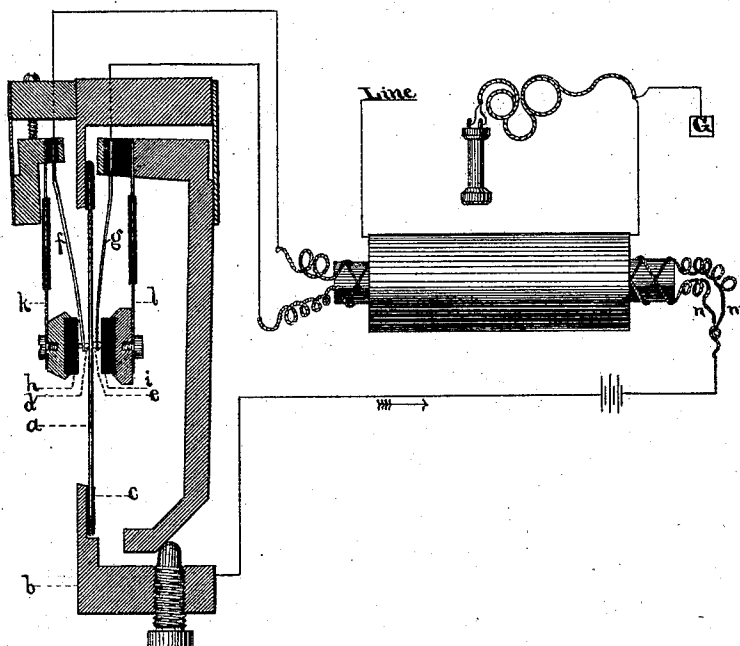


(No Model.)

C. D. HASKINS.
TELEPHONE TRANSMITTER.

No. 286,923.

Patented Oct. 16, 1883.



Witnesses
William S. Granger
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UNITED STATES PATENT OFFICE.

CHARLES D. HASKINS, OF NEW YORK, N. Y., ASSIGNOR TO THE WESTERN
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TELEPHONE-TRANSMITTER.

SPECIFICATION forming part of Letters Patent No. 286,923, dated October 16, 1883.

Application filed July 14, 1881. (No model.)

To all whom it may concern:

Be it known that I, CHARLES D. HASKINS, of New York, New York, have discovered a certain new and useful Improvement in Telephone-Transmitters, of which the following is a full, clear, concise, and exact description.

My invention relates to the method of inducing voice-currents in a telephone-line from a local circuit by means of a diaphragm and movable contacts and an induction-coil. Heretofore the current has been sent through the primary of the induction-coil in one direction or in reversals, the primary consisting of a single wire.

My improvement consists in winding the primary of the induction-coil in branches, the branches being wound so that the current will divide and pass in opposite directions through the primary, the points of variable resistance being so arranged that when the diaphragm is set in vibration the strength of the current in the branches of the primary will vary. The resultant or differential of the variations in the branches will induce reversed voice-currents in the line passing through the secondary of the induction-coil.

In the drawing I have shown my improved transmitter in section, and a diagram of the circuits through the induction-coil.

The diaphragm *a* is japanned on both sides, and insulated from the frame *b* by means of the rubber *c*, which may be placed around the edges of the diaphragm, so as to lap toward its center on both sides, as shown. The contact points or electrodes, *d e*, may be of platinum, and are supported, respectively, on the opposite side of the diaphragm by the springs *f g*. The springs hold the contact-points against the pieces of carbon *h i*, which are sup-

ported by the springs *k l*. The contact-points should be adjusted to the carbon pieces so that normally the resistance at one point will be about the same as at the other. Tracing now the circuit of the current from the battery as indicated by the arrows, we find two branches, *m n*, passing through the induction-coil in opposite directions to the contact-points *d e*. The branch circuits pass thence through the carbon pieces and the springs *k l*, and unite in the frame, which is connected with the other pole of the battery, as shown. When the diaphragm is set in vibration by the voice, it is evident that the resistance of the carbon points in the two branches will vary with the vibrations. The effective current through the branches of the primary will be measured by the difference between the strength of the current in the two branches at any given instant. The current will, it is evident, now be stronger in one branch and now stronger in the other, and thus the effective current of the differential will be in reversals, and consequently the induced voice-current in the main line will be in reversals corresponding to the differential of the current in the two branches of the primary.

I claim—

The combination of the following elements: diaphragm *a*, frame *b*, insulating substance *c*, contact-points *d e*, supported by springs *f g*, carbon pieces *h i*, supported by adjustable springs *k l*, and the branches *m n* of the primary of the induction-coil, substantially as shown and described.

CHAS. D. HASKINS.

Witnesses:

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