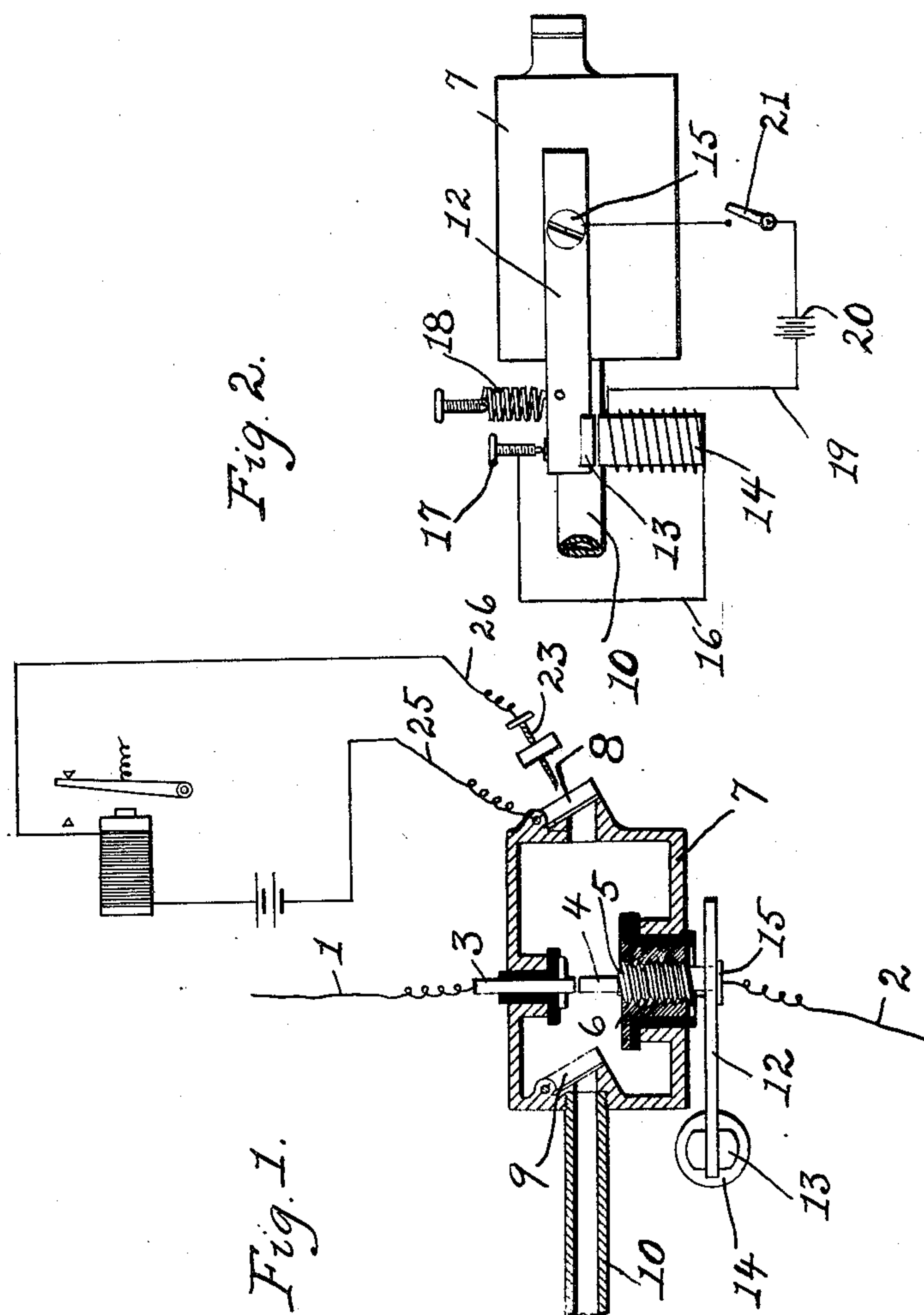


No. 889,790.

PATENTED JUNE 2, 1908.

I. KITSEE.
TELEGRAPHY.

APPLICATION FILED NOV. 17, 1906.



WITNESS:

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To all whom it may concern:

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

My invention relates to an improvement in telegraphy, and has more special reference to such systems where rapidly recurring or alternating impulses, or oscillating waves, are used, as for instance in telegraphing through the natural medium.

In some instances where a spark gap is used in the receiving circuit, the incoming impulses are not intense enough to produce the necessary spark, and it is the aim of my invention to facilitate the production of such spark even with very weak impulses. When two conductors are placed apart from each other, so that a space, or as it is technically called a "spark-gap", is intervening, the resistance of this gap is of so high a nature that very weak impulses will not be able to break down this resistance and to overbridge the space between the two conductors. But, if during the time that the impulses are flowing in one of these conductors, the second conductor is alternately and in rapid succession brought in contact with the first conductor and moved away from same, then the impulses will follow the movement of the second conductor and will overbridge the space between the two conductors when they are moved apart, provided that the gap produced is not too large.

My invention contemplates a system of telegraphy wherein through such movements of one or both conductors, the efficiency of the incoming impulse as to the production of the spark is increased, and as it is necessary for me to show this my invention in operative relation, I have illustrated the same in the accompanying drawing as applied to a system wherein the spark is made to actuate the local circuit through the expansion of an inflammable material, such as gas, in an inclosed space; it being obvious that my invention is applicable to other systems where in such sparks are used.

Referring to the drawing, Figure 1 is a sectional elevation of a receiving device embodying my invention and Fig. 2 is a plan view of same; the circuits in both figures being in diagram.

1 and 2 are parts of the receiving circuits;

3 and 4 are the terminals of same; 7 is an inclosure. In the drawing, the terminal 3 is illustrated as being stationary and the terminal 4 is illustrated as being adjustable with the aid of its screw threaded part 5 fitting into the threaded portion 6. The terminal 4 is provided with the lever 12 secured to 4 with the aid of the removable screw 15. The lever 12 carries the armature 13 and in juxtaposition to said armature is the electro-magnet 14; the coil thereof is connected through wire 16 with the adjustable contact 17 and with the other terminal through wire 19 with the source of current, here shown as batteries 20, the free pole of which is connected with the interposition of the switch 21 to the lever 12. In its normal position, this lever is held in contact with the screw 17 by the spring 18. This part of the arrangement is nothing more or less than a simple make and break. When the switch 21 is closed, the electro-magnet 14 is energized, thereby bringing down the armature 13 and with it the lever 12. Through this movement, the contact between 17 and 12 is broken; the electro-magnet 14 is deenergized and the spring 18 will again move the lever 12 upwards and in contact with 17. This movement is repeated as long as the switch 21 is closed. Through this movement, the screw threaded portion 5 causes the part 4 to come alternately in contact with 3 and out of contact with same, in a manner so that alternately a gap is produced and destroyed between the extreme parts of 3 and 4.

I am aware that instead of the rotary movement with the aid of a screw, other movements may be substituted, but I have found that this movement is in practice the best suited for the arrangement as illustrated. The inclosure 7 is in reality a gas chamber, or as it is technically called an "explosive chamber". The gas is admitted to this chamber with the aid of the means, here shown as a pipe 10; the chamber is provided with the two check valves 9 and 8. As this part of my invention is not claimed *per se* in this application, it is unnecessary to dwell more particularly on the office of this chamber and the gas admitted therein. It suffices to say that it is here proposed to inflame the gas to actuate through the expansion the check valve 8, and for this purpose, this check valve may be connected with a local circuit containing necessary devices and the terminals of this local circuit are indicated by

the numerals 23, 25 and 26. In the practical working of this arrangement, it is advised that, first of all, the screw 15 should be removed, so also the lever 12 and the two contacts 3 and 4 be brought together. The lever 12 is then with the aid of 15 secured to its place. Through the downward stroke of this lever, the part 4, being integral with the screw threaded part 5, is moved away a greater or lesser distance from the contact 3, and the operator has it therefore in his power to make the gap between 3 and 4 of any desired length by increasing or decreasing the space between the armature 13 and the electro-magnet 14.

Having now described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. In telegraphy, a receiving circuit and means to alternately make and destroy an air-gap between two terminals of said receiving circuit independent of the action of the transmitting means, in combination with a localized circuit adapted to be operated through the heating effect of the incoming impulses over-bridging said air-gap.

2. In telegraphy, a receiving device comprising two receiving terminals, at least one of said terminals being movable, and means to alternately bring said terminals into and out of contact with each other for the formation of an air gap independent of the action of the transmitting means, in combination with a localized circuit adapted to be operated through the heating effect of the incoming impulses over-bridging said air-gap.

3. In combination with two receiving terminals provided with an air gap, automatic means to alternately and in quick succession destroy and make said air gap independent of the action of the transmitting means and localized translating device adapted to be operated through the movement of a conductor due to the heating effects of the electric energy over-bridging said air-gap.

4. In combination with receiving terminals provided with an air-gap, electro-magnetic means to alternately make and destroy said air-gap independent of the action of the transmitting means said air-gap inclosed in a chamber, the gaseous contents

of which are adapted to be operated through the heating effect of the incoming impulses.

5. A telegraphic receiving device comprising an inclosure, terminals for said inclosure, means to introduce an inflammable medium in said inclosure and means to automatically make and destroy the gap between said terminals.

6. In a receiving device wherein the heating effect of a spark is employed to actuate a localized device, means automatic in their action to alternately produce and destroy an air gap between two terminals connected to the receiving terminals, and a localized device to be actuated through the heating effect of a spark at said air gap.

7. In a telegraphic receiving device, two terminals, and means to alternately join and separate said terminals independent of the action of the transmitting means said terminals surrounded by an inflammable medium.

8. A telegraphic receiving device, comprising a receiving circuit, relatively movable terminals for said circuit, means for causing relative movement between said terminals to alternately make and destroy a spark-gap, and means for actuating a localized device through the heating effect of a spark at said spark-gap.

9. A telegraphic receiving device, comprising a receiving circuit, relatively movable terminals for said circuit, means for causing relative movement between said terminals in quick succession to alternately make and destroy a spark-gap, and means for actuating a localized device through the heating effect of a spark at said spark-gap.

10. In wireless telegraphy, an antenna, a ground, means to alternately make and break the contact between said antenna and ground, a gaseous medium, a localized circuit and means to operate said localized circuit through the change in said gaseous medium due to the incoming impulses.

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

ISIDOR KITSEE.

Witnesses:

EDITH R. STILLEY,
ALVAH RITTENHOUSE.