R. A. FESSENDEN.

WIRELESS TELEGRAPHY.

APPLICATION FILED JULY 16, 1906.

948,068. Patented Feb. 1, 1910.

FIG. 1.

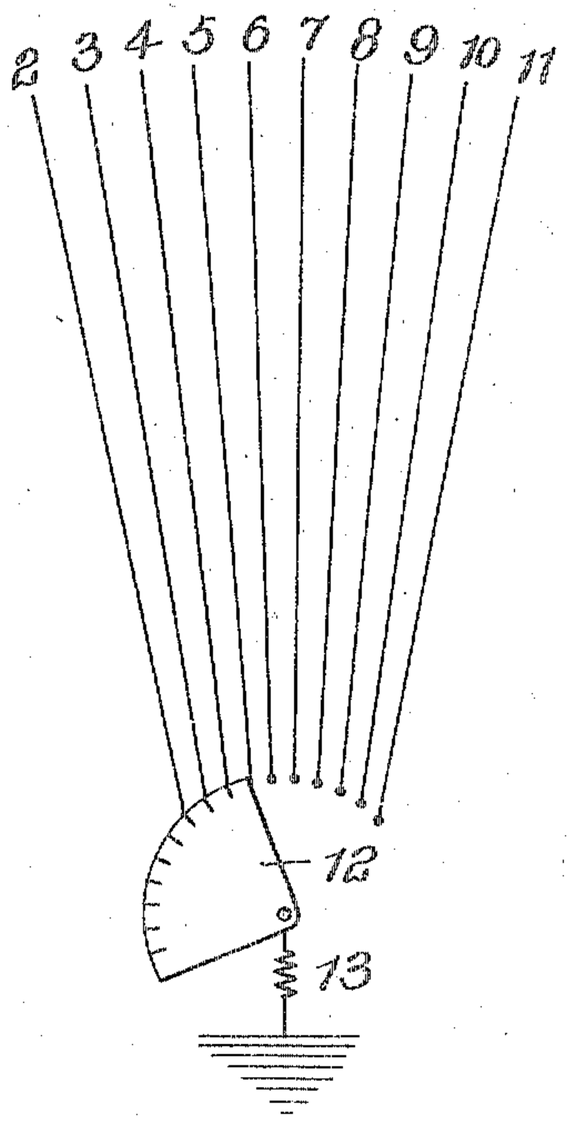
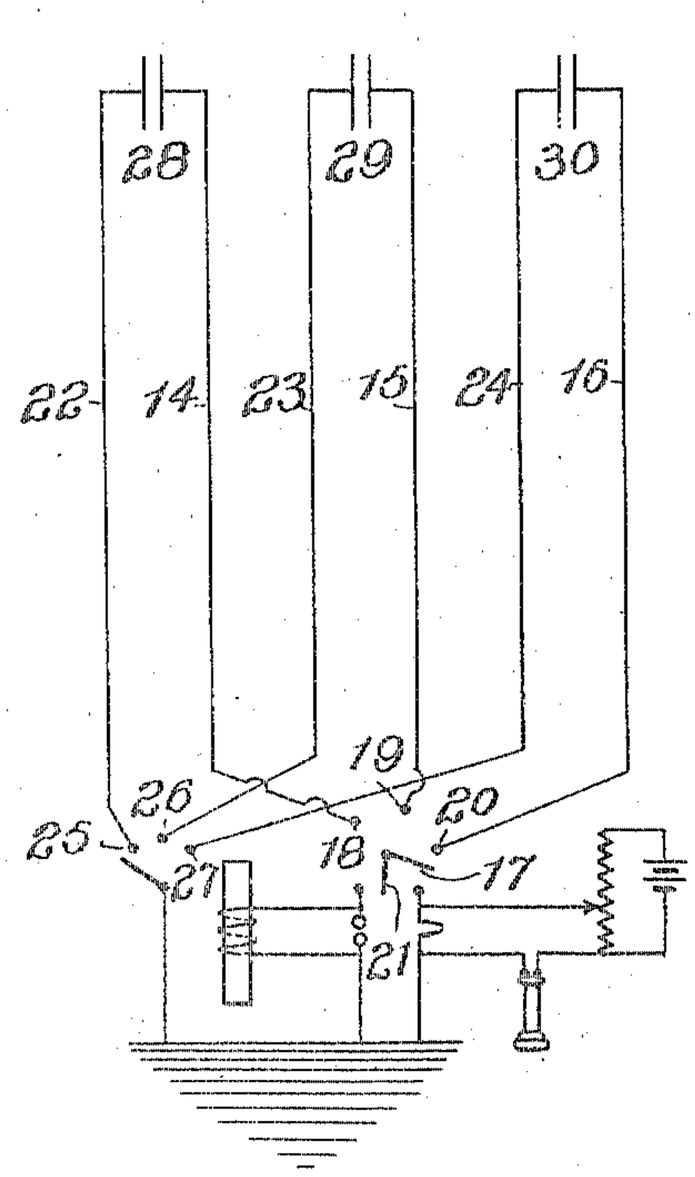


FIG. 2.



WITNESSES:

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Francis Clement.

INVENTOR

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by Dennis S. Wolcott Atty

UNITED STATES PATENT OFFICE.

REGINALD A. FESSENDEN, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR TO THE NATIONAL ELECTRIC SIGNALING COMPANY, OF PITTSBURG, PENNSYLVANIA, A CORPORATION OF NEW JERSEY.

WIRELESS TELEGRAPHY.

948,068. Specification of Letters Patent. Patented Feb. 1, 1910.

Original application filed July 27, 1903, Serial No. 167,242. Divided and this application filed July 15, 1905. Serial No. 269,880.

To all whom it may concern:

Be it known that I, REGINALD A. FESSENDEN, residing at Washington, in the District of Columbia, a citizen of the United States, have invented certain new and useful Improvements in Wireless Telegraphy, of which the following is a specification.

The invention described in this case, which is a division of application Serial No. 167242, filed July 27, 1903, relates to the tuning of antennæ by altering the capacity of the antennæ.

It also relates to tuning by connecting one or more members of a multiple antenna in electro-static inductive relation.

It further relates to the utilization of one or more members of a multiple antenna for sending or receiving and altering an electrical characteristic of the sending or receiving members by one or more of the other members of the antenna.

The invention is hereinafter more fully described and claimed in the accompanying drawing forming part of this specification.

Figures and 2 show means for tuning the antennæ whether used for sending or receiving.

In Fig. 1, a method is shown of tuning the antennæ by changing the capacity of the antennæ, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11. 12 is a device whereby more or less of the antennæ can be connected at will, and 13 is a coil which may form either the primary of the transformer in which a receiver is placed, when it is desired to receive, or the secondary of a transformer whose primary is in a circuit for producing oscillations when it is desired to send.

Fig. 2, shows means for an alternative method for accomplishing the same results, where 14, 15 and 16 are antennæ, any one of which may be switched in as desired by the switch 17 passing over the contacts 18, 19 or 20 and being connected by the switch 21 so as to send or receive at will, while 22, 23 and 24 are wires which may be connected to the ground at will by the switch making contact with one or more of the contacts 25, 26, 27. 28, 29 and 30 are capacities of different values and it will be seen that on connecting the wire 22 to ground, the capacity of the vertical 14 will be largely increased and similarly with the other antennæ.

While I have described with some particularity a form of apparatus for the practice of my improved method, no claim is herein made to such apparatus, as the same forms the subject-matter of another application Serial No. 291,736.

I claim herein as my invention—

1. In wireless signaling, the method of tuning an antenna by varying the electrostatic inductive relation between said antenna and another conductor, substantially as described.

2. In wireless signaling, the method of tuning an antenna which consists in providing several aerials of variable capacity and altering the inductive relation between them to attain resonance in one of them, substantially as described.

3. In wireless signaling, the method of tuning an antenna by providing a series of aerial conductors, connecting a portion of them to the ground and coupling the grounded conductors in electro-static inductive relation to the ungrounded conductors.

4. In wireless signaling, the method of tuning an antenna which consists in providing multiple aerials and altering the capacity by connecting one of them in electrostatic inductive relation with others of the aerials.

5. In wireless signaling the method of tuning an antenna circuit by providing multiple aerials and changing the electrical characteristics of one of them by the influence of the others, substantially as described.

In testimony whereof, I have hereunto set my hand.

REGINALD A. FESSENDEN.

Witnesses:
THOMAS P. BROWN,
JESSIE E. BENT.