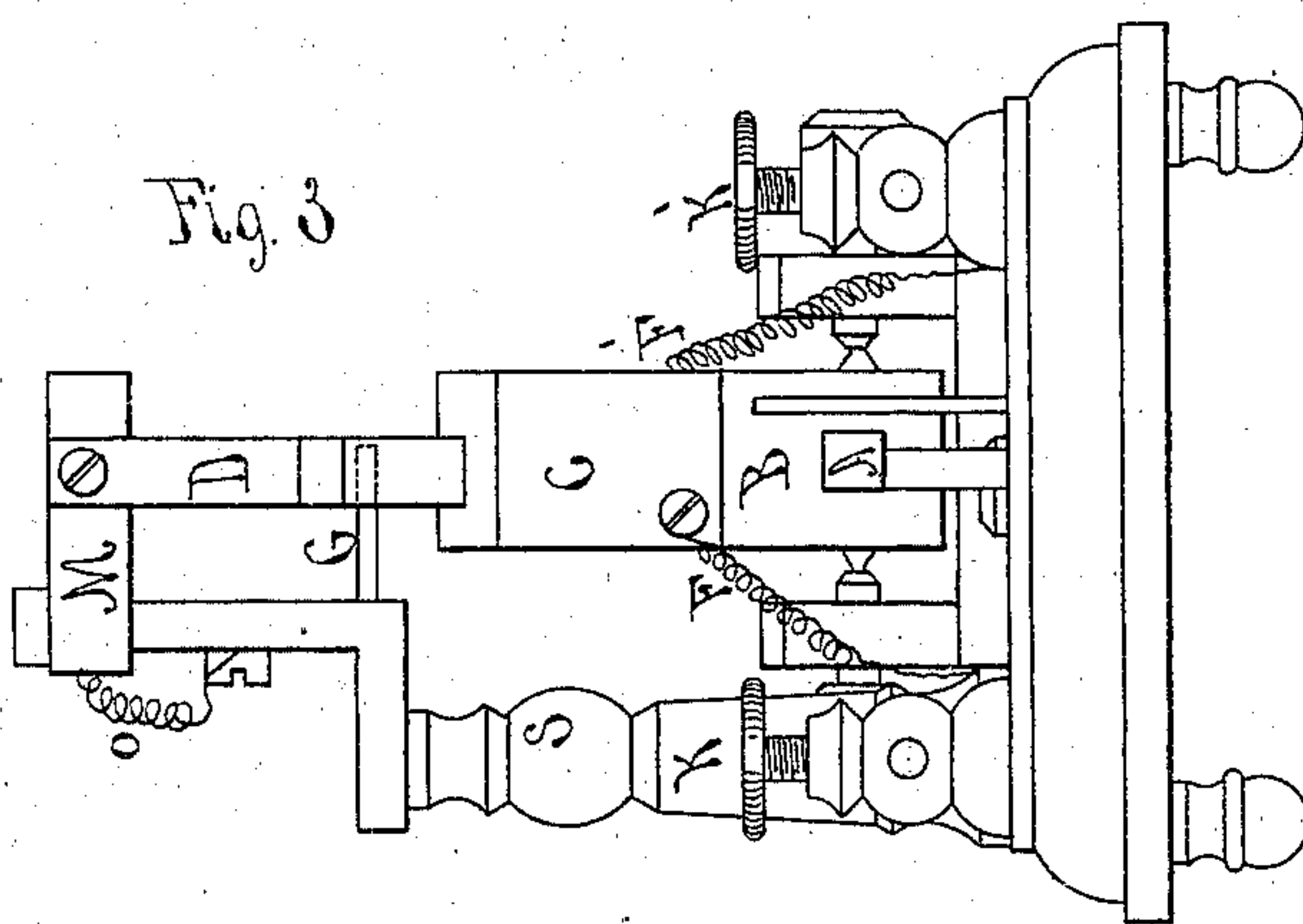
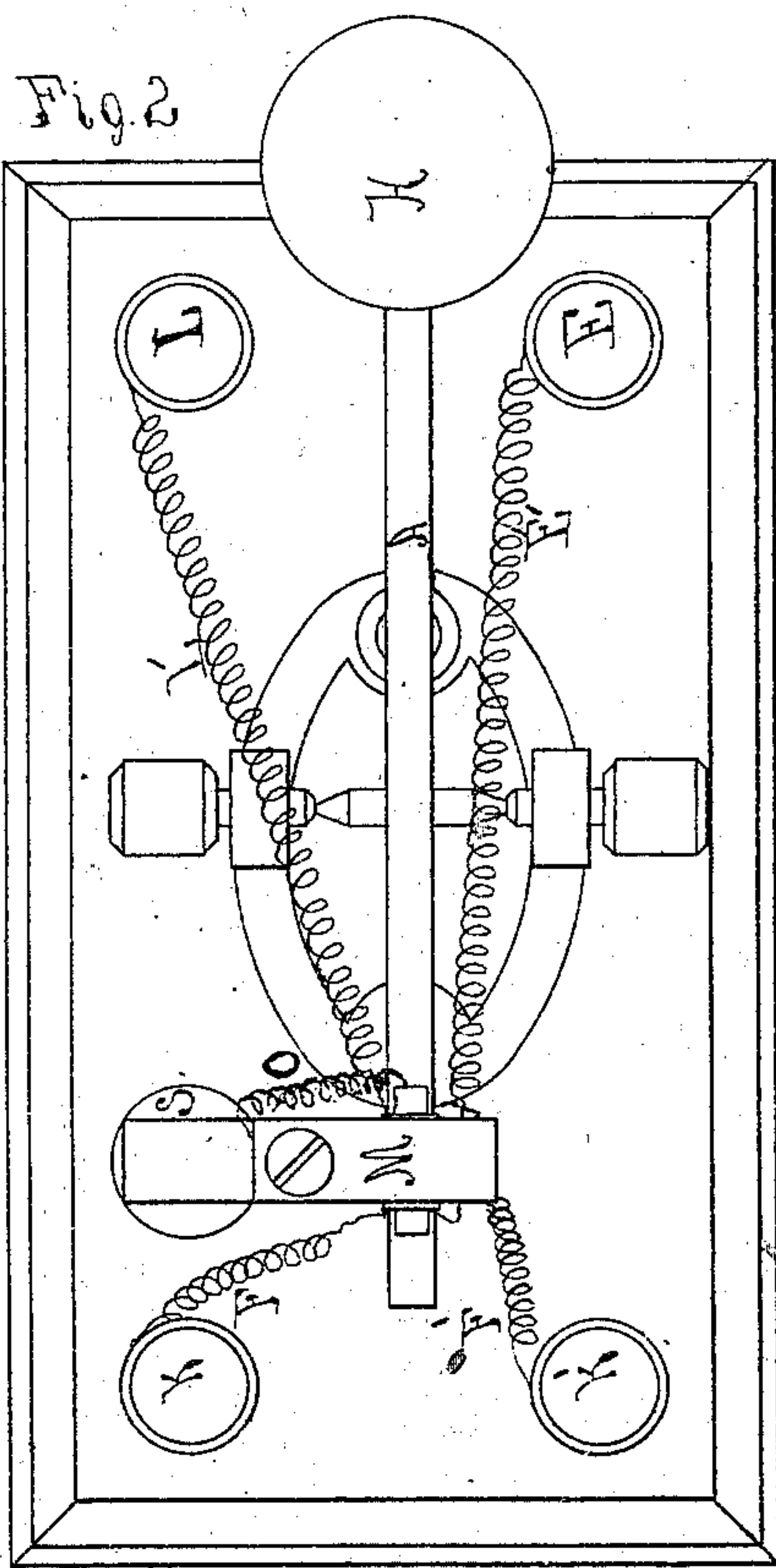
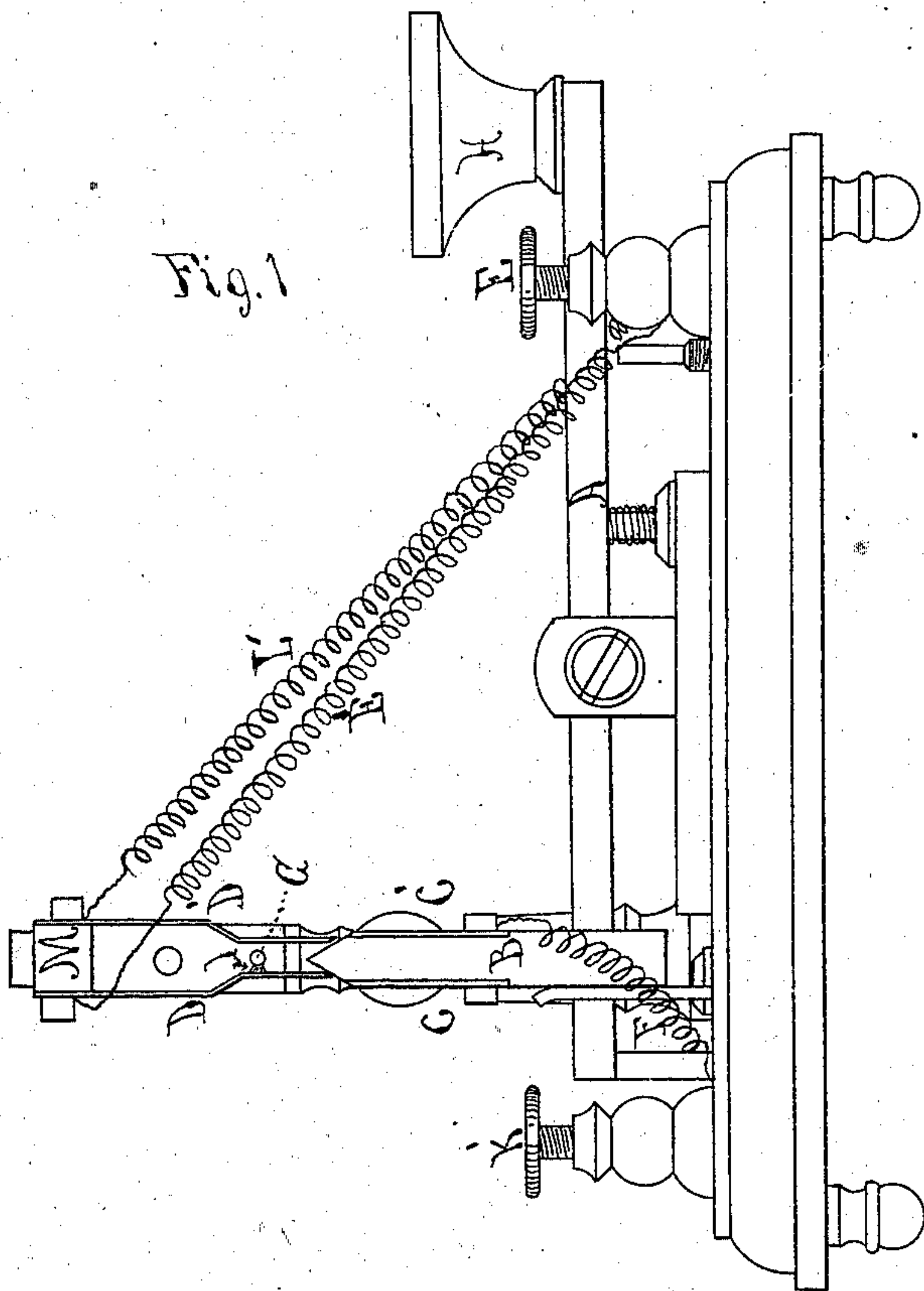


J. B. STEARNS.
Duplex Telegraph Keys.

No. 136,875.

Patented March 18, 1873.



Witnesses.
Arthur Lord
Am Hayes jr

Inventor,
Joseph B. Stearns
by his attorney
A. C. Hayes

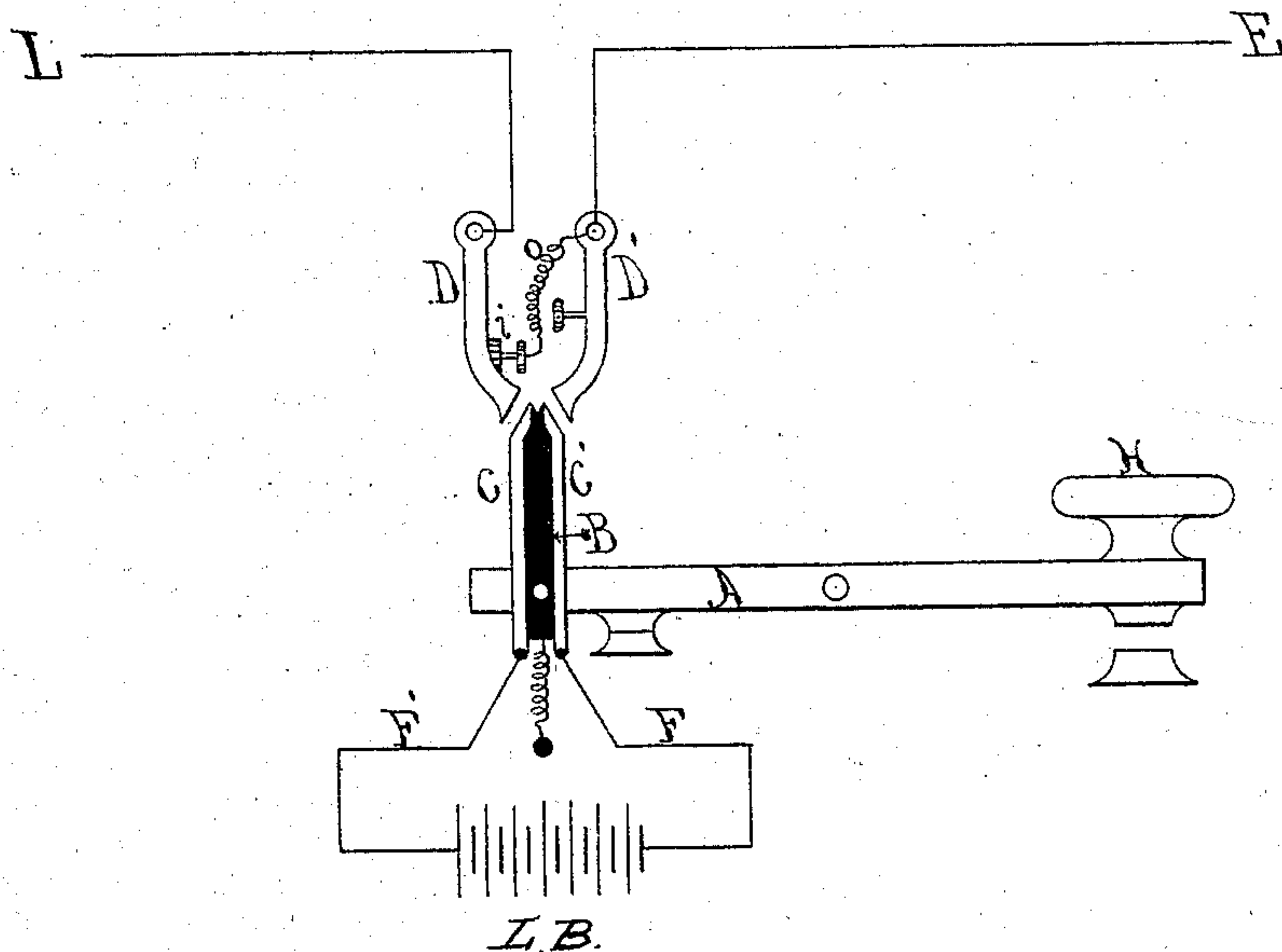
2 Sheets--Sheet 2.

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UNITED STATES PATENT OFFICE.

JOSEPH B. STEARNS, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN DUPLEX TELEGRAPH-KEYS.

Specification forming part of Letters Patent No. 136,875, dated March 18, 1873.

CASE D.

To all whom it may concern:

Be it known that I, JOSEPH B. STEARNS, of Boston, in the county of Suffolk, State of Massachusetts, have invented a new and useful Improvement in Telegraph Apparatus, of which the following is a specification:

My invention consists in an improved telegraph-key, which I call a wedge-key, by means of which a galvanic battery may be introduced into and removed from a circuit so that a current can be transmitted to a distant station without breaking or interrupting the circuit from that station.

The accompanying drawing forming a part of this specification represents my invention, Figure 1 being a front elevation of my improved key; Fig. 2 being a plan, and Fig. 3 an end elevation, of the same. Fig. 4, sheet 2, is a diagram showing the battery and its connection.

Like letters in the figures refer to similar parts.

Description of the Drawing.

A is a metallic lever, similar to the lever of the common telegraph-key, which is pivoted in the usual manner upon a suitable base, and is provided at one extremity with the usual finger-knob H. B is a bar of some insulating substance, such as hard rubber, pivoted at right angles to the opposite extremity of the lever A. This bar is wedge-shaped at its upper extremity, and has attached to it, one on each side, plates of metal C C'. The plates of metal are connected respectively to the opposite poles of a galvanic battery, L B, by the screw constructions K K', and wires F F'. D D' are two flat metallic springs, which are attached at their upper ends to a block of insulating material, M, supported on a proper standard of metal, and at their lower ends rest upon the wedge-shaped insulating portion

of the bar B, one on each side, but do not touch the metallic plates C C'. Upon one of these metallic springs, D, is a platinum point, I, which rests against a metallic projection, G, extending out from the standard S, so that when the bar B is depressed the point I and projection G are in contact, and the circuit is completed through them. The circuit from the line to earth is completed through screw-connection L, wire L', upper portion of metallic plate D', wire O, in Fig. 3, standard S, metallic projection G, platinum point I, metallic spring D, wire E', and screw-connection E, to earth. The resistance of the wire O is equal to that of the battery L B.

The operation of the key is as follows: On depressing the knob of H of the lever A to send a signal, the bar B is elevated, and its wedge-shaped portion enters between the metallic springs D D', and separates them slightly. This breaks the circuit at I, but at the same time the metallic springs D D' come into contact with the metallic plates C C' on each side of the bar B, and the battery L B is thrown into the circuit through K' F' C' D' L back through E E' D C F K to battery, and a signal is transmitted. Owing to the fact that the resistance at O is the same as that of the battery, the resistance of the circuit remains unchanged.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is—

The combination of the lever A, insulating-bar B, metallic plates C C', metallic springs D D', insulating-block M, projection G, and connecting-wires F F' L E, and O, substantially as and for the purpose as set forth.

JOSEPH B. STEARNS.

Witnesses:

A. L. HAYES,

WILLIAM A. HAYES, JR.