

N° 21,640



A.D. 1904

Date of Application, 8th Oct., 1904

Complete Specification Left, 6th July, 1905—Accepted, 10th Aug., 1905

PROVISIONAL SPECIFICATION.



**“Improvements in Apparatus for Wireless Telegraphy.”**

We, MARCONI'S WIRELESS TELEGRAPH COMPANY, LIMITED, EDGAR BERRY, and HARRY ALEXANDER ELRICK EWEN, all of 18 Finch Lane, in the City of London, Electricians, do hereby declare the nature of this invention to be as follows:—

5 This invention relates to apparatus in which the same aerial conductor is used both for the receiving and transmitting instrument.

10 In such apparatus it is usual to connect the receiving instrument to the earth and to the aerial (the latter connection being through a switch) and also to connect the transmitting instrument to the aerial and to earth. The latter earth connection has frequently been through a switch by which the connection can be broken whilst receiving, for otherwise (unless the apparatus is specially tuned to prevent it) the incoming oscillations will pass directly to earth through this connection without affecting the receiver.

15 According to this invention a small spark gap is made in the earth connection of the transmitter in place of this switch. We find that this spark gap in no way affects the operation of the transmitter which works exactly as if it were connected to earth by a continuous conductor whilst the spark gap effectually prevents the received oscillations from passing directly to earth without affecting the receiver.

Dated this 6th day of October 1904.

20 MARCONI'S WIRELESS TELEGRAPH Co. LTD.,  
H. CUTHBERT HALL,  
H. JAMESON DAVIS,  
Directors.

25 E. BERRY.  
H. A. ELRICK, EWEN.

COMPLETE SPECIFICATION.

**“Improvements in Apparatus for Wireless Telegraphy.”**

30 We, MARCONI'S WIRELESS TELEGRAPH COMPANY, LIMITED, EDGAR BERRY, and HARRY ALEXANDER ELRICK EWEN, all of 18 Finch Lane, in the City of London, Electricians, 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 apparatus in which the same aerial conductor is used both for the receiving and transmitting instrument.

[Price 8d.]

PRICE 8d.



*Improvements in Apparatus for Wireless Telegraphy.*

In such apparatus it is usual to connect the receiving instrument to the earth and to the aerial (the latter connection being through a switch) and also to connect the transmitting instrument to the aerial and to earth. The latter earth connection has frequently been through a switch by which the connection can be broken whilst receiving, for otherwise (unless the apparatus 5 is specially tuned to prevent it) the incoming oscillations will pass directly to earth through this connection without affecting the receiver.

According to this invention a small spark gap is made in the earth connection of the transmitter in place of this switch. We find that this spark gap in no way affects the operation of the transmitter which works exactly 10 as if it were connected to earth by a continuous conductor whilst the spark gap effectually prevents the received oscillations from passing directly to earth without affecting the receiver.

The drawings illustrate the invention diagrammatically.

$a$  is the aerial and  $a^1$  the spark gap in it, generally a gap of one millimetre 15 is suitable.  $a^2$  is the secondary of the transformer of the transmitter and  $b$  is the primary.  $c$  is the primary of the transformer of the receiver which is connected to earth as is usual. The other parts of the transmitting and receiving instruments are not shown.

The invention is equally applicable whether the connection of the coil  $c$  20 to the aerial is below the coil  $a^2$  as shown in Figure 1 or above it as shown in Figure 2.

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:—

The spark gap  $a^1$  substantially as and for the purpose described. 25

Dated this 23rd day of June 1905.

MARCONI'S WIRELESS TELEGRAPH Co. LTD.,

S. FLOOD PAGE,  
HENRY SAUNDERS, 30  
Directors.  
HENRY W. ALLEN,  
Secretary.

EDGAR BERRY,  
H. A. ELRICK, EWEN. 35

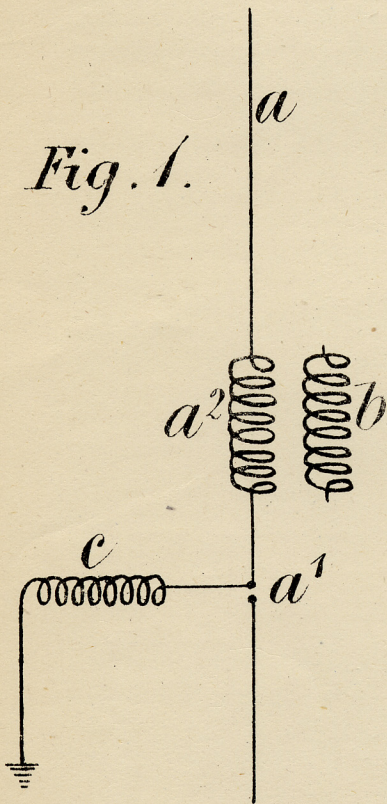
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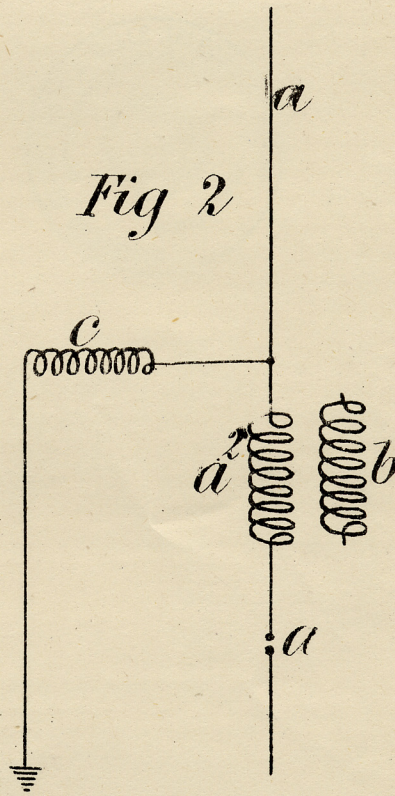


(2<sup>nd</sup> Edition)

*Fig. 1.*



*Fig 2*



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