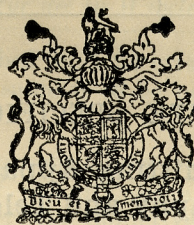




N° 2919



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Complete Specification Left, 3rd Sept., 1913—Accepted, 29th Jan., 1914

PROVISIONAL SPECIFICATION.

Improvements in Transmitting Apparatus for use in Wireless Telegraphy and Telephony.

I, GUGLIELMO MARCONI, LL.D., D.Sc., of Marconi House, Strand, London, W.C., do hereby declare the nature of this invention to be as follows:—

This invention relates to improvements in transmitting apparatus for use in wireless telegraphy and telephony.

- 5 According to my invention I employ a series of condensers and I discharge them in succession in the same direction in such a way that as one is discharged the next is charged, the final discharge being effected from the last of the series. Each condenser except the last is included in two circuits, the first circuit containing a source of current preferably continuous, a key and an inductive resistance, while each of the remaining circuits comprises an inductive resistance and a gap which can be almost bridged by suitable means at regular intervals. The inductive resistances of all the circuits, except the first, act as primaries to a secondary in the aerial, or in an oscillating circuit coupled to the aerial. Preferably I employ four or a larger even number of condensers and the primaries are wound in opposite directions alternately so that the aerial is impulsed alternately in one direction and then in the other, the intervals between the bridging of the circuits being so chosen that the impulses are in phase with the natural period of electrical oscillation of the aerial. I may also employ primaries wound the same way and impulse the aerial at each complete period or otherwise in synchronism with its natural period of oscillation, in which case I am not limited to employing an even number of condensers.

For bridging the gaps I preferably employ a series of toothed discs on a single shaft which can be rapidly rotated, the teeth of the discs being so arranged that the circuits are closed in rotation.

- 25 Suitable means are provided in each circuit (except the first) for preventing the condensers from discharging in the wrong direction and I preferably employ for this purpose an air-blast between the teeth of the disc and one or both of the terminals close to which they pass but I may employ instead or in addition a resistance or a rectifier or both.

- 30 The speed of the toothed discs should obviously be such that the aerial receives impulses in synchronism with its natural time period.

Dated this 4th day of February, 1913.

CARPMAEL & Co.,

Agents for Applicant,

24, Southampton Buildings, London, W.C.

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~~[Price 8d.]~~

PRICE 6d.

Impts. in Transmitting Apparatus for use in Wireless Telegraphy and Telephony.

COMPLETE SPECIFICATION.

Improvements in Transmitting Apparatus for use in Wireless Telegraphy and Telephony.

I, GUGLIELMO MARCONI, LL.D., D.Sc., of Marconi House, Strand, 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 improvements in transmitting apparatus for use in wireless telegraphy and telephony, whereby continuous oscillations or groups of continuous oscillations may be generated.

According to my invention I employ a series of condensers and I discharge them in succession in the same direction in such a way that as one is discharged the next is charged, the final discharge being effected from the last of the series. Each condenser is included in two circuits. The first circuit contains a source of current, preferably continuous, a key and an inductive resistance, while each of the remaining circuits comprises an inductive resistance and a gap which can be almost bridged by suitable means at regular intervals. The inductive resistances of all the circuits, except the first, act as primaries to a secondary in the aerial, or in an oscillating circuit coupled to the aerial, all such circuits acting on the aerial or intermediate circuit being in resonance with the aerial. I may employ four or a larger even number of condensers, the primaries being wound in opposite directions alternately, so that the aerial is impulsed alternately in one direction and then in the other, the intervals between the bridging of the circuits being so chosen that the impulses are in phase with the natural period of electrical oscillation of the aerial. Or I may employ primaries wound the same way and impulse the aerial at each complete period, or otherwise, in synchronism with its natural period of oscillation, in which case I am not limited to employing an even number of condensers.

For bridging the gaps I preferably employ a series of toothed discs on a single shaft which can be rapidly rotated, the teeth of the discs being so arranged that the circuits are closed in rotation.

Suitable means are provided in each circuit (except the first) for preventing the condensers from discharging in the wrong direction and I preferably employ for this purpose an air-blast between the teeth of the disc and one or both of the terminals, close to which they pass, but I may employ instead or in addition a resistance, a rectifier, a quencher gap or a combination thereof.

The speed of the toothed discs should obviously be such that the aerial receives impulses in synchronism with its natural time period.

Groups of continuous oscillations may be generated by this apparatus if the teeth on the discs are arranged in groups.

The drawing is a diagram illustrating the invention; C¹, C², and C³ are a series of condensers so arranged that C¹ discharges through inductive resistance P¹, and discharger D¹, into condenser C². C² discharges through P² and D² into C³; C³ which is the last of the series finally discharges through P³ and D³. The condenser C¹ is charged by a generator G through an inductive resistance I.

The disc dischargers D¹, D² and D³ are preferably all on the same shaft and insulated from one another and are so adjusted that circuits C¹ P¹ C², C² P² C³, C³, P³, C¹ P¹ C², etc., are completed and broken in the above order and at equal intervals. The inductive resistances P¹, P² and P³ act upon the common secondary S which may form part of an aerial A or part of an intermediate circuit which is coupled to the aerial.

Impts. in Transmitting Apparatus for use in Wireless Telegraphy and Telephony.

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

1. In a transmitter for producing continuous oscillations or groups of continuous oscillations a plurality of circuits, each containing a condenser an inductive resistance and a discharger, the inductive resistances all being coupled to an aerial, or to an intermediate circuit coupled to an aerial, each condenser except the last discharging into the next condenser, while the dischargers discharge the condensers in regular order and in synchronism with the natural time period of the aerial substantially as described.

2. A transmitter substantially as described and illustrated in the drawing.

Dated this 3rd day of September, 1913.

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CARPMAEL & Co.,
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24, Southampton Buildings, London, W.C.

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(2nd Edition)

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

