

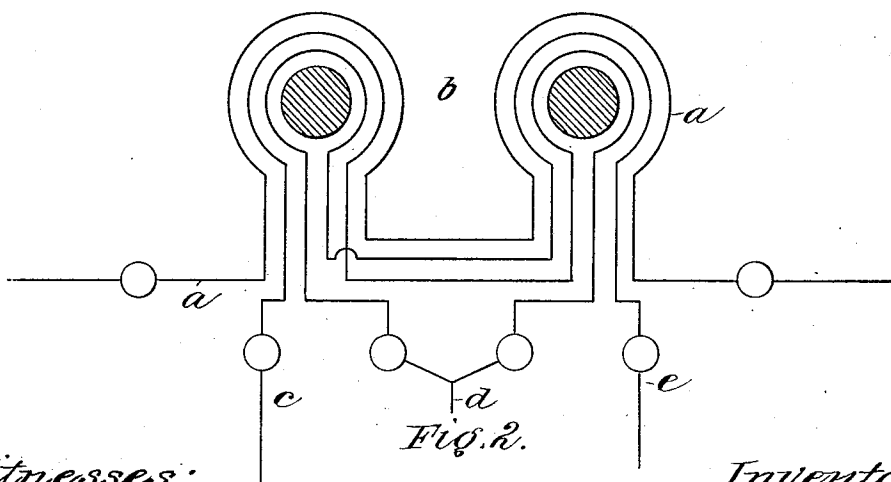
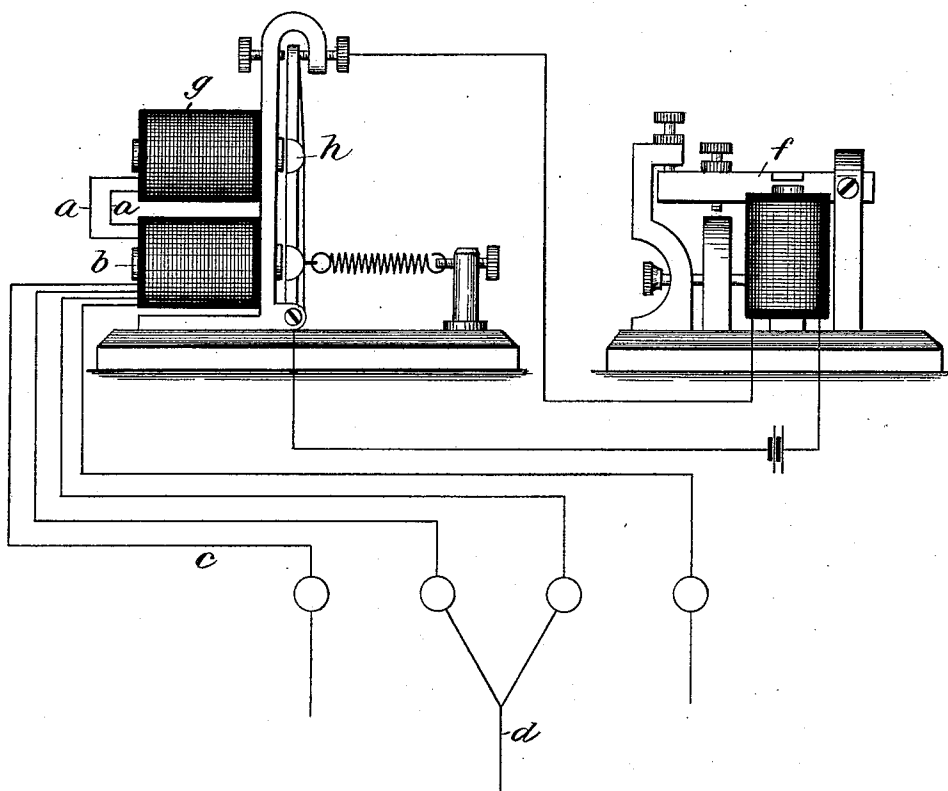
(No Model.)

C. D. HASKINS.
QUADRUPLIX TELEGRAPHY.

No. 405,211.

Patented June 11, 1889.

Fig. 1.



Witnesses:
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UNITED STATES PATENT OFFICE.

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QUADRUPLIX TELEGRAPHY.

SPECIFICATION forming part of Letters Patent No. 405,211, dated June 11, 1889.

Application filed November 19, 1887. Serial No. 255,602. (No model.)

To all whom it may concern:

Be it known that I, CHARLES DARWIN HASKINS, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented a certain new and useful Improvement in Quadruplex Telegraphy, (Case 2,) of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

In the working of quadruplex systems of telegraphy a false signal has been caused at the neutral relay when the polarity of its current is changed by the double-current transmitter at the distant end during the time that the armature of said neutral relay should be held up by the operation of the single-current transmitter. This false signal has been heretofore prevented by various devices especially devised for this purpose, as is shown, for example, in patent to Moffatt & Blakeney, No. 351,933, of November 2, 1886, for quadruplex telegraphy, and Jones, No. 360,528, of April 5, 1887, for quadruplex telegraphy.

My invention relates to devices for preventing such false signals; and it consists in providing an extra electro-magnetic device to the neutral relay in circuit with an extra helix provided on the neutral-relay magnets. The current induced in the extra coil or helix serves to energize the extra electro-magnet, so that the armature-lever of the neutral relay, instead of falling away or kicking, as it has done heretofore, is held in position by the extra electro-magnet and armature.

In the drawings, which are illustrative of my invention, Figure 1 is a diagram illustrative of a neutral relay provided with my improvements connected with the local sounder in a quadruplex-telegraph system. Fig. 2 is a diagram illustrative of the manner in which I preferably wind the magnets of the neutral relay.

As shown in Fig. 2, *a* is the extra coil

wound upon the neutral-relay magnet *b*. The line *c* is connected, as shown, through the different spools of magnet *b*, to the wire *d*, leading to the transmitter. The wire *e* from the rheostat is connected in like manner through a coil of each of the relay-magnets, and from thence with the wire *d*, leading to the transmitter.

The particular method of winding the spools of the neutral relay with concentric coils I have claimed in a separate application filed herewith.

Referring to Fig. 1, it will be seen that the sounder *f* is included in the local circuit of the relay in the usual manner.

My invention consists in providing the extra electro-magnet *g* upon the neutral relay, said magnet being placed in the circuit of the extra coil or helix *a* and arranged to hold the armature *h* from falling back or kicking when energized by current induced in the extra coil *a*. By this arrangement false signals upon the relay *g* are prevented.

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

In a neutral relay, the combination, with the differentially-wound electro-magnet, of an extra coil upon said electro-magnet and an extra electro-magnet included in circuit with said extra coil, said differentially-wound electro-magnet and said extra electro-magnet each being provided with a separate armature and said armatures being mounted upon the same lever, whereby currents induced in the extra coil energize the electro-magnet included in its circuit to prevent the armature of the said relay from falling away or kicking.

In witness whereof I hereunto subscribe my name this 5th day of October, A. D. 1887.

CHARLES D. HASKINS. [L. s.]

Witnesses:

JOHN J. CARTY,
MILLS H. LANDON.