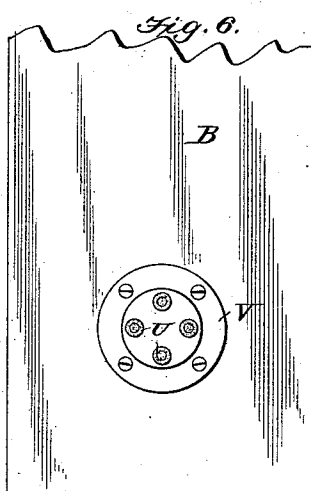
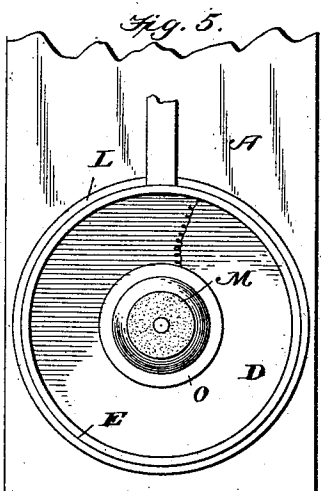
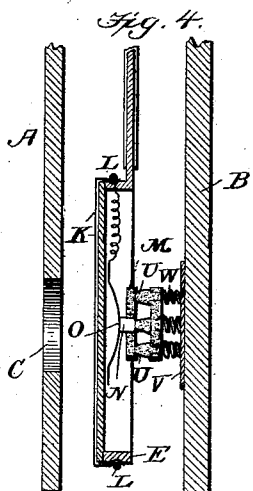
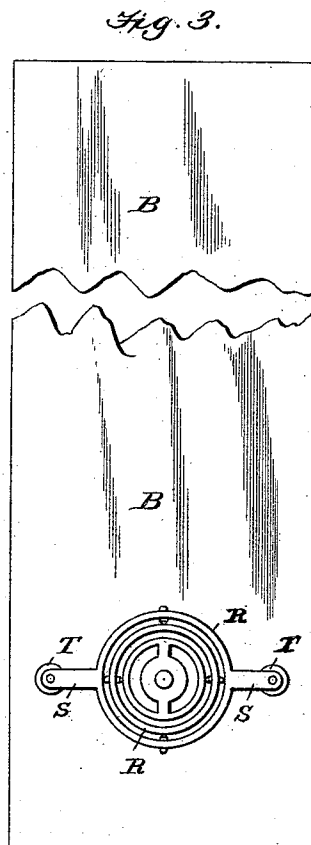
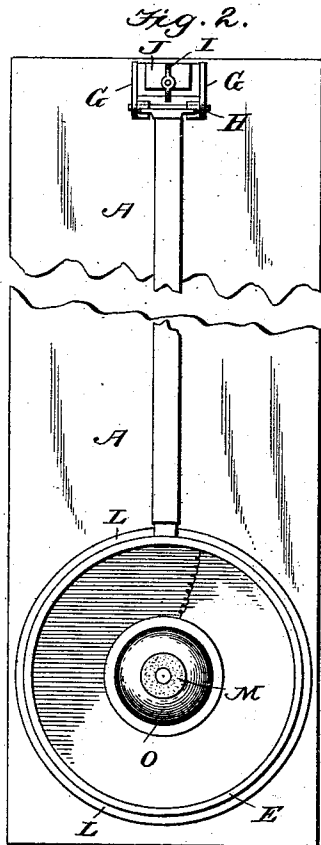
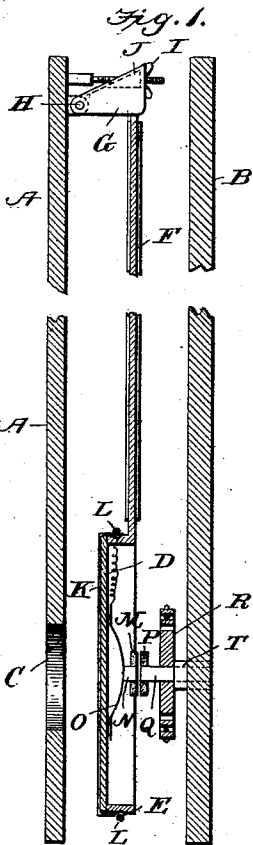


(No Model.)

A. T. COLLIER.
TELEPHONIC TRANSMITTER.

No. 484,778.

Patented Oct. 25, 1892.



Witnesses

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Inventor

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UNITED STATES PATENT OFFICE.

ARTHUR THOMAS COLLIER, OF ST. ALBANS, ENGLAND.

TELEPHONIC TRANSMITTER.

SPECIFICATION forming part of Letters Patent No. 484,778, dated October 25, 1892.

Application filed December 8, 1891. Serial No. 414,438. (No model.) Patented in England June 11, 1891, No. 9,887.

To all whom it may concern:

Be it known that I, ARTHUR THOMAS COLLIER, a citizen of the United Kingdom of Great Britain and Ireland, residing at St. Albans, in the county of Hertford, England, have invented certain new and useful Improvements in Telephonic Transmitters, of which the following is a specification.

This invention relates to telephonic transmitters, (for which I have obtained Letters Patent in Great Britain, No. 9,887, dated June 11, 1891;) and its object is to increase the efficiency of these instruments. In a telephonic-transmitter constructed according to these improvements there are two contacts or sets of contacts, hereinafter called the "electrodes," one of these, called the "front electrode," being attached to the diaphragm and the other, called the "back electrode," being attached to or carried by a yielding support. It is preferred that the diaphragm carrying the front electrode shall be suspended so that its electrode hangs in unstable contact with the back electrode; but an ordinary fixed diaphragm may be employed, although with not so good an effect.

The accompanying drawings illustrate in what manner my invention may be carried into practical effect, and I will proceed to fully describe my improvements with reference to the various figures therein, in each of which similar parts or details of construction are indicated by similar letters of reference.

Figure 1 is a sectional side view of the instrument. Fig. 2 is a back view of the suspended diaphragm. Fig. 3 is an elevation of one method of mounting the back electrode. Fig. 4 is an alternative form of the arrangement represented by Fig. 1. Fig. 5 is a back view of the diaphragm and electrode represented by Fig. 4, and Fig. 6 is an elevation of the back electrode shown in Fig. 4.

In Figs. 1, 2, and 3 a part of the apparatus is represented as being broken away in order to bring the drawings within reasonable limits.

A and B are the front and back portions, respectively, of the casing of the instrument, the mouthpiece C being formed through the front portion A of the casing. The diaphragm D may be of thin metal or of wood or of any other suitable substance secured upon the annular framing E, which is suspended by the

rod F from the support G. This support may be adjustable about the fulcrum H by means of the fixed screw and wing-nut I for the purpose of increasing or diminishing the effective pressure between the electrodes. For the purpose of this adjustment an inclined plane is formed on the under side of the support G, in contact with which the wedge J works upon the fixed screw in such a manner that when the nut I is rotated in one direction the support will be lifted by the action of the wedge on the inclined plane and when rotated in the opposite direction it will be lowered. This motion of the point of suspension about the fulcrum H effects the recession and approach of the front electrode relatively to the back electrode and provides a delicate means for adjustment of the amount of pressure between them. A sheet of india-rubber K may be secured upon the diaphragm by the elastic ring L for the purpose of preventing the condensation of moisture from the breath thereon. The front electrode M may be attached to the diaphragm by means of the short tubular stud N, which may be secured upon the dome-shaped flanged metallic base O, which in its turn is secured upon the inner face of the diaphragm by means of cement, pins, or rivets. The back electrode P may also be mounted upon a tubular stud Q, fixed upon the cross-bar of the inner ring of the gimbals R, which are mounted by the bars S upon the back part of the casing. For the purpose of preventing the transmission of extraneous vibrations to the back electrode the gimbals may be mounted upon the india-rubber plugs T, instead of being secured directly upon the material of which the casing is constructed. The rod F, by means of which the diaphragm is suspended, as well as the annular framing E of the diaphragm, is preferably metallic for the purpose of obtaining a desirable amount of inertia. The circuit is completed through the gimbals, the front and back electrodes, the framing E, the rod F, and the support G, or otherwise, so that the two electrodes are included in series without restraint of their motion.

In Figs. 4, 5, and 6 of the drawings a modified construction and arrangement of the electrodes is shown. In this modification the gimbals are omitted and the back electrode

is composed of a series of points U, mounted upon a metallic base V, which is secured upon the back part of the casing by means of three or more spiral springs W, the essential amount of yielding motion being insured by the said springs. The electrodes should in all cases be constructed of close-grained homogeneous hard carbon, and they may consist of two tablets, as indicated by Fig. 1, or of one tablet and a set of points, as indicated in Fig. 2, the tablet being attached either to the diaphragm, as shown, or forming the back electrode.

Very good results may be obtained with the diaphragm fixed to the front of the casing, as in the well-known Blake transmitter, and I therefore do not limit myself to the use of the suspended diaphragm, although in most cases I prefer to employ it.

Having now particularly described my invention and in what manner the same may be performed, I declare that what I claim is—

1. In a telephonic receiver, the combination, with the diaphragm secured upon an annular framing suspended upon a rod depending

from a support pivoted to the frame of the transmitter and having an inclined plane on its upper side, of the wing-nut and screw whereby said rod may be adjusted to adjust the diaphragm and its electrode with respect to the back electrode, substantially as described.

2. In a telephonic transmitter, the combination, with the diaphragm and its electrode, of the back electrode, the tubular stud upon which said electrode is mounted, the gimbals secured to the back of the frame, and the cross-bar secured to the inner ring of the gimbals and carrying the tubular stud upon which the back electrode is mounted, substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two witnesses, this 7th day of November, 1891.

ARTHUR THOMAS COLLIER.

Witnesses

WILLIAM E. HAYS,
GEO. W. ROWE.