V. COLIN & M. JEANCE.

WIRELESS TELEPHONY APPARATUS.

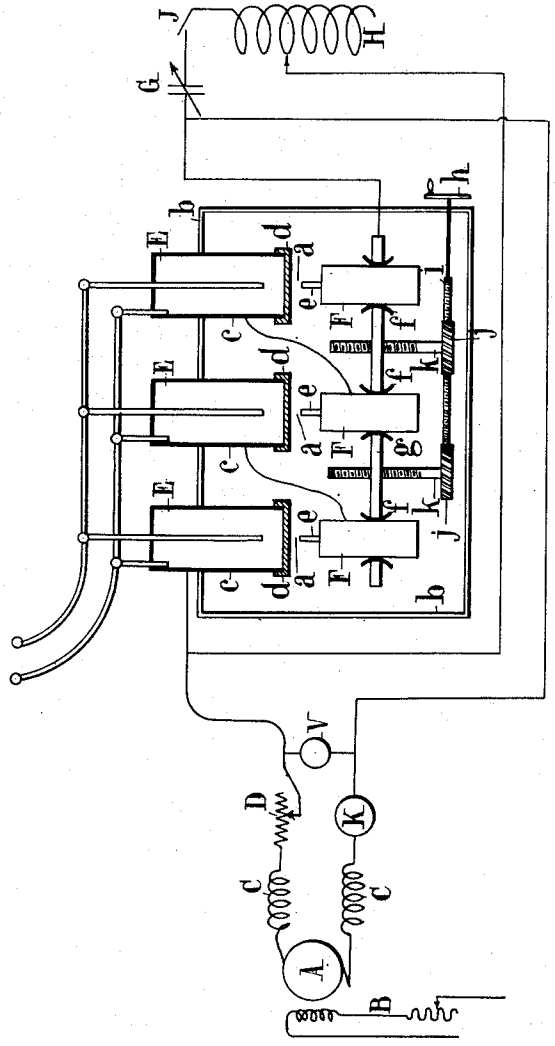
APPLICATION FILED AUG. 18, 1909.

1,010,593.

Patented Dec. 5, 1911.

2 SHEETS—SHEET 1.

Fig. 1



WITNESSES

H. A. Byrne

J. M. Wynkoop

INVENTORS

Victor Colin and Maurice Jeance

BY Emile Bömelycke

ATTORNEY

V. COLIN & M. JEANCE.
WIRELESS TELEPHONY APPARATUS.
APPLICATION FILED AUG. 18, 1909.

1,010,593.

Patented Dec. 5, 1911.
2 SHEETS—SHEET 2.

Fig. 2

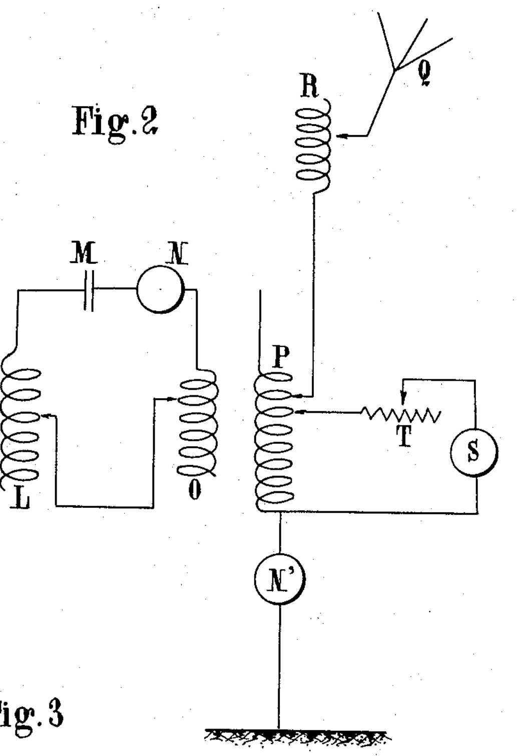
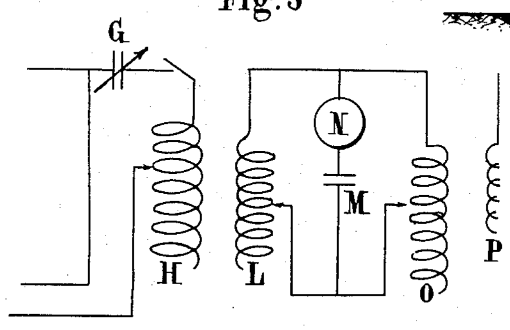


Fig. 3



WITNESSES
H. H. Byrne
J. M. Wynkoop.

INVENTOR
Victor Colin and Maurice Jeance
BY
[signature]
ATTORNEY

UNITED STATES PATENT OFFICE.

VICTOR COLIN, OF NEUILLY-SUR-SEINE, AND MAURICE JEANCE, OF PARIS, FRANCE.

WIRELESS-TELEPHONY APPARATUS.

1,010,593. Specification of Letters Patent. Patented Dec. 5, 1911.

Application filed August 18, 1909. Serial No. 513,531.

To all whom it may concern:

Be it known that we, VICTOR COLIN and MAURICE JEANCE, residing at Neuilly-sur-Seine, France, and Paris, France, respectively, have invented a new and useful Improvement in Wireless-Telephony Apparatus, which improvement is fully set forth in the following specification.

This invention relates to a complete apparatus intended for transmission and hearing, without wires, of sounds of any kind, voice, music, words, etc., by means of non-damped Hertzian waves.

The apparatus comprises: 1. A series of arc lamps with an arc between copper and carbon electrodes, the arc appearing either in the open air or in hydrogen, lighting gas, ammonia, acetylene, oil gas, water, petroleum or its derivatives, heavy oils, hydrocarbons and their compounds. 2. A series of circuits intended to produce simple non-damped oscillations. 3. A microphonic device. The receiver apparatus has no special features about it, and may consist of any desired receiver in which sounds could be heard, either an electrolytic detector, or detectors based on the Edison effect (Audion, Fleming valve, etc.), or detectors with crystal contacts or magnetic detectors, being used. Electrical dimensions of the receiver must be suitably calculated.

The explanation will be better understood with reference to the accompanying drawings in which—

Figure 1 is a diagrammatic view of the whole of the apparatus; Fig. 2 shows an intermediate circuit; and Fig. 3 is a modified construction of the intermediate circuit shown in Fig. 2.

The current used is supplied by a continuous current dynamo A with variable excitation B, by means of which it is possible to utilize at the same speed of rotation variable and suitable voltages. The switch-board is provided with two heavy self induction coils C and a suitable variable rheostat D inserted into the circuit supplying the arcs.

The lamp comprises one or more arcs *a* inclosed into a tight metal box *b* in the interior of which can circulate the gas or the liquid utilized. The box *b* is provided with positive electrodes E consisting of cylindrical reservoirs *c* of copper of large diameter, in which circulates, by means of a thermo siphon, an insulating or non-insulating cooling liquid. The end of the positive electrodes is formed by a detachable flat cap *d* under which appears the arc *a*. The positive electrodes are fixed. The negative electrodes are formed by thin carbon rods *e* 1 to 3 mm. in diameter carried by a radiating cylinder F, or by a carbon of large diameter. The said carbon-holder radiator F, or the said carbon of large diameter, is inserted with a slight amount of friction into a socket *f* carried by a disk *g* which can rise or descend under the action of a hand wheel *h* mounted on a worm *i* which controls the disk *g* by means of pinions *j* and screws *k*. The hand wheel *h* arranged outside the box *b* is operated by hand, or automatically by an electric regulator, so as to maintain a constant voltage at the arcs. When the arcs appear in the open air, the carbons used can be of large diameter.

The primary circuit comprises the arcs in series, a variable capacity G and a variable self-induction coil H. A voltmeter V is arranged at the terminals of the arcs. A commutator or switch J enables this first circuit to be broken. An intermediate circuit comprises a variable self-induction coil L forming the secondary circuit of a Tesla transformer, the primary coil of which consists of the self-induction coil H of the first circuit, a variable condenser M, an ammeter N and a variable self-induction coil O forming the primary coil of a second Tesla transformer. Finally a variable self-induction coil P forming the secondary coil of a second Tesla transformer, has one of its ends connected to earth passing through an ammeter N^1. A point suitably chosen on the said self-induction coil is connected to the antenna Q passing through an adjustable self-induction coil R of antenna.

The microphone apparatus S is arranged in a circuit, one of the ends of which is connected to earth, and the other to a suitably selected point of the second coil of the second Tesla transformer. Into the said circuit are inserted a variable resistance T and an ammeter not shown in the drawing.

Claims:

1. In a space-telephone transmitting system, an electric arc, the cathode of which consists of a relatively small pencil of carbon supported by a conducting holder having a relatively large radiating surface.

2. In an apparatus for producing and transmitting sustained electrical oscillations, an electric arc, the cathode of which

consists of a relatively small pencil of carbon carried by a support having a relatively large radiating surface, and the anode of which consists of a metallic vessel, and means for causing a continuous circulation of water through such vessel to cool the same.

In testimony whereof we have signed this specification in the presence of two subscribing witnesses.

VICTOR COLIN.
MAURICE JEANCE.

Witnesses:
EMILE LEDRET,
H. C. COXE.