

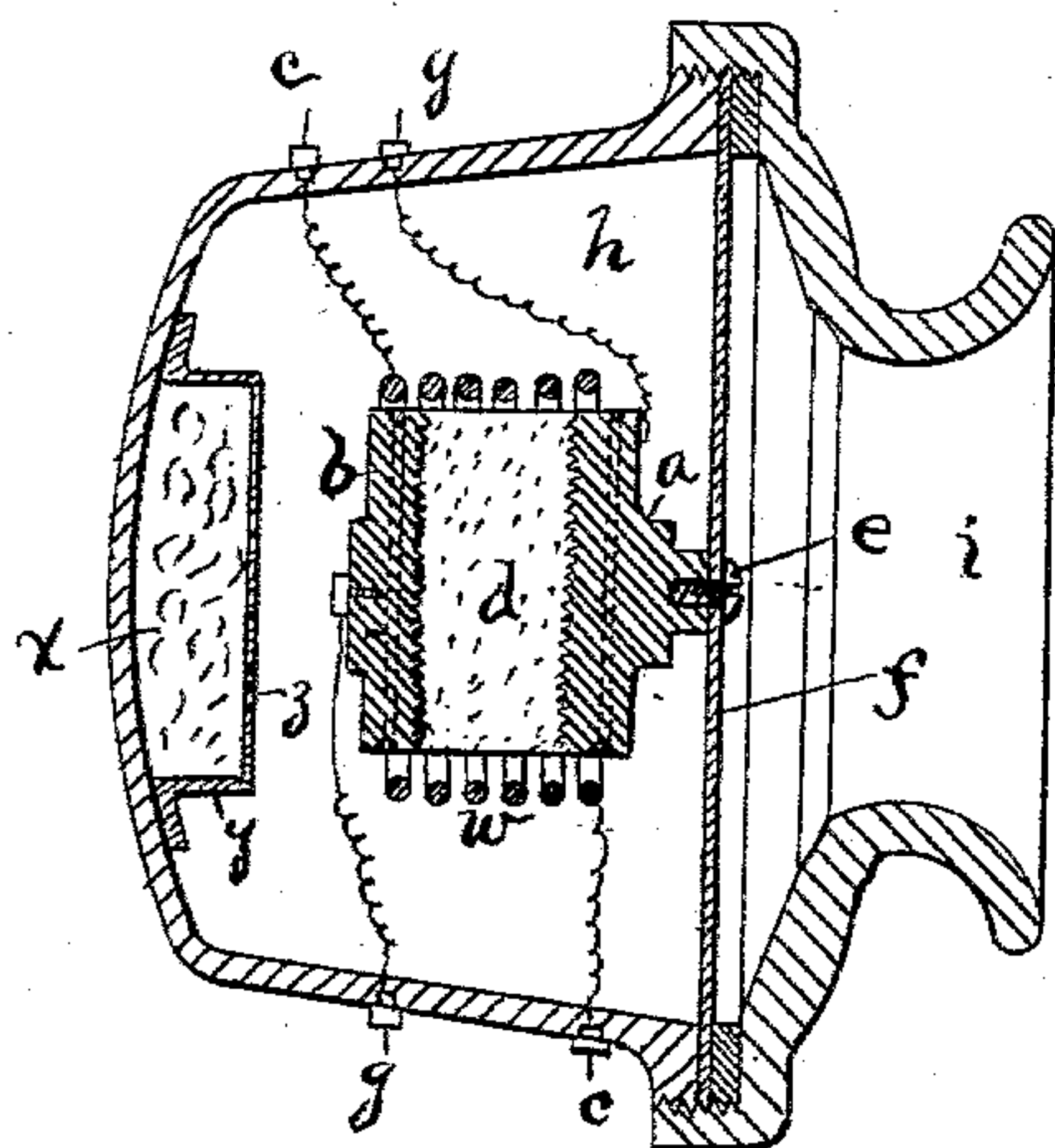
No. 753,062.

PATENTED FEB. 23, 1904.

P. GERMAIN.
MICROPHONE.

APPLICATION FILED OCT. 7, 1899.

NO MODEL.



WITNESSES:

P. W. Wright.

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UNITED STATES PATENT OFFICE.

PIERRE GERMAIN, OF FONTENAY AUX ROSES, FRANCE.

MICROPHONE.

SPECIFICATION forming part of Letters Patent No. 753,062, dated February 23, 1904.

Application filed October 7, 1899. Serial No. 732,941. (No model.)

To all whom it may concern:

Be it known that I, PIERRE GERMAIN, inspector of telegraphs, of Fontenay aux Roses, Department of Seine, France, have invented certain new and useful Improvements in the Construction of Microphones, which improvements enable telephonic transmission to be effected under special conditions as regards intensity, allowing thereby reception in loud tones by a magnetic receiver of the ordinary type, of which the following is a specification.

This invention relates to an improved microphone, and has for its object to provide means for improving the transmission.

In the sectional view in the accompanying drawing, *z* is the mouth-piece, fitting the chamber *h*, which contains the microphone, composed of two carbon disks *a* and *b*, with the conducting medium *d* between them. The disk *a* is secured to the diaphragm *f* by a screw *e*, which diaphragm serves to seal the chamber from the outer air. Wires *g g* lead to and away from the microphone and convey the electric current for transmission, while the wires *c c* lead to a heating-coil *w*, surrounding the microphone. A casing *y*, perforated with holes *z* and containing potassium, sodium, or some other substance *x*, adapted to absorb the moisture and oxygen from the air, is secured to the wall of the chamber.

To improve the conductivity and clearness of transmission of the medium *d*, I incorporate with the carbon granules a metal or metallic oxid—for instance, oxid of silver one part to three parts of carbon. This may be directly incorporated with the ordinary carbon granules or may be incorporated with carbon mass before baking and baked in the form of sticks and afterward broken up to form the granules. The manner of securing this low-conductivity granule is not of this invention, an important part of which is to have a low conductivity in the microphone to permit the travel of large currents there-through. Heat I have found to be of material aid in improving the transmission, and I may apply it in any manner. In the drawing I have shown it applied by a coil of wire *w*, connected to a source of electricity. This heating means should be capable of heating

the conducting medium to about 80° centigrade. It is obvious that with so much heat in the chamber there would be liability to combustion of the particles. To prevent this, I place within the chamber a quantity of potassium or sodium, (in this case we will assume it is sodium,) which has an affinity for oxygen and whose base, formed by the oxidation of the metal, has an affinity for water-vapors and carbonic acid. The granulate chamber being closed, the oxygen, water-vapor, and carbonic acid confined therein are absorbed by the sodium, and there remains only the nitrogen of the air, which cannot support combustion, and the carbonic oxid and the oxid of the metal forming the granulate, as well as the semiconductive divisions in the diaphragms between which the granulate is placed. Under these conditions perfect transmission can be obtained. This method of obtaining an inert atmosphere is much superior to that which consists in exhausting the chamber containing the granulate by means of an air-pump, for then the chamber must be formed of rigid heavy walls unsuitable for microphonic sensitiveness. When exhausted by means of a pump and the rarefaction is complete, should a leak arise nothing can prevent the inrush of oxygen on account of atmospheric pressure, whereas when an inert atmosphere has been chemically produced, as hereinbefore explained, an entry of fresh air is of no importance, for the sodium (with its affinity for oxygen) absorbs it as it penetrates; but with an inert atmosphere the penetration of air into the granulate-chamber would be very slow on account of the pressure in the microphonic chamber being the same as that of the atmosphere.

Having an inert atmosphere, no matter what heating-currents are employed no oxidation of the metal or combustion of the carbon takes place, and a greatly-improved transmission is secured.

I claim as my invention—

1. A microphonic transmitter having a chamber and chemical means inside said chamber to eliminate the oxygen contained therein, as and for the purpose described.

2. A microphonic transmitter having a

chamber to contain the elements and sodium in said chamber, as and for the purpose set forth.

3. A microphonic transmitter having a
5 chamber containing means for eliminating the combustion-supporting element of the air and means for applying heat to the chamber.

4. A microphonic transmitter having a
10 chamber and granulate therein, composed of a mixture of carbon and some metal of good conductivity, in combination with means for

applying heat to the granulate, and means within said chamber to eliminate the oxygen contained therein.

In testimony whereof I have signed my name 15
to this specification in the presence of two subscribing witnesses.

PIERRE GERMAIN.

Witnesses:

GUSTAVE DUMONT,
J. ALLISON BOWEN.