# T. A. EDISON.

## AUTOMATIC-TELEGRAPHY.

No. 173,718. Patented Feb. 22, 1876.

Fig. 1.

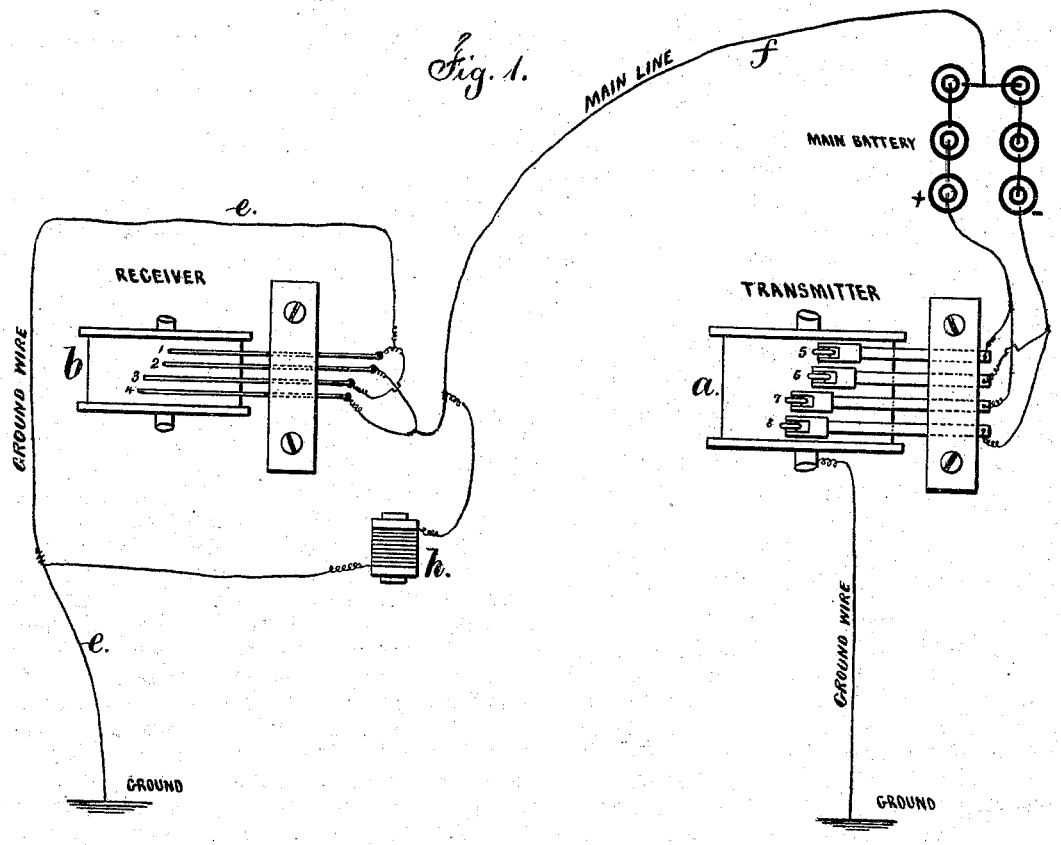


Fig. 2.


Witnesses,

Chas. H. Smith

Harry Smith

Inventor.

Thomas A. Edison

per Lemuel W. Serrell

Atty

# UNITED STATES PATENT OFFICE.

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

## IMPROVEMENT IN AUTOMATIC TELEGRAPHY.

Specification forming part of Letters Patent No. **173,718**, dated February 22, 1876; application filed January 15, 1875.

*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 Automatic Telegraphs, of which the following is a specification:

The object of this invention is to produce block characters on chemical paper by aggregation of dots, and the transmission is effected by a strip of perforated paper, the perforations being grouped together to form the block letter, as in my Patent No. 151,209.

I make use of four lines of perforations in composing the block letter, four rollers or stylus-points at both the receiving and transmitting stations. The first pair of rollers are in advance of the second pair, and one roller of one pair and another of the other pair are connected, and act with a positive current over the lines, and the other rollers of the other pair act with the negative current. This arrangement produces the record of the letters properly in succession in dots, forming block characters; but there are also produced some false dots between the letters, that are stopped-out or obliterated by hand at the receiving-station, so that only the true characters remain visible.

In the annexed diagram the receiving-drums *a* and *b*, at the transmitting and receiving station, respectively, are operated as usual, and draw along the strips of perforated paper *c* and chemical paper *d*.

The receiving stylus-points 1 and 3 are connected to the earth-wire *e*, and the stylus-points 2 and 4 are connected to the line *f*, and between the line *f* and ground-wire *e* a small electro-magnet, *h*, is placed, so as to act to neutralize the static or induced current in the line, as explained in my Patent No. 135,531.

At the transmitting-station the rollers 5 and 7 are connected to the positive pole of the battery *l*, and the rollers 6 and 8 to the negative pole, the line-wire *f* being connected to the center of the battery, and the drum *a* being connected to the earth.

Suppose, now, that four transverse perforations, composing the letter "I," pass under the rollers 5 6 7 8; the roller 5 first sends a negative pulsation through the ground through 1 and 3, marking the paper, returning by 2 and 4 to the line, and these points 1 and 3 will mark, but 2 and 4, being a negative return current, will not. No. 1 is a true mark, but 3 is a false mark, that is obliterated, as illustrated in Fig. 2. The roller 6 now sends a positive current over the line, which goes by 2 and 4, and leaves by 3 and 1. The mark 4 is false, and is obliterated. The pulsation sent by 7 is next negative, and goes by 1 and 3, and mark 3 is true, but 1 is false, and is obliterated, and then the roller 8 sends a positive current over the line by 2 and 4, returning by 1 and 3. The mark 4 is the true one, and 2 is the false one; but, in consequence of arranging the pairs of points in advance of each other, as shown, the false marks are brought together between the respective characters, while the characters themselves stand out true and correct.

The character will be made by the pulsations as indicated, according to the arrangement of the perforations representing that character, and the false marks, being between the character, are blotted out by a boy or attendant after the strip of paper is received from the machine, so as only to leave the characters themselves apparent between the blots, as illustrated in Fig. 2.

I claim as my invention—

Four transmitting stylus-points or rollers, connected in pairs to the positive and the negative of a battery, to which the line-wire is united at the center, in combination with two stylus-points connected to the line and two to the earth at the receiving-station, the parts being arranged and operated as set forth.

Signed by me this 7th day of August, 1874.

THOMAS A. EDISON.

Witnesses:

GEO. T. PINCKNEY,

CHAS. H. SMITH.