T. A. EDISON.

Transmitter and Receiver for Automatic Telegraphs.

No. 168,242. Patented Sept. 28, 1875.

Fig. 1.

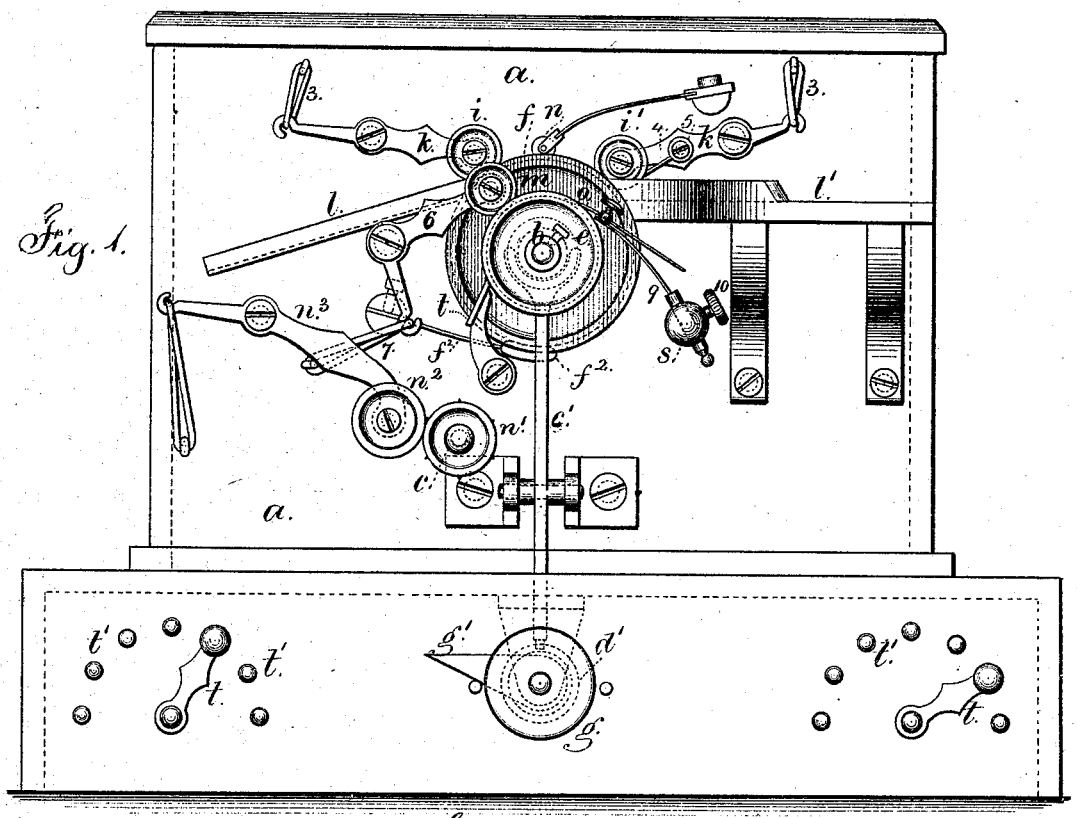


Fig. 2.

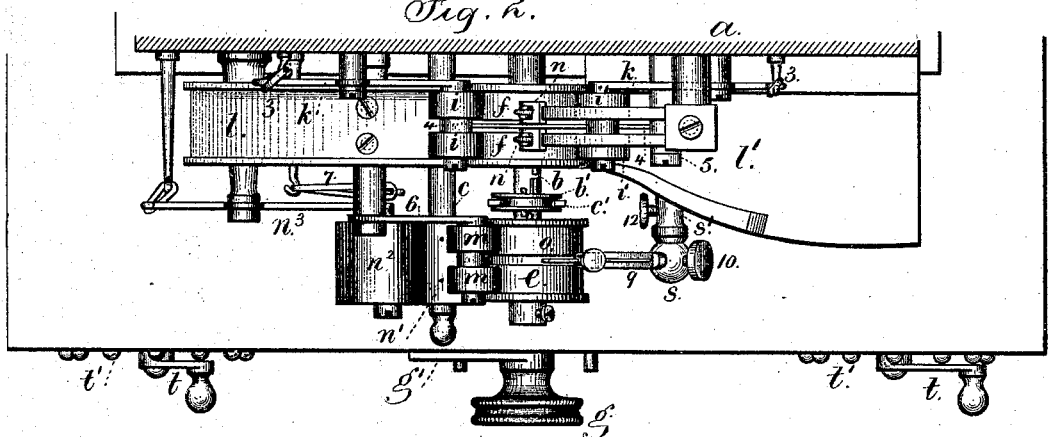
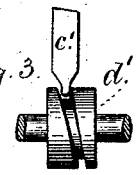


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

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

IMPROVEMENT IN TRANSMITTERS AND RECEIVERS FOR AUTOMATIC TELEGRAPHS.

Specification forming part of Letters Patent No. **168,242**, dated September 28, 1875; application filed January 26, 1875.

CASE 104.

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

This instrument is made for drawing through perforated paper and transmitting pulsations, or for moving the chemical prepared strip of paper, and winding the same up ready for transfer to the copyist to write out or print the message. My improvement has special reference to the mechanism by means of which these operations of transmitting and receiving are performed in one instrument.

In the drawing, Figure 1 is an elevation of said instrument, and Fig. 2 is a plan of the same.

Within the box *a* there is to be placed any suitable clock movement or mechanism, operated by a weight or spring to propel the shafts *b* and *c* with the required velocity. This clock-work is not shown in the drawings, as it may be of any convenient character, and it should include stopping and starting mechanism. The drums *e* and *f* are loose upon the shaft *b*, but there is between them a coupling, *b'*, sliding upon a feather or key, and connecting either *e* or *f* to the shaft *b*, so that it will be revolved by and with such shaft; and this coupling is operated by a lever, *c'*, at the lower end of which is a finger passing into the screw-cam *d'*, (shown detached in Fig. 3,) that is connected with the button *g* and pointer *g'*, so that by turning such button the drum *e*, for chemical paper, will be connected to the shaft and revolved, or the drum *f*, for perforated paper. The spring friction-brake *f'* holds the drum *f* from turning when the paper is not to be run through, and this brake also serves to keep the surface of the drum clean. The contact-rollers *i* and *i'* serve to press the perforated paper to the drum *f*, so that it may be drawn through by the revolution of said drum. These rollers are on levers *k*, that are acted upon by springs 3, and there is a guide-wire, 4, that extends from a stud, 5, on *k*, beneath the rollers *i i'*, and these rollers are grooved for its passage, and this wire serves to direct the advancing end of the strip of paper to the roller *i*. The troughs *l l'*, at opposite sides of the drum *f*, serve to guide the paper as it is entered and passes away, and the rollers *n* upon spring-arm close contact through the holes in the strip to transmit the pulsations, as heretofore usual. The strip of chemical paper is passed beneath the stylus *o*, over the drum *e*, beneath the contact-roller *m*, and is wound upon the roller n^1. The contact-roller *m* is upon an arm or lever, 6, that is provided with a spring, 7, and the stylus *o* is upon a spring-arm, 9, that is made with a stock that can be moved in a small head, *s*, and clamped by a screw, 10, so as to be adjusted lengthwise, and this head *s* has a stem running into the horizontal column *s'*, and clamped by the screw 12, to regulate the pressure of the stylus upon the paper. The cleaning-plate *t*, having a tongue passing into a groove in the drum *e*, prevents the paper sticking to the said drum. This has heretofore been used, and the end of the strip, coming into contact with the roller n^1, is pressed to the same by the roller n^2 and spring-lever n^3, and said paper is caused to adhere to the roller n^1 by small points that are upon its surface; hence the paper will be carried around and wound upon this roller n^1, and the roller n^2 will yield as the roll of paper increases in size. As heretofore explained, the shaft *c*, upon which this roller n^1 is placed, is revolved by the clock-work, so that it will act to wind up the paper; but as the roll increases in diameter the speed of winding would increase. This, however, is allowed for by friction between the surface of the shaft *c* and the interior of the central hole of said roller n^1, as the roller is simply placed upon this shaft; and this construction allows the roller to be removed with the paper upon it when the message is finished, or the paper has accumulated in a roll of sufficient size. This removable roller and its paper are taken by the person who writes out or prints the message from the chemically-marked strip.

The transmitting-roller being larger than the receiving-roller, and both making the same

number of revolutions, the perforated paper will be moved more rapidly than the chemical paper, so that the marks on the chemical paper will be contracted proportionately, and the length of the chemical paper lessened to the proper extent.

The circuit-connections to the instrument are to be of any desired character. It is generally preferable to connect the stylus *o* and the rollers *n* with the line and the instrument to the earth, and to throw back either the stylus or the rollers that are not in use.

The switches *t* and pins *t'* serve to place upon the line greater or less resisting power under arrangements of circuits adapted to automatic telegraphy.

I claim as my invention—

1. The transmitting-drum *f* and receiving-drum *e* upon the same shaft, in combination with the receiving and transmitting stylus or rollers *n o* and a clutch, *b'*, for connecting either one drum or the other to the shaft *b*, as set forth.

2. The two contact-rollers *i* and *i'*, applied to the transmitting-drum, one at each side of the roller *n* or stylus, in combination with the wire 4, to guide the advancing end of the strip of paper, as set forth.

3. The roller n^1, removable from the shaft *c*, and revolved by friction, and containing points, in combination with the receiving-drum *e* and yielding roller n^2, substantially as set forth.

Signed by me this 18th day of January, A. D. 1875.

THOS. A. EDISON.

Witnesses:
GEO. T. PINCKNEY,
CHAS. H. SMITH.