

(No Model.)

F. ANDERSON.  
AUTOMATIC TELEGRAPHIC RECORDER.

No. 407,462.

Patented July 23, 1889.

Fig. 1.

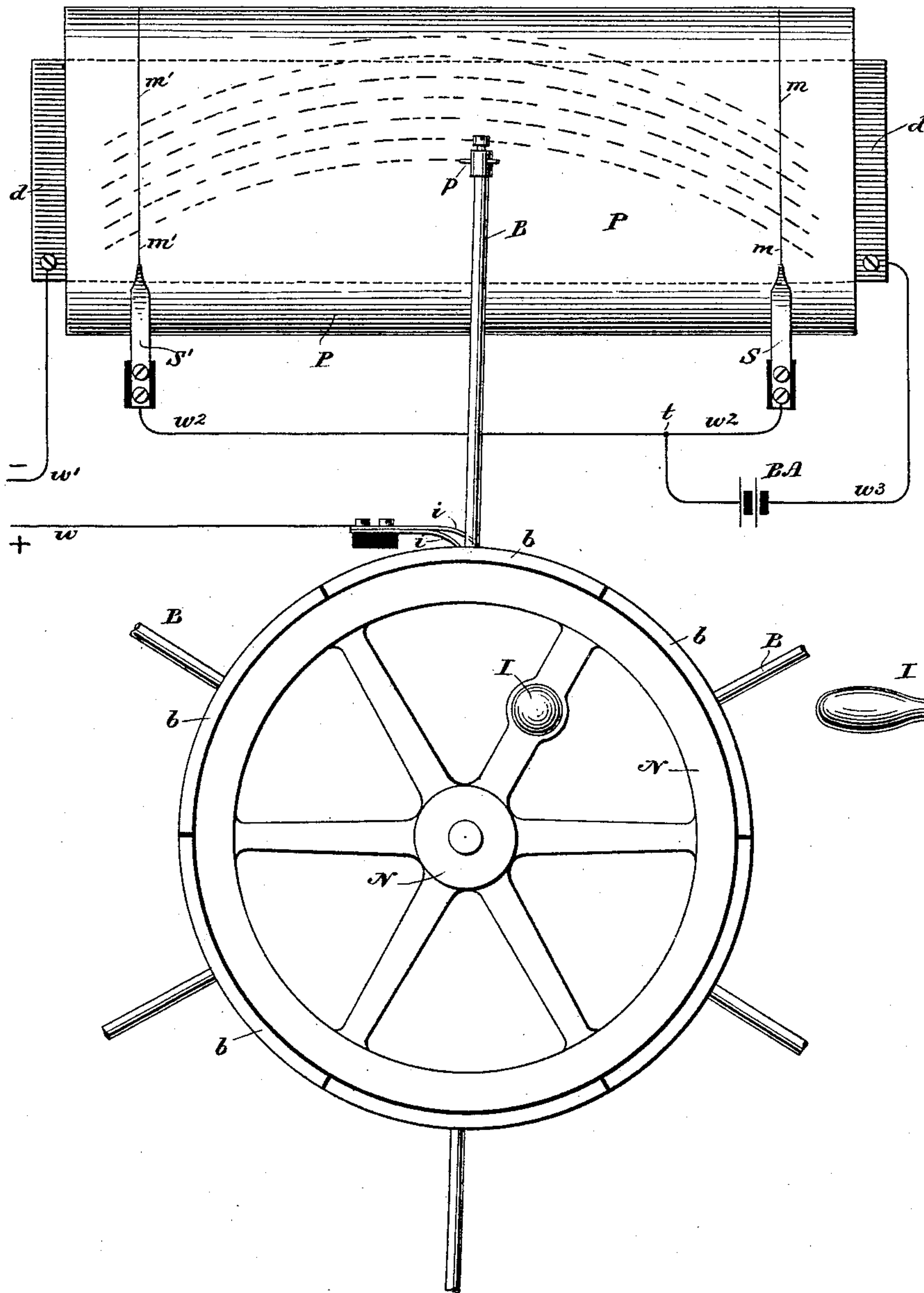
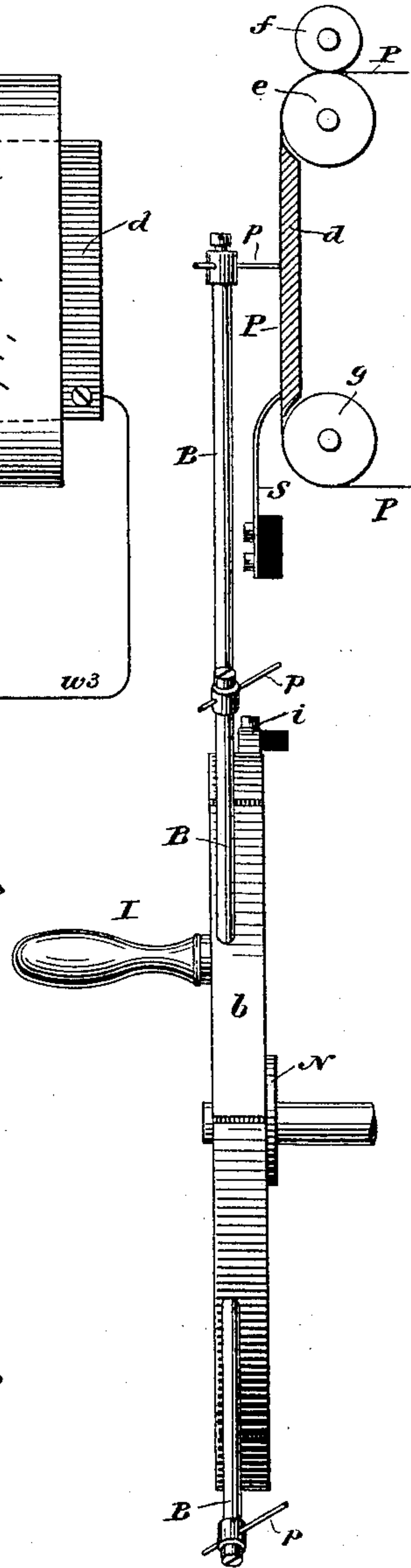


Fig. 2.



Witnesses  
Geo. W. Breck  
C. E. Ashley

Inventor  
Frank Anderson  
By his Attorneys  
Charles J. Kintner

# UNITED STATES PATENT OFFICE.

FRANK ANDERSON, OF PEEKSKILL, NEW YORK.

## AUTOMATIC TELEGRAPHIC RECORDER.

SPECIFICATION forming part of Letters Patent No. 407,462, dated July 23, 1889.

Application filed May 7, 1889. Serial No. 309,862. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK ANDERSON, a citizen of the United States, residing at Peekskill, in the county of Westchester and State of New York, have made a new and useful Invention in Automatic Telegraphy, of which the following is a specification.

My invention relates particularly to improvements in automatic telegraphic receiving apparatus of the general type known as "chemical" or analogous automatic recording-receivers, and the object is to devise a page-message record in which the recorded characters of the Morse and analogous types are arranged in concentric or parallel lines on a page of sensitized or equivalent receiving-paper, which shall avoid the annoying trouble incident to existing forms of page-records, wherein such characters are sometimes divided at the end of one line and the commencement of the subsequent line, thereby puzzling the reader and preventing rapid reading. I accomplish this object by the arrangement of parts and construction of apparatus hereinafter described, and particularly pointed out in the claims which follow this specification.

In all automatic telegraphic page-receivers with which I am familiar wherein Morse and analogous characters are either placed upon a sensitized record-page or by an ink-recorder said characters fill the entire page from edge to edge, and there arises a possibility that some of the characters or parts thereof may be uncorded at the edges of the page. There also exists with such receivers a source of annoyance and delay to the reader of the recorded message in the fact that the combinations of recorded characters or symbols representing a single letter are often divided at the ending of one line and the beginning of the line which follows, as I have already indicated in the statement of the object of my invention. My invention overcomes these annoyances, and a page-record is made having a marginal line on each edge of the page similar to the marginal lines or edges of a book or printed page.

In order that my invention may be fully understood, I will refer to the accompanying drawings, in which like letters of reference

represent like parts of the apparatus wherever used.

Figure 1 is a plan view illustrating diagrammatically the arrangement of parts of the entire apparatus; and Fig. 2 is a side elevational view thereof, showing part in section.

N represents a rotary receiving-wheel adapted to be rotated by a handle I or by any source of power, said wheel being carried by a shaft journaled in a frame. (Not shown.)

*p p* are recording-pens, and *B B B* are radial pen-carrying arms fixedly secured to electrical conducting-segments *b b b*, attached to and insulated from the wheel N and from each other.

*i i* is a double-leaf conducting-spring adapted to bear upon the face of the conducting-segments *b b b* and connected by a wire *w* to the main line running to the distant transmitting-station. (Not shown.)

P is a sheet of sensitized receiving-paper of the kind usually adopted in automatic telegraphy, said paper being fed forward over the metallic conducting-surface *d* by feed-rolls *e, f*, and *g*.

*w'* is an earth-wire connecting the metal plate *d* to earth.

The apparatus described thus far constitutes the subject-matter of another application for a patent filed by me in the United States Patent Office on the 9th day of February, 1889, No. 299,264, and I therefore make no claim to it here, the claims of the present application being directed to features which I shall now describe, and also to such features in combination with the above-described mechanism.

S and S' are conducting contact-springs bearing normally upon the sensitized paper P at points near the lower edge of the bearing conducting-plate *d*. These springs are connected in multiple arc by wires *w<sup>2</sup>* at *t* to the positive pole of a battery B A of sufficient current capacity to act upon the sensitized paper P, the other pole of said battery being connected by a wire *w<sup>3</sup>* to the bearing plate or surface *d*.

The operation of the apparatus is as follows: The transmitter (not shown) having been set in operation at the distant station, the wheel N is rotated at substantially the



same speed as the transmitter and the paper P is fed forward through the agency of feed-rolls *e*, *f*, and *g*, all as disclosed in my prior application above referred to. As the paper advances the two marginal lines *m* and *m'* are recorded upon the edges through the agency of battery B A. As the successive segment *b* is brought beneath the two-part contact-spring *i* the current from the distant battery divides between the two pens then on the surface of the paper, and a duplicate record is made so long as the insulated space between these two segments is passing beneath said two-part spring. This duplicate record, therefore, appears at the ending of the line where the right-hand pen is passing out of circuit and at the beginning of the next line where the second or left-hand pen is passing in. Now, the space between the two contact-springs S and S' bears a fixed relation to the arcs of the successive segments, so that all of the record made to the left and right of the lines *m'* and *m* is in duplicate. In reading the record therefrom the operator has simply to read either all of the record to the left of line *m* or all to the right of line *m'*, or all between lines *m* and *m'*, and should he be in doubt about any character at the end of a line he need only look at the characters outside the lines *m* and *m'* to ascertain if the letter is complete at the end of the line or has been continued on the next line below. Inasmuch as the record is duplicated at the opposite edges of the page when any two pens are on the paper, and as the distance between the two lines *m* and *m'* equals the angular distance between the pens, all that portion of the record made to the right and left of these two lines is repeated, and by glancing at the record thus made on the successive lines it will be at once apparent whether a letter is complete at the right-hand end of the line or is partially recorded on the next succeeding line. In other words, if a dash occurs directly on the right-hand line *m'*, as the pen goes out of circuit, a glance at the left-hand end of the next succeeding recorded line will disclose to the reader if this dash is the end of that letter or is followed by an independent letter.

It will be understood that the record must be read as commenced, either between the lines *m* and *m'* or to the left or right, as indicated, and after one becomes accustomed to the system it is found possible to read very rapidly.

I do not limit myself to the specific means shown for thus rendering possible the rapid and intelligible reading of page-records, as it is obvious that many modified forms might be

submitted by which the repeated characters are made.

I may and sometimes do use sensitized paper already prepared with the lines *m* and *m'* having the required spacing-distance. These lines may be previously ruled upon the paper by inking-pens or in any preferred manner.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In an automatic telegraphic receiver of the page type, a message-blank having marginal lines, in combination with a receiving-recorder having a series of pens connected to contacting surfaces, insulated from each other, and electrically connected by a two-point contact-spring to the distant transmitter, the contacting surfaces having a fixed relation to the distance between the two marginal lines, whereby the characters near the ends of the successive lines are repeated, substantially as described.

2. An automatic telegraphic record consisting of a series of concentrically-recorded lines of characters upon a sheet of sensitized paper or equivalent material, said record having a definite portion of the characters repeated at the ending and beginning of successive lines, substantially as described.

3. An automatic telegraphic record consisting of a series of concentrically-recorded lines of characters upon a sheet of sensitized paper or equivalent material, said record-paper having two marginal lines as indexes, outside of which all the characters or portions thereof representing telegraphic symbols are duplicated, substantially as described.

4. The combination of two or more rotary receiving-pens with apparatus for producing marginal lines upon a sensitized page-record, consisting of two electrical contact pens or springs connected to one pole of an electrical generator, in combination with a sensitized sheet of paper and a contacting surface connected to the other pole of said electrical generator, substantially as described.

5. The combination of two or more rotary receiving-pens with means for making marginal lines on a page-record, consisting of two contact-pens, in combination with a sensitized sheet of paper, a conducting supporting-surface, and an electrical generator connected to said pens and the conducting-surface, substantially as described.

FRANK ANDERSON.

Witnesses:

C. J. KINTNER,

A. E. McKECHNIE.