

(No Model.)

W. S. DAVIS.  
TELEPHONIC TRANSMITTER.

No. 305,901.

Patented Sept. 30, 1884.

Fig. 1.

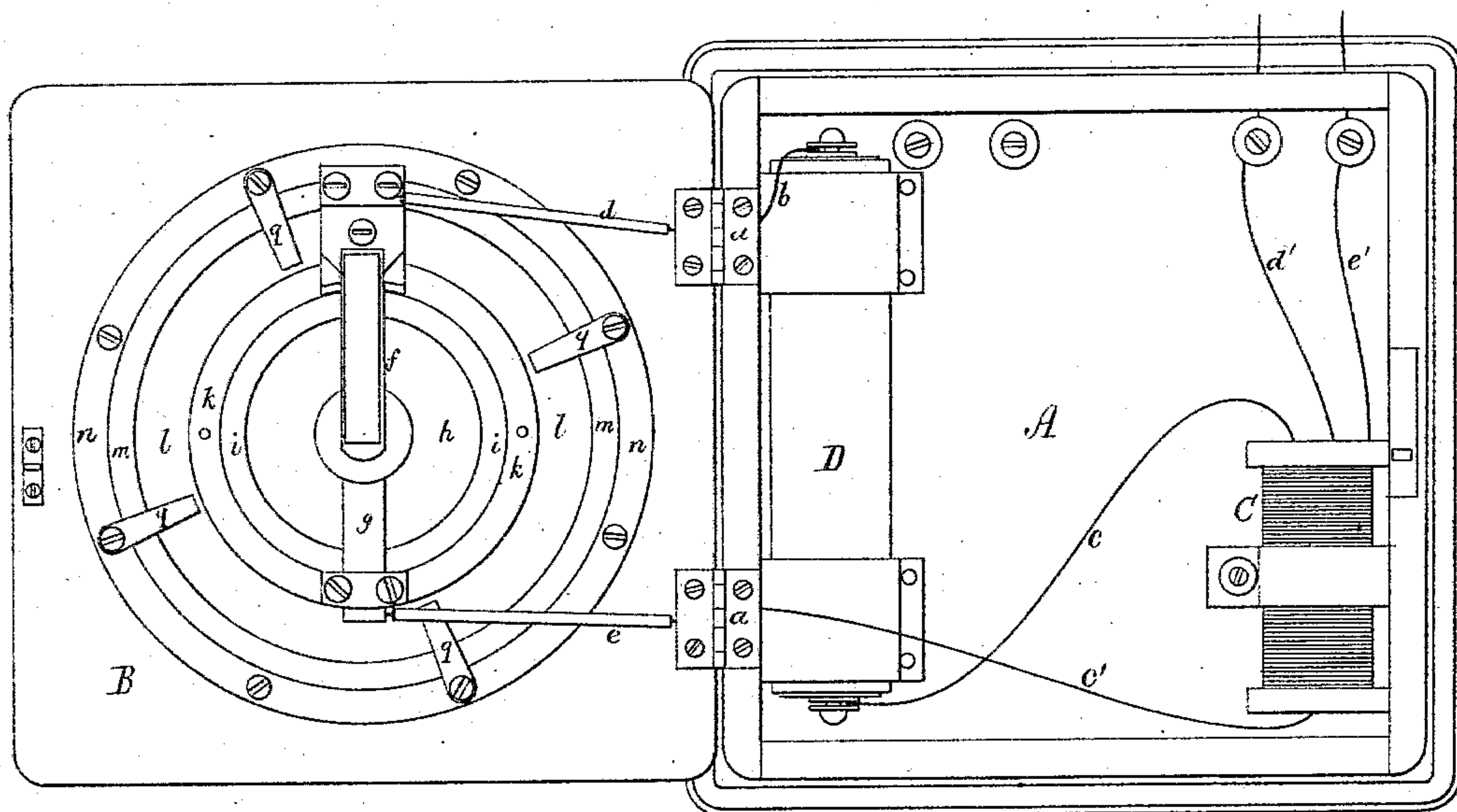


Fig. 2.

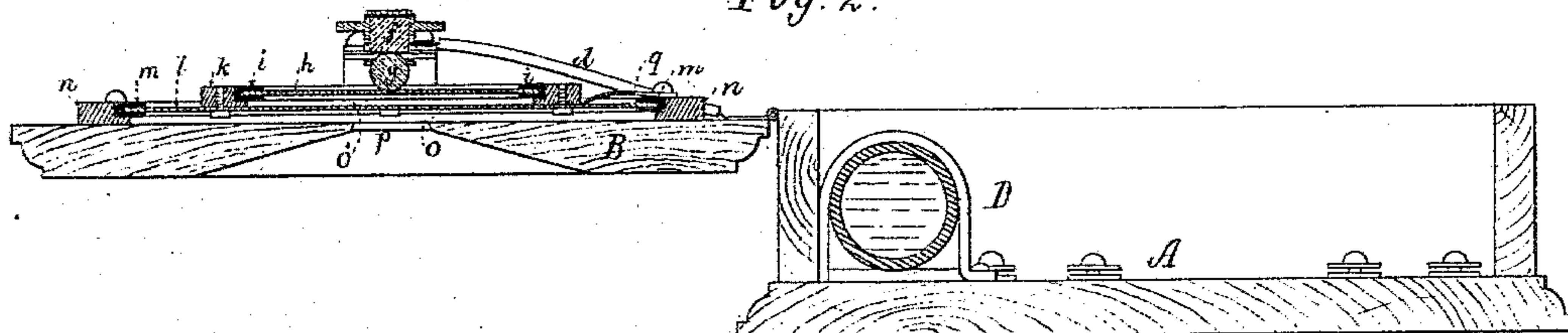
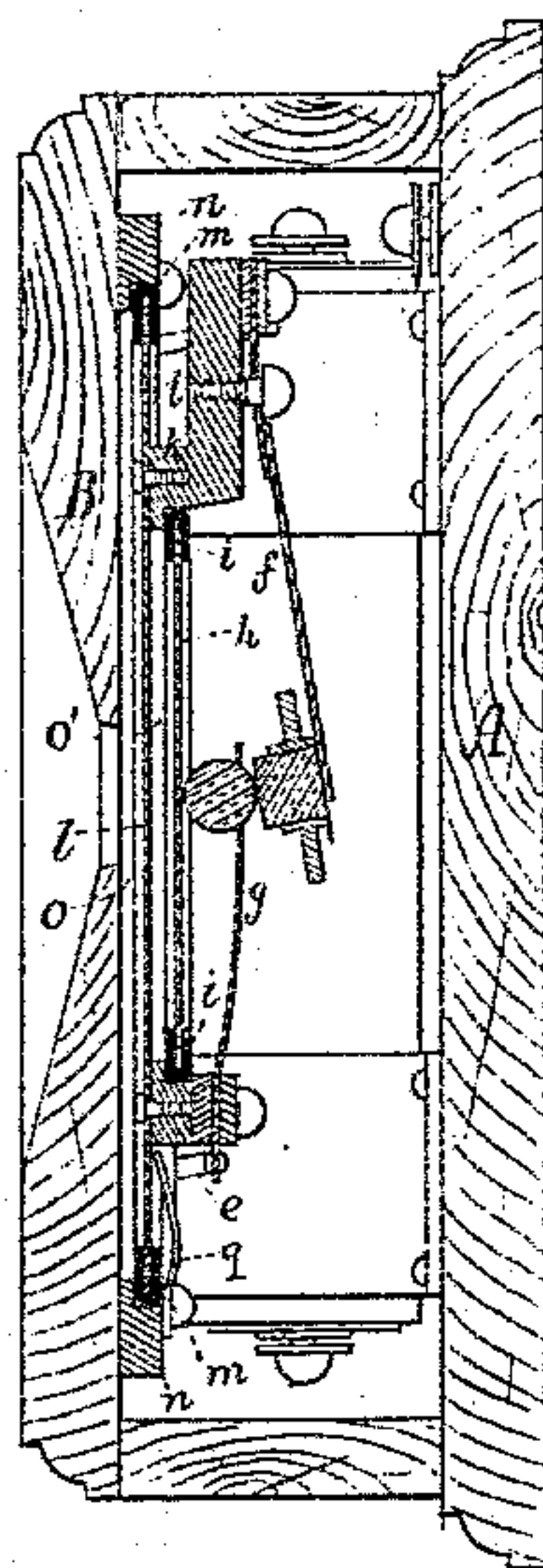


Fig. 3.



Witnesses.

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by *R. H. Eddy* att'y.



# UNITED STATES PATENT OFFICE.

WILLIAM SULLIVAN DAVIS, OF LOWELL, MASSACHUSETTS, ASSIGNOR OF  
ONE-HALF TO JONATHAN KENDALL AND GEORGE M. KENDALL, BOTH  
OF SAME PLACE.

## TELEPHONIC TRANSMITTER.

SPECIFICATION forming part of Letters Patent No. 305,901, dated September 30, 1884.

Application filed February 4, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM SULLIVAN DAVIS, of Lowell, in the county of Middlesex, of the Commonwealth of Massachusetts, have invented a new and useful Improvement in Telephonic Transmitters or Microphones; and I do hereby declare the same to be described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a view of my improved article as open or with the cover of its case turned back. Fig. 2 is a longitudinal section of it. Fig. 3 is a transverse section taken lengthwise through the two electrodes.

My invention, the nature of which is defined in the claim hereinafter presented, relates specially to the well-known "Blake transmitter," or microphones of like character.

In carrying out my said invention I have combined with a Blake transmitter a vibratory supporting disk or diaphragm having a diameter longer than that of the sustaining-ring of the diaphragm of the transmitter, such additional diaphragm being fastened to the said ring, and arranged concentrically therewith, and encompassed by a rubber ring, in turn inclosed in a metallic one, which is fastened to the inner face of the cover of the case.

In the drawings, A denotes the said case, and B its cover, the latter being secured to the case by metallic hinges *a a*. Within the case is the usual induction-coil, C, and besides such I place in such case a small electric or galvanic battery, D, having one of its current-wires—viz., *b*—connected with one of the hinges *a a*, and the other, *c*, with the induction-coil, a wire, *c'*, from such coil being extended to the other hinge. Wires *d* and *e* extend from the hinges to the two electrodes *f* and *g*, arranged as represented with the diaphragm *h* of the Blake transmitter. This diaphragm is encompassed by a rubber ring, *i*, fitted into a metallic ring, *k*.

To the front side of the ring *k*, I fasten concentrically to the said ring an auxiliary diaphragm, *l*, longer in diameter than the ring *k*, and encompassed by a rubber ring, *m*, which in turn is surrounded by a supporting metallic

ring, *n*, fastened to the inner face of the cover of the case. There is between the auxiliary diaphragm and the said cover a shallow chamber, *o*, provided with a mouth, *p*, as shown. There is also a shallow chamber, *o'*, between the two diaphragms, such chambers being to allow them to properly vibrate. A series of springs, *q*, fixed to the metallic ring *n*, extends to the inner face of the said auxiliary diaphragm, upon which the springs at or near their free ends bear. The said springs are to keep the diaphragm in position in its encompassing rings, and to allow it to vibrate as may be required. The auxiliary diaphragm, combined and arranged as described with the transmitter or microphone and its case, is to prevent the transmitter from "jarring" or "breaking up," as telephonists express the jarring sound produced by one electrode on the other while vibrating when the party speaking in front of the mouth of the transmitter is close thereto. By the auxiliary diaphragm the main diaphragm and electrodes are vibrated simultaneously, and become so insulated from the voice of a speaker as to be vibrated thereby only through the auxiliary diaphragm, the jarring of the electrodes being thereby prevented, as I have found in practice. Furthermore, by having to the transmitter the auxiliary diaphragm, arranged as described, I can use to the mouth a speaking-tube without causing any of the said jarring or breaking up, and thus can increase the volume of sound, so as to render the speech of the operator to be heard through the telephone to much greater certainty and advantage. With the auxiliary diaphragm a stronger battery can be used than can with the transmitter without such diaphragm, and therefore the telephonic current can be worked to better advantage. By having the battery within the case of the transmitter the electrical current to the electrodes meets with less resistance than would follow were the battery out of the case. Other advantages arise from having the battery within the case of the transmitter.

In Fig. 1 the wires for connecting the induction-coil with the telephone circuit-wires are shown at *d'* and *e'*.



I claim—

The combination of the case, the diaphragm,  
and the electrodes of a telephonic transmit-  
ter or microphone with an auxiliary or ad-  
5 ditional diaphragm larger in diameter than  
the main diaphragm and its sustaining-ring,  
and fixed to the latter and to another and

larger sustaining-ring, arranged in and sup-  
ported by the said case, all being substan-  
tially as set forth.

WILLIAM SULLIVAN DAVIS.

Witnesses:

R. H. EDDY,  
E. B. PRATT.