

(No Model.)

P. B. DELANY.
AUTOMATIC TELEGRAPHY.

No. 541,967.

Patented July 2, 1895.

Fig. 1

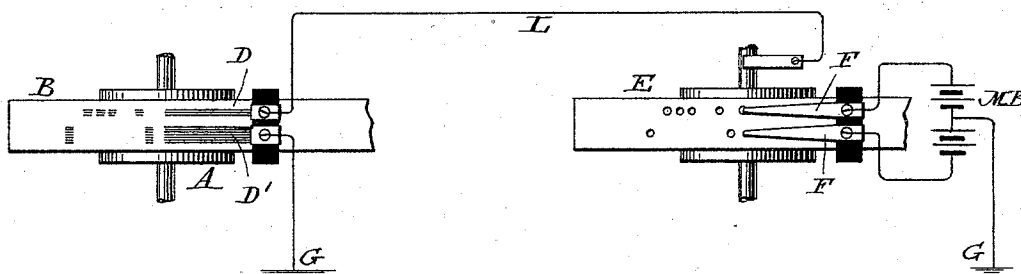


Fig. 2.

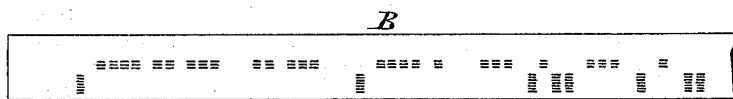


Fig. 3.

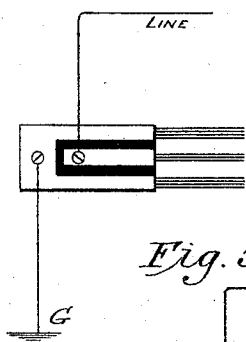


Fig. 4.

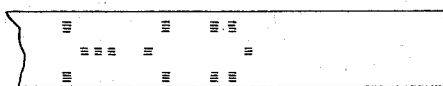


Fig. 5.

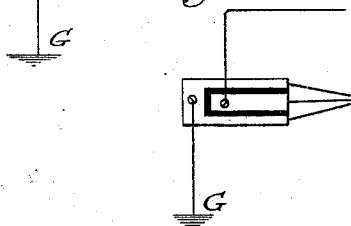
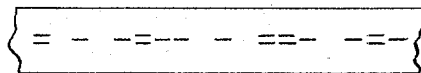


Fig. 6.



Witnesses
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AUTOMATIC TELEGRAPHY.

SPECIFICATION forming part of Letters Patent No. 541,967, dated July 2, 1895.

Application filed April 3, 1895. Serial No. 544,318. (No model.)

To all whom it may concern:

Be it known that I, PATRICK BERNARD DELANY, a citizen of the United States, residing at South Orange, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Automatic Telegraphy, of which the following is a specification.

This invention relates to the recording of received signals or characters in automatic telegraphy—more especially on chemically prepared paper by the action of the transmitted current impulses.

The object of my invention is to obtain such a record in which the definition of the recorded characters shall be clear and distinct and in which the arrangement of the characters is such that the record on the receiving ribbon may be read with certainty and facility at any ordinary reading distance.

To this end my invention consists, first, in forming one of the characters, either the dot or dash, and preferably the dash, of a greater width transverse to the receiving ribbon than the other character. Thus the dots may be arranged in one line and the dashes in another line, either entirely or partly upon one or both sides of the line of dots. Preferably I form the dots by one stylus arranged in the ordinary way, and the dashes by a bifurcated stylus, in other words by two styluses electrically united and arranged respectively on opposite sides of the dot recording stylus. With such an arrangement the dots would appear in one line and each dash would be represented by dots or marks opposite each other, and on opposite sides of the line in which the dots are recorded; or a single dash finger or stylus may be relatively much wider in a direction transverse to the receiving ribbon, and may be arranged entirely on one side of the dot recording stylus. In the former arrangement the dot stylus and the two arms of the dash stylus may respectively have, as is ordinarily the case in chemical receivers, relatively fine or small points of contact that bear upon the receiving ribbon. I prefer, however, that the dot stylus, as well as the two styluses forming the dash recorder, shall have a contact making surface bearing upon the ribbon relatively wider in a line transverse to the ribbon, than in a line longitudinal therewith. Such an increased width of contact is best obtained by using for each contact finger or sty-

lus two, three or more wires or small fingers arranged side by side. The increased width of the contact surface of the stylus reduces the circuit resistance at that point so as to permit a freer passage of the current impulse through the paper, thus facilitating the discharge of the line, reducing the delay in the discharge of the tailing current, and diffusing the delayed current over the enlarged contact surface, thereby preventing material protracted discoloration of the ribbon.

Another feature of this invention consists in the system of automatic transmission and chemical reception in which I employ a perforated transmitting ribbon, all of the perforations representing dots being arranged in one line, and all of the perforations representing dashes being arranged in another line. The perforations are of the same size and the transmitted impulses are of equal duration and may be successively of like or opposite polarity. The polarity of the transmitted impulses depends upon whether its transmission is effected by a dot perforation in one line or a dash perforation in another line. The dot and dash impulses thus transmitted are received and respectively recorded in different lines on the chemically prepared ribbon. The received record therefore shows the dot and dash characters respectively in different lines.

In the accompanying drawings, Figure 1 is a detail view illustrating such parts of a chemical receiver and automatic transmitter as are sufficient to illustrate my invention. Fig. 2 is a view showing a section of paper ribbon with chemically recorded characters thereon full size; Fig. 3, a detail view of another arrangement of recording styluses; Fig. 4, a view showing the characters as they would be recorded by the arrangement of brushes shown in Fig. 3; Fig. 5, a detail view of another kind of recording stylus, and Fig. 6 a view showing the characters as they would be recorded by the styluses shown in Fig. 5.

The transmitter shown in Fig. 1 is a conventional illustration of an automatic transmitter operated by a perforated ribbon. Of course such organization may be varied.

In the receiver A indicates the ordinary roll over which the chemically prepared ribbon B passes.

L is the main line; D, the dot stylus, and D' the dash stylus. Both styluses are mounted upon a block of insulating material. The dot

brush may be connected with the line and the dash brush to earth.

At the transmitting station E is the perforated transmitting ribbon; M B, the main battery; F F, the contact fingers, by means of which the circuit is completed to the cylinder G through the perforations, and thence to line. The impulses of current are either successive currents of like polarity or alternately currents of a dissimilar polarity. As all the perforations are of the same size the transmitted impulses are of equal duration. Impulses of uniform polarity transmitted by the upper row of perforations record dots at the receiver, such dots forming the upper line of characters on the receiving ribbon. The impulses of current of uniform polarity transmitted through the lower line of perforations are recorded as dashes on the receiving ribbon in the lower line of characters. The general plan is, so far as I am aware, new with me. My invention, however, in addition to what has been above indicated, includes the idea of transmitting impulses of equal duration and recording them by characters of different arrangement or area upon a chemically prepared strip, the dot and dash characters being arranged in different lines.

In Fig. 1 the styluses D D' are of greater thickness or width in a line transverse to the ribbon than they are in a line longitudinal to the ribbon. The dash brush D' is made wider than the dot brush and is shown therefore as being made up of a greater number of wires. The characters chemically recorded where such a brush is used are indicated in Fig. 2. As indicated in Fig. 3 the dot finger or stylus may be placed centrally and that for the dashes be bifurcated, one leg thereof lying upon each side of the dot stylus. With such an arrangement the characters produced would be as indicated in Fig. 4. The opposite dash characters arranged one on each side of the line of dot characters would be read as one. In Fig. 5 the contact points or surfaces of the styluses are shown as each formed by a single point or wire. The record with such an arrangement of styluses would be as indicated in Fig. 6. The purpose of these arrangements is to insure a ready distinction, in reading, between the dots and dashes. I should prefer to employ in practice the plan of reception indicated in the two latter figures.

I claim as my invention—

1. In an automatic telegraph, the combination of a transmitting tape having perforations arranged in two rows, one row being for transmitting dots and the other row for transmitting dashes, current transmitting mechanism by which the perforations in one row representing dots transmit impulses of current of one polarity, and perforations in the other row representing dashes transmit current impulses of the opposite polarity, and a receiver having two styluses resting on a chemically prepared ribbon in different lon-

gitudinal plane vertical to the face of the ribbon, one of said styluses producing upon the ribbon dots, when current impulses of one polarity are received, and the other stylus producing dashes when current impulses of the opposite polarity are received, such dot and dash characters being in different longitudinal lines on the ribbon substantially as set forth.

2. An automatic telegraph chemical receiver having two recording styluses, one of which has a greater area of contact surface in a line transverse to the chemically prepared receiving ribbon than the other stylus, the styluses being arranged in different longitudinal planes vertical to the face of the ribbon, whereby the chemically produced characters are developed in independent longitudinal lines on the ribbon.

3. In an automatic telegraph, the combination with a transmitter adapted to be operated by a perforated tape to transmit currents either successively of the same or opposite polarity, and a chemical receiver having two recording styluses bearing upon the chemically prepared ribbon, one of said styluses having a greater area of surface contact than the other in a line transverse to the receiving ribbon.

4. In an automatic telegraph, a chemical receiver having a dot recording stylus and a dash recording stylus, one of which consists of two electrically united parts arranged respectively on opposite sides of the other stylus, substantially as set forth.

5. In an automatic telegraph, the combination of the receiver operated by a perforated tape to send current impulses of one polarity representing dots, and current impulses of another polarity representing dashes, and a chemical receiver having two recording styluses resting upon the chemically prepared ribbon, one for recording dots and another for recording dashes, one of said styluses consisting of two electrically united parts arranged respectively on opposite sides of the other stylus, substantially as set forth.

6. In an automatic telegraph, the combination of a transmitter for transmitting current impulses representing dots and current impulses representing dashes, and a receiver having recording devices that record the characters of one kind in one line and the characters of the other kind in duplicate on opposite sides of the first named line of characters.

7. A received ribbon record having characters representing say dots in one line, and characters representing say dashes in duplicate on opposite sides of the line of dots.

In testimony whereof I have hereunto subscribed my name.

PATRICK BERNARD DELANY.

Witnesses:

FRANK S. OBER,
EDWARD C. DAVIDSON.