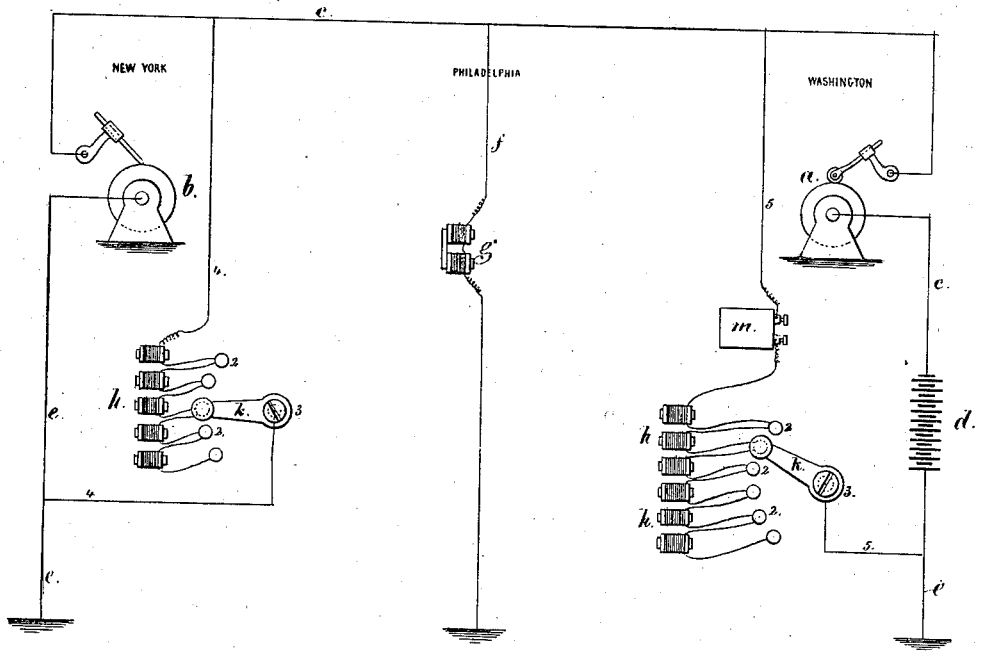
T. A. EDISON.

Chemical Telegraphs.

No. 147,313. Patented Feb. 10, 1874.



Witnesses,
Chas. A. Smith
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UNITED STATES PATENT OFFICE.

THOMAS A. EDISON, OF NEWARK, NEW JERSEY, ASSIGNOR TO HIMSELF AND GEORGE HARRINGTON, OF WASHINGTON, D. C.

IMPROVEMENT IN CHEMICAL TELEGRAPHS.

Specification forming part of Letters Patent No. **147,313**, dated February 10, 1874; application filed July 29, 1873.

CASE 74.

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 Chemical Telegraphs, of which the following is a specification:

In Letters Patent granted to me February 4, 1873, and numbered 135,531, a helix or magnet is employed in a shunt or derived circuit to neutralize the attenuations of the pulsations in the main circuit, and prevent the tailing upon the chemical paper.

The object of the present invention is to adjust the counter or reacting force of the magnets or helices at the receiving station, and also to adjust the reacting force of the magnets or helices at the transmitting station, so as to vary the action of the helices to suit the battery or the conditions of the pulsations at the transmitting and receiving stations.

In the annexed diagram, *a* is the transmitting-instrument, in which the strip of perforated paper is employed to make and break the circuit. *b* is the receiving-instrument for the strip of chemical paper. *c* is the main line; *d*, the main battery; *e e*, the ground-connections. *f* is a branch circuit to the earth, in which the induction-coils or magnets *g* are introduced, as in aforesaid patent. *h* are the induction-coils at the receiving station, and the action of the same corresponds with that set forth in said patent. I, however, employ several electro-magnets or induction-coils, connected together through the contact-pins 2 2, and these are arranged in the arc of a circle, of which the fulcrum 3 of the switch *k* is the center, and to this center 3 one of the shunt-wires 4 connects. By moving this switch *k*, one or more of the helices is placed in the shunt-circuit, and the reactionary effect in clearing the line or instrument of tailing is thereby increased or decreased, as required.

At the transmitting-station the shunt-circuit 5 is provided with the resistance or rheostat *m*, and the electro-magnets or induction-coils *h*, switch *k*, and contact-pins 2 2, so that there may be more or less reactionary effect of the helices *h* to cut off the tailings upon the main line, because, when the circuit is closed at the transmitting-instrument *a*, a large portion of the battery-power passes through the shunt 5, switch *k*, coils *h*, and rheostat, and there is an accumulation of energy in the helices *h*, and as soon as the circuit through the instrument *a* is broken, the magnets *h* discharge themselves with more or less power, according to the number of said helices that are brought into the circuit; and this discharge, being in an opposite direction to the current of the battery, acts to clear the line of any surplus or static electricity, and prevent tailing.

It will be evident that the reactionary effect of the induction-coil or magnets in the shunt-circuit at the transmitting station is to neutralize static electricity, or to bring the line to a normal electric condition instantly, thereby greatly promoting the rapidity of action.

Either the positive or the negative of the transmitting-battery may be to the line, and the other pole to the earth; but the connections of the receiving-instrument must be made accordingly.

I claim as my invention—

1. A shunt or derived circuit at the transmitting station, into which an adjustable resistance and one or more electro-magnets are introduced, as and for the purposes set forth.

2. The combination, with a chemical telegraphic receiving-instrument, of several electro-magnets and a switch, *k*, to connect more or less of said magnets in a shunt-circuit, for the purposes set forth.

Signed by me this 23d day of April, A. D. 1873.

THOMAS A. EDISON.

Witnesses:

GEO. T. PINCKNEY,

CHAS. H. SMITH.