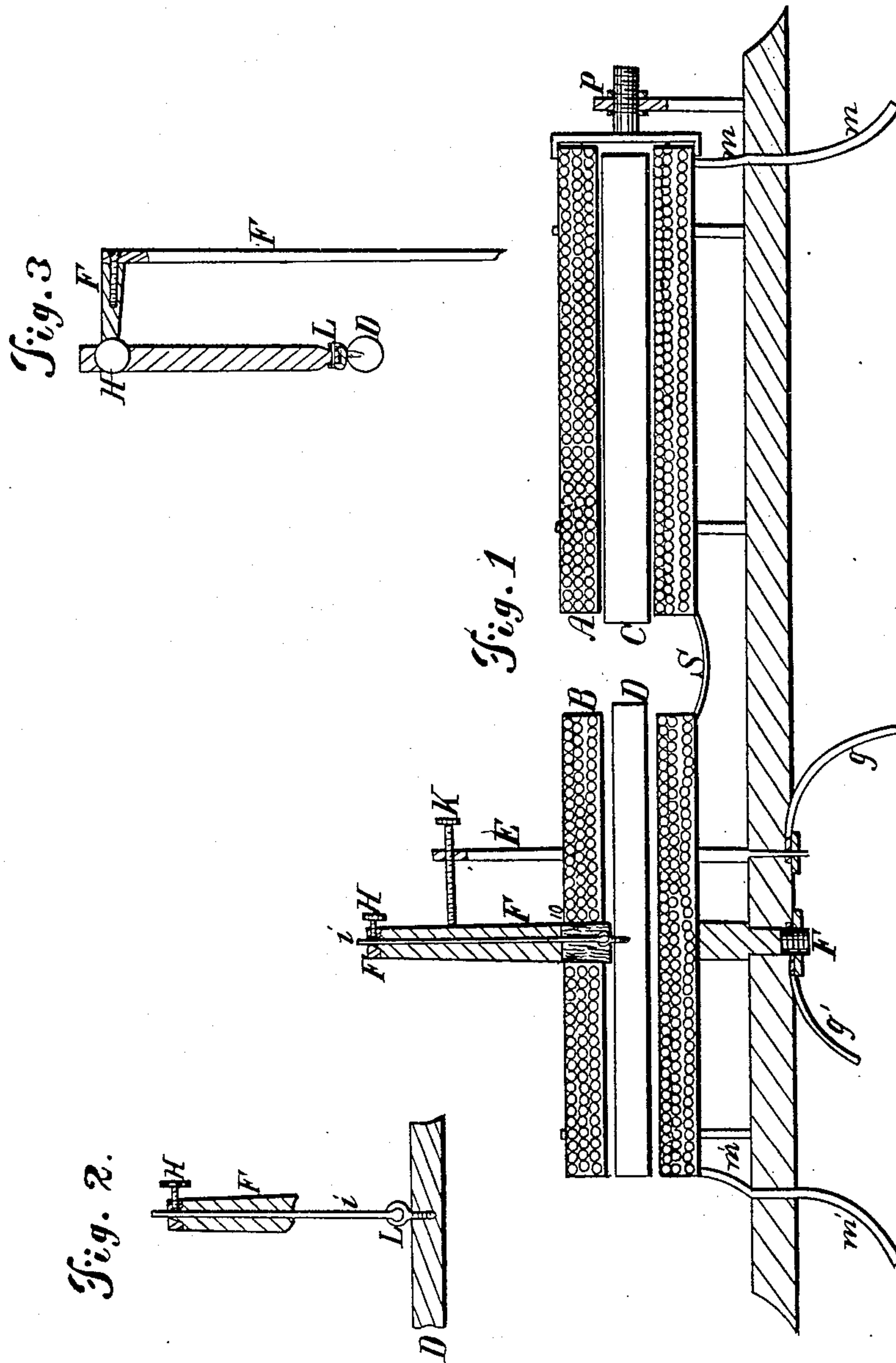


G. W. KING.
Telegraph Instrument.

No. 84,197.

Patented Nov. 17, 1868.



Witnesses;
J. L. D'Keale
A. H. King

Inventor,
Geo. W. King



GEORGE W. KING, OF GEORGETOWN, DISTRICT OF COLUMBIA.

Letters Patent No. 84,197, dated November 17, 1868.

IMPROVEMENT IN TELEGRAPH-INSTRUMENTS.

The Schedule referred to in these Letters Patent and making part of the same.

Be it known that I, GEORGE W. KING, of Georgetown, in the county of Washington, in the District of Columbia, have invented a new and useful Improvement on Relays for Telegraphing. I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification.

Figure 1 is a front view of my improved relay.

Figure 2 is a front view of the spring and its attachments.

Figure 3, a sectional view of the same devices.

A is a magnet, made in the usual way, by coils of wire and core of soft iron.

B is a magnet, the core D of which is slightly smaller than the helix.

D, the core, is delicately supported from a pivot or pivots, which allows it to play in the helix B, to and from the stationary electro-magnet C.

L is a pivot.

i is a delicate spring, which suspends the core D, and conveys the local current from F.

F, the support for the core D and spring i, and conveys the local currents from wire G'.

M and M' are the main wire which forms the helices.

S, the wire connecting the helices.

G and G' are the wires from the local battery.

E is one of the supports of the helix, and conveyer of the local current from the wire G.

K is an adjusting-screw, and also conveyer of the current from E, at the time of the junction of the spring i with it, which occurs at the time of the attraction of the magnets D and C.

O is a space in the helix, left for the spring i to pass through.

When the currents are passing through the helices, the iron cores D and C are temporarily magnetized. The ends of the cores D and C next to each other being

positive and negative, are thereby attracted to each other, causing a junction of the spring i and screw K, by which means the local circuit is completed.

Now, should the current be very strong, the attraction to each other of the magnets D and C will be strong, but at the same time the attraction of or tendency of the helix B to hold the magnet D in its place will also be strong, so, if the attraction of the magnet C be made a little stronger than the attraction of B, then the amount of attraction in C, in excess of the attraction of B, will always remain the same in weak as in strong currents, thereby do away with all adjustments, after being once adjusted.

When a spring is employed for regulating the armature of the magnet, it requires to be constantly readjusted, according to the strength of the current, and atmospheric causes.

The advantage of this arrangement becomes obvious when it is considered that slight vibrations, accidental currents, &c., are often sufficient to overcome the resistance of the spring, and impede the working of the line.

I am aware that a self-adjusting relay is not new, in which the magnets are excited by the same current, and oppose each other in such a manner that the attractive force is uninfluenced by any disturbance in the strength of the current.

This I do not claim, nor do I claim a helix, having a movable core; but

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

The core D, acting as an armature, and oscillating in the helix B, when pivoted to the supporting-spring I, in the manner and for the purpose herein described.

GEO. W. KING.

Witnesses:

A. MOORE,

THOS. JEWELL.