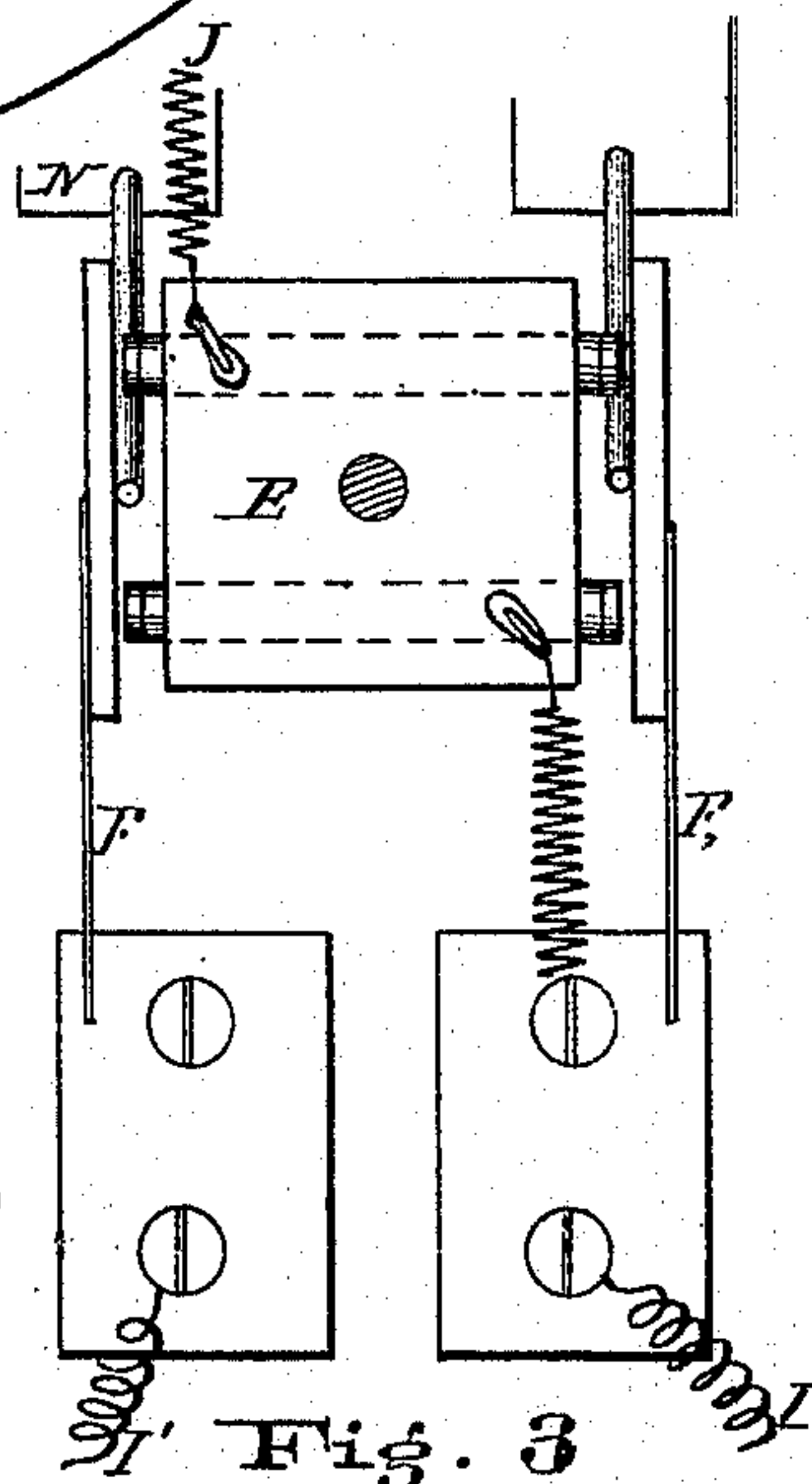
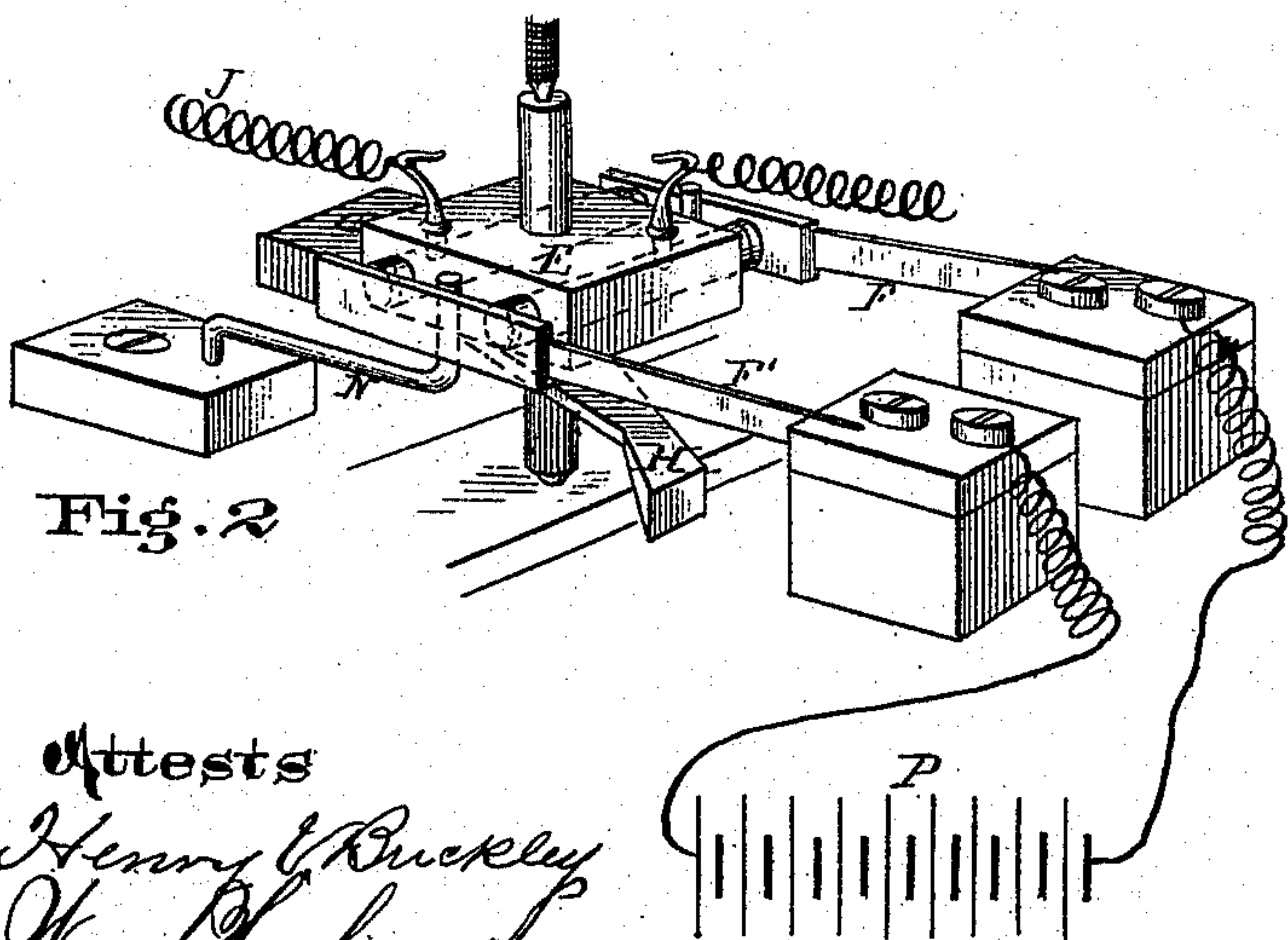
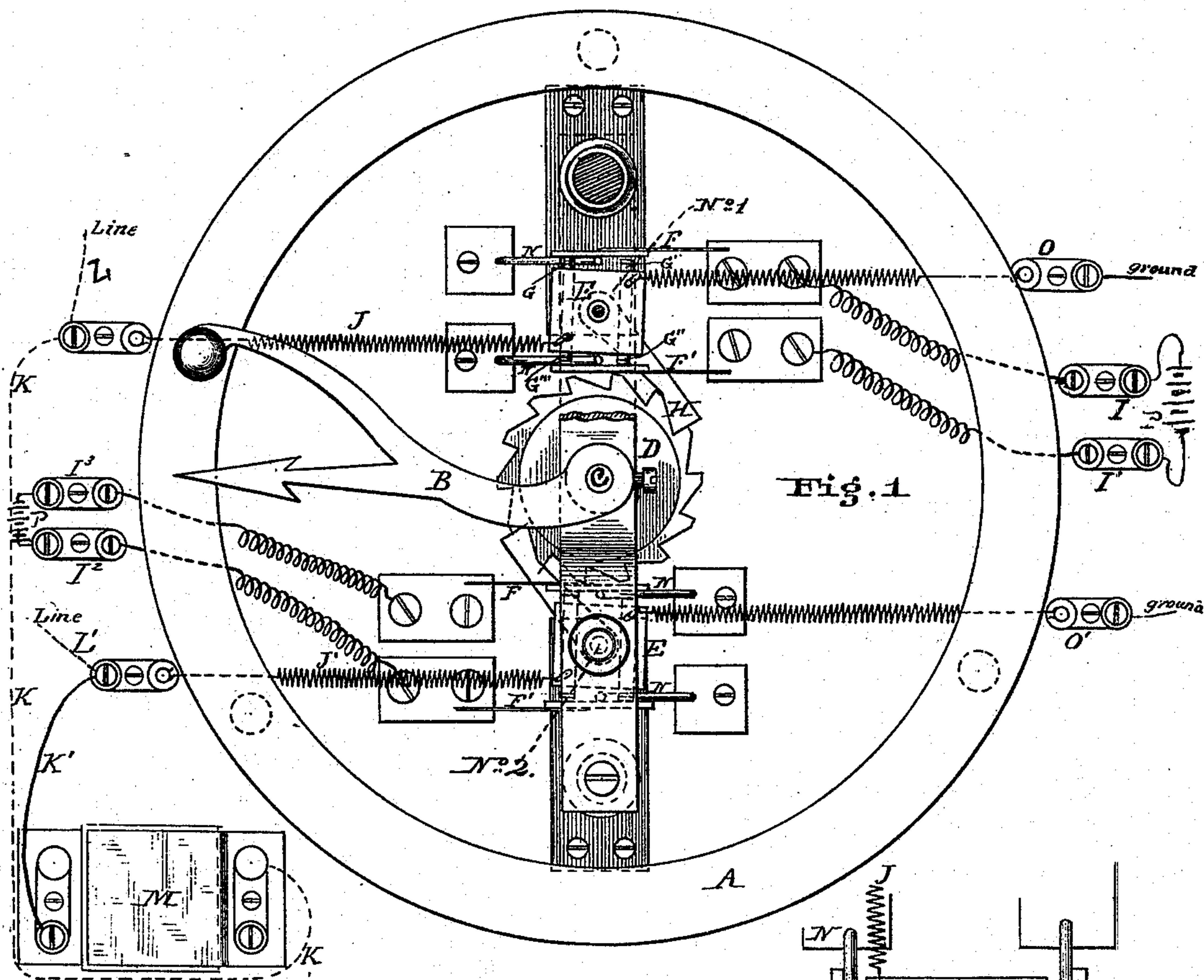


(No Model.)

S. M. PLUSH.
Telegraph Mechanism.

No. 238,250.

Patented March 1, 1881.



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UNITED STATES PATENT OFFICE.

SAMUEL M. PLUSH, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO HIMSELF AND WILLIAM P. PHELPS, OF SAME PLACE.

TELEGRAPH MECHANISM.

SPECIFICATION forming part of Letters Patent No. 238,250, dated March 1, 1881.

Application filed September 15, 1880. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL M. PLUSH, M. D., of Philadelphia, Pennsylvania, have invented new and useful Improvements in Telegraphic Mechanism; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the annexed drawings, making part hereof.

The object of this invention is to overcome the difficulties of working pole-changers with heavy batteries. The difficulty has been that the heavy charges of electricity from the batteries would burn the platinum points of the pole-changer in a few hours, and it would consume much valuable time to adjust new points, the machine meantime being inoperative. To overcome this I so construct the pole-changer as to open the circuit entirely at each vibration, and use a condenser, thereby bringing the charge from the line and that from the condenser into opposition, by which one charge neutralizes the other.

By the use of currents of opposite polarity, instead of using the ground, not only is the capacity of the condenser doubled, but the static discharge from each side of the condenser is largely increased. One condenser takes the place of two—not merely does double its previous work, but is used in the place of two as they are now connected.

In the drawings, Figure 1 is a plan or top view of my mechanism; Fig. 2, an enlarged detached perspective view of the pole-changer and its immediate connections; Fig. 3, a detached plan or top view of the pole-changer.

A is the dial-ring; B, the pointer; C, the shaft of the pointer having a ratchet-wheel, D, at its foot; E, a square rubber block pivoted centrally; F F', two band-springs setting against the points G G' G'' G''' of the block E; H, a spring-pawl to ratchet D on block E. The parts E F, &c., G, &c., H form the pole-changer. I I' I'' I''' constitute the battery-connections. J J' are spiral-spring connections between the pole-changer and the condenser-wires K K'. L is one line-wire. L' is the other line-wire; M, the condenser. N N' are arms impinging against the pole-changer springs to restrain the latter from following the block E when it is desired to move a part

of the block away from any one spring to entirely break that particular circuit. O O' are the ground-connections. I have indicated batteries at P.

One pole-changer I have designated as No. 1; the other, No. 2. The pole-changer No. 1 is connected with the condenser M by wire K. Pole-changer No. 2 is connected with the condenser by wire K'. Line-wire L passes from No. 1, and line-wire L' from No. 2.

The operation of the batteries upon the pole-changers is well known to all persons skilled in the art, and a detailed description is unnecessary. I is the copper, and I' the zinc, poles of one battery; and I'' the copper, and I''' the zinc, poles of the other battery. The change of the poles is accomplished by means of the vibrations of the block E by the mechanism shown. The charge, say of No. 1 line, passes along the line-wire L, and the circuit is then entirely broken. The return shock of the charge then, instead of passing back to the platinum point, is met at the junction of the line-wire Z and condenser-wire K by the charge from the condenser, and its force is thus neutralized or destroyed. The other pole-changer, No. 2, is connected with the other end of the condenser M by the wire K' and the action of the charge upon the line-wire L' and the action of the condenser-wire K' is the same as that above described of the similar connections of No. 1 line. Instead of having a ground-connection at one end of the condenser the other line is connected at that end, and all condenser ground-connection is dispensed with. Thus all the force of the charges of the two lines, which were formerly passed into the ground, is retained in the condenser, and operates to neutralize the return force of the current from the respective line-wires. All of the battery force is utilized.

My device can be used with any two lines where the breaking of the circuit is simultaneous, whether pole-changers be used or ordinary circuit-breakers.

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

1. In combination with pole-changers No. 1 and No. 2, the single condenser M, two line-

wires, L L', and condenser-wires K K', all connected and operating substantially as and for the purposes described.

5 2. The combination, with two line-wires, L and L', the circuits in which are broken simultaneously, of single condenser M and condenser-wires K K', the said two condenser-

wires being connected to the opposite ends of the condenser, substantially as and for the purposes described.

SAML. M. PLUSH.

Witnesses:

GEORGE E. BUCKLEY,
HENRY V. BUCKLEY.