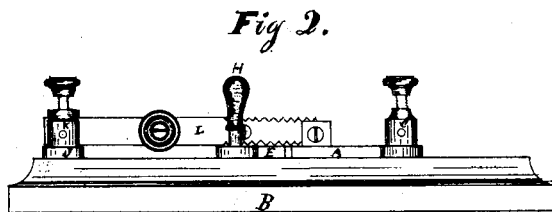
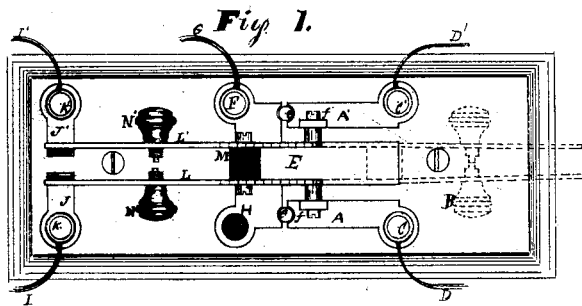


TELEGRAPHIC STATION CUT-OFF.

No. 110,970.

Patented Jan. 17, 1871.



Witnesses

Edw. Frost.
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IMPROVEMENT IN MECHANISMS FOR OPENING AND CLOSING TELEGRAPHIC STATION-CIRCUITS.

Specification forming part of Letters Patent No. **110,970**, dated January 17, 1871.

To all whom it may concern:

Be it known that I, ELISHA GRAY, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Mechanism for Opening and Closing Telegraphic Station-Circuits; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable others skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawing, forming part of this specification, in which—

Figure 1 is a plan view of my invention, and Fig. 2 is a side elevation of the same.

Similar letters of reference indicate corresponding parts in the several figures of the drawing.

My invention has for its object the production of a mechanical device by the use of which the circuit in telegraph-lines may be cut off from the operating-instrument without opening the circuit in the main line; and the nature of my improvement consists in the arrangement of horizontal springs hinged to the plates, to which the ends of the wire forming the main line are secured. Said springs are separated one from the other by means of a non-conducting block secured between the same, and are provided with platinum-pointed screws, so arranged as to engage one with the other as said springs are thrown back, thus cutting the circuit from the instrument without breaking or opening the circuit in the main line, and, by throwing the same forward upon the plates receiving the wires from the instrument, said screws are disengaged and the circuit is complete through the instrument.

In the accompanying drawing, A and A' are metal plates, mounted upon or secured to a wooden base or platform, B. Attached to said plates are binding-posts C C', which receive the ends of the line-wire D D'.

E is a metal ground-plate, which is firmly secured to said platform separately from plates A and A'. Attached to said plate is a binding-post, F, which receives the end of the ground-wire G.

H is a movable post, so arranged as to be

readily applied to the apertures *e e* between the ground and line plates, the object of which is to connect the line wires to or from the instrument with the ground-wire. J and J' are metal plates, which are firmly and separately secured to the forward end of said platform. The inner ends of said plates are formed or bent upward, the upper ends of which are made round or wedge-shaped. Attached to the outer ends of said plates are binding-posts K K', which receive the wires I I', leading to and from the instrument.

L L' are metal springs, which are hinged or pivoted to vertical studs *ff*, projecting upward from the inner sides of plates A and A'. Said springs are attached (near their rear ends) one to the other by being bolted to the outer sides of insulator M, and extend forward to and against the outer sides of the upward-projecting ends of plates J and J'.

Secured to said springs, at or near the center, between said insulator and their forward ends, are platinum-pointed screws N N. Said screws are so arranged as to have their inner ends separated one from the other as said springs are thrown forward over the upward-projecting ends of plates J and J', or to come in contact with or engage one with the other as said springs are disengaged from said plates, thus electrically connecting the same. The edges of the rear extremity of said springs next to the forward end of insulator M are fluted or cut away transversely, forming a series of sharp edges, which project upward and downward to a point near the ground-plate. The object of thus fluting said springs is to protect the instrument from lightning, as the electrical current will pass from said edges to the ground-plate E, and from said plate to the ground through wire G.

The manner of connecting and operating my invention is as follows: Springs L and L' are thrown forward over or against the outer sides of the upward-projecting ends of plates J and J', which disconnects screws N N. Thus the circuit is completed through the instrument, the electrical current passing from wire D of the main line, through plate A, spring L, plate J, and wire I, to the instrument; thence back,

through wire I', plate J', spring L', and plate A', to wire D' of the main line.

In cutting the instrument out of the circuit, springs L and L' are thrown back, as shown by dotted lines, Fig. 1. Thus screws N N are engaged and the circuit is completed, the electrical current passing from wire D of the main line, through plate A, spring L, screws N N', to spring L', plate A', to wire D' of the main line.

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

1. The springs L and L', arranged to operate substantially as and for the purpose specified.

2. The combination of plates A and A', ground-plate E, plates J and J', springs L and L', the several parts arranged to operate together substantially as and for the purpose set forth.

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Witnesses:

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