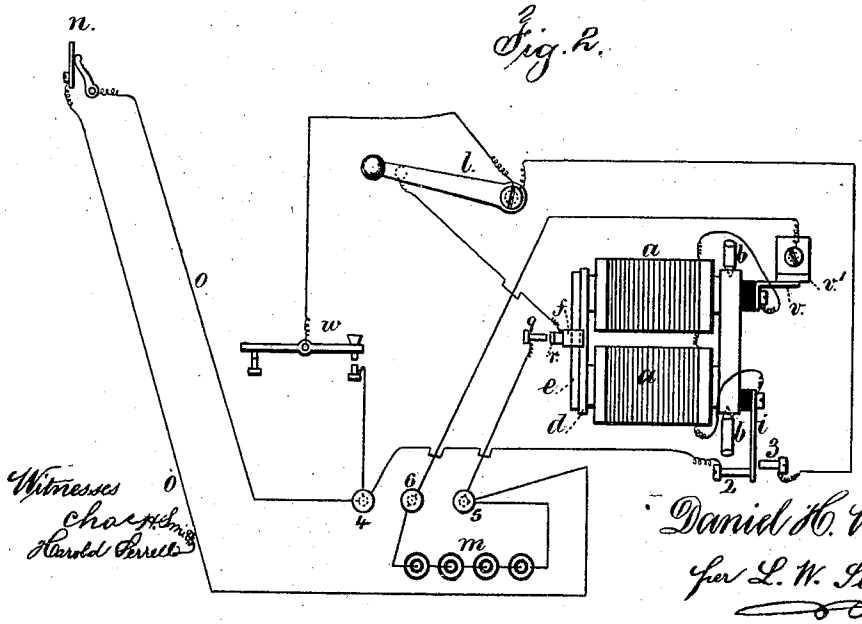


Fig. 2.



Witnesses

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UNITED STATES PATENT OFFICE.

DANIEL H. WHILLDIN, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN ELECTRO-MAGNETIC ALARMS.

Specification forming part of Letters Patent No. **184,679**, dated November 21, 1876; application filed June 19, 1876.

To all whom it may concern:

Be it known that I, DANIEL H. WHILLDIN, of Brooklyn, in the county of Kings and State of New York, have invented an Improvement in Burglar-Alarms, of which the following is a specification:

I make use of an electro-magnet and two armatures, and the magnet is hinged so that it may swing.

When the circuit is closed the electro-magnet is held from moving by contact, or nearly so, with one of the armatures. If the circuit is broken, the armature is released, the magnet moves and approaches the second armature, and in so doing the circuit to the battery is again closed and the magnet energized, and a bell or alarm is rung. I also arrange the said bell and its circuits in such a manner that a switch and finger-key can be used, so that the bell and magnet can be availed of in communicating signals when the burglar-alarm is not in use.

The electro-magnet *a* is mounted upon the pivot *b*, and provided with a partial counterpoise, *c*, that prevents the magnet swinging so suddenly as to be injured by the movement.

This magnet may be moved into the positions shown by the full lines in the side view, Figure 1, and there are two armatures, *d* and *e*, upon the armature-lever *f*, that has its fulcrum at *g*, and is drawn back by the spring *h*, when the circuit to the battery is broken, in which case the magnet falls or moves on its pivots *b*, and its poles approach the second armature *e*, and in the movement of the magnet the circuit-spring *i* is changed from the insulated stop 2 to the stop 3.

By reference to the diagram, Fig. 2, the connections will be understood. Let *m* represent the battery, and *n* a door, window, or other place or places to be guarded, and *o* the circuit to the same, or to any sounding or receiving instrument. From the battery *m* the current passes to 6, contact-plates *v*, *v'*, *a*, *i*, 2, 4, *o*, *n*, and 5, back to the battery, and so long as this circuit remains closed the magnet *a* will be charged, and be held by contact with the armature *d*. If this circuit is broken, the magnet *a* is demagnetized and falls, and the arm *i* moves to 3, and the current passes from *m*, by 6 *v v' a i* 3, switch *l g*, armature-spring *r*, contact-screw 9 and 5, to battery, and as the armature *e* is attracted by *a*, the circuit between 9 and *r* will be broken, and the armature is drawn back by the spring *h*, and closes the circuit again, and by the hammer *s* or *f* the bell *t* will be rung, and continue to ring until the switch *l* is opened or the magnet raised again. The arm *v* upon the base of the magnet is in contact with the spring *v'*, to which the wire from the magnet *a* is connected. This keeps the parts in electric contact, but allows of the movement of the electro-magnet.

When the magnet *a* is in the position shown by dotted lines in Fig. 1, the finger-key *w* can be operated to give calls and signals upon the line or circuit *o*. In this case the current passes from *m*, by 6 *v v' a i* 3, switch *l*, key *w*, binder 4, circuit *o*, to 5, and thence to battery *m*.

By this arrangement the instrument can be used as a call or telegraph when not set as a burglar-alarm.

This swinging magnet may be made use of with an alarm or signal upon tills, or for fire-alarms, or under any other circumstances whenever available.

I claim as my invention—

1. The electro-magnet *a*, set to swing upon the pivot *b*, in combination with the two armatures *d* and *e*, and bell or signal, and circuit-connections, substantially as set forth.

2. The combination, with the electro-magnet *a* and two armatures, *d* and *e*, of the circuit-spring *i*, finger-key *w*, and circuit-connections, substantially as set forth.

3. The combination, with an electro-magnet swinging upon pivots, of a counter-weight, *c*, spring *v'*, and arm *v*, substantially as and for the purposes set forth.

Signed by me this 23d day of May, A. D. 1876.

DANIEL H. WHILLDIN.

Witnesses:
GEO. T. PINCKNEY,
CHAS. H. SMITH.