

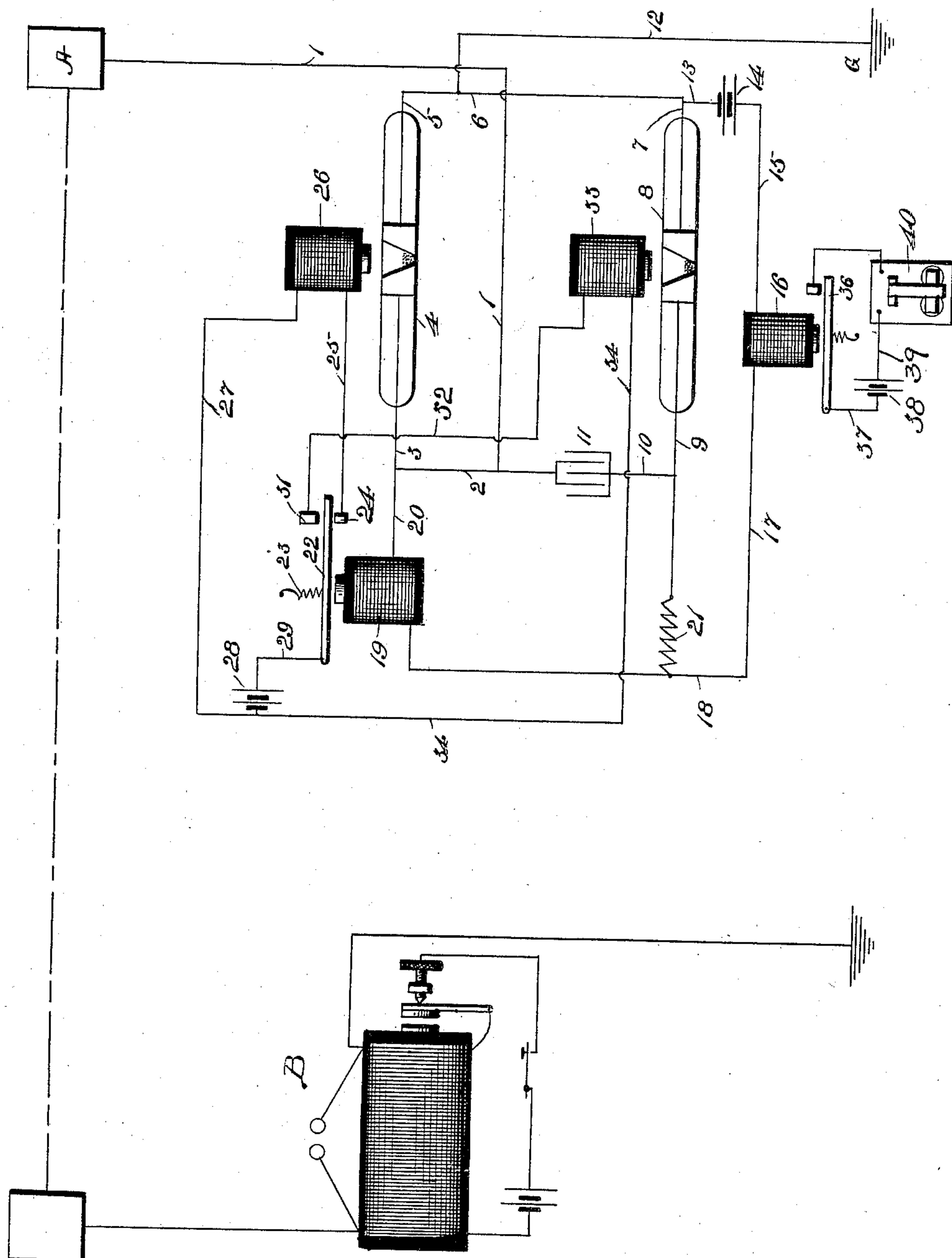
No. 707,064.

Patented Aug. 12, 1902.

H. SHOEMAKER.
WIRELESS TELEGRAPHY.

(Application filed June 1, 1901.)

(No Model.)



Witnesses
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UNITED STATES PATENT OFFICE.

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WIRELESS TELEGRAPHY.

SPECIFICATION forming part of Letters Patent No. 707,064, dated August 12, 1902.

Application filed June 1, 1901. Serial No. 62,717. (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 Telegraphy, of which the following is a specification.

This invention relates to improvements in wireless telegraphy; and the main object of my invention is the provision of an apparatus especially adapted for outdoor and long-distance work and one which will absolutely prevent the feathering or the adhering to the silver plugs of the filings in the coherers and an apparatus which will produce a dot and dash.

Another object of my invention is the provision of a receiving apparatus having a series of coherers in the main circuit, one decohering means operated to decohere one of the coherers as soon as the coherers lose their resistance and the other decoherer operated as soon as the first-mentioned coherer again conducts.

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

In the drawing I have illustrated a diagrammatical view of an entire system of wireless telegraphy embodying my invention.

Referring to the drawing, A designates the air-plate, connected by the wire 1 to the wire 2, this wire being connected to the wire 3, coherer 4, wire 5, wire 6, wire 7, coherer 8, wire 9, wire 10, and a condenser 11, this constituting a portion of the main circuit and completing it with the ground G by means of a wire 12. The main circuit, however, is not directly through these wires, but through wire 13, batteries 14, wire 15, relay 16, wire 17, wire 18, electromagnet 19, and wire 20, which is connected to wire 3. A resistance 21 is connected to wire 18, a wire 9 of the coherer 8 being connected to said resistance. When the main circuit is energized, the electromagnets 16 and 19 are magnetized, the electromagnet 19 operating the lever 22, which is provided with the spring 23. When this le-

ver is thus attracted, it contacts a post 24, which makes a circuit through the lever, wire 25, electromagnet 26, wire 27, batteries 28, and wire 29, this circuit operating a decohering device 26. When the main circuit is de-energized, the lever 22 is returned by its spring to make another circuit through its post 31, wire 32, electromagnet 33, wire 34, batteries 28, and wire 29, this circuit operating the decohering device 33. When a wave in the very first instant is received and before the coherers have fully conducted, the electromagnet 19 is affected very slightly, but enough so through its connections with the coherers and air and ground to cause the lever 22 to be moved slightly toward the electromagnet and out of contact with the post 31, but not in contact with the post 24, thus breaking the circuits of both of the decohering devices 26 and 33, which are then free to decohere the coherers 4 and 8, respectively, when the coherers both fully conduct and after one of the coherers has been decohered.

The electromagnet 16 when energized attracts the lever 36, which makes a circuit through wire 37, batteries 38, and wire 39 to operate the sounder 40.

B designates a transmitting-station.

From this description it will be seen that I have produced decohering devices which are adapted to be operated in succession and be dependent upon the waves as received by the receiving apparatus, this construction being vastly different from the constructions set forth in my application filed May 13, 1901, Serial No. 60,010, in which I have illustrated and claimed a series of coherers in the main circuit and independent means for decohering.

The action in this arrangement or construction, as set forth in this application, is such that when a wave is received both of the coherers conduct, closing the main relay 16 and the relay 19, which in turn closes the circuit of the magnet 26 and causes the coherer 4 to be decohered. As soon as this action takes place the magnet 19 becomes demagnetized and circuit is made with magnet 33, which in turn operates the decohering device of the coherer 8; but by this time coherer No. 4 again conducts, and thus this action is re-

peated as long as the train of waves is received, and the relay 16 is held over and causes the sounder to be operated to receive a dot or dash.

5 I would have it understood that I may employ any construction of decoherer, preferring, however, to use a magnetic decoherer instead of the tapping devices generally used.

From this description it is evident that I
10 produce a wireless system which will be absolutely sure in operation for a long distance or outdoor purposes.

The wires 10 and 2 I have connected with a condenser, which is adapted to prevent any
15 current flowing from wire 9 to wire 20, but allows the wave to pass through the condenser, and my reason for employing the resistance 21 is to balance the magnet 19, to which it is equal. It will be observed that the coherers
20 4 and 8 are in the same main circuit, being connected in parallel, the coherer 4 being connected through relay 19 and the coherer 8 through the inductive resistance 21, which, as I have mentioned before, is equal to the
25 relay 19.

It is evident that I provide a system of wireless telegraphy having in its receiving-station a series of coherers, which are arranged in parallel and in the same main circuit.
30 They are so arranged that when they conduct one decoherer is operated to decohere one of the coherers, and as the latter loses its resistance and conducts again, the remaining decoherer is operated to decohere
35 the other coherer; said decoherers therefore being dependent upon the operation of the coherers.

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

1. In a system of wireless telegraphy, a transmitting and a receiving apparatus; said receiving apparatus, consisting of a series of coherers in the same main circuit and in parallel, and a decohering device for each coherer,
45 said decohering devices being dependent upon the action of the coherers, one being operated when the coherers conduct and the other when one of the coherers has been decohered.

50 2. A receiving apparatus for wireless telegraphy, comprising a series of imperfect electrical contacts, said contacts being in the same main circuit, a relay in said main circuit, a receiving-instrument circuit controlled
55 by the relay, another relay in said main circuit and decohering devices adapted to be operated in succession as the last-mentioned relay is magnetized and demagnetized.

3. A receiving apparatus comprising air
60 and ground plates, a series of coherers in

parallel and in circuit therewith, a relay in circuit with the coherers, a sounder-circuit operated by said relay, another relay in the coherer-circuit, and decohering means for each coherer adapted to be operated in succession as the last-mentioned relay is magnetized and demagnetized. 65

4. A receiving apparatus comprising a series of coherers in parallel and in the same main circuit, a decoherer for each coherer, 70 separate circuits for each decoherer and a relay in said main circuit for operating said decoherers one at a time in succession as the said relay is magnetized and demagnetized.

5. A receiving apparatus, comprising a series of coherers, air and ground plates connected therewith, a main circuit embracing said coherers which are in parallel, a relay in said circuit, a sounder-circuit operated by said relay, another relay in said main circuit 80 and a decoherer for each coherer adapted to be operated in succession as the last-mentioned relay is magnetized and demagnetized.

6. In a receiver, a plurality of wave-responsive devices, a relay controlled by said devices, two circuits controlled by said relay, each including a decohering device. 85

7. In a receiver, a plurality of wave-responsive devices, a relay controlled by said devices, a decoherer-circuit operated upon the energization of said relay, and a decoherer-circuit closed upon the deenergization of said relay. 90

8. In a receiver, a plurality of wave-responsive devices, a relay controlled by one of said devices, a decohering device for the wave-responsive device controlling said relay, actuated upon the energization of said relay, and a decoherer-circuit closed upon the deenergization of said relay 95

9. A plurality of wave-responsive devices, a recorder-relay controlled thereby, a second relay controlled by a portion of said wave-responsive devices, a decoherer actuated upon the energization of the second relay, and decohering means for the remaining wave-responsive devices actuated upon the restoration of said first-mentioned portion. 100

10. In a receiver, a plurality of wave-responsive devices connected in parallel, an automatic decoherer for a portion of said devices, and means operative upon the restoration of said portion of said devices to decohere the remaining wave-responsive devices. 105

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

HARRY SHOEMAKER.

Witnesses:

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