

E. BERLINER.
Contact Telephone.

No. 241,912.

Patented May 24, 1881.

Fig. 1.

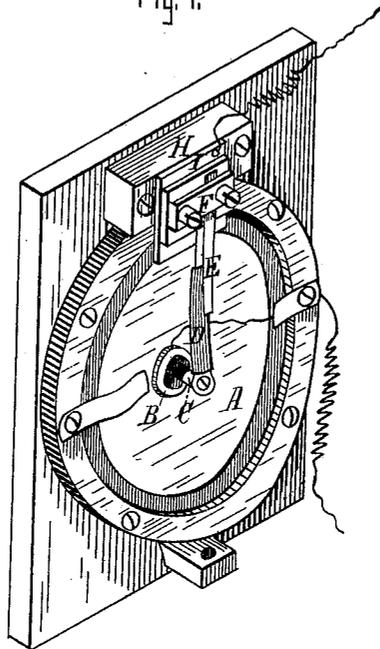


Fig. 3.

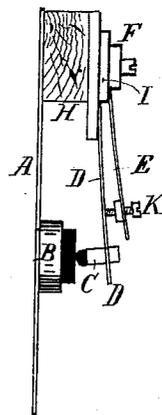
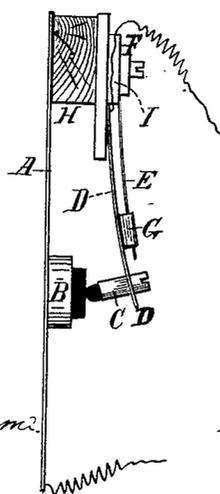


Fig. 2.



WITNESSES:

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INVENTOR:

Emile Berliner
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UNITED STATES PATENT OFFICE.

EMILE BERLINER, OF BOSTON, MASSACHUSETTS.

CONTACT-TELEPHONE.

SPECIFICATION forming part of Letters Patent No. 241,912, dated May 24, 1881.

Application filed December 22, 1879.

To all whom it may concern :

Be it known that I, EMILE BERLINER, of the city of Boston, in the county of Suffolk, and State of Massachusetts, have invented a new and useful Improvement in Microphones or Contact-Telephones, of which the following is a specification.

This improvement relates to that class of microphones in which one electrode is held in position by being attached to a spring or reed, which presses it against the opposite electrode; and it consists in an improved manner of adjusting the tension of this spring or reed by a second spring or elastic medium, which, however, need not necessarily form part of the telephonic circuit, arranged in such a manner that it presses against the first spring with a different amount of tension. I am aware that this result has been accomplished before by fastening the second spring on a fixed point at the side of the first spring, with its free end resting upon the latter, and by moving said second spring in a circle around the fixed point, so as to change the place where the free end of the second spring touches the first spring, thereby producing difference of tension; but this has been found inefficient, and my improvement is, I claim, of greater utility.

In the drawings, Figure 1 shows one form of the improvement; Fig. 2, another form.

In both the figures, A is a diaphragm; B, an electrode fastened upon said diaphragm; C, the opposite electrode, having a curvilinear convex extremity in contact with the electrode B, and fastened to the spring or reed D, which may be covered with a rubber tubing, as in Fig. 1.

H is a block of insulating material. I is a compound block of metal, into which the reed D is fastened; and F another block for holding the spring E.

In Fig. 2 G is a piece of rubber tubing or any other material which can be moved along the spring E, and is by the latter pressed against the reed D.

It will be evident that when I slide the piece G further up toward the block I the pressure by which C is pressed against B becomes less, and that on sliding it further toward the extremity of the spring E said pressure increases.

In Fig. 1 the block F can be loosened, and the spring E, which presses against D, can be moved farther out, so that its extremity will be nearer to the electrode C, and thereby increase the pressure of said electrode upon the electrode B.

In Fig. 3 the spring E is traversed by the screw K, the extremity of which presses upon the spring D, and the tension of the latter is adjusted by screwing the screw K toward or off the diaphragm. Hence in these devices a simple method is shown for adjusting the pressure between the electrode A and the electrode B. I make use in the electrode C of a curvilinear convex contact-surface, because it does not wear upon the opposite contact-surface so much as it would if an attenuated point.

I do not claim, broadly, an adjusting device for microphones in which the extremity of a spring can be moved off or toward the extremity of another spring against which it presses.

I have shown a rubber ring clasping the edge of the diaphragm, spring-fingers for holding the diaphragm in place, and a rubber coating on the electrode-spring; but these devices I do not claim as my invention; but

What I claim is—

1. In a contact-telephone or microphone, the combination, with the diaphragm and electrode vibrated by it, and a spring and electrode carried thereby, of a second spring projecting over and parallel with the first-named spring, and means as indicated for adjusting its pressure against the latter, and consequently of the two electrodes against each other, substantially as described.

2. In a contact-telephone or microphone, an elastic electrode, which is pressed against the opposite electrode by a spring which can be shortened or lengthened, as and for the purpose described.

3. In a contact-telephone or microphone, the combination of a vibrating surface forming one electrode, and being carried by a diaphragm in contact with a curvilinear convex surface forming the opposite electrode, the latter being attached to a flat spring, the elasticity of which is adjustable, substantially as and for the purpose set forth.

4. In a contact-telephone or microphone, the combination of a vibrating surface forming one electrode, in contact with the elastic opposition electrode, the latter being pressed
5 against the former by a movable piece, G, attached to a stationary spring, substantially as and for the purpose set forth.
5. The combination, with a spring and electrode carried thereby, of a second spring held
10 stationary at one end, and arranged to bear against the spring carrying the electrode, and means, as indicated, for adjusting its pressure, substantially as described.

In witness whereof I have hereunto set my hand on this 18th day of December, 1879, in 15 presence of the subscribing witnesses.

EMILE BERLINER.

Witnesses:

ALEX. L. HAYS,

CHAS. E. BURLINGAME.