

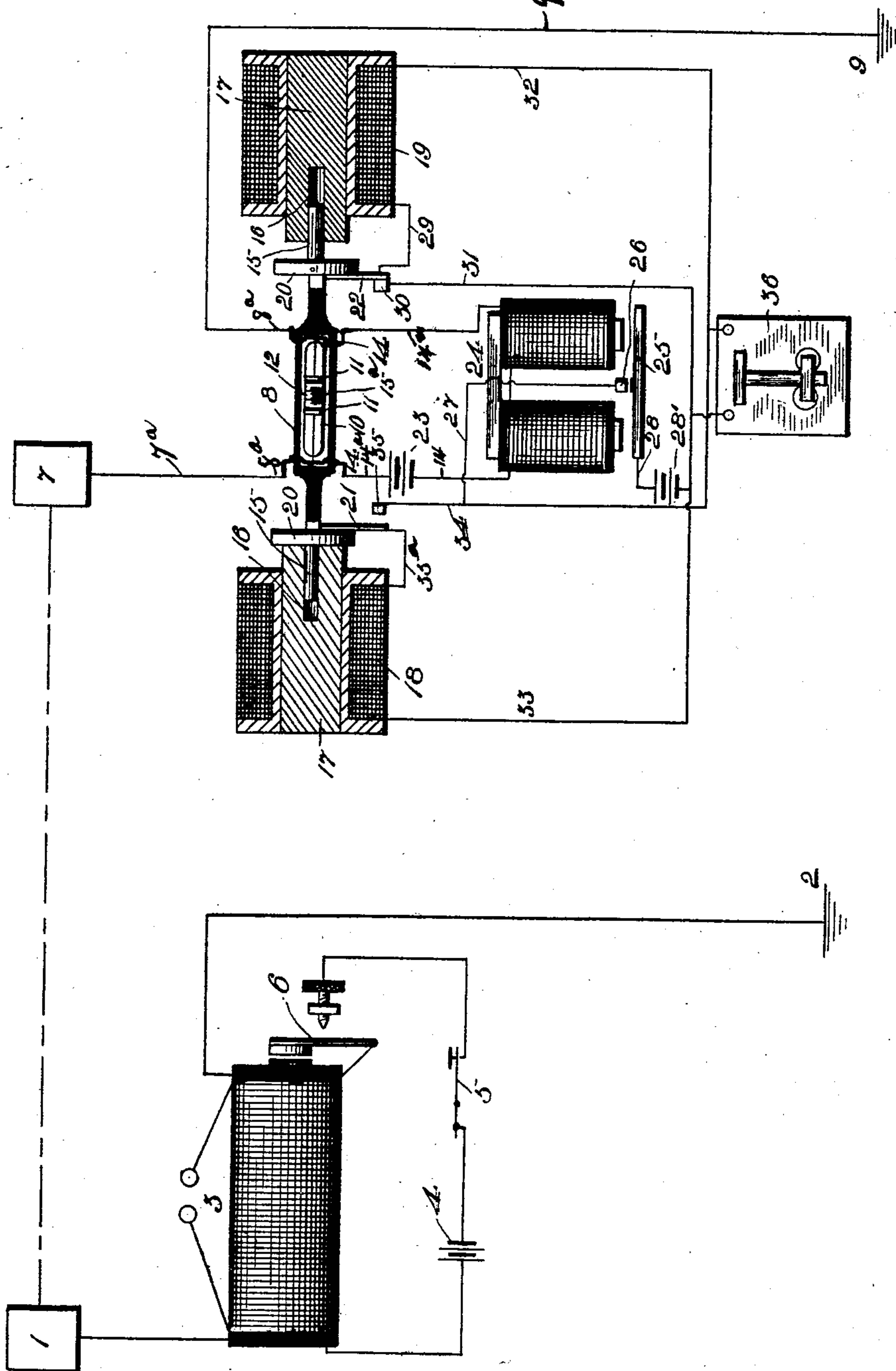
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Patented Sept. 17, 1901.

H. P. DAVIS.  
WIRELESS TELEGRAPHY.

(Application filed May 8, 1901.)

(No Model.)



Witnesses  
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# UNITED STATES PATENT OFFICE.

HERBERT P. DAVIS, OF WEST PHILADELPHIA, PENNSYLVANIA, ASSIGNOR  
TO GUSTAVE P. GEHRING, OF SAME PLACE.

## WIRELESS TELEGRAPHY.

SPECIFICATION forming part of Letters Patent No. 682,974, dated September 17, 1901.

Application filed May 8, 1901. Serial No. 59,271. (No model.)

*To all whom it may concern:*

Be it known that I, HERBERT P. DAVIS, a citizen of the United States, residing at West 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 a system of wireless telegraphy by which electrical signals, actions, or manifestations are transmitted through the air, earth, or water by means of oscillations of high frequency, such as have been termed "Hertzian waves."

Another object of my invention is the provision of a system of wireless telegraphy whose receiving-station is provided with a wave-detector having means for alternately reciprocating the detector to cause the magnetic particles carried thereby to decohere.

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

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

Referring to the drawing, the numeral 1 designates the air-plate, and 2 the ground of the transmitting-station, which further consists of the induction-coil 3 in circuit with the batteries 4 and the transmitting-key 5, a vibrator 6 also being employed.

The receiving-station consists of the air-plate 7, which is connected by the wire 7<sup>a</sup> to the wire 14, and the ground 9 is connected by means of the wire 9<sup>a</sup> to the other end of the wire 14. This wire 14 is mounted in the frame 8, which is made of insulating material to prevent short-circuiting of the wires. The wires 14<sup>a</sup> of the relay-circuit are also connected to the wire 14. Supported and carried by this frame is the non-conducting tube or coherer-tube 10, having mounted therein the silver plugs 11, which provide a pocket 12 to contain the filings or magnetic particles 15<sup>a</sup>. Connected to the plugs and also embedded in the frame are the wires 14,

thus causing the plugs to be in circuit with the air and ground. This frame is provided with the rods or outer ends 15, which are slidably mounted in the openings 16 of the cores 17 of the magnets 18 and 19. Carried by each rod are the circular disks 20, which are made of soft metal, so as to be readily attracted by the cores of the magnets as said magnets are alternately energized to give the coherer a reciprocating movement to decohere the filings. Connected to the rods 15 inside of the disks are the spring contacts or arms 21 and 22. Connected in circuit with the frame is a battery 23 and relay 24, which is adapted when the coherer loses its resistance to attract the armature 25 and cause said armature to contact the post 26, to which is connected the short wire 27, a short wire 28 connecting said armature with the batteries 28'. In operation the magnet 19 has its circuit through wire 29, arm 22, contact-point 30, wire 31, batteries 28', armature 25, post 26, wire 27, and wire 32. Magnet 18 has its circuit through wire 33, batteries 28', the armature 25, post 26, wire 27, wire 34, contact-point 35, spring contact or arm 21, and wire 35<sup>a</sup>. Connected in circuit with wire 32 and wire 31 is a sounder 36.

From this description, taken in connection with the drawing, the operation of my improved system is readily understood and its numerous advantages fully appreciated; but, briefly stated, it is as follows: By manipulating the transmitting-key the induction-coil causes an impulse to be transmitted through the air and be received by the receiving apparatus. This energizes the coherer, which after it loses its resistance has the effect of energizing the relay-magnet, which operates or energizes the electromagnets 18 and 19 alternately, so that the coherer is reciprocated in substantially horizontal plane to shake the tube and decohere the filings. As these magnets are energized one at a time, the cores attract the disks alternately, thus giving the rods and frame carrying the coherer a reciprocating movement, and thus dispenses with the mechanical devices generally used for the purpose of decohering the filings.

It is evident that I provide a system of wireless telegraphy which has a very practical and



useful construction of decohering devices, said devices being operated alternately, so as to cause the coherer to be reciprocated, not jarred or tapped, as is the ordinary way, to disturb or decohere the filings or particles contained therein, thus providing an instrument which is thoroughly efficient and practical in use.

I claim—

1. In a receiving-station, the combination of a tube, metallic particles located therein, a circuit through the particles, a relay actuated by the circuit, and two electromagnets actuated one at a time to give said tube a horizontal movement or to reciprocate the same to disturb the particles.

2. A receiving-station, consisting of a tube, metallic plugs in the tube, metallic particles in the tube between the plugs, a circuit through the plugs and particles, a relay actuated by the circuit, and electromagnets operated one at a time to reciprocate the tube.

3. In a receiving-station, the combination of air and ground plates, a frame connected with said plates, a coherer carried by said frame, and means for reciprocating said frame to decohere the coherer, said frame being journaled in said means.

4. In a receiving apparatus, consisting of air and ground plates, a reciprocating coherer in circuit therewith, electromagnets for reciprocating said coherer, means for causing said electromagnets to be energized one at a time to reciprocate the coherer, and a sounder in circuit with said electromagnets.

5. In a wireless system of telegraphy, a transmitting and receiving station, said receiving-station consisting of air and ground plates, a reciprocating coherer in circuit therewith, electromagnets for reciprocating said coherer, means for causing said magnets to be energized one at a time, and a sounder in circuit with said electromagnets.

6. In a receiver for electrical oscillations, the combination of a tube, metallic particles

located in said tube, a circuit through the particles, a relay actuated by the circuit, and two independent means actuated alternately as the relay is magnetized for reciprocating the tube to decohere the particles.

7. In a receiver for electrical oscillations, the combination of a tube containing metallic particles, a circuit through the particles, and two independent means actuated one at a time alternately by the circuit for reciprocating the tube to decohere the particles.

8. In a receiver for electrical oscillations, the combination of an imperfect electrical contact, metallic plates connected to the contact, a circuit through the contact, and two independent means actuated one at a time alternately by the circuit for reciprocating the contact.

9. In a wireless-telegraph system, the combination of means for producing Hertz oscillations, a signaling instrument and a receiver, said receiver comprising means for receiving the impulse, a circuit through said means, and two independent means actuated one at a time alternately for reciprocating said first-mentioned means, and a receiving instrument operated by the influence of such oscillations.

10. In a wireless-telegraph system, the combination of means for producing Hertz oscillations, a signaling instrument and a receiver, said receiver comprising means for receiving the impulse, a circuit through said means, a relay actuated by said circuit, two independent means actuated one at a time alternately to reciprocate the first-mentioned means, and a receiving instrument operated by the influence of such oscillations.

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

HERBERT P. DAVIS.

Witnesses:

MARCUS KATZ,  
GEO. W. ROWE.