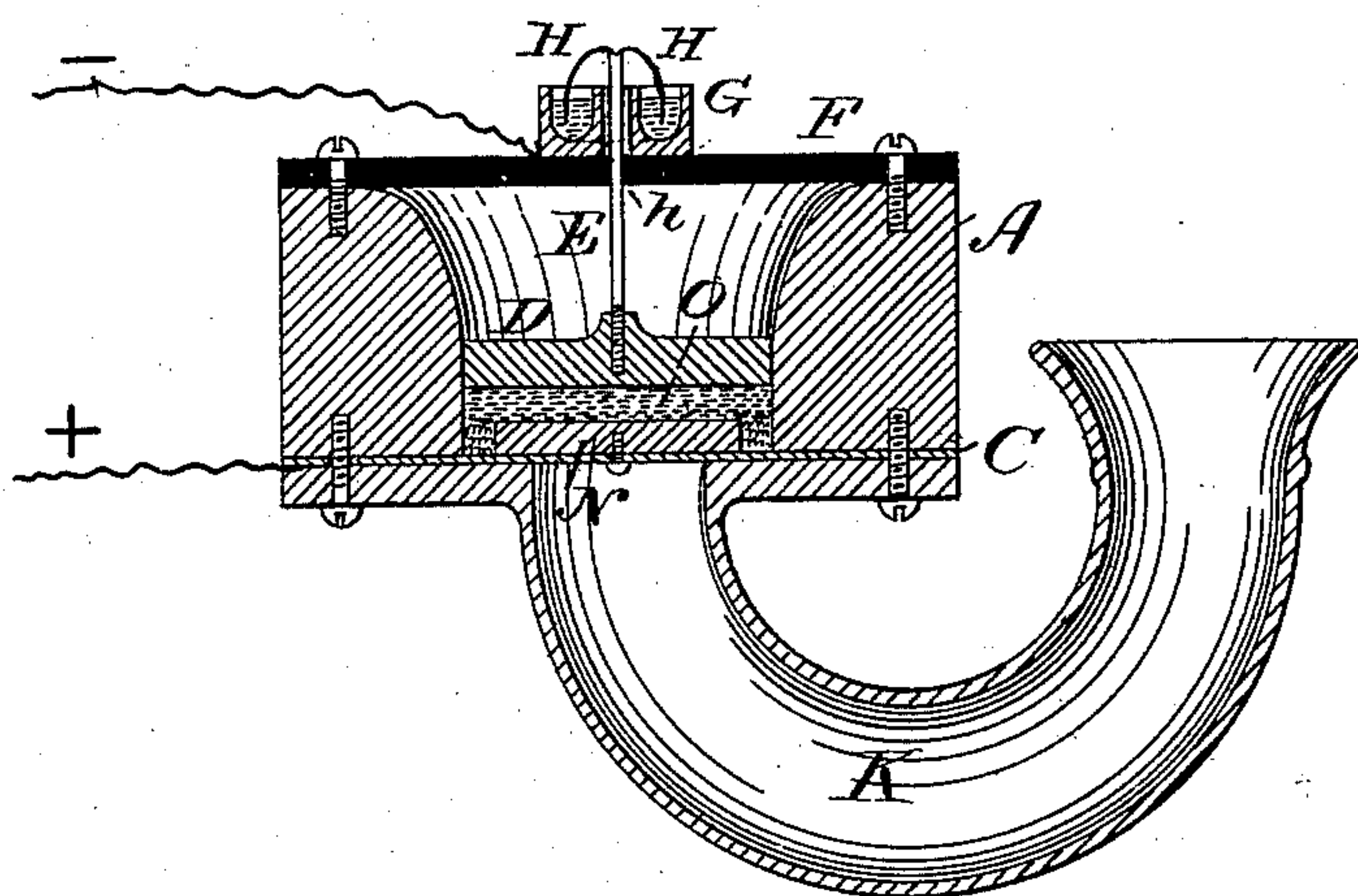


(No Model.)

E. BERLINER.
TELEPHONE TRANSMITTER.

No. 285,102.

Patented Sept. 18, 1883.



Witnesses.

Geo. Willis Pierce
J. H. Cheever.

Inventor:

Emile Berliner

UNITED STATES PATENT OFFICE.

EMILE BERLINER, OF BOSTON, MASSACHUSETTS.

TELEPHONE-TRANSMITTER.

SPECIFICATION forming part of Letters Patent No. 285,102, dated September 18, 1883.

Application filed June 13, 1883. (No model.)

To all whom it may concern:

Be it known that I, EMILE BERLINER, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain Improve-
5 ments in Telephone-Transmitters, of which the following is a specification.

This invention relates to that class of telephone-transmitters which consist, essentially, of a vibrating medium, in combination with a
10 tube or chamber containing loose conducting particles. In operating such transmitters the mass of loose particles is compressed more or less at each vibration, and thereby its resistance is altered accordingly. It is, however,
15 important to pack the particles together in order to insure a certain firm contact between them; and my present invention consists in doing this by a weight resting permanently on said mass. The transmitter thereby be-
20 comes also self-adjusting.

Various other mechanical improvements, which I also describe below, are of secondary importance, and may be varied or substituted without departing from the spirit of my in-
25 vention.

In the drawing, A is a piece of stout hard-rubber tubing, closed below by a metal diaphragm, C. To the center of the latter is screwed the metal or carbon block N. Into
30 the tube is placed a mass, O, of loose conducting particles, such as crushed coke, iron filings, or the like. Upon this conducting mass rests loosely a metal weight, D, to which is attached or screwed the metal stick E. This

stick slides through a hole, *h*, of the hard rubber bar F. Around the stick E, and upon
35 said bar F, is situated a circular mercury-trough, G, and two wires, H H, which are soldered to said stick, dip into the mercury. A mouth-piece, K, is screwed to the tube A,
40 and the whole apparatus stands best in a true vertical position, as shown. Two leading-wires, + and -, are soldered to the mercury-trough and to the diaphragm, respectively.

To operate this apparatus the two wires just
45 mentioned are connected with a battery into a telephonic circuit, and the electrical undulations are produced by speaking into the tube K, according to well-known laws. The weight
50 D is determined beforehand, and as it is capable of moving up and down freely it will respond to any vibratory impulses which it may receive from the diaphragm through the conducting mass O.

I claim—

In a telephone-transmitter, a tube or chamber containing a mass of loose conducting particles through which a current passes, and
55 which particles are held together by a movable weight resting on said mass, substantially as described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 11th day of June, 1883.

EMILE BERLINER.

Witnesses:

GEO. WILLIS PIERCE,
J. H. CHEEVER.