

T. S. Hall.
Electrical Alarm.

N^o 105,447.

Patented Jul. 19, 1870.

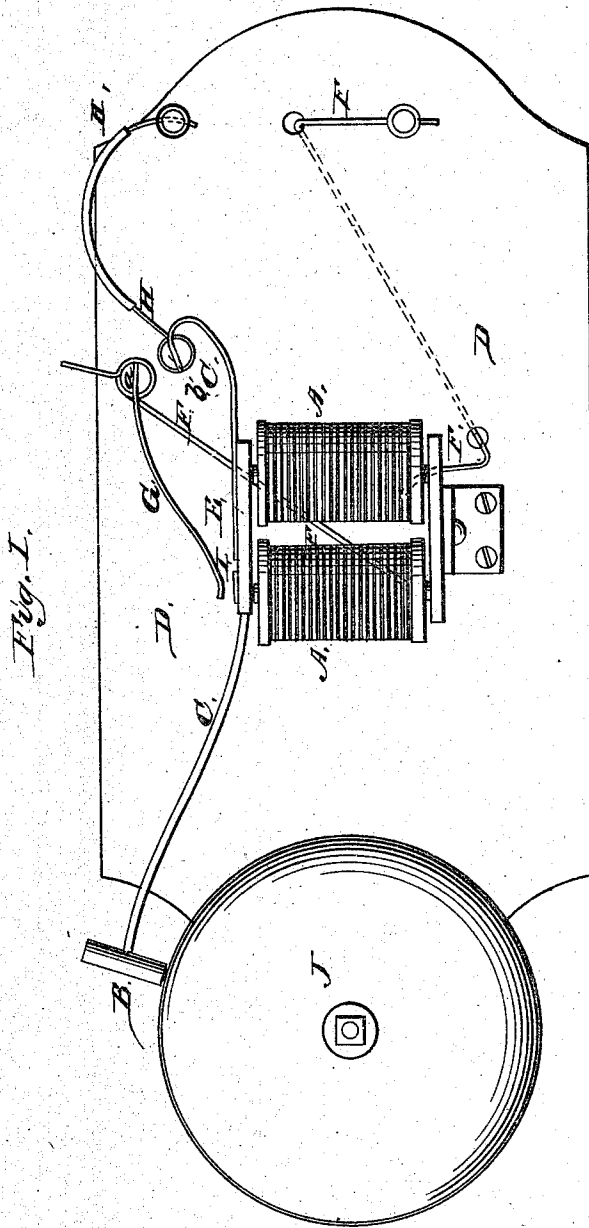


Fig. 1.

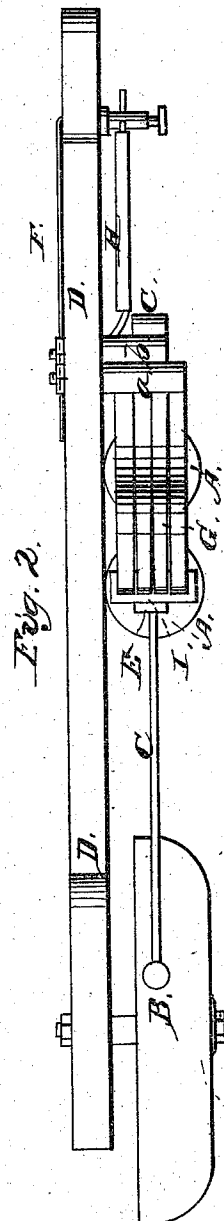


Fig. 2.

Witnesses,
J. H. Mendenhall
John C. Reman

Inventor,
T. S. Hall.

per *Wm. H. Co.*
Attorneys.

United States Patent Office.

THOMAS S. HALL, OF STAMFORD, ASSIGNOR TO HALL'S ELECTRIC RAILWAY-SWITCH AND DRAW-BRIDGE SIGNAL COMPANY, OF NEW HAVEN, CONNECTICUT.

Letters Patent No. 105,447, dated July 19, 1870.

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, THOMAS S. HALL, of Stamford, Fairfield county, Connecticut, have invented a new and improved Electric 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 drawing forming part of this specification.

Figure 1 represents a front or face view of my improved electric alarm.

Figure 2 is a top or edge view of the same.

Similar letters of reference indicate corresponding parts.

This invention relates to an improvement in the devices for operating the hammer of an alarm-bell by the action of an electric current and of spring-power.

The invention consists in the application of a system of springs arranged alongside of each other, and acting against a plate arranged on the armature and projecting from the sides of the same.

When the hammer is attracted toward the electro-magnet, the electric circuit is broken, and it is then drawn up against the aforesaid system of springs, which is provided to act on the broad surface of the projecting-plate to produce permanency of action and reliability.

When the armature has been elevated the electric current is re-established, and the electro-magnet draws it down, it being aided by the aforesaid system of springs. Thus rapid vibrating motion is imparted to the hammer to cause it to strike against a bell, thereby producing the required alarm.

The springs heretofore used were apt to get out of order and entirely unreliable, and alarms could never be made to operate for a considerable length of time.

By the use of my system of springs all these defects are entirely overcome.

A in the drawing represents the electro-magnet, connected with a wire, F, of a battery.

B is the hammer, having a spring-shank, C, which

is secured to a suitable frame or support, D, and which carries the armature E of the electro-magnet.

The wire F is, from the electro-magnet, carried to the fastening-pin *a* of a series of spring plates, G, arranged above the armature E on the frame or support D.

A wire, H, extends from the fastening-pin *b* of the hammer-shank to the other pole of the battery, or to the ground, as the case may be.

The lower ends of the spring plates G are opposite a plate, I, which is as wide as the springs G, to be acted upon by them.

The operation is as follows:

When the armature is on the electro-magnet, as in fig. 1, the current through the wire F is interrupted, as the parts G and I are out of contact.

The spring shank C will then elevate the armature and raise the hammer, but at the moment in which the parts G and I touch, the current is established through G, I, E, C, and H, with the wire F, and the strong electro-magnet, combined with the weight of the hammer and with the repelling-power of the spring plates G, causes the hammer to move down with much greater force than it moved up, and to strike the gong or bell J. When down, the current is interrupted, and the hammer raised again, as aforesaid. Thus rapid motion is imparted to the hammer, and it is caused to strike the bell with greater force than could be produced by any other electric alarm.

Having thus described my invention,

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

The combination of the system of springs G G, transverse bar I, armature E, electro-magnet A A, with conducting-wires, all constructed and arranged as described.

THOMAS S. HALL.

Witnesses:

FRANK BLOCKLEY,
- SOLON C. KEMON.