No. 776,960. PATENTED DEC. 6, 1904.

G. W. TALLEY.

TELEPHONE TRANSMITTER.

APPLICATION FILED MAY 19, 1903.

NO MODEL.

FIG. 1.

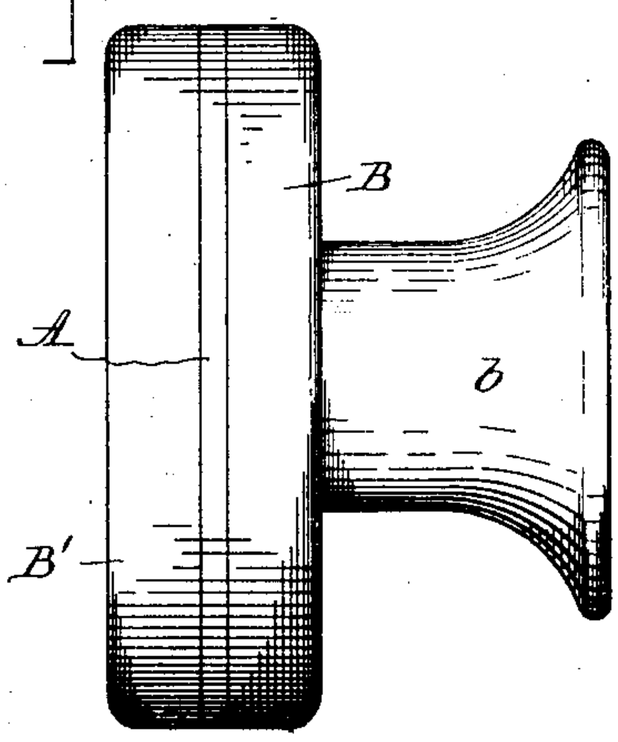


FIG. 2.

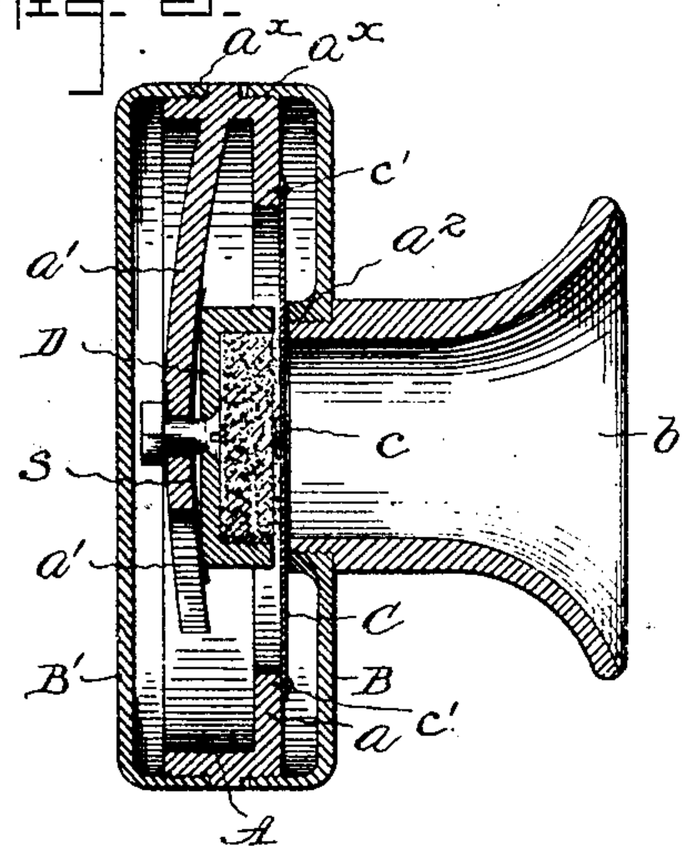


FIG. 3.

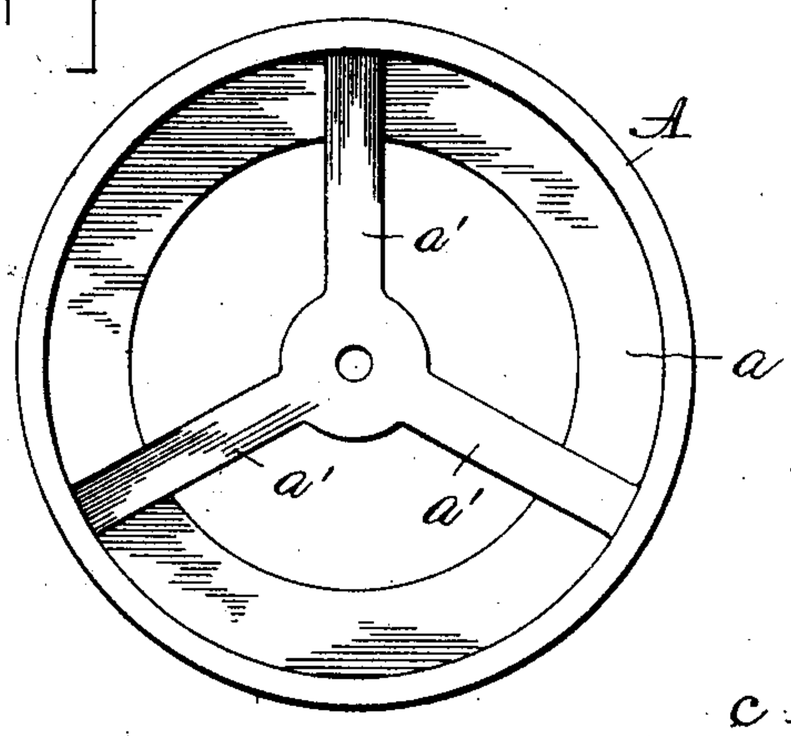


FIG. 4.

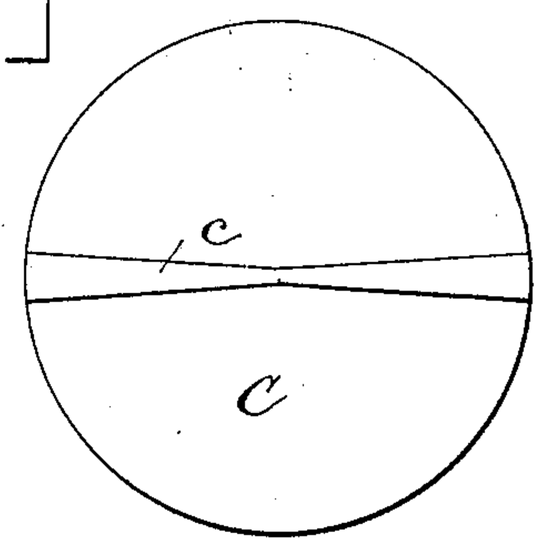
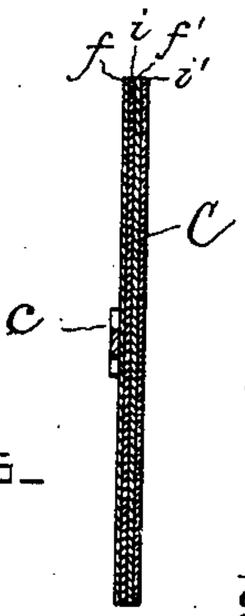


FIG. 5.



Witnesses:—

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No. 776,960. Patented December 6, 1904.

UNITED STATES PATENT OFFICE.

GEORGE W. TALLEY, OF ATLANTA, ILLINOIS, ASSIGNOR OF ONE-HALF TO ROBERT D. McKOWN, OF ATLANTA, ILLINOIS.

TELEPHONE-TRANSMITTER.

SPECIFICATION forming part of Letters Patent No. 776,960, dated December 6, 1904.

Application filed May 19, 1903. Serial No. 157,813. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. TALLEY, a citizen of the United States, and a resident of Atlanta, in the county of Logan and State of Illinois, have invented a Telephone-Transmitter, of which the following is a full, clear, and exact description.

My invention is an improvement in transmitters for telephones; and the primary object of my invention is to provide a diaphragm of improved construction which is not affected by moisture, heat, or cold, will more perfectly transmit voices or other sounds to render more distinct and intelligible telephonic communications, will effectually obviate the harsh, rattling, and sharp metallic sounds usually associated with the ordinary telephone, and which shall be durable and will not deteriorate by constant use.

A further object of my invention is to so construct the transmitter as to firmly support the diaphragm and cup containing the carbon in their proper relation, as well as to provide an adjustment of the parts, readily and conveniently accomplished, whereby the volume of sound transmitted by the apparatus may be regulated.

In the use of telephones, especially those established for public service, it is customary to inclose the apparatus in a booth, so that private conversation can be carried on, inasmuch as with the use of the ordinary diaphragm it is necessary that the speaker talk distinctly in order to be heard at the other end of the line. By practical use I have found that telephones equipped with my improved diaphragm, hereinafter described, will transmit voice and other sounds so clearly and distinctly that it is possible for a whispered conversation to be carried on, thereby insuring privacy when desired even though the apparatus itself may be located openly in a room where others may be present, also that by an adjustment of the transmitter the volume of sound emitted from the receiver may be so loud as to be distinctly and clearly heard all over a room of ordinary size.

In the use of telephones in submarine work it has been found difficult to produce a transmitter in which the diaphragm will not be affected by moisture and temperature, and these objections heretofore experienced are obviated by the construction of diaphragm in accordance with my invention.

In the following specification I have entered into a detail description of my invention, and what I claim as novel, and desire to protect by Letters Patent, is more specifically set forth in the appended claims.

In the accompanying drawings, which form a part of this specification, Figure 1 is a side elevation of a telephone-transmitter constructed in accordance with my invention. Fig. 2 is a vertical transverse sectional view. Fig. 3 is a rear view of the support for the diaphragm and carbon-cup, the said latter being removed. Fig. 4 is a detail view of the diaphragm. Fig. 5 is a detail sectional view of the diaphragm, enlarged in thickness to indicate the several layers of which it is composed.

Similar letters of reference indicate similar parts in the several views of the drawings.

In carrying out my invention the transmitter proper is constructed of practically three parts—to wit, the support A and the two-part casing B B′, the part B of said casing carrying the usual mouthpiece *b*. These parts are connected by threading the two parts of the casing onto the support.

The support A comprises a ring the circumference of which is threaded at its edges in opposite directions, as at $a^{\times}$, to receive the parts of the casing, and at one edge of said ring is an inwardly-projecting annular flange *a*, adapted to receive the diaphragm C, hereinafter particularly described, and within said ring are rearwardly-curved radial ribs *a′*, integrally connected at the center of the ring or support and forming the support for the cup D, which contains the carbon, the said central connecting portion being apertured, as shown, for this purpose. The cup D, which contains the granulated carbon, is made of carbon, as is usual, and is therefore insulated from the casing by the insulating material *s*. The diaphragm C is attached by screws *c′* to the front face of the annular flange *a* of the ring or

support A in proper relation to the cup containing the carbon, so that the latter may receive the impulses caused by the vibrations of said diaphragm.

The diaphragm C consists of several layers, (see Fig. 5,) the first being a sheet of fabric *f*—such as silk, linen, cotton, jute, &c.—upon which is spread a thin coating of carbon *i*. To this is glued or otherwise attached a second sheet of fabric *f'*, and to the latter is also glued or otherwise attached a thin film of mica, glass, celluloid, or similar material, as *i'* the faces of the diaphragm being protected by a coating of shellac or varnish. Several layers of the fabric and mica or glass may be added when desired for certain purposes for which the transmitter may be adapted. Upon the back of the diaphragm, or that opposite the mica or glass covering, is a thin and narrow metal cross-piece *c*, tapering in width from each end to the center, and though shown as a single strip the same may be composed of two pieces or strips and either in contact at the center of the diaphragm or slightly separated.

A diaphragm constructed as hereinbefore described is extremely sensitive to sound-waves and will transmit the vibrations to the wire without losing much of the natural tone of voice, volume, force, or pitch.

It will be understood that the metal cross-piece *c* of the diaphragm forms the front electrode and the granulated carbon in the cup D the rear electrode. The cup D is slightly removed from the diaphragm, and at its edge is provided the usual means for preventing the carbon from falling out.

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

1. A diaphragm for telephones comprising a sheet of fabric treated with carbon, a mica covering, and a protecting-surface of shellac or varnish.

2. A diaphragm for telephones, comprising a sheet of fabric coated with carbon, a mica covering, and a protecting-surface of shellac or varnish.

3. A diaphragm for telephones, comprising a sheet of fabric coated with carbon, a mica covering, and a thin and narrow metal strip extending across one face of the diaphragm.

4. A diaphragm for telephones, comprising a sheet of fabric coated with carbon, a second sheet of fabric attached thereto, and a covering of mica.

5. A diaphragm for telephones, comprising a sheet of fabric coated with carbon, a second sheet of fabric attached thereto, a covering of mica, and a protecting-surface of shellac or varnish.

6. A diaphragm for telephones, comprising a sheet of fabric coated with carbon, a second sheet of fabric attached thereto, a covering of mica, and a protecting-surface of shellac or varnish, together with a thin and narrow metal strip extending across the face of the diaphragm.

7. The combination, in a telephone-transmitter, of the diaphragm, and a thin and narrow strip of metal extending across the face of the diaphragm and tapering in width from each end to the center.

8. A telephone-transmitter, comprising a ring having opposite screw-threads on its periphery, said ring having an inwardly-projecting annular flange and radial arms the latter connected together at the center, together with caps threaded on the periphery of said ring, one carrying the mouthpiece, whereby the diaphragm is adapted to be attached to the annular flange and the cup containing the carbon to the radial arms.

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

GEORGE W. TALLEY.

Witnesses:

ROBERT D. MCKOWN,

JAS. E. JEWETT.