

(No Model.)

D. DRAWBAUGH.  
TELEPHONE TRANSMITTER.

No. 303,627.

Patented Aug. 19, 1884.

Fig. 1.

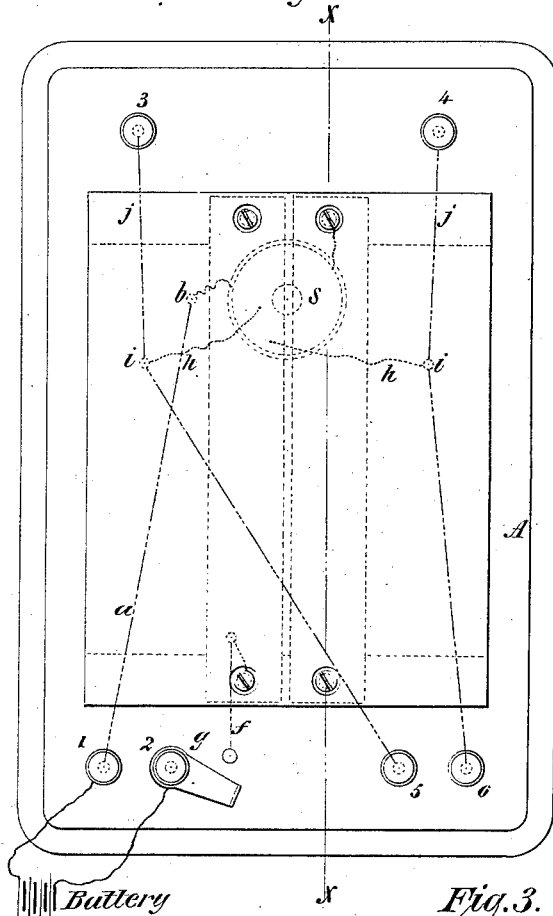


Fig. 2.

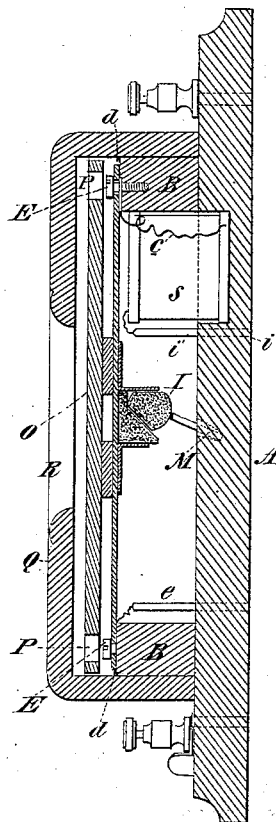


Fig. 3.

Fig. 4.

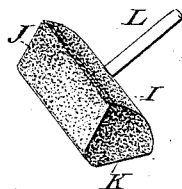
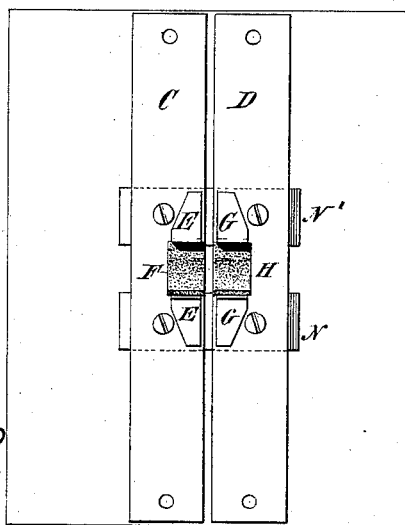
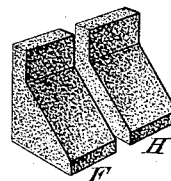


Fig. 5.



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# UNITED STATES PATENT OFFICE.

DANIEL DRAWBAUGH, OF EBERLY'S MILL, PENNSYLVANIA, ASSIGNOR TO  
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## TELEPHONE-TRANSMITTER.

SPECIFICATION forming part of Letters Patent No. 303,627, dated August 19, 1884.

Application filed March 27, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, DANIEL DRAWBAUGH, of Eberly's Mill, Cumberland county, Pennsylvania, have invented a new and useful Improvement in Telephone-Transmitters, of which the following is a specification.

The invention relates to a telephone-transmitter containing three electrodes, two being rigidly attached to elastic bars or plates, to which plates the diaphragm is secured, and the third and loose electrode resting upon the inclined faces of the fixed electrodes.

The invention consists in the construction more particularly hereinafter set forth.

Figure 1 is a front view of the instrument with the outside inclosing-case removed. Fig. 2 is a vertical section on the line *x x* of Fig. 1. Fig. 3 is a rear view of the diaphragm with the parts attached thereto. Fig. 4 is the loose electrode, and Fig. 5 is the fixed electrodes shown separately.

Similar letters of reference indicate like parts.

A is the base or back board of the instrument. B B are two bars of wood attached thereto. C and D are two bars or strips of metal secured to the bar B by screws E. These bars are not in contact. Held in metal clips E on the back of the bar C is an electrode, F, preferably of carbon. Held in similar clips, G, on the back of the bar D is a similar electrode, H, of like material. The inner sides of these electrodes are beveled or inclined, as shown in Fig. 5. I is an electrode of like material, of segmental form, having two plane faces, J and K. L is a rod inserted in the electrode I and loosely received in a conical socket, M, in the back board, A. The electrode I rests upon the beveled faces of the electrodes F and H, and forms a bridge between them, these electrodes F and H not being in contact. One of the plane faces of the electrode I rests upon the beveled faces of the electrodes F H, and the other plane face lies just below the protruding clips E and G, but not in contact with said clips. The purpose of these clips is to prevent the electrode I from becoming displaced when the instrument is moved about. To the front sides of the bars C and D are secured two horizontal bars of wood, N and N',

and to these bars is secured the diaphragm O, which I prefer to make also of wood. The diaphragm is perforated, as indicated at P, to allow of access to the screws E. Q is an inclosing-case having a mouth-piece opening, R. Said case fits over the bars B, and is thus tightly held in place by friction.

The circuits in the instrument proceed as follows: from the battery to the binding-post 1 by a wire, *a*, in the back of the case, to a post, *b*, thence to the primary of the induction-coil S, through said primary, and thence by a wire, *c*, to a metal contact-plate, *d*, which is held between the upper screw E and the bar B, and which is in contact with the metal bar C. The current then proceeds along the metal bar C to the electrode F, thence passes to the loose or bridge electrode I, thence to the electrode H and bar D, thence to a post, *e*, and thence by a wire, *f*, to the switch *g*, and when the switch lever and point are in contact back to the battery. The secondary of the induction-coil communicates by wires *h h* to posts *i i*, and these posts communicate by branch wires *j j* to the line binding-posts 3 and 4, and to binding-posts 5 and 6, to which a receiving-telephone may be attached.

It will be seen that by this construction the diaphragm is supported substantially at its center and has free edges, and that the vibrations of the diaphragm are directly communicated to the elastic metal plates or bars C and D, which support the fixed electrodes. The vibrations of the diaphragm due to the sound-waves produced by the voice cause variations in the resistance offered by the electrodes to the passage of the current. Said current is thereby modified so as to render it undulatory and adapted for telephonic purposes. The electrodes are preferably made of carbon.

I claim as my invention—

1. The combination, in a telephone, of a diaphragm attached substantially at its center to two elastic metallic supports, not in electrical contact with each other, two electrodes inclined or having inclined faces secured upon said supports, and a loose electrode resting upon and bridging the fixed electrodes and sustained by said electrodes and a fixed support, substantially as described.

2. In a telephone, the combination of a diaphragm supported substantially at its center and free to vibrate at its edges, an elastic support to which said diaphragm is secured, two  
5 fixed electrodes not in electrical contact carried by said support, and a loose electrode resting by gravity upon and bridging the fixed electrodes, substantially as described.
3. In a telephone, a diaphragm, two fixed  
10 electrodes not in electrical contact vibrated by said diaphragm and being inclined or having inclined faces, and a loose electrode resting by gravity upon and bridging the inclined faces of said fixed electrodes, the said  
15 loose electrode being prevented from sliding off the fixed electrodes by a projection from said loose electrode entering and being loosely held in a socket in a fixed support, substantially as described.
- 20 4. The combination of the back board, A, bars B, elastic metal bars C D, attached to bars B, diaphragm O, a means of attaching said diaphragm substantially at its center to

said bars, electrodes F and H, supported upon bars C D, electrode I, and a projection thereon received in a recess or socket on said back board, substantially as described. 25

5. In a telephone, the combination of the back board, A, bars B, an elastic support attached to said bars, a diaphragm secured substantially at its center to said support, and  
30 electrodes interposed between said elastic support and a fixed support, substantially as described.

6. In a telephone, the combination of the  
35 back board, A, bars B, an elastic support attached to said bars, a diaphragm secured substantially at its center to said support, electrodes interposed between said elastic support and a fixed support, and the case or cover  
40 Q, substantially as described.

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Witnesses:

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