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PROVISIONAL SPECIFICATION.

Improved Means for Detecting Continuous Electrical Oscillations.

We, MARCONI'S WIRELESS TELEGRAPH COMPANY, LIMITED, and CHARLES SAMUEL FRANKLIN, Electrical Engineers, both of Marconi House, Strand, London, W.C., do hereby declare the nature of this invention to be as follows:—

This invention relates to improved means for detecting continuous electrical oscillations.

When a closed circuit containing a condenser is coupled either directly or through an intermediate circuit to an aerial and a rectifying detector in series with a suitable telephone receiver is placed in shunt to the condenser, a unidirectional current is obtained in the telephone circuit on continuous oscillations being induced in the aerial by continuous waves from a distant station.

This unidirectional current which is a maximum when all the circuits are in tune and rapidly diminishes in value as the receiving circuits are put out of tune will not, however, give any effect in a telephone and various forms of make and break contacts which break up this current and cause it to produce a sound have therefore been employed.

According to this invention we tune one or more of the receiving circuits by means of a condenser or condensers the capacity of which can be periodically varied between suitable limits at any desired frequency.

The condenser is preferably in the form of a disc or discs with conducting sectors which are caused to approach and recede from fixed conducting sectors. The law of the rate of variation of capacity may be determined by shaping the sectors and is preferably made a harmonic law.

The result is that the unidirectional current obtained in the telephone circuit during the reception of continuous waves is varied between maximum and minimum values in a harmonic manner giving in the telephone a very pure note the pitch of which may be varied as desired.

Dated this 14th day of May, 1913.

MARCONI'S WIRELESS TELEGRAPH COMPANY, LIMITED.

The common seal of Marconi's Wireless Telegraph Company, Limited, was hereto affixed in the presence of:—

HENRY S. SAUNDERS,
H. RIAL SANKEY,
Directors.

HENRY W. ALLEN,
Secretary.

C. S. FRANKLIN,

[Price 6d.]

Improved Means for Detecting Continuous Electrical Oscillations.

COMPLETE SPECIFICATION.

Improved Means for Detecting Continuous Electrical Oscillations.

We, MARCONI'S WIRELESS TELEGRAPH COMPANY, LIMITED, and CHARLES SAMUEL FRANKLIN, Electrical Engineers, both of Marconi House, London, W.C., do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to improved means for detecting continuous electrical oscillations.

When a closed circuit containing a condenser is coupled either directly or through an intermediate circuit to an aerial and a rectifying detector in series with a suitable telephone receiver is placed in shunt to the condenser, a unidirectional current is obtained in the telephone circuit on continuous oscillations being induced in the aerial by continuous waves from a distant station.

This unidirectional current which is a maximum when all the circuits are in tune and rapidly diminishes in value as the receiving circuits are put out of tune will not, however, give any effect in a telephone and various forms of make and break contacts which break up this current and cause it to produce a sound have therefore been employed.

According to this invention we tune one or more of the receiving circuits by means of a condenser or condensers the capacity of which can be periodically varied between suitable limits at any desired frequency.

The condenser is preferably in the form of a disc or cylinder with conducting sectors which are caused to approach and recede from fixed conducting sectors. The law of the rate of variation of capacity may be determined by shaping the sectors and is preferably made a harmonic law.

The result is that the unidirectional current obtained in the telephone circuit during the reception of continuous waves is varied between maximum and minimum values in a harmonic manner giving in the telephone a very pure note the pitch of which may be varied as desired.

The accompanying diagram illustrates our invention.

a a are conducting sectors which can be caused to rotate about an axis b so that they approach and recede from a conductor sector c in series with an inductance S .

The capacity between a and c thus varies between two limits, and therefore the tune of the circuit comprising the inductance S and condenser a c also varies between two limits, which can be made as wide apart as desired by suitably proportioning a and c . This circuit is adjusted so that at one of the limits or at the intermediate position it is in tune with the aerial which is tuned to the wave it is desired to receive.

The result is that the rectified current through a rectifier K during the reception of continuous waves is varied between maximum and minimum values in a harmonic or any other desired manner, giving in the telephone T a very pure note the pitch of which can be varied as desired.

Obviously an intermediate circuit may be introduced between the aerial circuit and the circuit S , and the condenser a c may be placed in this circuit or similar varying condensers (preferably geared together) may be placed in all the circuits.

The same result may also be obtained by replacing the varying condenser or condensers a c by a rotating coil or coils which alter the inductance of one or all the circuits instead of the capacity thereof.

Improved Means for Detecting Continuous Electrical Oscillations.

Having now particularly described and ascertained the nature of our said invention, and in what manner the same is to be performed, we declare that what we claim is:—

1. In a wireless receiver for continuous waves a device which will alter the
5 tune of one or all of the circuits at any desired frequency without the employment of make and break contacts substantially as described.
2. In a receiver covered by Claim 1 altering the tune by means of a condenser one plate of which is fixed while the other rotates substantially as described.

Dated this 17th day of November, 1913.

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[Wt. 3.—125/1/1916.]

MARCONI'S WIRELESS TELEGRAPH CO. & another's COMPLETE SPECIFICATION.

(2nd Edition)

[This Drawing is a reproduction of the Original on a reduced scale.]

