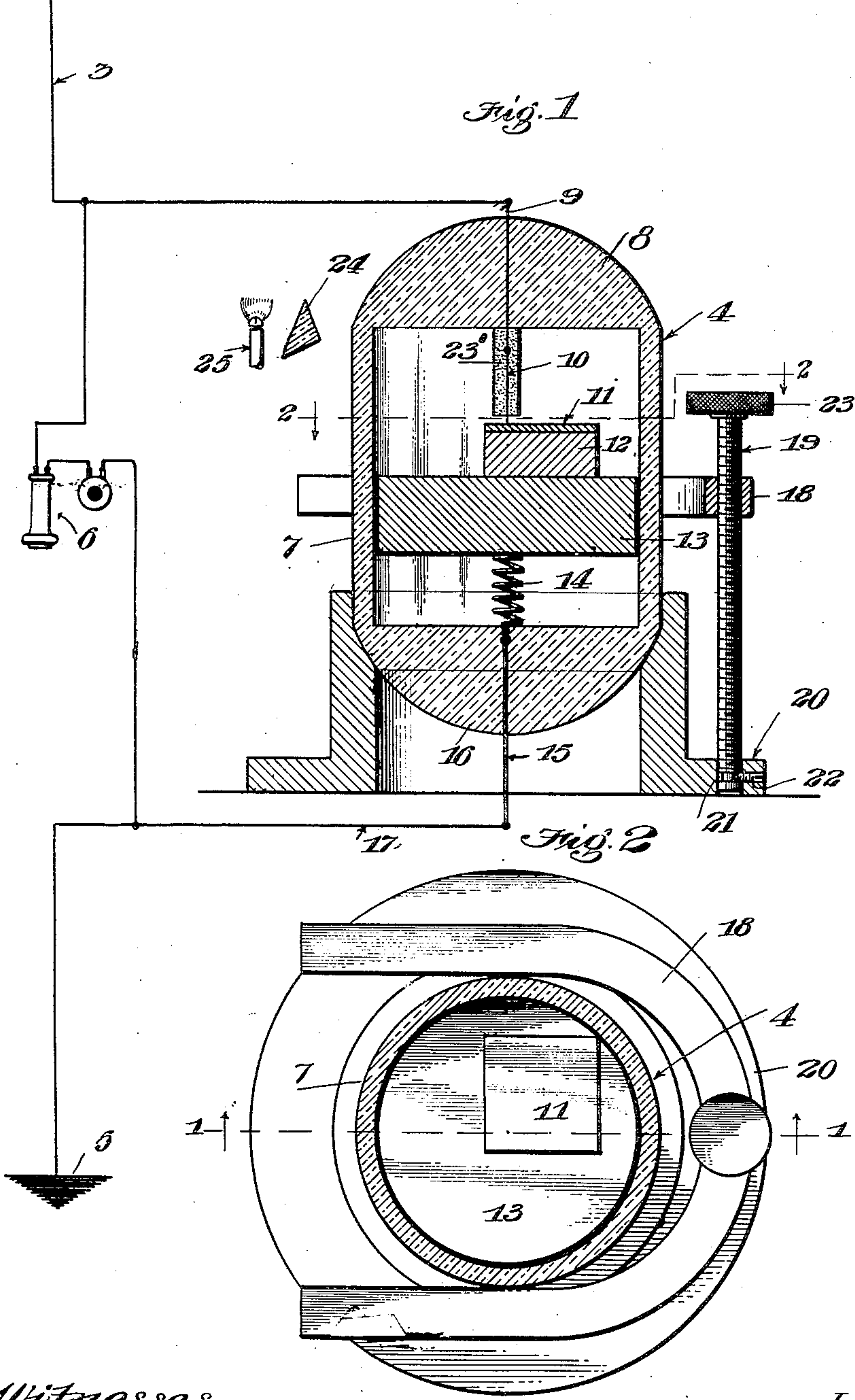


A. PLECHER.  
CONTACT DEVICE.

APPLICATION FILED DEC. 27, 1904.



Witnesses  
Edmund A. Frause,  
Margaret C. Nicholson.

Inventor  
Andrew Plecher  
by Hazard & Carpham  
Attorneys.



# UNITED STATES PATENT OFFICE.

ANDREW PLECHER, OF LOS ANGELES, CALIFORNIA, ASSIGNOR TO THE  
PACIFIC WIRELESS TELEGRAPH COMPANY, A CORPORATION OF  
WASHINGTON.

## CONTACT DEVICE.

No. 817,864.

Specification of Letters Patent.

Patented April 10, 1906.

Application filed December 27, 1904. Serial No. 238,544.

*To all whom it may concern:*

Be it known that I, ANDREW PLECHER, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Contact Devices, of which the following is a specification.

My invention relates primarily to coherers for receiving telegraph messages by the system denominated "wireless telegraphy;" but it may also be used to increase the sensitiveness of any microphone receiver or transmitter; and the object thereof is to provide a contact of an exceedingly sensitive nature whereby faint Hertzian or other electrical waves will produce a distinctly audible sound in the telephone of the receiving apparatus.

In the drawings forming a part of this application I have illustrated my device applied to wireless-telegraph receiving-station.

Figure 1 is a longitudinal vertical section of the contact device on the line 1 1 of Fig. 2 looking in the direction of the arrow, and a diagrammatic representation of the other parts of the receiving apparatus. Fig. 2 is a cross-section of the contact device on the line 2 2 of Fig. 1 looking in the direction of the arrow.

In the drawings, 3 is the aerial conductor or mast wire, which is connected through the contact device 4 to the ground 5 or other capacity. A telephone 6 is connected in shunt in the aerial line. The contact device consists of a body 7, which is preferably cylindrical in shape and is formed of quartz-glass, and the ends are closed by pieces of ordinary glass preferably semiglobular in shape. Projecting through the upper end 8 is a platinum wire 9, to which connection is made by the aerial line. To the inner end of this platinum wire is secured a silver wire 10, which loosely contacts with a silver plate 11, which plate rests upon and is supported by an iron block 12. Plate 11 and block 12 are supported by an iron base-block 13, which is of the same shape in cross-section as the body and fits loosely and is vertically movable therein. This base-block is connected to and supported by a spiral spring 14, which is connected to the platinum wire 15, that extends through the bottom 16. This platinum wire is connected to ground by wire 17. Straddling the body on a line with the base-plate is the horseshoe-magnet 18, which is

supported by the micrometer-screw 19, rev-  
olubly mounted in base 20. Around the  
lower end of this screw is a groove 21, which  
receives the end of screw 22, which screw  
holds the micrometer-screw in place and per-  
mits it to be revolved. A milled operating-  
head 23 is affixed to the top of the microm-  
eter-screw to rotate the same. Plate 11 is  
preferably covered on its upper surface with  
a sulfid coating or oxidized film, and an en-  
velop of sulfur 23' may be secured around  
the silver wire 10 to keep the coating of plate  
11 renewed as the same is used, as herein-  
after stated. This plate may be used with-  
out being oxidized or covered with a sulfid  
coating, under some conditions; but under  
most conditions the sulfid coating or the ox-  
idized surface produces the best results.  
After the internal parts are in place within  
the body of the device with the silver wire  
and silver plate in light contact, the air is ex-  
hausted from the interior thereof and the  
same is then sealed. It is desirable that the  
air be exhausted to the one-millionth of an  
atmosphere to produce the best results. It  
will be observed that the contact between  
the silver plate 11 and the wire 10 may be ad-  
justed to any degree of tension by moving  
the magnet 18 up or down by means of the  
micrometer-screw 19, which carries with it  
the base-block 13 through the magnetic  
influence exerted thereon by the magnet.  
Whenever it is desirable to change the point  
of contact between the silver wire and plate,  
another magnet, more powerful than magnet  
18, may be held on the outside of the body  
to draw block 13 and plate 11 along upon  
the top of the base-block, thereby making  
the life of the contact device practically  
continuous, as the sulfur envelop will resul-  
furize those parts of plate 11 which have been  
in contact with wire 10 after such point is re-  
moved from contact. In order to make the  
contact between wire 10 and plate 11 more  
sensitive, I have provided a prism 24, so ar-  
ranged that it will project the ultraviolet  
rays upon the point of contact between the  
wire and the plate. In order to produce such  
rays, I provide an acetylene-gas burner 25  
back of the prisms. This gas-flame may be  
rendered sensitive in any desired manner, as  
it produces a better result if rendered sensi-  
tive than if permitted to burn steadily. It  
will be understood that spring 14 is a very



sensitive spring and of sufficient power to simply support the parts resting thereon to maintain the contact between the silver plate and the silver rod.

5 Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a system of wireless telegraphy an aerial line; a contact device comprising a tubular body of quartz-glass having its ends suitably closed and the air exhausted therefrom; a silver rod in said tubular body electrically connected to the aerial line; a silver plate in said tubular body having an oxidized or sulfurized surface in contact with said rod; an iron base-plate supporting said plate; a spring supporting said base-plate; electrical connections connecting said spring to ground and a magnet exterior said glass body.

20 2. In a system of wireless telegraphy an aerial line; a contact device comprising a quartz-glass tubular body having its ends suitably closed and the air exhausted therefrom; a silver rod in said tubular body electrically connected to the aerial line; a silver plate in said tubular body having an oxidized or sulfurized surface in contact with said rod; an iron block below and forming the support of said silver plate; an iron base-block below and supporting said first iron block, said first iron block being smaller than the base-block and movable thereon; a spring supporting said base-block; electrical connections connecting said spring to ground; a magnet adjacent to said tubular body and adapted to control by its magnetic influence the position of the contact-plate in said tubular body; and means to move said magnet.

3. In a system of wireless telegraphy an aerial line; a contact device comprising a quartz-glass tubular body having its ends suitably closed and the air exhausted therefrom; a silver rod in said tubular body electrically connected to the aerial line; a silver plate in said tubular body having an oxidized or sulfurized surface in contact with said rod; an electrical connection connecting said plate to ground; and means to direct ultraviolet rays upon the point of engagement between said rod and said plate.

4. In a system of wireless telegraphy an aerial line; a contact device comprising a

quartz-glass tubular body having its ends suitably closed and the air exhausted therefrom; a silver rod in said tubular body electrically connected to the aerial line; a silver plate in said tubular body having an oxidized or sulfurized surface in contact with said rod; a sulfur envelop; an iron block below and forming the support of said silver plate; an iron base-block below and supporting said first base-block, said first block being smaller than the base-block and movable thereon, a spring supporting said base-block; electrical connections connecting said spring to ground; a magnet exterior and adjacent to said tubular body and adapted to control by its magnetic influence the position of the contact-plate in said tubular body; means to move said magnet; and means to direct ultraviolet rays upon the point of engagement between said rod and said contact-plate; and a telephone connected in said aerial line in shunt on opposite sides of said contact device.

5. Means to intensify sound in a telephone comprising a contact device connected in the telephone-circuit, said contact device comprising a hollow glass body having a portion of its walls composed of quartz-glass and having the air exhausted from the interior thereof; a silver rod in said body electrically connected to the line leading into said telephone; a silver plate in said body having an oxidized or sulfurized surface in contact with said rod; electrical connections connecting said plate to the telephone-ground; and means to direct ultraviolet rays upon the point of engagement between said rod and said plate.

6. In an electrical circuit, a contact device therein comprising a silver wire connected in one side of the circuit and a silver plate connected in the other side of the circuit said wire resting upon the surface of said plate; and means to project ultraviolet rays upon the point of engagement between said wire and plate.

In witness that I claim the foregoing I have hereunto subscribed my name this 9th day of December, 1904.

ANDREW PLECHER.

Witnesses:

G. E. HARPHAM,  
HENRY T. HAZARD.