

G. VON ARCO.
 PORTABLE STATION FOR WIRELESS TELEGRAPHY.
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958,209.

Patented May 17, 1910.

Fig. 2.

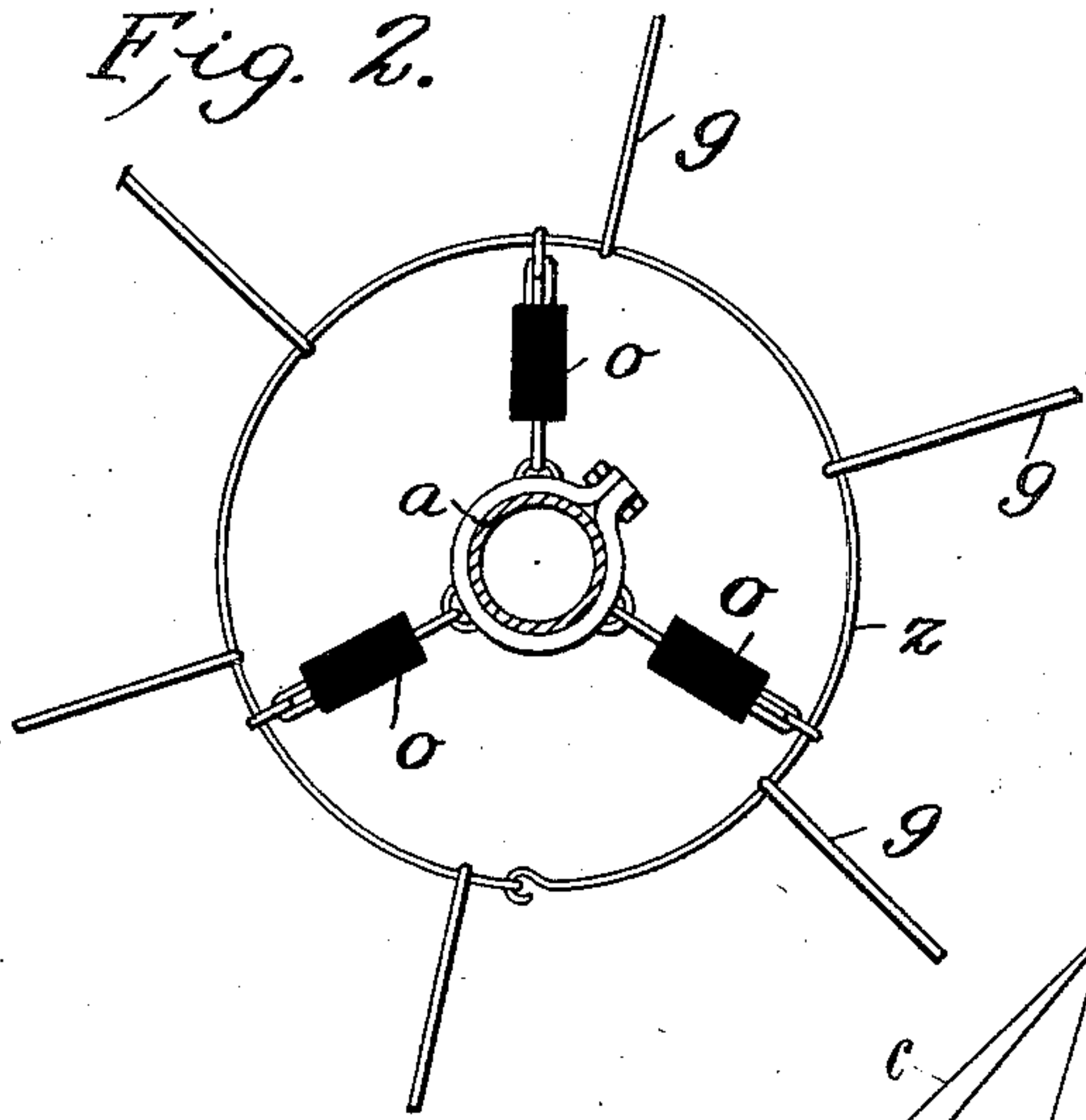
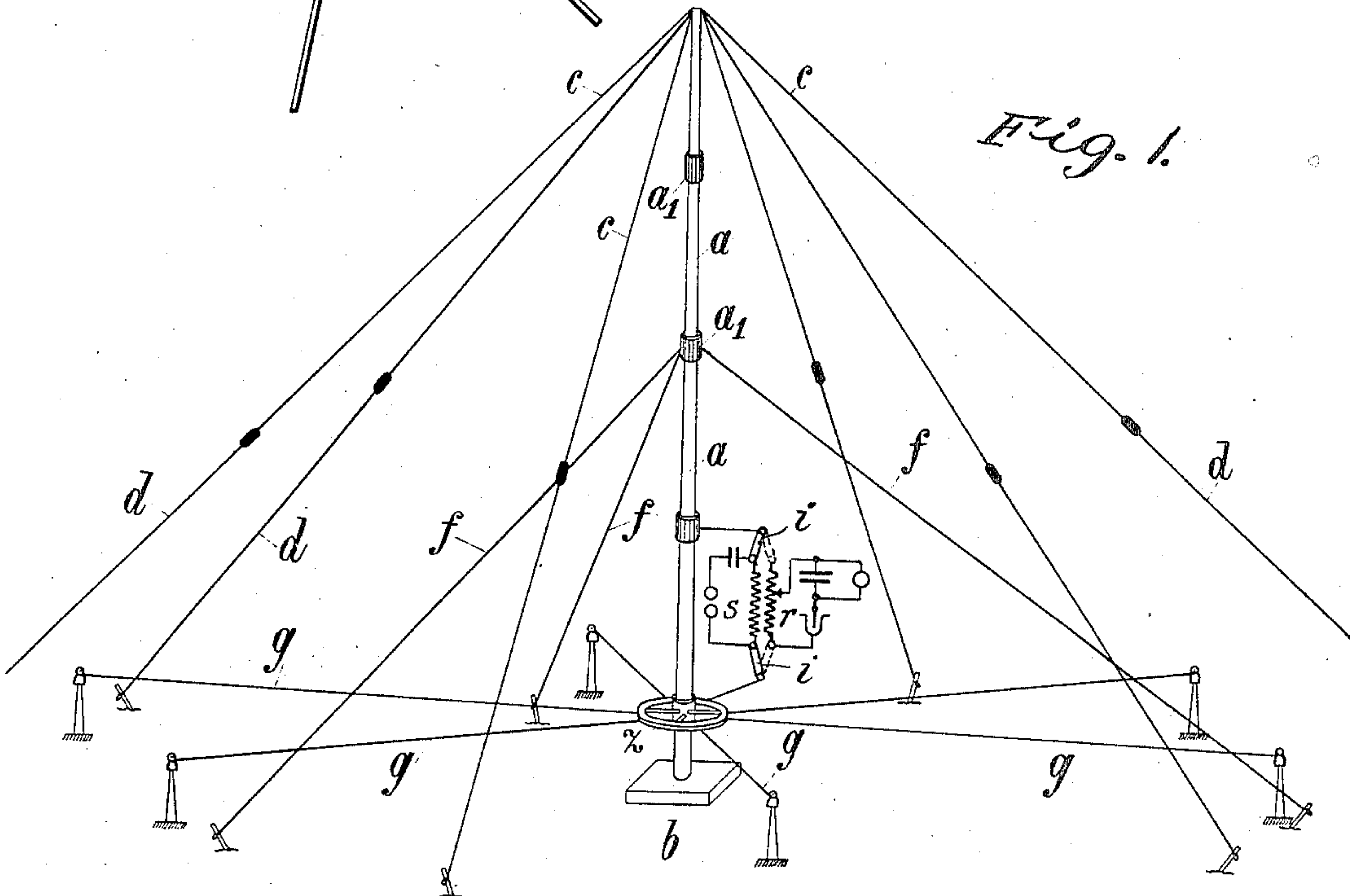


Fig. 1.



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UNITED STATES PATENT OFFICE.

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PORTABLE STATION FOR WIRELESS TELEGRAPHY.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, GEORG VON ARCO, a subject of the King of Prussia, residing at Berlin, Germany, have invented certain new and useful Improvements in a Portable Station for Wireless Telegraphy, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, forming a part of this specification.

This invention relates to portable stations for wireless telegraphy, which are characterized by the aerial conductor and also the masts serving for carrying the same being composed of several sections adapted to be readily put together and taken apart and which, in a collapsed condition, are easily portable.

The invention consists more particularly in a system of aerial conductors arranged like an umbrella carried by a mast composed of separately collapsible parts. The mast is insulated from earth and as a counter capacity a surface capacity formed of wires is preferably employed. The apparatus for wireless telegraphy is connected in between the aerial conductor system and the counter capacity. The use of an umbrella antennæ system which, as is well known, has a very high capacity, has the advantage of requiring only one mast for its support, which mast in consequence of the symmetrical arrangement of the umbrella antennæ may be made comparatively thin and light, as it is only subjected to pressure. From this will be readily seen the practical importance of the result, which the use of an umbrella antennæ in its combination with an easily dismountable or collapsible mast composed of separate parts affords in its use for portable stations.

A form of construction of the invention is shown in the accompanying drawing, in which:

Figure 1 is a side elevation of my improved station, and Fig. 2 is a detail plan view of the connection of the counter capacity with the mast.

a is a mast composed of several sections. The separate sections consist preferably of steel or magnalium, and are held together by means of short sleeves a' . The mast is insulated from earth by an insulating support, for instance a block of marble b , or in other manner, and has at its upper end the umbrella antennæ formed of wires c .

The separate wires c extend from the top of the mast radially obliquely downward and are stretched toward the ground by cords d with which they are connected. For the sake of simplicity the umbrella antennæ also serve for erecting the mast and maintaining it erect. In order to insure the position of the mast stay cords f may also be employed. In the present case, instead of the earth serving as counter capacity, a surface capacity which is formed of several wires g distributed around the mast and radially arranged relative thereto, is employed. These radial wires are well insulated from earth and run parallel thereto; they are disposed around the mast and attached to a central ring z which is connected with the mast through insulators such as shown in Fig. 2. Thus the radial wires are connected with each other.

The apparatus r, s , for wireless telegraphy, which may be of any known type, is connected, also in well known manner, between the aerial conductor system and the counter capacity g , above mentioned, in well known manner. I have diagrammatically illustrated such an apparatus in its general form, wherein s represents the sending circuit and r the receiving circuit. Both circuits may be alternately thrown into circuit with the antennæ and counter capacity by means of a switch i . All these features, however, do not form part of my invention but are merely represented so as to indicate how my invention may be operated in practice.

The arrangement of a counter-capacity insulated from the earth has as is well known the advantage of rendering it independent of a more or less good earth connection, and consequently of the variation in the damping of the aerial conductor system thereby caused. It is essential particularly for portable stations which are to be rapidly erected at any suitable place and then rapidly brought into a condition for operation to be independent of the earth and its resistance, so that always a uniform damping of the oscillation system can be counted upon.

Having explained my invention, what I do claim and desire to secure by Letters Patent is:

1. A portable station for wireless telegraphy consisting of a metal mast composed of several easily dismountable sections and insulated from the ground, an umbrella-

shaped aerial stretched between said mast
and several distant points on the ground
but insulated from the latter, a counter ca-
pacity formed of wires disposed radially
5 around the mast and insulated therefrom
and from the ground, and the apparatus for
wireless telegraphy interposed between the
aerial and the counter capacity.

2. A portable station for wireless telegra-
10 phy consisting of a metal mast composed of
several easily dismountable sections, and in-
sulated from the ground, an umbrella-
shaped aerial stretched between said mast
and several distant points on the ground but
15 insulated from the latter, a counter capacity
comprising a conductivity ring surrounding

said mast, insulators fastened to said ring
and to said mast holding said ring concen-
trically with the mast and wires attached to
said ring and radiating therefrom and fas- 20
tened at their free ends to the ground but in-
sulated therefrom, the apparatus for wire-
less telegraphy interposed between the aerial
and said counter capacity.

In witness whereof, I hereunto subscribe 25
my name this 16th day of October A. D.
1907.

GEORG VON ARCO.

Witnesses:

HENRY HASPER,

WOLDEMAR HAUPT.