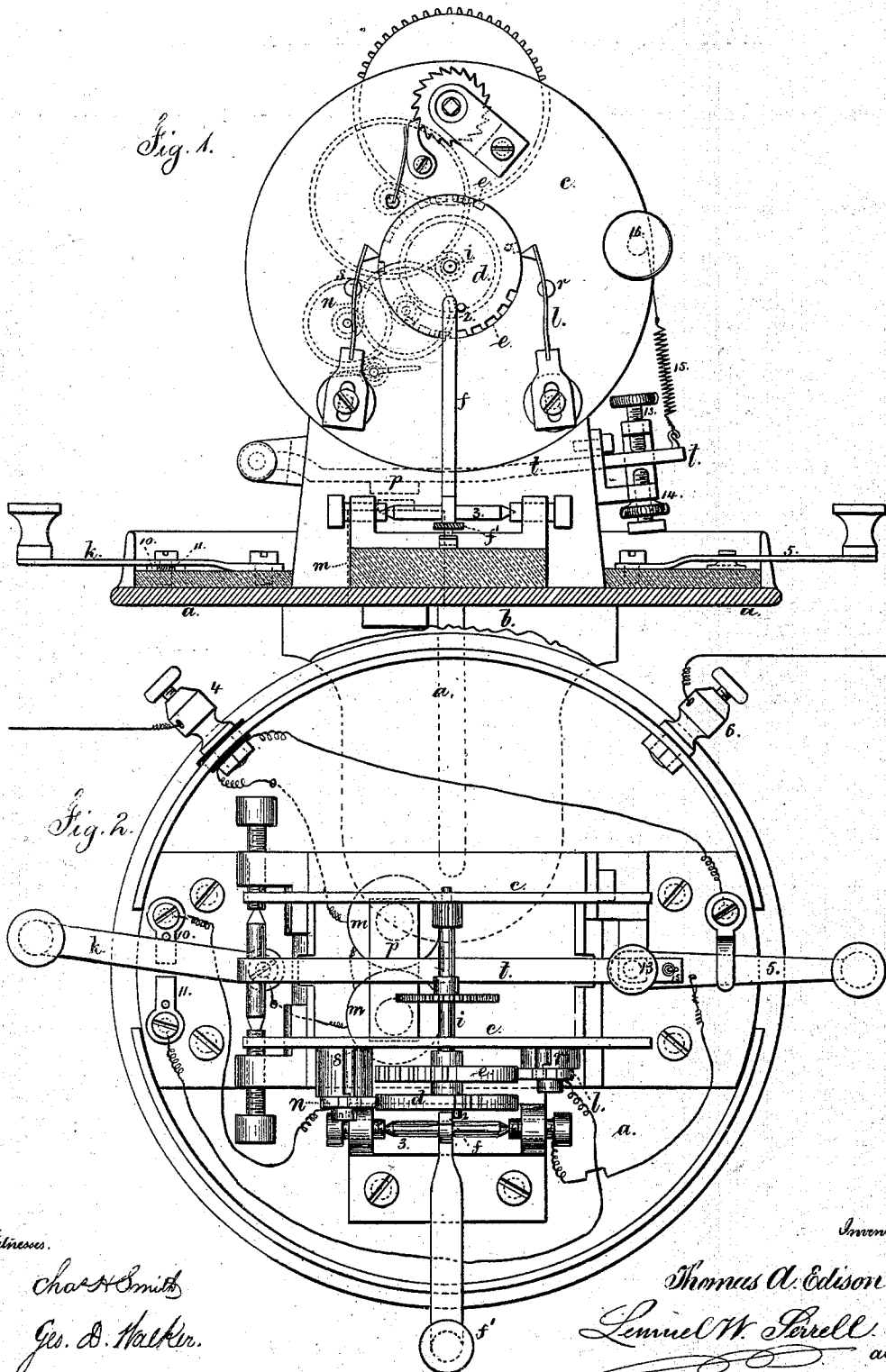


**T. A. EDISON.**  
**Telegraph Signal-Boxes.**

No. 146,812.

Patented Jan. 27, 1874.



# UNITED STATES PATENT OFFICE.

THOMAS A. EDISON, OF NEWARK, NEW JERSEY, ASSIGNOR TO AMERICAN DISTRICT TELEGRAPH COMPANY, OF NEW YORK, N. Y.

## IMPROVEMENT IN TELEGRAPH-SIGNAL BOXES.

Specification forming part of Letters Patent No. 146,812, dated January 27, 1874; application filed December 3, 1872.

*To all whom it may concern:*

Be it known that I, THOMAS A. EDISON, of Newark, in the county of Essex and State of New Jersey, have invented an Improvement in Telegraphic Alarm and Signal Apparatus, of which the following is a specification:

Before my invention, an alarm apparatus and local telegraph had been invented for communicating from several houses or buildings in a telegraphic circuit with the central station, for calling police, messenger, or other service, as seen in Letters Patent No. 127,844, granted to E. A. Calahan. My invention is an improvement upon the same, and a modification of Letters Patent No. 129,526; and consists in an adjustment to the springs that close the circuit, whereby the V-shaped ends are properly positioned, and the power of the springs regulated. Also, in arranging the magnet, armature, and adjustable stops in relation to the clock-work so that the parts are easy of access, and the sound from the moving armature will be unconfined.

In the drawing, Figure 1 is an elevation with the bed in section; and Fig. 2 is a plan with the clock-work or train of gearing removed.

The base *a* is made circular, and adapted to receiving a glass shade to protect the machine from dust; and the base is sustained by a bracket, *b*, that can be screwed to a window or door frame, or other convenient support. The plates *c c* are connected to the base *a*, and carry the spring-barrel and train of gearing, of any usual character, to rotate the shaft *i* and brake-wheels *d* and *e*. There is a stop-pin, 2, upon the wheel *d* that is arrested by the lever *f*, which lever *f* is mounted upon the insulated cross-shaft 3, and provided with a finger-key, *f'*, outside the base, so that, by depressing the said key *f'* the lever *f* is moved, the pin 2 liberated, and the train of gearing allowed to move, and revolve the wheels *d* and *e*. The same movement breaks the electric circuit that ordinarily passes from the binder 4, through the insulated switch 5 and wire, to the lever *f*; thence, through the pin 2 and clock-work and bed, to the binder 6.

In the brake-wheels *d e* are notches, positioned to give indications upon a suitable instrument at the central receiving-station—such as a bell-magnet, armature, and hammer—to designate, by the strokes on the bell, the number allotted to the wheel *d*, or to the wheel *e*, and, in so doing, indicate the station at which the instrument is placed containing such numbers; and, also, what is wanted—such as police or messenger.

The switch *k* is employed to direct the circuit through either the wheel *d* or the wheel *e*, according to what is to be indicated at the receiving-station. I remark that the contact-blocks 10 and 11 of the switch are sufficiently near each other for the circuit not to be broken in the act of moving the switch from one contact-block to the other.

The circuit-closing springs *l n* are upon insulated blocks, and connected by clamping-screws passing through slots, so that the V-shaped ends of such springs can be adjusted in their position vertically; and also in the force with which they press against the respective wheels *d* or *e*. There are insulated stops *r s* provided to limit the movements of the springs *l n*, and prevent the V-ends of the springs moving too far into the slots in the circuit-wheels *d e*, thereby insuring the proper length of pause between the pulsations.

The electro-magnet *m* is in an opening in the base *a* below the clock-work, and it is provided with an armature, *p*, and lever *t*, having a limited motion between the adjusting-screws 13 14, and the retractile spring 15 is adjusted by the shaft 16, that passes through the frames *c*. This arrangement renders the parts very compact, gives access to the magnet from below, and brings the moving end of the armature-lever where it can be seen, and the sound thereof against the screws 13 14 will not be confined.

The connection from the binder 4, through the insulated switch 5 to the lever *f*, ordinarily remains closed, and forms a shunt to the main line, cutting out the electro-magnet; but, when broken at 5, the current is compelled to go through the electro-magnet *m*, producing a motion of the armature, and sound. This switch 5 is, therefore, only employed by an operator

to ascertain whether or not the line is in use by any other instrument, by compelling any pulsation to pass through his magnet, and if the electro-magnet is not vibrated the line is clear, and his own instrument can be started, and, by the electro-magnet responding, it will become apparent that the line is in proper condition.

I claim as my invention—

1. The circuit-springs *l n*, attached by slots and screws, so as to be adjustable in their length and power, as set forth, in combination with the wheels *d e*, as specified.

2. The combination of the electro-magnet *m* beneath the clock-work, the adjusting armature-lever, screws 13 14 outside the clock-work, and the shaft 16, for adjusting the spring 15 above the lever and through the clock-plates *c c*, all arranged as and for the purposes set forth.

Signed by me this 26th day of November, 1872.

THOMAS A. EDISON.

Witnesses:

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