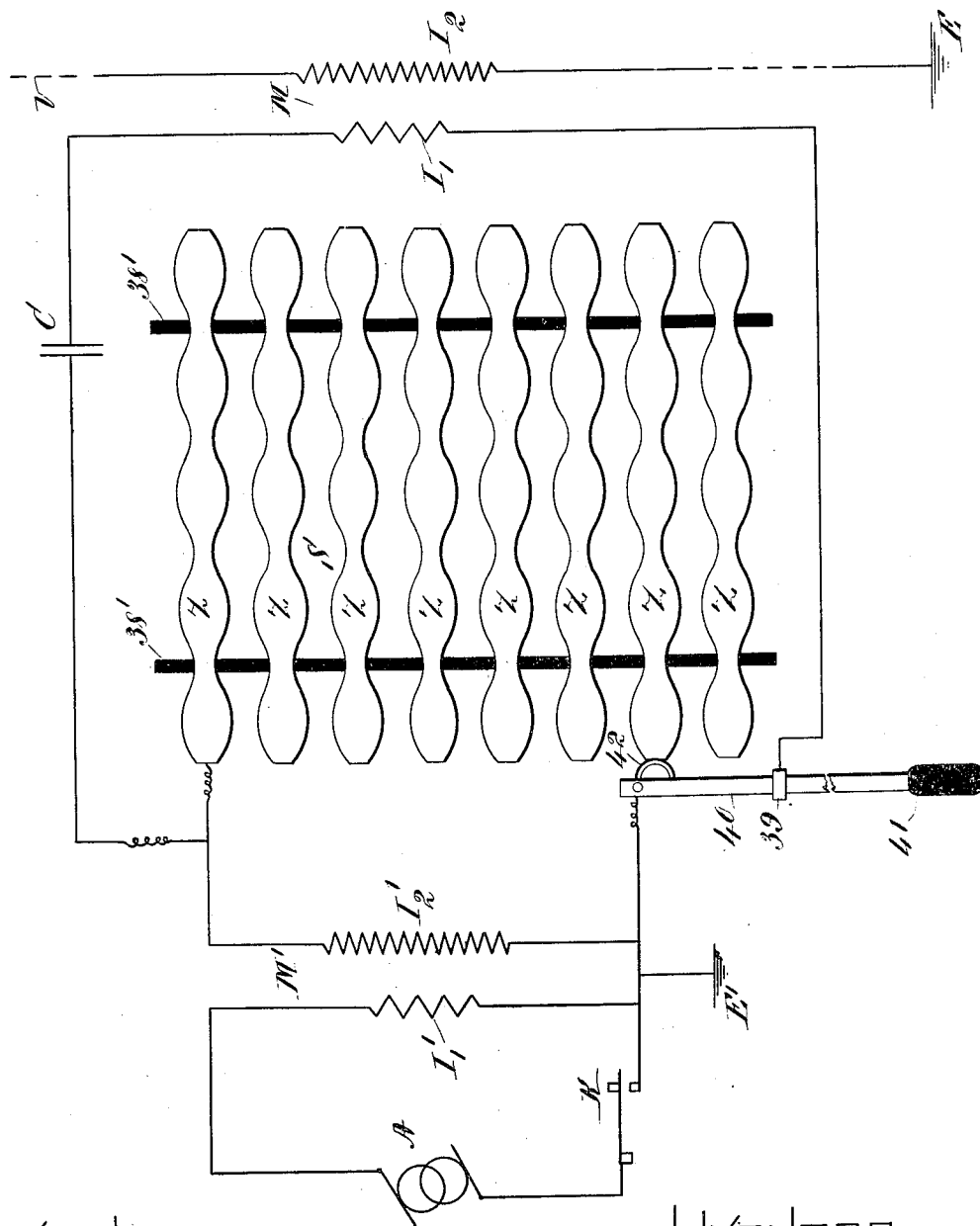


S. CABOT.
SPACE TELEGRAPHY.
APPLICATION FILED DEC. 31, 1906.

937,282.

Patented Oct. 19, 1909.



WITNESSES=

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UNITED STATES PATENT OFFICE.

SEWALL CABOT, OF BROOKLINE, MASSACHUSETTS.

SPACE TELEGRAPHY.

937,282.

Specification of Letters Patent.

Patented Oct. 19, 1909.

Original application filed November 18, 1905, Serial No. 288,032. Divided and this application filed December 31, 1906. Serial No. 350,258.

To all whom it may concern:

Be it known that I, SEWALL CABOT, a citizen of the United States, and a resident of Brookline, in the county of Norfolk and State of Massachusetts, have invented a new and useful Improvement in Space Telegraphy, of which the following is a specification.

My invention relates to the art of transmitting intelligence from one station to another by means of electromagnetic waves without the use of wires to guide the waves to their destination; and it relates more particularly to means for disturbing the electrical equilibrium of a sonorous circuit by suddenly discharging the condenser included therein.

The object of my invention is to provide a discharger for such sonorous circuit which shall have the advantages hereinafter set forth.

My invention may best be understood by having reference to the drawing which accompanies and forms a part of this specification and which illustrates one of the many possible embodiments of my invention, together with one of the ways in which it may be employed in a space telegraph transmitting system.

In the figure, the circuit S C I₁ is a sonorous circuit which includes the multiple series spark-gap S, the condenser C and the primary I₁ of the oscillation transformer M, whose secondary I₂ is included in the elevated conductor system V I₂ E, said system being earthed at E, either directly or else through a receiving system, as more fully described in my Patent No. 840,908, granted January 8, 1907, on my application Serial No. 288,032, filed November 18, 1905, of which the present application is a division.

The aforesaid sonorous circuit is energized by the alternator A, or other suitable source of vibratory electromotive force and the transformer M', whose primary and secondary windings are shown respectively at I₁' and I₂', may be interposed between said alternator and said sonorous circuit.

K is a key for controlling the current in the circuit of the primary of the transformer M' in accordance with the signal to be transmitted. The transformer M' may be earthed as shown at E'.

A preferred form of discharger or spark-gap is shown at S and consists of a multiple-

series spark-gap. The electrodes of said multiple-series gap are formed preferably of zinc, although any suitable material may be employed, and if of zinc, they may be formed into the desired shape by working an ordinary battery zinc by means of a hand-tool. The electrodes Z are placed as shown, with their ends resting upon the insulating members 38'. As indicated, one terminal of the gap is connected to one terminal of the secondary I₂' and to the condenser C, while the other terminal is connected to the second terminal of said secondary, and to the earth connection E'. In order to regulate the number of the members Z employed in the multiple series spark-gap, I may employ a rod 40, provided at one end with a handle 41 of insulating material and at the other with a spring-contact 42, said rod being mounted to slide in the standard 39.

The advantages of series spark-gaps are well known, having been set forth in U. S. Letters Patent to J. S. Stone No. 768,000, and elsewhere; but so far as I am aware, a multiple-series spark-gap has not before been used as a discharger for the condenser of a sonorous circuit. Such gap is highly advantageous for the purpose of affording as large a number of short paths for the spark as may be desired, and thereby reducing the resistance to electrical oscillations initiated in the sonorous circuit by the first discharge of the condenser across the gap. The advantages of using zinc are that it absorbs the oxygen from the nitrous acid created by the spark discharges and fixes it, and also that its vapor is non-conducting, so that a gap having zinc electrodes is a non-arcing gap.

I do not wish to be limited to the exact form of construction herein described, inasmuch as it will be obvious that many modifications may be made therein without departing from the principle of my invention.

I claim:

1. In a space telegraph transmitting system, the combination, with a sonorous circuit, of a multiple-series spark-gap and means for including any desired number of the electrodes thereof in said circuit.

2. In a space telegraph transmitting system, the combination, with a sonorous circuit, of a multiple-series spark-gap having its electrodes formed of a non-arcing metal

and means for including any desired number of said electrodes in said circuit.

3. In a space telegraph transmitting system, the combination, with a sonorous circuit, of a multiple series spark-gap having its electrodes formed of zinc and means for including any desired number of said electrodes in said circuit.

In testimony whereof, I have hereunto subscribed my name this 29 day of December 10 1906.

SEWALL CABOT.

Witnesses:

GEO. K. WOODWORTH,
E. B. TOMLINSON.