(No Model.)

J. B. GILL.

DISTRICT TELEGRAPH CALL BOX.

No. 383,220. Patented May 22, 1888.

Fig. 1.

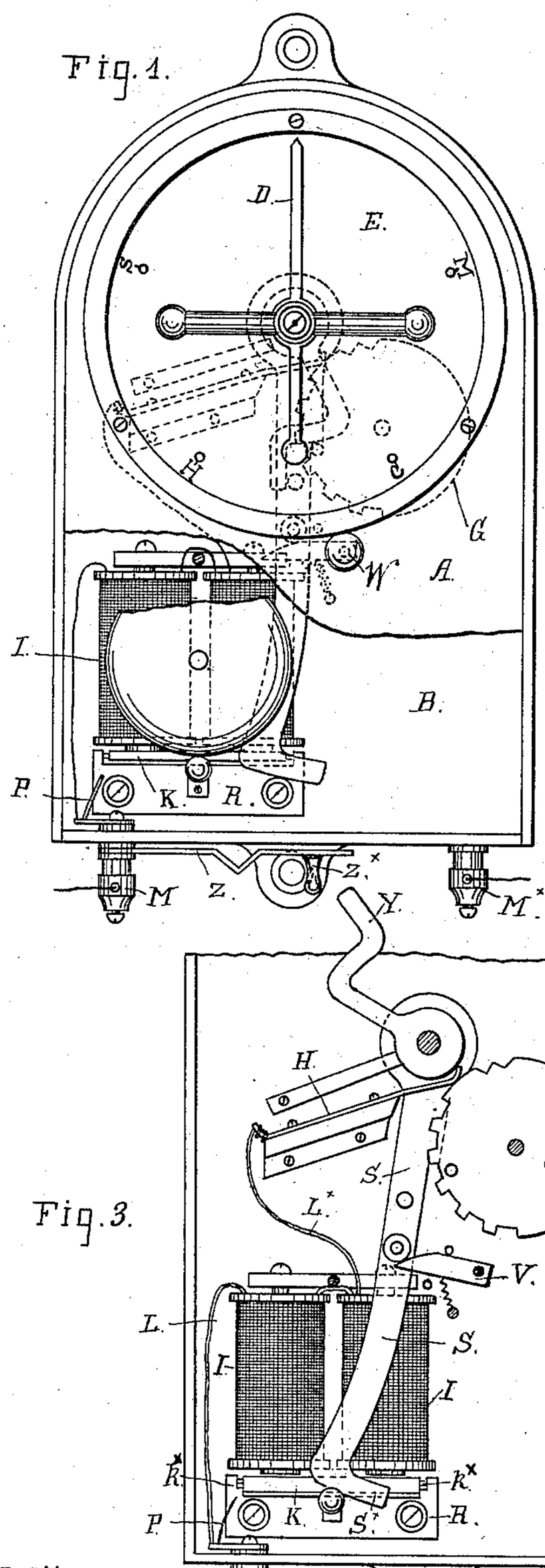


Fig. 2.

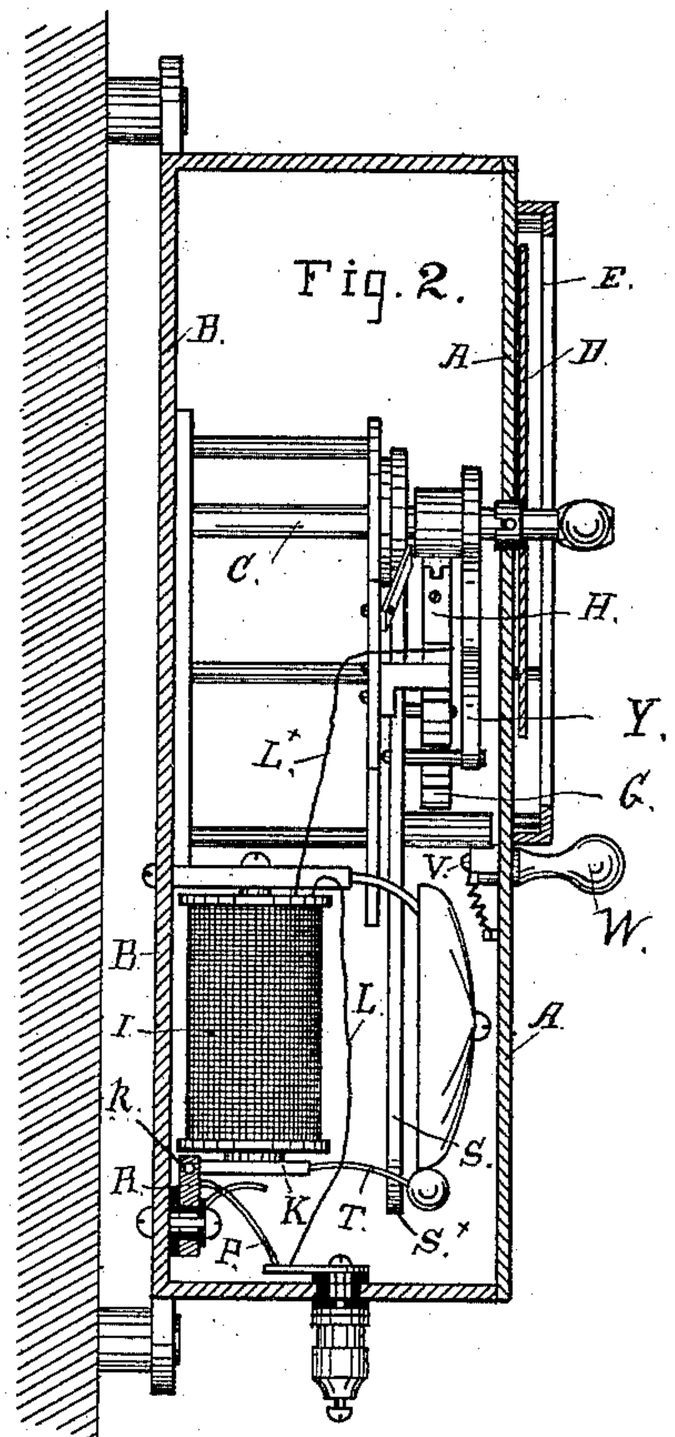
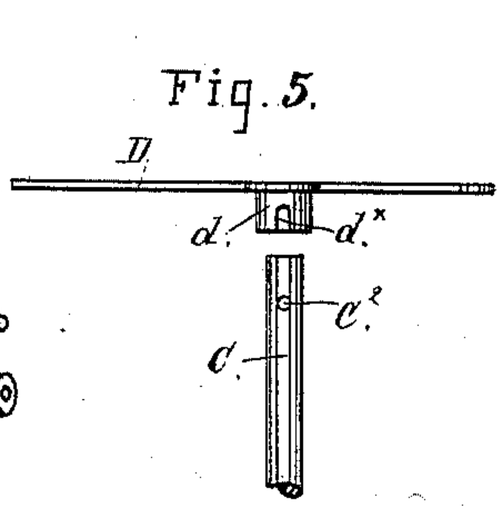


Fig. 3.

Fig. 5.



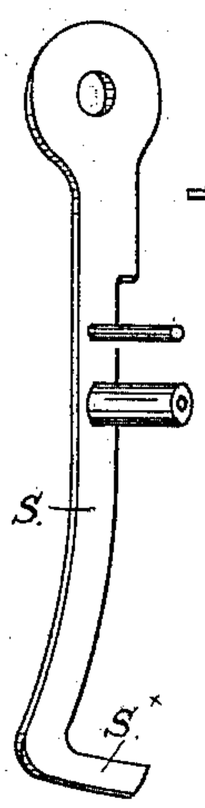


Fig 4.

Witnesses:

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UNITED STATES PATENT OFFICE.

JAMES B. GILL, OF SAN FRANCISCO, CALIFORNIA.

DISTRICT-TELEGRAPH CALL-BOX.

SPECIFICATION forming part of Letters Patent No. 383,220, dated May 22, 1888.

Application filed September 20, 1887. Serial No. 250,266. (No model.)

To all whom it may concern:

Be it known that I, JAMES B. GILL, a citizen of the United States, residing in the city and county of San Francisco, and State of California, have invented certain new and useful Improvements in District-Telegraph Call-Boxes; and I do hereby declare that the following is a full, clear, and exact description of my said invention, reference being had to the drawings that accompany and form a part of this specification.

My invention relates to improvements in call-boxes for district-telegraph lines; and the improvements consist in certain novel construction and combination of parts, the nature and details whereof, as well as the objects sought to be attained thereby, are fully set forth in the following description and claims.

In the drawings herein referred to as much of the general construction of the class of call-boxes to which my improvements more particularly apply is shown as is necessary to a clear understanding of the improvements and their operation.

Referring to the accompanying drawings by figures and letters, Figure 1 represents in front view a call-box with my improvements applied to it, the front being broken away at the bottom to expose the inside to view. Fig. 2 is a vertical cross-section. Fig. 3 is a front view of the lower part of the box showing more particularly the shunting-circuit and the lever by which the circuit is broken when the box is set in operation and restored again after the signal is transmitted. Figs. 4 and 5 are details on a larger scale.

A is the front, and B the back, of the box in which the mechanism is inclosed.

C is the spindle or arbor to which the pointer D of the setting mechanism is fixed, and E is the dial having the usual letters or characters of the various signals arranged at intervals of space apart around its face.

G is the notched disk of the signal mechanism, and H the contact spring that rides on the edge of the disk, and by which the circuit is established and the signals given in the usual manner.

I I are the coils, and K the pivoted armature, of the electro-magnet, and L $L^{\times}$ are the connections or terminal wires of the coils, the one to the binding-post M, and the other, $L^{\times}$, to the contact-spring H. This connection carries the circuit from the post M through the coils to the spring H, thence through the signal-disk G, and finally through the post on which it is pivoted or through some other metal part in electric contact with it to the back of the box and down to the other binding-post, $M^{\times}$.

P is a short wire connecting the metal plate R with the binding-post M, and constituting with the armature K a cut-out for the coils that is controlled by the armature. The plate R is insulated from the back of the case and the armature is pivoted to it at $k^{\times}$. These parts and connections are clearly shown in Figs. 2 and 3 of the drawings, and as thus arranged for operation it will be seen that when the armature sets against the magnet a short circuit will be established from the post M, through the wire P, plate R, armature, and cores of the magnet to the back of the box and thence to the other binding-post.

In the operation of the device the magnet-armature strikes the bell, whose function it is to indicate that the signals are being transmitted. The magnet is normally short-circuited to decrease resistance of line, in consequence of which the current following the line of least resistance will leave the coils and pass through the connections thus established between the two posts. This short circuit is set up while the box is not engaged in transmitting signals, as the residuary magnetism in the coils is sufficient to hold the armature in contact, as shown in Fig. 2, and as long as this position maintains, the coils are out of the main circuit; but in preparing the box to transmit any one of its signals the armature is thrown back, and the short circuit being thereby broken the coils are restored to the main circuit. The means by which this is effected consists of the lever S, movable on the arbor C as a center, and having a curved end or foot, $S^{\times}$, suitably shaped and set to be thrown over and to press upon the projecting hammer or striker wire T, that is carried by the armature. This lever is the stop-lever by which the motion of the signal-disk G is arrested, and the disk also held until the signal-setting mechanism is properly adjusted for action. The knob W, with a spring-latch, V, setting under the stud

S² on the lever, serves to throw it back, and by this movement of the lever the bent end S× is caused to strike the armature and move it away from the magnet. In this position the lever prevents the armature from rising, and until the signal is completed and the lever is thrown forward by the curved arm Y to lock the signal-disk G the magnet remains in circuit. This is illustrated in Fig. 3 of the drawings, while in Fig. 1 the position of the parts when the signal is transmitted and the short circuit is established is represented partly by full and partly by the dotted lines. These parts are of well-known construction and operation, and, as my present improvements do not include them except so far as the bent stop-lever is employed as a means for controlling the armature, it is unnecessary to give more detailed description of their operation. For the same reason the coil-spring and train of gears that rotate the signal-disk G have not been shown or described.

In the operation of these signal-boxes it frequently happens that the pointer is set to the wrong signal, and when it is thus turned too far on the dial it would be of advantage to have some means at hand for readjusting the box or to avoid the necessity of sending a wrong signal. To overcome such improper adjustment at any time, I attach a cut-out, Z, to the binding-post M under the box, by means of which the circuit can be carried from one post to the other and the signal mechanism can be cut out. This device is formed of a spring-plate, Z, furnished with a knob, Z×, at the free end, and secured at the opposite end to the binding-post M and in suitable electric connection with it, but insulated from the box. Therefore by pressing the free end of the plate against the bottom of the box the circuit will be established directly between the two posts, and, as the box is then cut out, the signal mechanism may be allowed to run down and then be reset to the required signal.

Figs. 2 and 5 illustrate a means of setting and attaching the pointer in the end of its spindle, which I employ to facilitate adjustment and prevent the pointer being improperly attached. The spindle is furnished with a pin, c^2, and the collar d, that forms the hub of the pointer, is slotted at $d^\times$ to slip over the pin, and by having these parts suitably set with reference to the position to be held by the pointer (which is represented in Figs. 1 and 2) it follows that when the pointer is placed on the spindle in setting up and adjusting the box it can take but one position, and therefore when it is secured by the screw the right position with respect to the dial is secured.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a telegraphic signal-box, the combination of an electro-magnet in a closed circuit, the shunting-circuit consisting of the connections P P, and armature K K, and mechanism under control of and actuated by the transmitting mechanism consisting of movable lever S, having foot S×, the projecting hammer on the armature, and the knob W with its latch V, all arranged to enable the armature to be thrown away from the magnet and the circuit broken when the box is set in operation.

2. A telegraphic signal-box having an electro-magnet in a closed circuit, and a shunting-circuit consisting of connection P, plate R, and armature K, adapted to take the coils normally out of the main circuit, in combination with means described, consisting of movable lever S, having foot S×, the projecting hammer on the armature, and the knob W with its latch V, whereby the shunting-circuit is broken and the magnet energized.

3. In a telegraphic signal-box, the combination of the magnet-armature K in a circuit, and the stop-lever S, of the transmitting mechanism having the bent end S× set for operation with relation to the armature, as described.

In testimony that I claim the foregoing I have hereunto set my hand and seal.

JAMES B. GILL. [L. S.]

Witnesses:
JOS. E. FORD,
C. W. M. SMITH.