

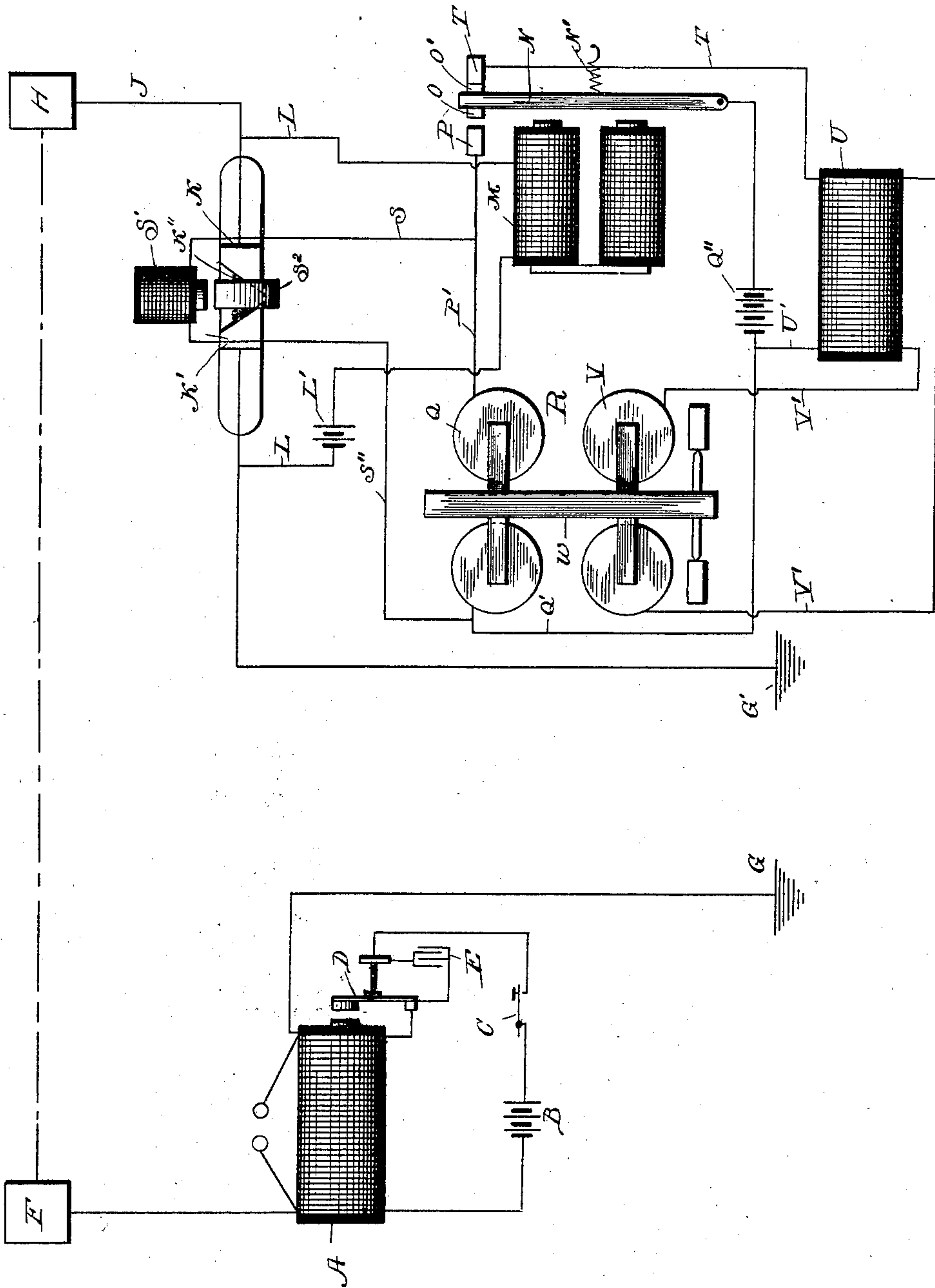
No. 680,002.

Patented Aug. 6, 1901.

H. SHOEMAKER.
WIRELESS TELEGRAPH SYSTEM.

(Application filed Apr. 18, 1901.)

(No Model.)



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by

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UNITED STATES PATENT OFFICE.

HARRY SHOEMAKER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF
ONE-HALF TO GUSTAVE P. GEHRING, OF SAME PLACE.

WIRELESS-TELEGRAPH SYSTEM.

SPECIFICATION forming part of Letters Patent No. 680,002, dated August 6, 1901.

Application filed April 18, 1901. Serial No. 56,438. (No model.)

To all whom it may concern:

Be it known that I, HARRY SHOEMAKER, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Wireless-Telegraph Systems, of which the following is a specification.

My invention relates to improvements in wireless-telegraph systems; and the main object of my invention is the provision of a simple device for receiving and indicating the dash of the Morse code correctly.

Another object of my invention is the provision of a system which when the key at the transmitting-station is pressed causes the local contacts of the relay at the receiving-station to make a number of breaks, which cause a series of dots with very short spaces between them, much shorter than can be made by working the keys with the hand, and by reason of the device herewith presented I convert this series of dots into a dash, or, in other words, I use a rapidly-interrupted current for magnetizing the magnets of the sounder.

Another object of my invention is the provision of a device, located in the receiving apparatus, which will cause three magnetic impulses in the sounder-magnets every time the armature of the relay makes one vibration, instead of one impulse, as would be received without my device.

To attain the desired objects, my invention consists of a wireless-telegraph system embodying novel features of construction and arrangements of parts, substantially as disclosed herein.

In the figure of the drawing I have illustrated a diagrammatical view of the entire system..

Referring to the drawing, the transmitting-station comprises an induction or Ruhmkorff coil A, the primary of which is energized by a suitable battery or current source B in circuit with the key C and the interrupter D, a condenser E being in shunt therewith. Connected to the coil A is the air-plate F and the ground G.

The receiving-station comprises the air-plate H, connected by a conducting-wire J

through a detector or coherer K to the earth at G'. The coherer consists of the tube having therein the plugs K' and metallic particles K''. Connected in derivation with the coherer is a main circuit L, containing battery L, and a relay M, having the armature N, which is normally retracted by the retractile spring N'. This armature is provided with the front and rear contacts O and O', and the contact O when it contacts the contact P makes a circuit through the wire P', the front windings Q of the sounder R, the wire Q', batteries Q'', and the armature N. At the same time that this circuit is made a circuit is formed through the wire P', wire S, decohering-magnet S', wire S'', wire Q', batteries Q'', and the armature N. This circuit and the before-mentioned circuit are made after the coherer loses its resistance and the relay is magnetized. A ring S² loosely surrounds the coherer-tube and is adapted to be attracted when S' is magnetized to tap the tube and decohere the filings. When the contact O' contacts the contact T, a circuit is made through the wire T', the primary of the coil U, wire U', battery Q'', and armature N, this forming what I term the "back" contact-circuit. Every time a circuit is made with the primary and induction coil a current is induced in the secondary of the induction-coil, which cause a magnetic impulse in the rear windings V of the magnet through the wires V'; but when the contacts O and P are made no current is sent through the magnet V. When either the magnet Q or the magnet V are magnetized, the pivoted sounder-lever W is operated.

In order that the operation of my improved system may be readily understood, I will herein set forth a detailed description thereof, which is as follows: When a series of dots is received at the relay M, the armature N vibrates very rapidly, making about ten to fifteen vibrations to the second, thus sending the same number of impulses through the magnet Q. The induction-coil being connected with the back contact T has its circuit broken when contacts O' and T are broken and its circuit made when O' and T are contacted. Every time these contacts are broken or made a current is induced in the primary

of the induction-coil, causing a magnetic impulse in the magnet V. Thus it will be seen that by this construction I get three magnetic impulses instead of one impulse without the device.

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

1. In a system of wireless telegraphy, a transmitting and a receiving station, said receiving-station having therein a relay, a recorder-magnet, means for producing three magnetic impulses in the recorder-magnet to every one received in the relay.

2. A receiving apparatus of wireless telegraphy, comprising air and ground plates, a coherer, a relay-magnet in circuit with said coherer, a recorder-magnet and means operated by said relay for causing one impulse received by the relay to make three in the recorder-magnet.

3. A receiving apparatus for wireless telegraphy, consisting of air and ground plates, a coherer, a relay, means operated by said relay to make two distinct circuits, a pair of magnets energized when one circuit is made, another pair of magnets energized when the other circuit is made, and an induction-coil adapted to have its primary circuit broken when the last-mentioned magnet-circuit is broken.

4. A receiving apparatus for wireless telegraphy, consisting of a receiving-circuit including a coherer, a main circuit in parallel with said coherer, a relay in said circuit, a recorder-magnet operated by the relay and two separate circuits controlled by said relay so that

to every impulse received three impulses are caused to traverse the recorder-magnet.

5. A receiving apparatus for wireless telegraphy, consisting of a receiving-circuit including a coherer, a main circuit in parallel with said coherer, a relay in said circuit, means operated by said circuit to make two separate circuits, a circuit formed when the relay is magnetized, a sounder-magnet in said circuit, a decoherer-magnet in shunt with said circuit, another circuit formed when the relay is demagnetized, and an induction-coil and a sounder-magnet energized when this last-mentioned circuit is made.

6. A receiving apparatus for wireless telegraphy, comprising a receiving-circuit including a coherer, a main circuit in parallel with said coherer, a relay in said circuit, a retracted armature operated by said relay, a sounder-circuit operated when the relay is magnetized, and again when it is demagnetized, and an induction-coil adapted to be energized when the relay is demagnetized to hold the sounder over.

7. A coherer and decoherer consisting of a non-conducting tube, metallic plugs located in said tube, metallic powder located in the tube between the plugs, a band or ring loosely surrounding said tube opposite the pocket and a magnet adapted to attract said band when energized.

In testimony whereof I affix my signature in presence of two witnesses.

HARRY SHOEMAKER.

Witnesses:

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