

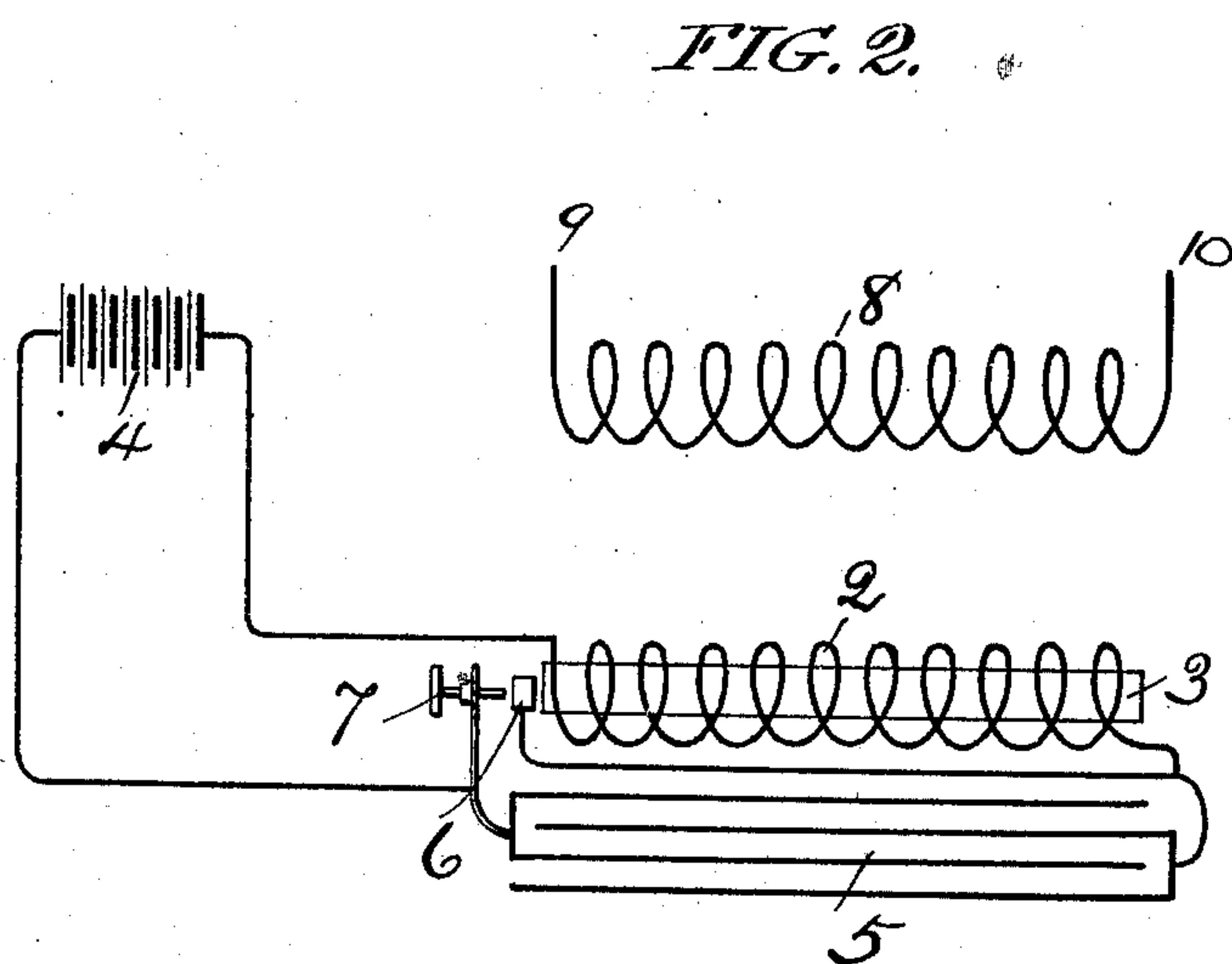
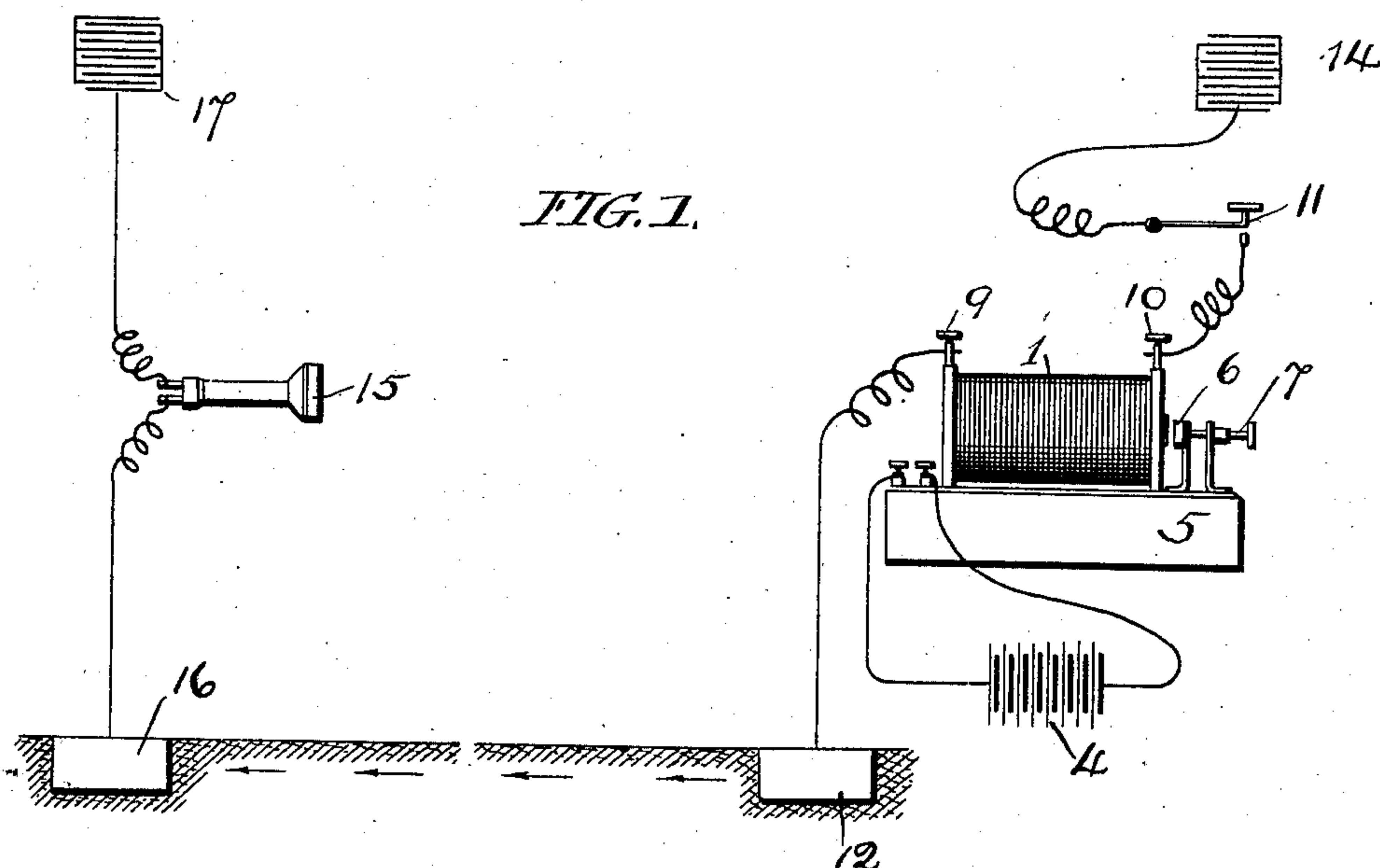
No. 685,742.

Patented Nov. 5, 1901.

A. F. COLLINS.
WIRELESS TELEGRAPHY.

(Application filed Mar. 31, 1900.)

(No Model.)



WITNESSES:

John Stokes Adams
Mae Hoffmann

INVENTOR

A. Frederick Collins
by J. W. Casada atty

UNITED STATES PATENT OFFICE.

ARCHIE FREDERICK COLLINS, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR
TO CHARLES A. CHASE, OF PHILADELPHIA, PENNSYLVANIA.

WIRELESS TELEGRAPHY.

SPECIFICATION forming part of Letters Patent No. 685,742, dated November 5, 1901.

Application filed March 31, 1900. Serial No. 10,888. (No model.)

To all whom it may concern:

Be it known that I, ARCHIE FREDERICK COLLINS, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented new and useful Improvements in Wireless Telegraphy, of which the following is a specification.

My invention relates to improvements in wireless telegraphy and the like.

My object is to provide improved means for causing definite electric oscillations to travel by the earth's conduction from a transmitter to a suitable responsive receiver and means for arbitrarily and at will varying said transmitted oscillations in signaling.

Referring to the drawings, Figure 1 is a diagrammatic view of my transmitting and receiving means. Fig. 2 is a diagrammatic detail of a Ruhmkorff coil and its connections.

Similar numerals refer to similar parts throughout both views.

My Ruhmkorff coil 1 is composed and connected as follows: The primary coil 2 is wound upon a soft core 3 and connected in circuit with the battery 4 and the condenser 5. The automatic vibrating armature or interrupter 6 and the adjusting-screw 7 are connected for regulating the vibrating rate, normally in circuit between the coil 2 and battery 4. The vibrator 6 is kept in motion by the current from the battery 4, producing a tone of normally uniform pitch, except when varied by the Morse key 11, as will be hereinafter described. The secondary coil 8, which surrounds the primary coil 2, is electrically connected by binding-post 9 at one terminal with the ground-plate 12 and by the binding-post 10 at its opposite terminal, through the Morse key 11, with the condenser 14. The receiver 15, provided with electrically-responsive means, is connected between the ground-plate 16 and the condenser 17.

The ground-plates 12 and 16 are preferably of copper sunk deeply enough in the earth to insure a moist contact.

When the key 11 is closed by the hand or otherwise, thus connecting 10 with 14, a portion of the induced current flows into the condenser 14, and the electromotive force of the induced current is thereby diminished or in-

creased at 9 and 10, as the condenser 14 is being charged or not, respectively. This variation of the induced current affects the battery-current in the primary coil, which results in immediately varying the vibration of the automatic interrupter, which in turn again correspondingly varies the induced current of the secondary coil that is delivered to the ground-plate 12—that is, assuming that the interrupter is set to a given rate of vibrations when the induction-coil is connected with the ground-plate only, then upon closing key 11 to connect the condenser 14 with the secondary coil the rate of vibration of the automatic vibrator is thereby affected, which in turn modifies or varies the induced current delivered to ground 12.

The current delivered to ground 12 radiates therefrom through the earth, and the portion which comes into contact with ground 16 is conveyed through the receiver 15 to the condenser 17, the receiver indicating the dots and dashes by the frequency and duration, respectively, of the two tones as the key 11 is closed or open.

What I claim is—

1. In combination with a source of electric current, a ground and a condenser, a Ruhmkorff coil, the primary of which is connected with the source of electric current, the secondary connected between the ground and a condenser, and means for arbitrarily breaking and making connection between the secondary and the condenser, the said mechanism constituting a transmitter; and a receiver consisting of a second ground, at a distance from the first, having electrically responsive means connected therewith, whereby the indications of said transmitter may be manifested by said receiver, substantially as described.

2. The combination of a source of electric energy, a primary coil and condenser connected therewith, an automatic electric interrupter operated by the current in said primary coil, means of adjustment for same, a secondary coil having one terminal connected with a ground and the other terminal with a second condenser and means for arbitrarily at will making and breaking connection between said secondary coil and said second

condenser, and a distant ground having electrically responsive means connected therewith, substantially as and for the purpose described.

- 5 3. The combination of a source of electric energy, a primary coil and condenser connected therewith, an automatic electric interrupter on said circuit operated by said primary current, means of adjustment for the
10 same, a secondary coil having one terminal connected with a ground and the other ter-

minal with a second condenser, and means for arbitrarily, at will, making and breaking connection between said coil and said second condenser, and a distant ground provided
15 with a condenser in electrical connection therewith and an electrical receiver on said circuit, substantially as described.

ARCHIE FREDERICK COLLINS.

Witnesses:

JOHN THIEL,
MAE HOFFMANN.