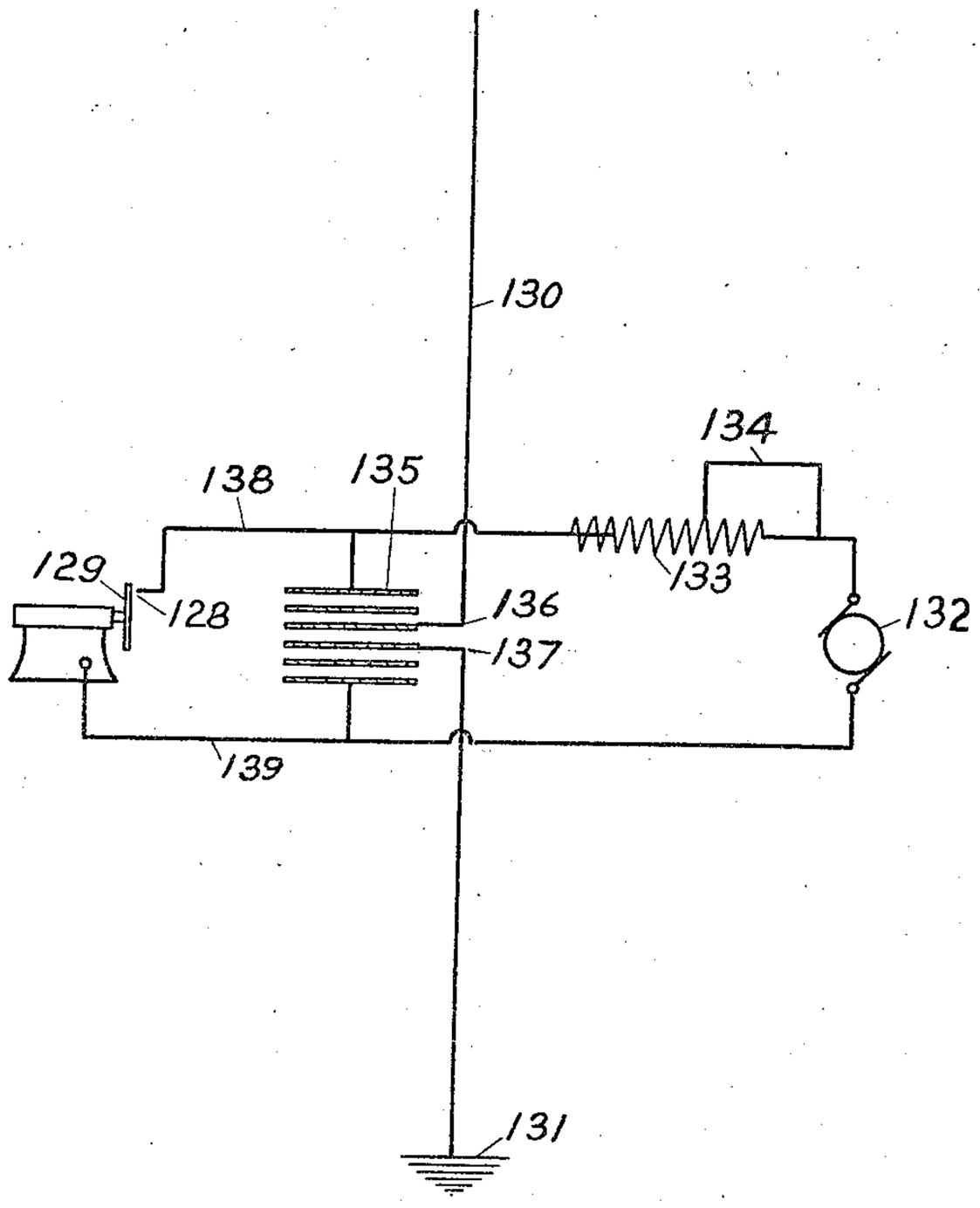
R. A. FESSENDEN.

METHOD FOR PRODUCING HIGH FREQUENCY OSCILLATIONS.

APPLICATION FILED OCT. 11, 1909.

1,166,893.

Patented Jan. 4, 1916.



Witnesses:
Jessie C. Dent
Florence R. Lyon

Reginald A. Fessenden.
Inventor

UNITED STATES PATENT OFFICE.

REGINALD A. FESSENDEN, OF BRANT ROCK, MASSACHUSETTS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO SAMUEL M. KINTNER, OF PITTSBURGH, PENNSYLVANIA, AND HALSEY M. BARRETT, OF BLOOMFIELD, NEW JERSEY, RECEIVERS.

METHOD FOR PRODUCING HIGH-FREQUENCY OSCILLATIONS.

1,166,893. Specification of Letters Patent. Patented Jan. 4, 1916.

Original application filed March 22, 1905, Serial No. 251,538. Divided and this application filed October 11, 1909. Serial No. 522,093.

To all whom it may concern:

Be it known that I, REGINALD A. FESSENDEN, residing at Brant Rock, Plymouth county, in the State of Massachusetts, a citizen of the United States, have invented certain new and useful Improvements in Methods for Producing High-Frequency Oscillations, of which improvements the following is a specification.

My invention relates to a method of producing high frequency oscillations and more particularly to a method of operating a discharge gap adapted for the producion of such oscillations.

In the accompanying drawing forming a part of this specification the figure illustrates diagrammatically the method of producing the oscillations.

The invention herein disclosed has for its object the method of producing high frequency oscillations in an efficient manner and more particularly the method of producing high frequency oscillations of a continuous or practically continuous character and still more particularly to a method of operating a form of discharge gap for use in this connection.

In the figure is shown a form of discharge gap adapted for this purpose and a suitable arrangement of circuits.

The arrangement of circuits is broadly similar to that shown in applicant's U. S. Patent 706,742 Figure 10.

In the figure one of the terminals of the spark gap 128 is formed of a disk 129 which revolves at a speed which may be as high as twelve miles per minute. 130 is the antenna grounded at 131, 132 is a source of voltage, preferably a continuous current dynamo, 133 is a means of regulating the current adjustable by means of the movable contact 134, 135 is a capacity, antenna and ground being connected across only a portion of the capacity, *i. e.* the plates 136, 137. By this means a high voltage current of small intensity can be altered into a low voltage current of larger intensity. The inductances formed of the wires 138, 139 are preferably small and arranged so that together with the capacity 135 they are in tune with the sending conductor.

In operation the rapid relative motion between the two terminals due to the rapid revolution of the terminal formed of the disk 129 produces a rapid and equitable succession of discharges and a high efficiency.

Having thus described my invention and illustrated its use, what I claim as new and desire to secure by Letters Patent is the following:

1. In wireless telegraphy, the method of generating oscillating currents for producing radiated waves, which comprises rapidly varying conditions of a gap in a closed oscillating circuit by rapidly moving a continuous surface and thereby continuously presenting a new surface of one of the electrodes in the gap with respect to the other.

2. In wireless telegraphy, the method of generating oscillating currents for producing radiation, which comprises varying the conductive condition of the gap in an oscillatory circuit by rapidly moving a continuous surface and thereby continuously presenting a new surface of one of the electrodes with respect to the other, whereby the discharge may take place on a continually cooled surface with every alternation of current.

In testimony whereof I have hereunto signed my name in the presence of the two subscribed witnesses.

REGINALD A. FESSENDEN.

Witnesses:

JESSIE E. BENT,

FLORENCE M. LYON.