

(No Model.)

T. A. EDISON.

TELEPHONE.

No. 257,677.

Patented May 9, 1882.

Fig. 1.

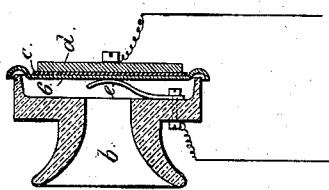
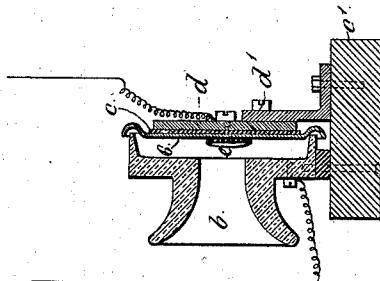


Fig. 2.



Witnesses

Chas H. Smith  
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Inventor

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*[Signature]* atty

# UNITED STATES PATENT OFFICE.

THOMAS A. EDISON, OF MENLO PARK, NEW JERSEY.

## TELEPHONE.

SPECIFICATION forming part of Letters Patent No. 257,677, dated May 9, 1882.

Application filed October 17, 1881. (No model.) Patented in England June 15, 1878.

*To all whom it may concern:*

Be it known that I, THOMAS ALVA EDISON, of Menlo Park, in the State of New Jersey, have invented an Improvement in Telephones, (Case No. 158 B.) of which the following is a specification.

This application is a division of my application No. 158, filed November 11, 1878, and the said division is made for the purpose of separating from said original application matters that are not in interference, and for separating the different features of invention into two additional applications. The present I term "Case No. 158 B."

Letters Patent in Great Britain No. 2,396 show the present devices. Said patent was applied for June 15, 1878, but the specification was not filed until December 13, 1878.

This portion of my invention relates to the telephone-instrument represented in the accompanying drawings, Figure 1 being a sectional view and Fig. 2 a section at right angles to Fig. 1.

The transmitting-instrument to which this portion of my invention relates is intended to transmit oral communications over electric circuits.

In my original application No. 158 I have shown a receiving-instrument and electric circuits; but as this transmitter may be used with any suitable circuits or receiving-instrument, these parts do not form a necessary feature of this division of my said application.

In my application No. 130, filed April 27, 1877, the diaphragm is in direct contact with a surface of plumbago or similar material.

In my Patent No. 203,015 a tension-regulator is described, composed of fiber and an electric conducting material—such as plumbago.

In my Patent No. 203,016 I have described a button of lamp-black forming the tension-regulator, and there is a metallic plate intervening and in contact with both the carbon and the diaphragm.

The peculiar features of the present invention as distinguished from the aforesaid devices relate to a telephonic diaphragm that is not clamped at its edges, but rests at one side against a support, and it is held in place by a yielding pressure applied to the other surface, and the tension-regulating device is applied between the diaphragm and the support, so that the pressure upon the tension-regulator will be varied by the vibrations of the diaphragm

as acted upon by articulate speech or other sounds, and the electric condition of the line will be varied, so that the current will undulate in a corresponding manner to the sound-waves.

In the drawings, the plate or diaphragm 6 rests against a tension-regulating device—such as a disk of fibrous substance, c—say, silk—with finely-divided material—such as plumbago—worked into its fibers. There may be several such disks, and the plate d is at the opposite sides of these disks c, and it is sustained in place by suitable means. I have shown a bracket, d', connected to a base, c', which is fastened to the mouth-piece b. The spring e serves to press the plate or diaphragm 6 toward the tension-regulator, so as to apply the proper initial pressure. One conductor is connected with the back plate, d, and the other to the spring e or diaphragm 6. The sound-waves act against the plate or diaphragm 6 and vibrate the same, and the resistance in the electric circuit is varied according to the action of the vibrating diaphragm on the tension-regulator. The edges of the diaphragm or plate 6 are preferably corrugated or turned over behind the back edges of the mouth-piece, as represented. This stiffens the edges of the diaphragm and prevents any independent or false vibrations at said edges.

I claim as my invention—

1. A tension-regulating device, a support for the same, a diaphragm resting against the tension-regulator, and a spring-presser acting to retain the diaphragm in place, substantially as specified.

2. In a telephone a diaphragm, the whole of which is free to vibrate under the action of sound, a tension-regulating device at one side of the diaphragm, a mouth-piece, and a spring acting to press the diaphragm toward the tension-regulator, substantially as set forth.

3. In a telephone-instrument, a diaphragm that is corrugated or ribbed at or near its edges, substantially as set forth.

4. In a telephone, the combination, with the diaphragm, of a yielding tension-regulator at one side and a yielding presser acting against the other side.

Signed by me this 7th day of September, A. D. 1881.

Witnesses: THOMAS A. EDISON,  
GEO. T. PINCKNEY,  
HAROLD SERRELL.