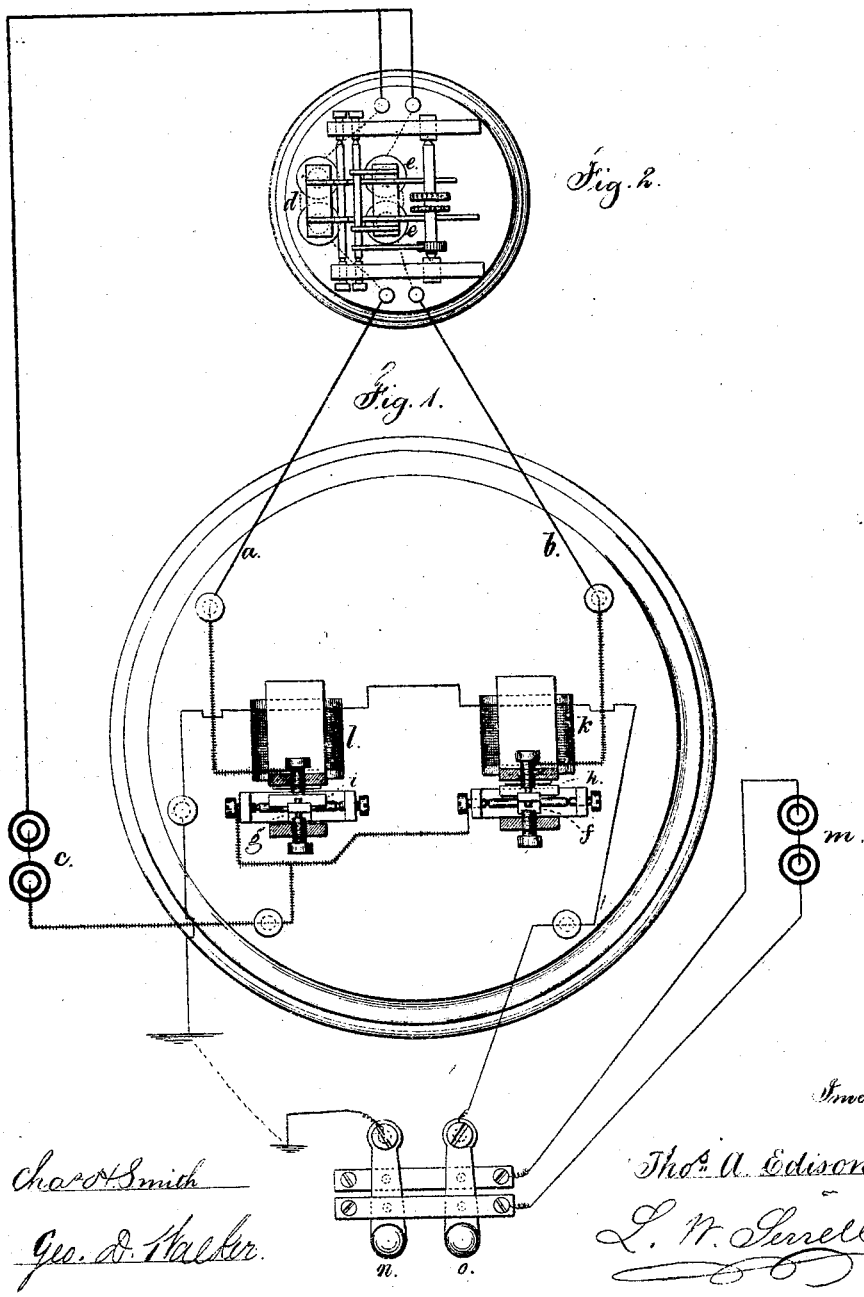
T. A. EDISON.

Circuits for Printing Telegraphs.

No. 140,489. Patented July 1, 1873.



Witnesses

Chas. H. Smith

Geo. D. Walker.

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UNITED STATES PATENT OFFICE.

THOMAS A. EDISON, OF NEWARK, NEW JERSEY, ASSIGNOR TO THE GOLD AND STOCK TELEGRAPH COMPANY, OF NEW YORK, N. Y.

IMPROVEMENT IN CIRCUITS FOR PRINTING-TELEGRAPHS.

Specification forming part of Letters Patent No. **140,489**, dated July 1, 1873; application filed February 18, 1873.

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 Circuits for Printing-Telegraph Instruments, of which the following is a specification:

In this instrument two relay-magnets are in a main-line circuit and their cores or armatures are polarized. The electro-magnets are so made that a pulsation of one polarity will attract one armature and repel the other, and the reverse when a current of opposite polarity is sent. The armatures of these electro-magnets open and close the circuits of a local battery, in which is placed the type-wheel and printing-magnets of a printing-telegraph instrument. When pulsations of one polarity act in the relay-magnets the type-wheel magnet of the printing-telegraph will be operated, and when a reverse polarity is sent through the relay-magnet the printing-circuit will be operated.

In the drawing, Figure 1 is a plan of the relay-magnets, and Fig. 2 represents the printing instrument and the circuits in which it is connected.

I remark that the printing instrument is to be of any desired character adapted to use with two circuit-connections, *a b*, such circuits passing, respectively, through the printing-magnet *d* and type-wheel magnet *e*. *c* represents the battery for the circuits *a b*, and this is connected with the circuit-closing levers *f* and *g*, upon which are the polarized armatures *h i* of the relay-magnets *k l*. These magnets *k l* are in the main circuit from the battery *m*, and when the key *n* at the distant station is depressed the pulsation passing through the magnets *k l* will be of negative polarity, and when *o* is depressed will be of positive polarity.

The electro-magnets *k l* are so made that when the key or pulsator *o* is operated, the magnet *k* will be operative upon its armature *h* to close and open the circuit *b* to the type-wheel magnet *e* and the armature *i* will be repelled; but when the type-wheel has been set the key *n* is to be depressed and the polarity reversed to act upon the armature *i*, and close the circuit *a* through the printing-magnets *d*, repelling the armature *h*.

By this transmitting mechanism the circuits *a b* can be operated at the distant station or stations with reliability and facility over a single line main circuit.

I remark that a pulsator-wheel and index-hand corresponding with the type-wheel may take the place of the keys *n o*.

The polarization of the electro-magnets may be effected by permanent magnetism in the core or armature, or in any convenient manner.

I claim as my invention—

Two polarized electro-magnets in a main circuit, in combination with two local circuit-connections to the magnets of a printing instrument, and a mechanism for opening and closing the main circuit and reversing the polarity of the current, substantially as and for the purposes set forth.

Signed by me this 13th day of February, A. D. 1873.

THOMAS A. EDISON.

Witnesses:

GEO. T. PINCKNEY,

CHAS. H. SMITH.