(No Model.)

G. BRAMBEL.

TELEPHONE TRANSMITTER.

No. 345,762. Patented July 20, 1886.

Fig. 1.

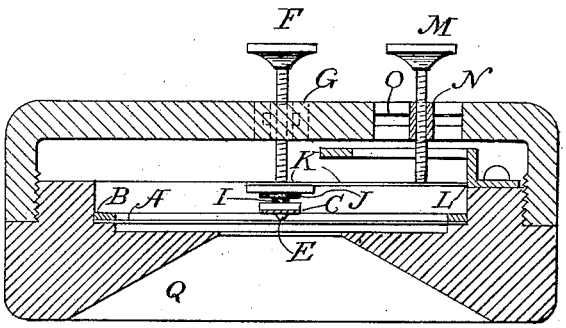


Fig. 2.

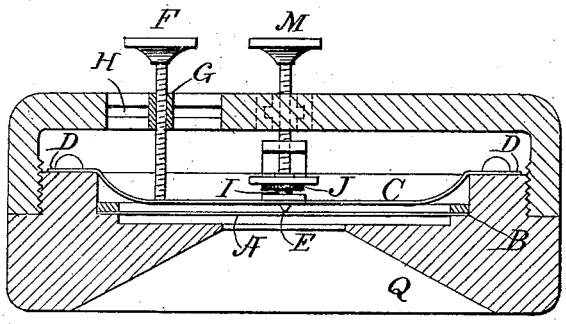
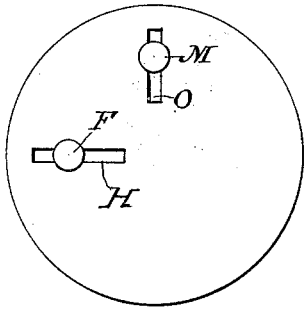


Fig. 4.



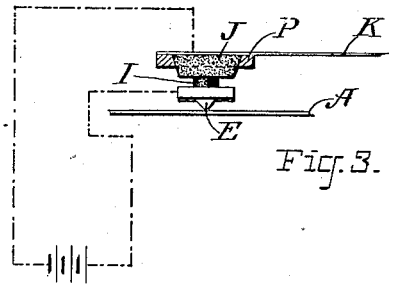
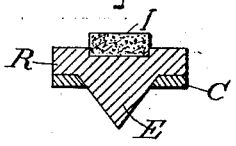


Fig. 3.

Fig. 5.



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UNITED STATES PATENT OFFICE.

GRANT BRAMBEL, OF HAVANA, NEW YORK, ASSIGNOR OF ONE-HALF TO FRED JAMES DUNHAM, OF SAME PLACE.

TELEPHONE-TRANSMITTER.

SPECIFICATION forming part of Letters Patent No. 345,762, dated July 20, 1886.

Application filed April 20, 1886. Serial No. 200,535. (No model.)

To all whom it may concern:

Be it known that I, GRANT BRAMBEL, a citizen of the United States, and a resident of Havana, in the county of Schuyler and State of New York, have invented certain new and useful Improvements in Telephone-Transmitters, described, claimed, and shown in the following specification, claim, and drawings.

My invention relates to improvements in the details of construction of telephone-transmitters; and my object is to provide such instruments with means for supporting in a superior manner the electrodes and diaphragms by adjustable elastic supports.

The device embodying my invention embraces two springs at right angles to each other, the first being supported at both ends and resting against the diaphragm, and the second at one end and resting against the first, carbon electrodes being between the two, and adjusting and adjustable screws being provided in connection with said springs, as more fully set forth in the sequel.

In order to illustrate the practical manner of carrying out the invention, and to enable others skilled in the art to which the invention appertains to make and use the same, drawings are hereunto annexed and described, in which similar letters represent corresponding elements, and in which each part referred to is designated by a single character.

Figure 1 is a cross-section view of the instrument; Fig. 2, the same at right angles to the first cross-section. Fig. 3 shows the disposition of the electric circuits. Fig. 4 shows a back view of the instrument, and Fig. 5 is a detail view.

The telephone embracing my invention consists of the combination of a diaphragm, A, supported at its circumference B in the ordinary manner; a spring consisting of a strip, C, of spring metal—such as brass or steel—having its ends D fixed outside of said circumference; a conical point, E, fixed at the center of said strip and pressing upon the center of said diaphragm; an adjusting-screw, F, pressing upon said spring; a support for said screw, consisting of a nut or lug, G, movable in a suitable slot, H; a carbon electrode, I, fixed upon said spring; a second carbon electrode, J, pressing upon the first; a spring-support, K, therefor fixed at but one of its ends, L; an adjusting-screw, M, pressing upon said second spring, and a support, N, for said last-named screw, consisting of a nut movable in a suitable slot, O, both of said slots being parallel, respectively, to said springs, which are at right angles to each other. The electrode J is beveled so as to fit into the ring P, which is fixed to the spring K.

Q is the funnel-mouth of the telephone.

In Fig. 5 is shown a detail view of the point E, which passes through the spring C and contains in a cavity the carbon electrode I, the cavity being in the enlarged portion R.

Telephony depends considerably for its practical success upon means provided for taking up the vibrations of air. A non-elastic substance will not be set into vibration as easily as an elastic one, and, again, an elastic substance acts the more perfectly according to the degree of adjustment which it receives. For instance, a violin-string, if under no tension, cannot be made to give forth a sound by means of the bow.

In the present invention I have provided, as shown, means for adjusting the tension of the diaphragm, as when the point E is pressed against it for adjusting the length and tension of the spring C, which holds the diaphragm, and means for adjusting the length of the spring K by moving the screw M, and means for adjusting the pressure of the electrodes I and J upon each other and upon the diaphragm by turning the screws F and M. The necessity of means of adjusting so many of the parts is, that it is found impossible to obtain an instrument so perfect as never to need adjustment after its first construction, for elasticity, length, and other similar elements vary with the temperature, chemical and electrical actions, and with use, so that a permanent adjustment becomes impracticable. Further, to speak with a loud voice over a long main line needs a different adjustment from that needed in ordinary conversation.

The invention is not limited to the precise construction hereinbefore described and shown, as it is evident that many modifications may be made therein without departing from the spirit of the invention.

Having now stated the object of the said in-

vention, having described its practical realization by reference to the accompanying drawings, having particularly ascertained the manner in which the same operates to accomplish the said object, what I consider to be novel and original, and therefore claim as my invention, is—

In a telephone-transmitter, the combination of a diaphragm suitably supported at its circumference, a spring consisting of a strip of metal having its ends supported outside of said circumference, a conical point fixed at the center of said strip and pressing upon the center of said diaphragm, an adjusting-screw pressing upon said spring, a support for said screw, consisting of a nut or lug movable in a suitable slot, a carbon electrode fixed upon said spring, a second carbon electrode pressing upon the first, a spring-support therefor fixed at but one of its ends and of the form of a strip, an adjusting-screw pressing upon said second spring, and a support for said last-named screw, consisting of a lug or nut movable in a suitable slot, both of said slots being parallel, respectively, to said springs, which are at right angles to each other.

Witness my signature and seal this 26th day of April, 1886.

GRANT BRAMBEL. [L. S.]

Witnesses:

MINOR MALLORY,

S. J. BROWN.