[Second Edition.]

N° 15,909 A.D. 1906

Date of Application, 13th July, 1906
Complete Specification Left, 11th Jan., 1907—Accepted, 28th Mar., 1907

PROVISIONAL SPECIFICATION.

"Improvements in and relating to Variable Electric Condensers."

We, MARCONI'S WIRELESS TELEGRAPH COMPANY, LIMITED, and JOHN ST VINCENT PLETTS, both of 18 Finch Lane, in the City of London, Electricians, do hereby declare the nature of this invention to be as follows:—

This invention relates to adjustable condensers the capacity of which may be varied continuously between limits determined by the size and construction of the condenser and the manner in which it is connected up.

The condenser consists of two sets of semicircular metallic plates adapted to be moved relatively to one another about a central non-conducting spindle and which are separated from one another by circular insulating discs. Each semicircular metallic plate is provided with a lug or projection situated near the middle point of the circumference. These lugs provide means of making electrical connection to the metallic discs and of turning them about the central spindle or for holding them stationary.

The plates are assembled together in a circular box having a central non-conducting spindle. To the bottom of the box and diametrically opposite to one another are fixed two pins which pass through holes in the lugs of one set of semicircular plates, the plates being prevented from turning about the pins by the central spindle.

Similarly to the top of the box and diametrically opposite to one another are fixed two pins which pass through holes in the lugs of the other set of semicircular plates, the plates as before being prevented from turning about the pins by the central spindle.

Each set of semicircular plates is separated from the other set by circular insulating discs provided with central holes for passing over the central non-conducting spindle. Washers are provided on the pins to separate the semicircular plates, and the pins are connected to the terminals.

The capacity of the condenser is varied by turning the top of the box which causes one set of semicircular plates to be turned relatively to the other, the capacity of the condenser being proportional to the angle through which the top is turned.

Dated this 13th day of July, 1906.

MARCONI'S WIRELESS TELEGRAPH CO., LTD.
HENRY S. SAUNDERS,
ALBERT OCHS,
Directors.
HENRY W. ALLEN,
Secretary.

JOHN ST. VINCENT PLETTS.

[Price 8d.]

COMPLETE SPECIFICATION.

"Improvements in and relating to Variable Electric Condensers."

We, MARCONI'S WIRELESS TELEGRAPH COMPANY, LIMITED, and JOHN ST VINCENT PLETTS, both 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 adjustable condensers the capacity of which may be varied by turning one of the condenser plates relatively to the other.

The condenser consists of two sets of semicircular metallic plates adapted to be moved relatively to one another about a central non-conducting spindle and which are separated from one another by circular insulating discs. Each semicircular metallic plate is provided with a lug or projection situated near the middle point of the semi-circumference. These lugs provide means of making electrical connection to the metallic plates and of turning them about the central spindle or holding them stationary.

The plates are assembled together in a circular box having a central non-conducting spindle. To the bottom of the box and diametrically opposite to one another are fixed two pins which pass through holes in the lugs of one set of semicircular plates, the plates being prevented from turning about the pins by the central spindle against which they bear.

Similarly to the top of the box and diametrically opposite to one another are fixed two pins which pass through holes in the lugs of the other set of semicircular plates, the plates as before being prevented from turning about the pins by the central spindle.

Each set of semicircular plates is separated from the other set by circular insulating discs provided with central holes for passing over the central non-conducting spindle. Washers are provided on the pins to separate the semicircular plates, and the pins are connected to the terminals.

The capacity of the condenser is varied by turning the top of the box which causes one set of semicircular plates to be turned relatively to the other, the capacity of the condenser being proportional to the angle through which the top is turned.

Figure 1 is a plan with the top removed showing all the plates in place.

Figure 2 is a similar plan showing only one set of semicircular plates.

Figure 3 is a similar plan showing the other set of semicircular plates.

Figure 4 is a sectional elevation showing one set of plates turned through a right angle.

Figure 5 is a sectional elevation at right angles to Figure 4.

A^1 A^2 and B^1 B^2 are two sets of semicircular plates adapted to be moved relatively to each other about a central non-conducting spindle C. On each of the plates A^1 A^2 B^1 and B^2 are lugs a^1 a^2, b^1 and b^2 respectively. To the bottom D of the box and diametrically opposite to one another are two pins E^1 E^2 which pass through holes in the lugs a^1 a^2 and to the top F of the box are similarly fixed two other pins G^1 G^2 which pass through holes in the lugs b^1 b^2. Each set of plates is separated from the other set by circular insulating discs H provided with holes for passing over the spindle C, and washers e^1, e^2, g^1 and g^2 are provided on the pins E^1 E^2 G^1 and G^2 to separate the plates.

Suppose now that the condenser is in the position shown in Figure 1. On the one side we have the semicircular plate B^1, and immediately underneath it,

but separated from it by an insulated disc H the semicircular plate A^1; under this again is another plate B^1 similarly separated, and so on. On the other side we have plates B^2 and A^2 similarly arranged. If the lid be rotated it will carry with it the pins G^1 and G^2 which will cause the plates B^1 and B^2 to turn about the spindle C. As these turn each plate B^1 will come out from between two plates A^1 and pass in between two plates A^2. Similarly each plate B^2 will come out from beneath two plates A^2 and pass in between two plates A^1; until when a half turn of the lid is completed the plates B^1 will be occupying the position formerly occupied by the plates B^2 and *vice versa*.

There are various ways in which the semicircular plates A^1 A^2, B^1 and B^2 may be connected up giving various ranges of capacity, but if the plates A^1 and B^1 be joined together and the plates A^2 and B^2 be joined together we shall have a capacity which may be varied from zero to a maximum determined by the size and construction of the condenser, and the capacity will be proportional to the angle through which the lid is turned.

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. A variable electric condenser consisting of two series of semicircular plates capable of being turned relatively to each other substantially as described.

2. A variable electric condenser consisting of two sets of semicircular plates capable of being moved relatively to each other about a spindle secured centrally in a box one series being connected to the top of the box and the other to the bottom of the same substantially as described.

3. Variable electric condensers substantially as described and illustrated in the drawings.

Dated this Seventh day of January, 1907.

MARCONI'S WIRELESS TELEGRAPH CO., LTD.

W. W. Goodbody,
Henry S. Saunders,
Directors.
Henry W. Allen,
Secretary.

J. ST. VINCENT PLETTS.

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[Wt. 57—50/5/1910.]

(2nd Edition)

Fig. 1.

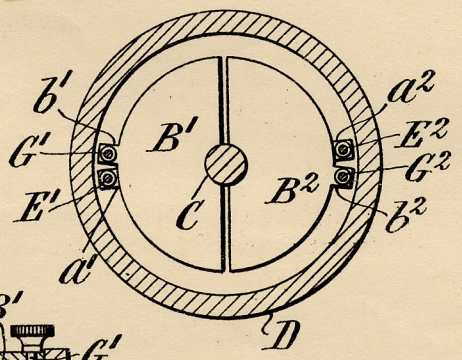


Fig. 4.

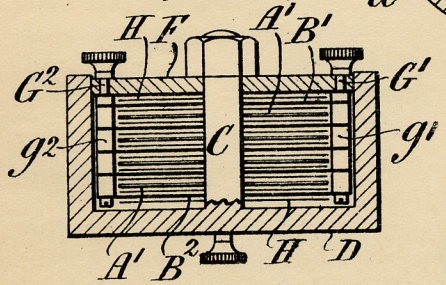


Fig. 2.

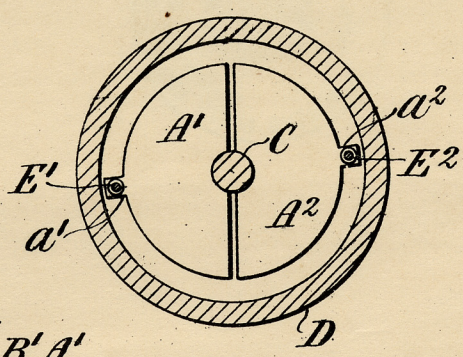


Fig. 5.

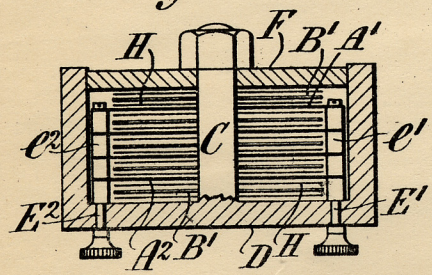
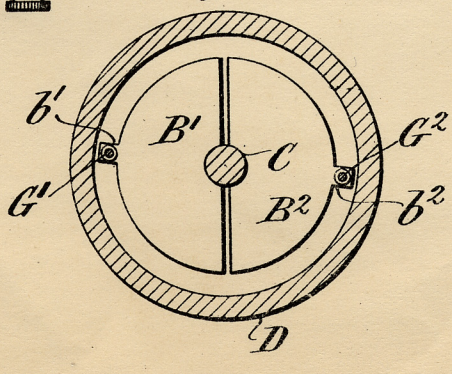


Fig. 3.



Malby&Sons, Photo-Litho.

ERRATUM.

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Page 3, line 7, *for* "beneath" *read* "between."

PATENT OFFICE,
13*th August*, 1913.