T. A. EDISON.
AUTOMATIC TELEGRAPH.

No. 195,752. Patented Oct. 2, 1877.

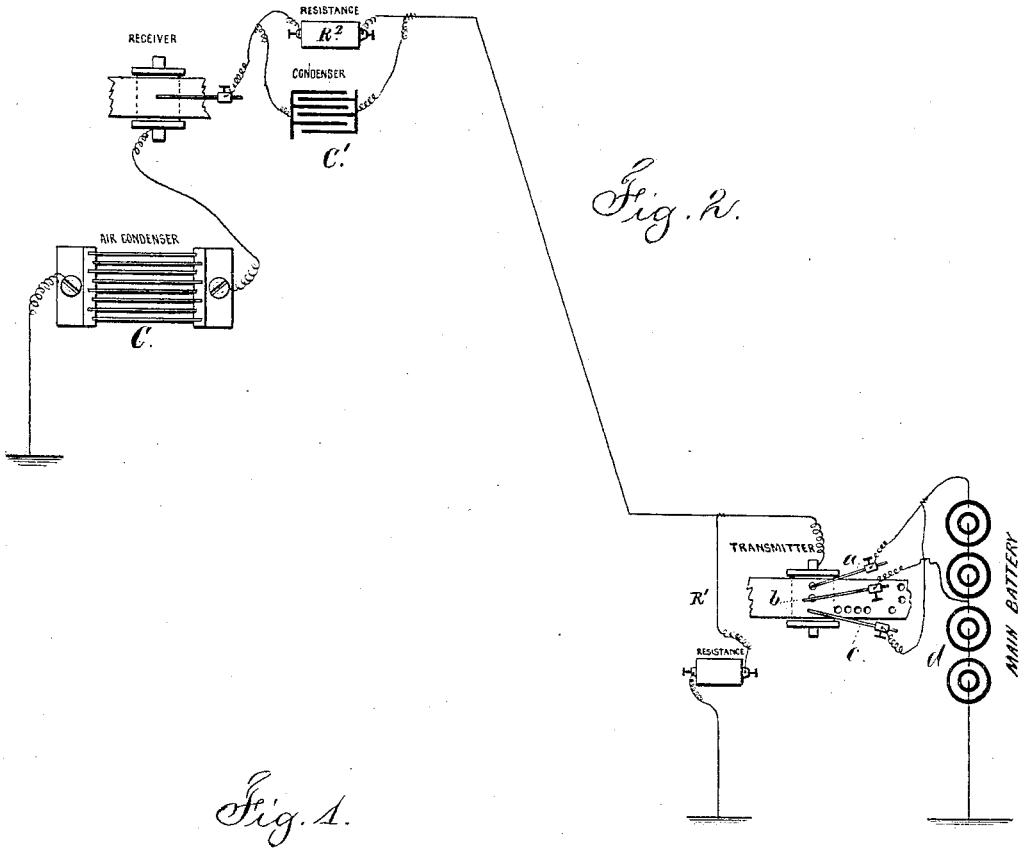
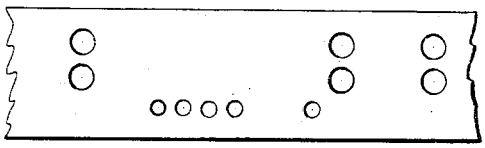


Fig. 2.

Fig. 1.



Witnesses;
Chas. H. Smith
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atty

UNITED STATES PATENT OFFICE.

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

IMPROVEMENT IN AUTOMATIC TELEGRAPHS.

Specification forming part of Letters Patent No. **195,752,** dated October 2, 1877; application filed January 27, 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 transmit, over telegraphic circuits, dashes the first part of each of which is formed by a stronger current than the last, so as to prevent the wire from being fully charged statically; also, in arranging in the main line at the receiving-station a condenser formed of plates separated by air only.

The invention consists in the method of arranging the perforations and contact stylus or rollers to send a strong current by putting on the whole of the battery to form the first part of a dash, and immediately thereafter a second stylus closes the circuit through one of the holes intended for a dash, so as to preserve the continuity, but only to put on a portion of the battery.

Figure 1 shows the arrangement of perforations for the word "That," and Fig. 2 shows the arrangement of parts and connections.

The first stylus, *a*, passing into the first hole, closes the circuit, and puts the whole battery *d* upon the line. Just at the moment it is leaving this hole the middle stylus or pen *b* falls into the second hole, preserving the continuity of the circuit, but putting on only half of the battery. The third pen, *c*, puts on the whole of the battery, and forms the dots.

If the ends of the stylus or pens are in line, one perforation will be in advance of the next to form the dash; but if the point of one stylus is farther in advance than the next, the perforations may be in line with each other transversely of the strip, and two styluses in place of three might be similarly employed.

R^1 is a branch to earth for the static discharge of the line. C′ is an ordinary condenser, shunted with a resistance, R^2, the object of which is to give a more powerful compensation should the air-condenser C prove insufficient; but generally the resistance R^2 is made *nil* or short-circuited, so that the condenser C′ is dispensed with. The first portion of a signal coming over the wire records itself on the chemically-prepared paper, and at the same time charges the condenser C. Now, when the signal ceases, the condenser C discharges a contrary current, which balances that from the line.

The reason of sending a weaker current to form the last portion of a dash is to prevent the wire from being charged higher with a dash than a dot, thus preserving an evenness in the recorded dots and dashes which it is very hard to obtain on very long circuits.

I use an air-condenser, C, so that it will discharge instantly, which is not the case with condensing-surfaces separated with a non-conducting material, the phenomenon of absorption preventing their discharging quickly and reducing the speed.

I believe I am the first to discover that an air-condenser applied to a chemical telegraph will promote rapidity of operation at the receiving-instrument.

I claim as my invention—

1. The air-condenser inserted in the line at the receiving-station of a chemical telegraph, for the purposes set forth.

2. In a chemical telegraph, the method specified of forming dashes by transmitting, by means of perforated paper, a strong current followed by a weak current, substantially as set forth.

Signed by me this 19th day of January, A. D. 1875.

THOS. A. EDISON.

Witnesses:

GEO. T. PINCKNEY,

CHAS. H. SMITH.