

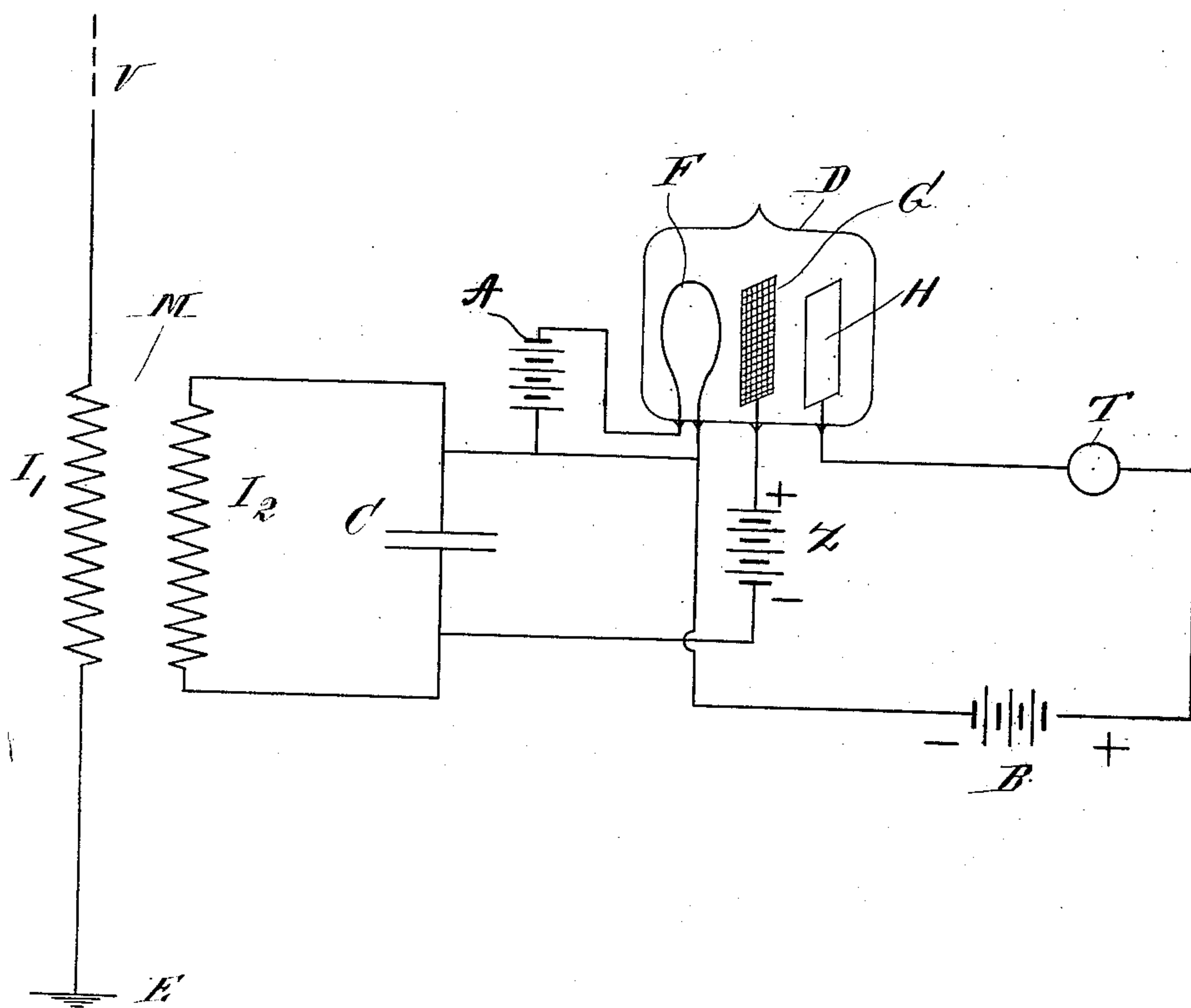
No. 884,110.

PATENTED APR. 7, 1908.

J. S. STONE & S. CABOT.

SPACE TELEGRAPHY.

APPLICATION FILED JAN. 4, 1907.



WITNESSES=

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UNITED STATES PATENT OFFICE.

JOHN STONE STONE, OF BOSTON, AND SEWALL CABOT, OF BROOKLINE, MASSACHUSETTS,
ASSIGNORS, BY DIRECT AND MESNE ASSIGNMENTS, TO WILLIAM W. SWAN, TRUSTEE, OF
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SPACE TELEGRAPHY.

No. 884,110.

Specification of Letters Patent.

Patented April 7, 1908.

Application filed January 4, 1907. Serial No. 350,721.

To all whom it may concern:

Be it known that we, JOHN STONE STONE and SEWALL CABOT, citizens of the United States, and residents, respectively, of Boston and Brookline, in the counties of Suffolk and Norfolk and State of Massachusetts, have invented a new and useful Improvement in Space Telegraphy, of which the following is a specification.

Our invention relates to oscillation detectors for space telegraph receiving systems, and more especially to the particular oscillation detector known as the audion, a device which is now well known and which has been fully described in a paper by Dr. Lee de Forest published in the *Proceedings of the American Institute of Electrical Engineers*, October, 1906, p. 719, to which reference may be had for a more detailed description thereof than is necessary to set forth herein.

The object of our invention is to improve the sensitiveness of an oscillation detector of the aforesaid type.

Our invention may best be understood by having reference to the drawing which accompanies and forms a part of this specification and which represents in diagram one embodiment of our invention which has given good results in practice.

In the drawing, the figure represents a space telegraph receiving system.

The audion shown in the drawing consists of a vessel D of glass or other suitable material which may be evacuated and in which are included a heated member F, which may be a filament, an electrode H, herein shown as a plate which may be of platinum, and a conducting member G, which may be a grid or screen and which may be interposed between said filament and electrode. The filament F may be heated preferably to incandescence by the battery A or other suitable source of electrical energy. A local circuit connecting the filament F and electrode H includes a telephone T or other suitable signal-indicating device and a source of electromotive force B, the positive terminal of which is connected to the electrode H. The filament F and conducting member G are connected to a closed oscillation circuit, herein shown as the oscillation circuit C I₂ and, as shown, they are connected across the terminals of the condenser C.

V I₁ E is an elevated conductor system in-

cluding the primary of the transformer M and the circuit C I₂ which includes the secondary of said transformer is made resonant to the frequency of the waves the energy of which is to be received.

We have found that the sensitiveness of the audion, when connected as above described with a closed oscillating circuit is greatly impaired from causes which are somewhat obscure and which we deem it unnecessary to discuss herein. The probable cause is that the conducting member G becomes negatively charged.

We have found that the sensitiveness of the audion may be greatly increased when connected as above described by inserting in the connections of the filament F and conducting member G to the oscillating circuit a source of electromotive force Z having its positive terminal connected to said conducting member and having an electromotive force determined by adjustment with respect to that of the source B which is included in the above mentioned local circuit.

While for the purpose of more clearly disclosing our invention we have described particularly one specific embodiment thereof, it will be understood that many modifications may be made therein without departing from the principle of our invention.

We claim,

1. A space telegraph receiving system having in combination a vessel, a heated member included therein, an electrode included in said vessel, a local circuit connecting said heated member and electrode, a source of electromotive force included in said local circuit and having its positive terminal connected to said electrode, a conducting member included in said vessel, connections from said heated member and conducting member to a closed oscillation circuit, and a source of electromotive force included in said connections and having its positive terminal connected to said conducting member.

2. A space telegraph receiving system having in combination a vessel, a heated member included therein, an electrode included in said vessel, a local circuit connecting said heated member and electrode, a source of electromotive force included in said local circuit and having its positive terminal connected to said electrode, a conducting member sealed within said vessel, connections

from said heated member and conducting member to a closed oscillation circuit, and a source of electromotive force included in said connections and having its positive terminal
5 connected to said conducting member, the electromotive force of the last mentioned source being adjusted with respect to that of the source included in said local circuit.

In testimony whereof, we have hereunto subscribed our names this 1st day of Jan. 10 1907.

JOHN STONE STONE.
SEWALL CABOT.

Witnesses:

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