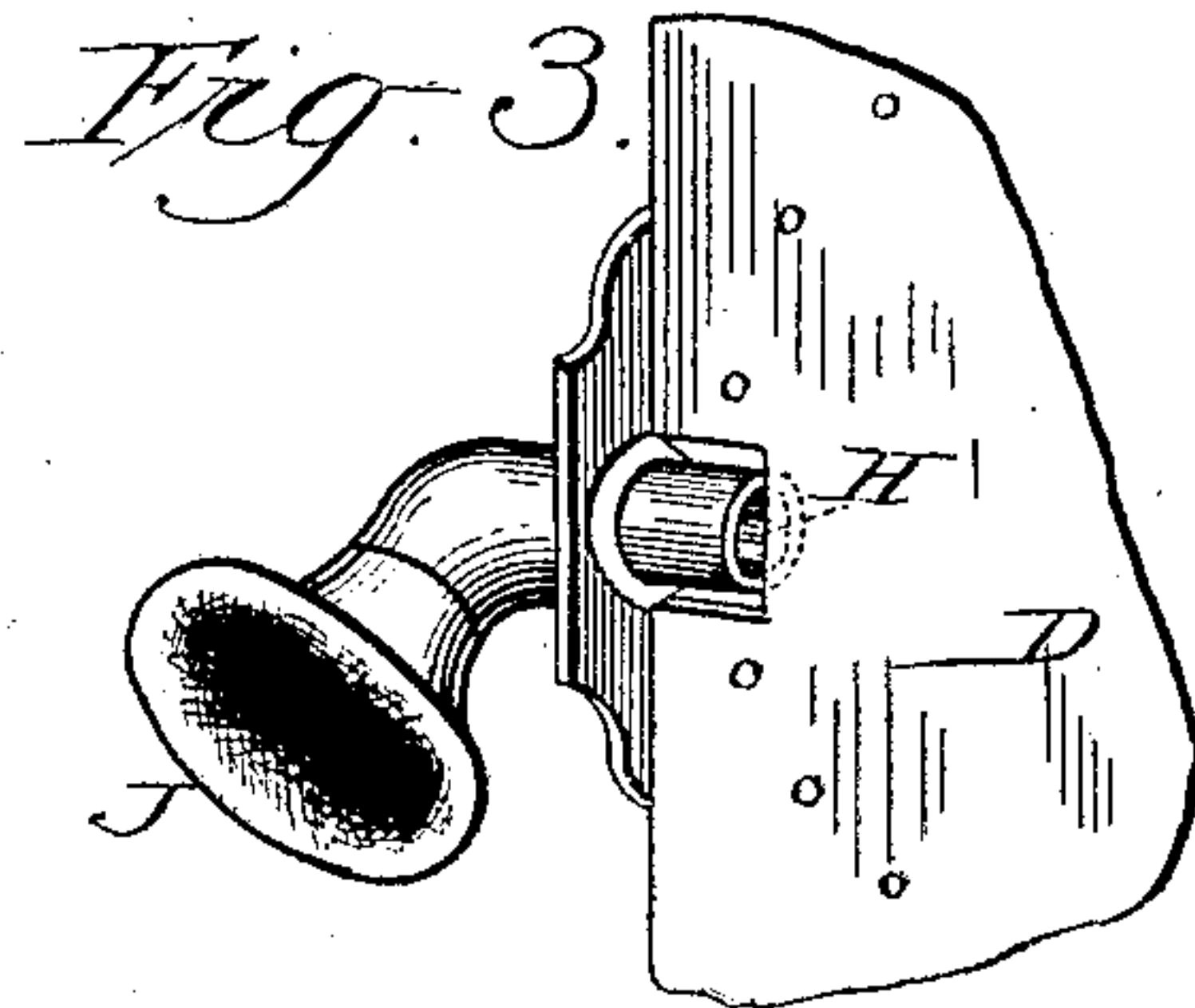
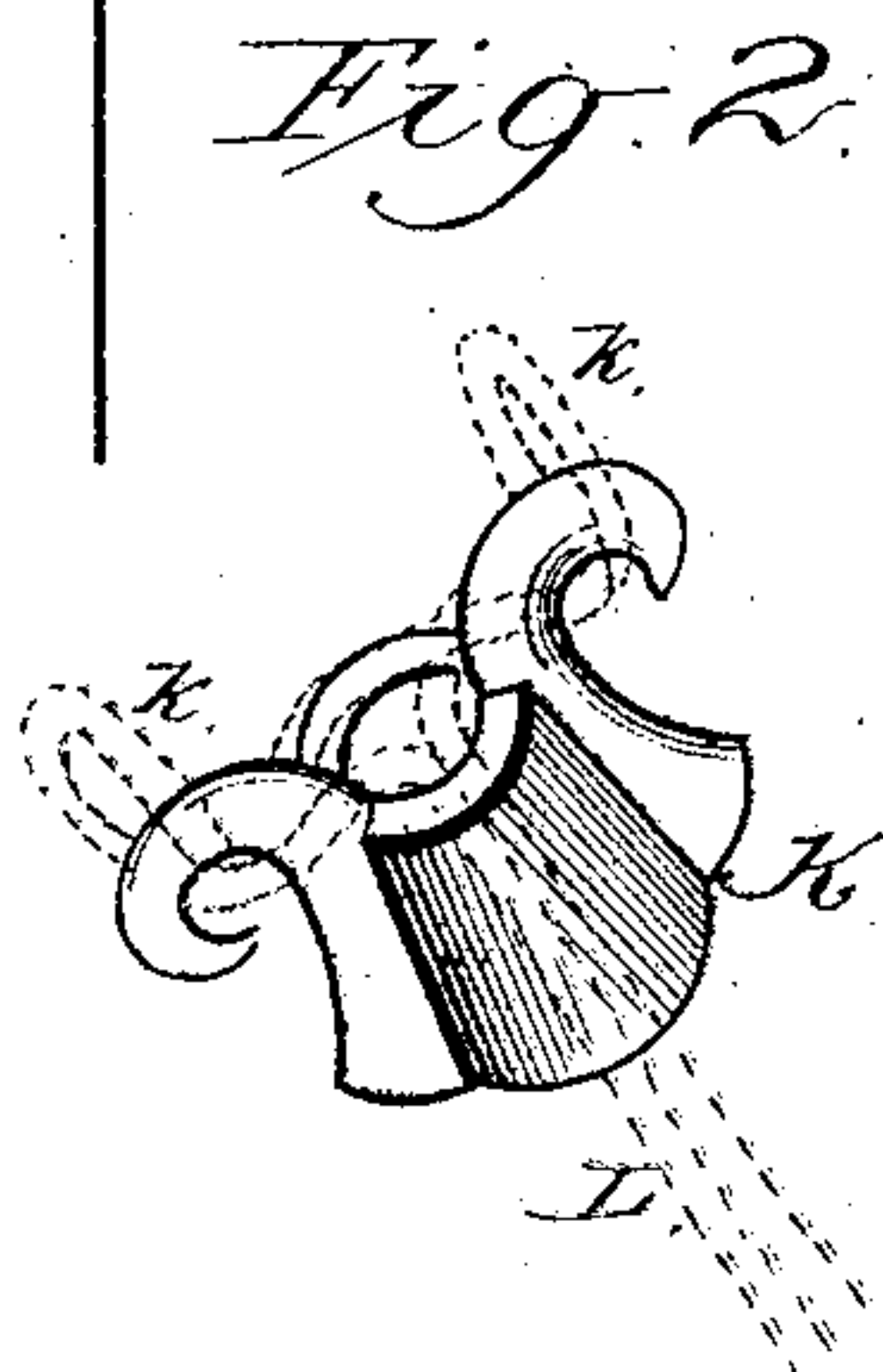
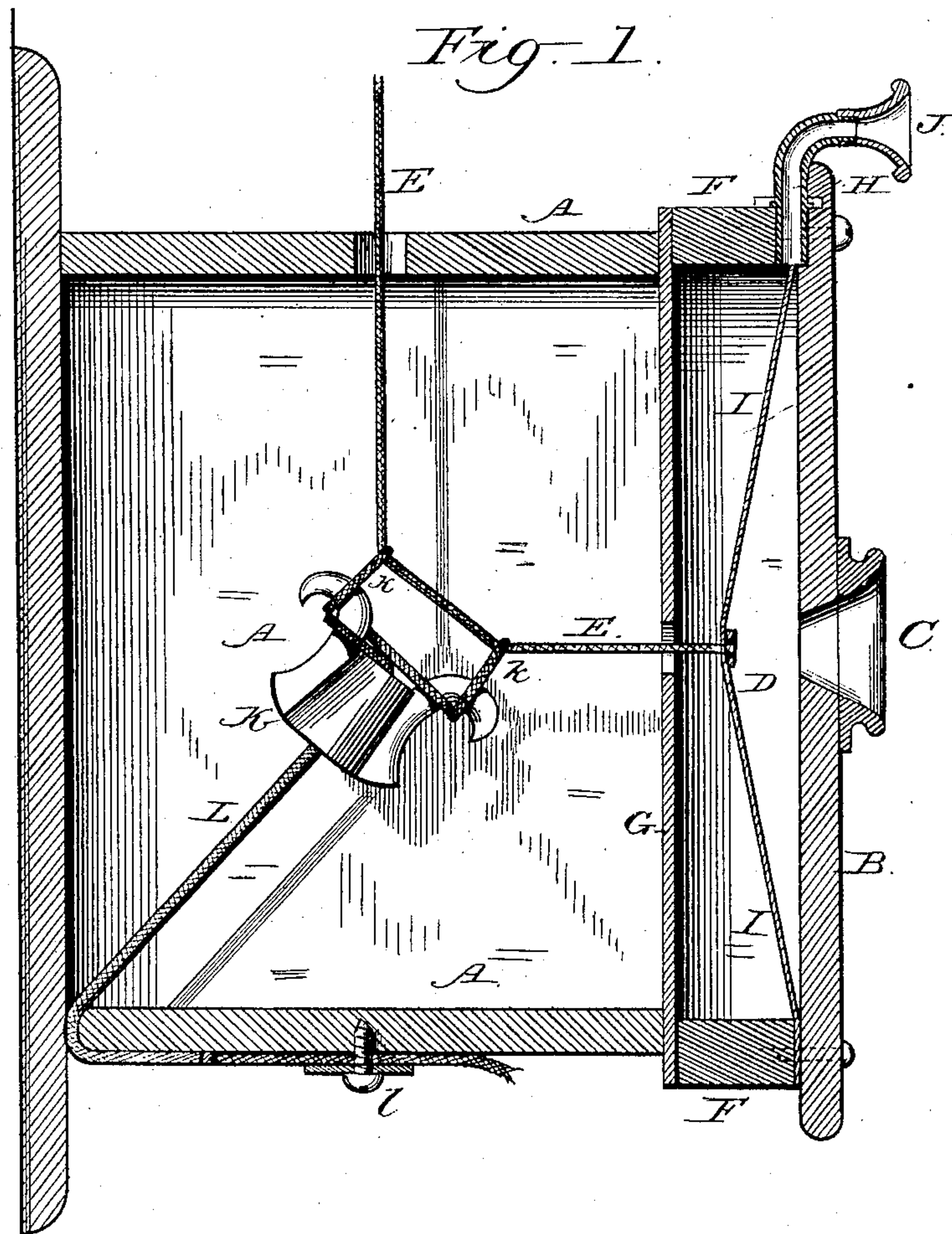


(No Model.)

A. ISKE.
ACOUSTIC TELEPHONE.

No. 322,294.

Patented July 14, 1885.



WITNESSES
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ANTHONY ISKE, OF LANCASTER, PENNSYLVANIA.

ACOUSTIC TELEPHONE.

SPECIFICATION forming part of Letters Patent No. 322,294, dated July 14, 1885.

Application filed January 24, 1885. (No model.)

To all whom it may concern:

Be it known that I, ANTHONY ISKE, a citizen of the United States, residing at Lancaster, county of Lancaster, and State of Pennsylvania, have invented new and useful Improvements in Acoustic Telephones, of which the following is a specification.

This invention relates to that class of telephones which operate without magnets or electrical currents by the propagation of sound-waves in and through wires, and which are commonly called "acoustic telephones." In these telephones it is exceedingly important to keep the wire taut, for the tighter the wire the more distinctly the sound will be heard. As the wire frequently enters the telephone-box at a very considerable angle to the surface of the diaphragm, great difficulty has been experienced in attaining and maintaining the requisite degree of tightness without injuring the diaphragm, which is preferably of parchment or other delicate material.

The chief object of my invention is to avoid this defect and secure the requisite tightness of wire within the telephone-box while leaving the diaphragm free from injurious strain. This object I effect by means of an anchor or insulator of lead or other material which will not readily conduct sound, this material being connected to the wire and drawn, or arranged in such a way that it will hold the wire taut within the box, though allowing it to bend at a right angle, yet will not apply any injurious strain to the diaphragm.

In the accompanying drawings, Figure 1 represents a vertical section of a telephone adapted to receiving as well as transmitting sound-waves propagated along the wire, said wire being provided with the tension device above referred to. Fig. 2 represents a detail perspective view of said tension device, anchor, or insulator, and Fig. 3 represents a detail view of the receiving-tube and part of the diaphragms.

A designates the telephone-box, having a front, B, in which is formed a central mouth-piece, C. This last directs the sound-waves, as usual, on the diaphragm D, preferably of parchment, and the vibrations thus communicated to this diaphragm are transmitted as sound-waves through the wire E.

The above is the operation when the instrument is used as a transmitter. When it is used as a receiver, the sound-waves pass in the opposite direction along wire E to said diaphragm and cause the latter to vibrate. The vibrations thus caused are communicated as sound-waves to the air in a sound-chamber, I, formed by the front B, aforesaid, a partition, G, which is parallel therewith and behind the diaphragm, and interposed walls F at the top, bottom, and sides of the box A. The front B and diaphragm D are attached to these walls, which form a base or frame for the diaphragm by screws f, or in any other convenient manner. The sounds produced in sound-chamber I by the vibration of diaphragm D pass outward through receiving-tube H to ear-piece J. The receiving-tube is arranged so that its inner end is bisected diametrically by the edge of the diaphragm, so that vibrations of air on each side of the latter have equal effect, and clear sounds are insured. This receiving-tube is also made rotatable in wall F, in order that (it being bent or curved in shape) it may present the ear-piece J in the direction where it is needed for use. To effect this, it is only necessary to turn said tube on its axis.

Whether the instrument be used for transmitting sound or receiving it, the wire E should be held taut within the box A, notwithstanding that it bends in entering said box, and this should be done without great friction of the wire against the box or subjecting the diaphragm to injurious strain. It is manifest that this cannot be effected by a pull on the wire. By means of my anchor or insulator K, I do fully effect it, however. This anchor or insulator, which is tubular, having a central passage, is hung to said wire at two points by loops or links L, which catch under hooks or horns L' of said weight or anchor K, and is located about midway between the point where the wire E enters the box and the point of attachment of said wire to the diaphragm. It is held in place by a cord or cords M, passing obliquely downward and rearward through the central passage of said tubular insulator or weight, and secured to the bottom of the box by a screw, N. By withdrawing this screw and moving it farther for-

ward or backward before attaching it again, the strain on the wire may be increased or diminished; but the weight of the anchor or insulator K, which is preferably of lead, will suffice of itself to apply a considerable degree of tension to the wire, though not enough to hurt the diaphragm. The non-resonant character of the material of said anchor or insulator prevents sound-waves from being transmitted to or from the wire through this device. It causes the wire to bend so as to pass out of the box nearly at right angles to the course which it follows between said insulator and the diaphragm, and thus prevents unnecessary friction against the side of the hole by which said wire enters the box, beside facilitating the keeping the wire perfectly tight and straight outside of the box.

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

1. The diaphragm, telephone-box, and sound-transmitting wire of an acoustic telephone, in combination with a tension device applied obliquely to said wire within said box, and cord L and screw l, for varying said tension, for the purpose set forth.

2. In combination with a diaphragm wire and box, a receiving-tube arranged with its inner end across the edge of the diaphragm, and rotatable to present the ear-piece in any direction desired.

3. A combined receiving and transmitting instrument having a partition behind the diaphragm and a receiving-tube located at the edge of the latter, substantially as set forth.

4. A tension device for a telephone-wire, consisting of a leaden weight hung to said wire, in combination with a cord whereby it is anchored to a fixed device, said weight serving to insulate said wire and also to hold it taut and bent, as described.

5. The tubular leaden anchor K, provided on each side with hooks or horns, substantially as and for the purpose set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

ANTHONY ISKE.

Witnesses:

JAS. B. DONNELLY,
P. DONNELLY.