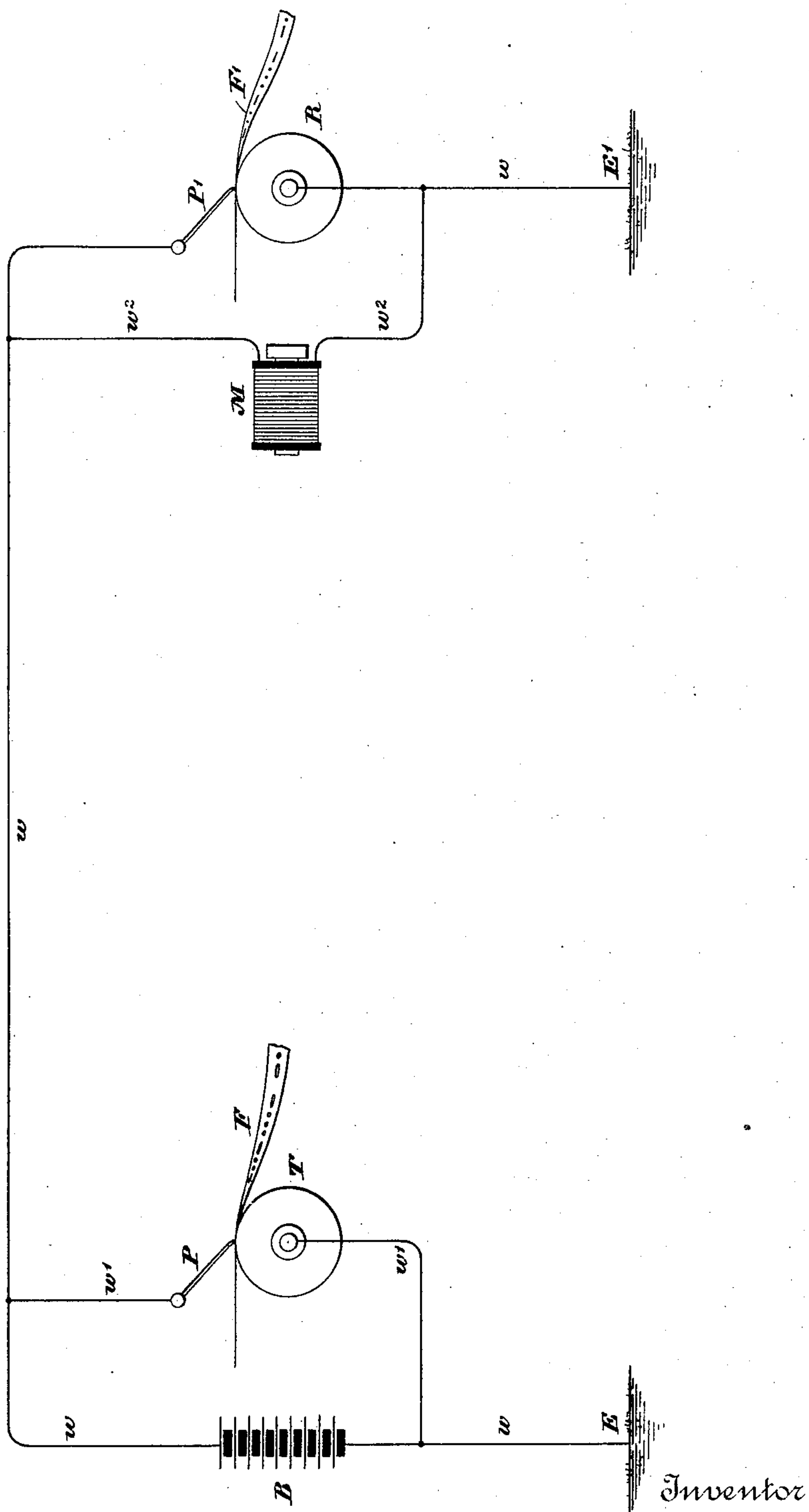


(No Model.)

F. ANDERSON.
AUTOMATIC TELEGRAPH.

No. 407,460.

Patented July 23, 1889.



Witnesses
Geo. W. Drect.
Carrie E. Ashley

Frank Anderson
By his Attorneys
Wiedersheim & Kintner

UNITED STATES PATENT OFFICE.

FRANK ANDERSON, OF PEEKSKILL, NEW YORK.

AUTOMATIC TELEGRAPH.

SPECIFICATION forming part of Letters Patent No. 407,460, dated July 23, 1889.

Application filed December 15, 1888. Serial No. 293,710. (No model.)

To all whom it may concern:

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

My invention relates particularly to improvements in that branch of the art of telegraphy known as "automatic telegraphs;" and to this end it consists in a novel arrangement of apparatus embracing a transmitter, receiver, battery, and a device located at the receiving-station to avoid what is commonly known in the art as "tailings" in the record on the receiving-fillet.

It is a well-known fact in the art of automatic telegraphy that in long lines, or such as possess great electro-static capacity, there results at the end of each electrical impulse recorded at the receiving-stylus what is known as a "tailing out" of the record, and often to such an extent as to cause the individual elements of the record to merge into each other. Various devices have been devised heretofore for overcoming this objectionable feature.

The object of this invention is to provide means for this purpose which shall be simple and efficient. In a prior application filed by me in the United States Patent Office on the 22d day of September, 1888, bearing Serial No. 283,087, I have described and claimed means for serving this end, consisting of a condenser located between the receiving-instrument and the earth, the action being such that when the current impulses are discontinued the condenser nullifies the tailings by a back discharge into the line.

The invention disclosed in the present application differs from the aforesaid invention in that I substitute for the condenser an electro-magnetic device located in a shunt around the receiving-instrument, the transmitting apparatus being the same as that disclosed in the aforesaid prior application.

In order that my invention may be fully understood, reference is had to the accompanying drawing, which is a diagrammatic view of a system of automatic telegraphs, disclosing a receiving and transmitting station and a conductor joining the same.

B is the battery, located directly in the main line w , said line being earthed at both ends $E E'$. The transmitting apparatus consists of the well-known form of conducting-cylinder T and the stylus or brush P , connected, as shown, to the main line by the wire w' , said parts constituting, when there is no fillet upon the cylinder, a shunt-circuit for the battery B , the fillet F used in transmission being of any preferred form which will permit the metallic stylus or brush P to contact with the cylinder T in the well-known manner. This form of transmitter for automatically shunting a battery at the transmitting-station, which battery normally charges the main-line circuit, is not novel with me, and it is only when combined with the receiving apparatus, which I shall now describe, that I claim features of novelty. The receiving-cylinder R , a receiving stylus, pen, or brush P' , and sensitized fillet F' are located in the main line w in the usual manner.

M is an electro-magnet, which has a capacity of discharge dependent upon the electro-static capacity of the line. This capacity of discharge may be increased or diminished by withdrawing or inserting the cores, or in any other well-known manner. This magnet M is located in the shunt-circuit w^2 around the receiving-instrument just described.

The operation is as follows, supposing the transmitting and receiving fillets to be in position, as shown: The transmitting stylus or brush P , resting normally upon the fillet F , permits the battery B to normally charge main line w and divide its circuit between the receiving-instrument and the magnet M in proportions dependent upon the resistance of the respective circuits. As the transmitting-fillet is moved along in the usual manner the stylus P is allowed to contact with the cylinder T , and thereby short-circuits or shunts the battery B through shunt-wire w' . The electro-magnet M is charged at the same time that the record is made upon the fillet F' , and when the shunting action takes place at the transmitter this electro-magnet discharges the current, the discharge being in such a direction as to counteract the electro-static discharge which would occur through the receiving-pen. Each impulse, therefore, sent

over the main line gives a clear and well-defined record on the receiving-fillet F'.

I am aware that it is old to utilize the discharge of an electro-magnetic device for the purpose of annulling tailings in automatic telegraphs, and I make no claim to this feature, broadly, my invention being directed to the combinations hereinafter specifically claimed.

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

15 1. In an automatic telegraph, the following combination of elements: a single transmitting-battery connected to earth and directly to a main line, which it normally charges, and a shunt around said battery, including in its circuit an automatic transmitter adapted to open and close said shunt, a recording-receiver located in the main line, and an electro-magnetic device located in a shunt around said receiving-instrument, substantially as described.

20 2. An automatic telegraph system consisting of the following elements: a main line earthed at each end and including a single

main-line or transmitting battery normally in circuit, transmitter consisting of a perforated fillet and contact brush or pen, a transmitting-cylinder located in a normally-open shunt around the entire battery, a receiver located at the receiving-station, and an electro-magnetic device included in the shunt about said receiver, substantially as described.

3. In a system of automatic telegraphy, the combination of a normally-charged main line, including a receiving-instrument, with an electro-magnet located in a shunt about the receiver, and a transmitter located in a shunt about the charging-battery, substantially as described.

4. In a system of automatic telegraphy, the combination of a main line, including a battery and a receiving-instrument, with a shunt around the battery, including a transmitter, and a second shunt about the receiver, including an electro-magnetic device for preventing tailings, substantially as described.

FRANK ANDERSON.

Witnesses:

L. L. SMITH,

C. J. KINTNER.