No. 872,284. PATENTED NOV. 26, 1907

R. HANSEN.

TRANSMITTER.

APPLICATION FILED DEC. 3, 1902.

Fig. 1.

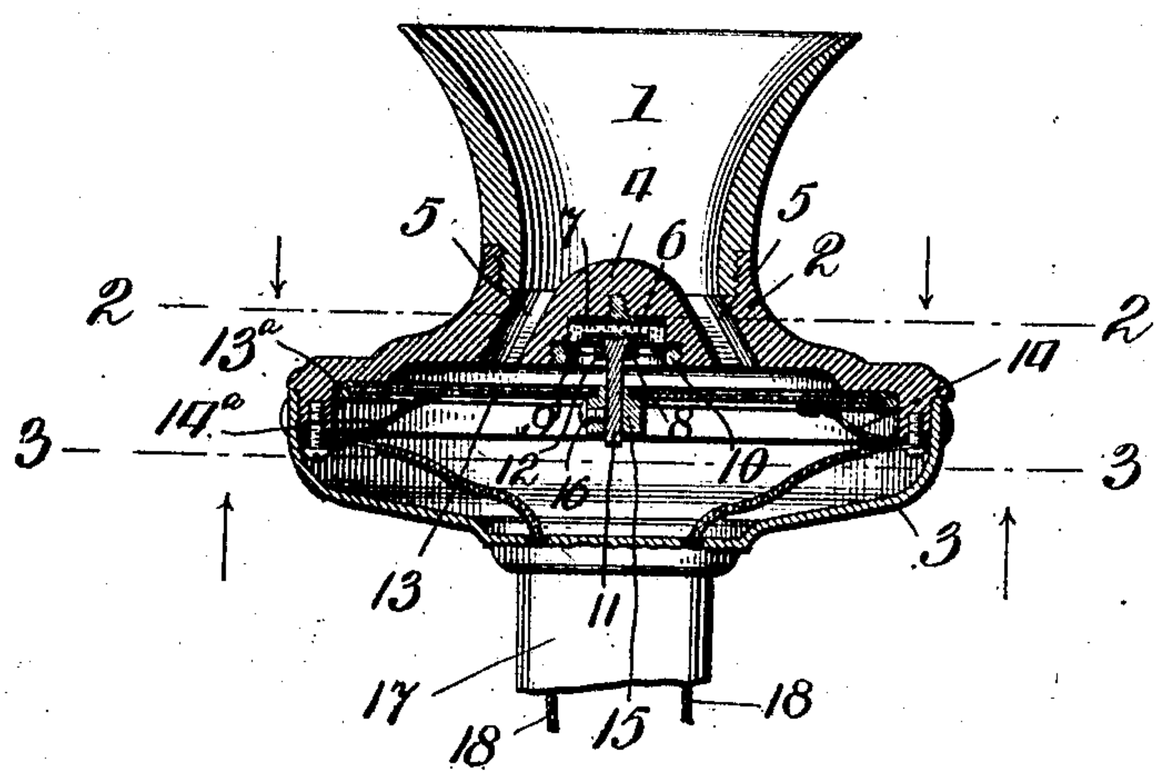


Fig. 2.

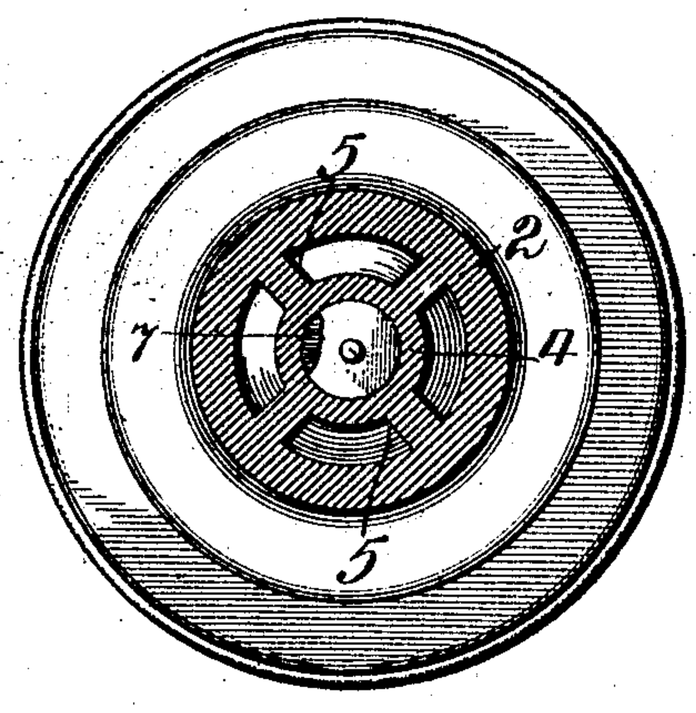
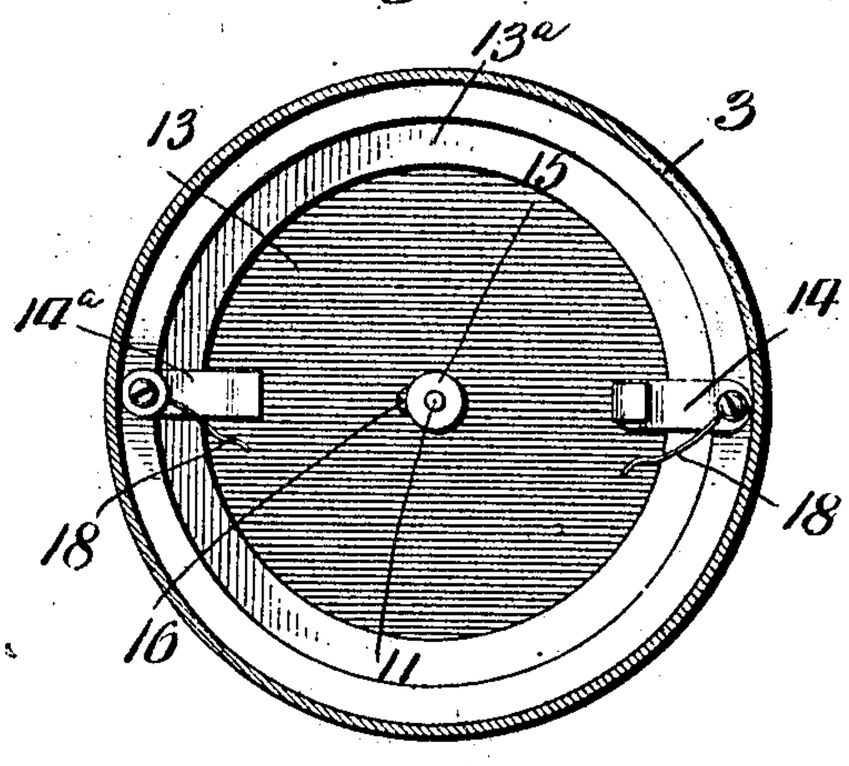


Fig. 3.



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UNITED STATES PATENT OFFICE.

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TRANSMITTER.

No. 872,284. Specification of Letters Patent. Patented Nov. 26, 1907.

Application filed December 3, 1902. Serial No. 133,716.

To all whom it may concern:

Be it known that I, RASMUS HANSEN, a subject of the King of Denmark, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Transmitters, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to telephone transmitters of the microphone variety.

Prominent objects of the invention are to provide a simple, practical and effective transmitter of the above class; to increase the efficiency and effectiveness of the same; and to reduce the expense of manufacture.

In the accompanying drawings, Figure 1 is a longitudinal section of the transmitter embodying my present invention; Fig. 2 is a transverse section of the same on line 2—2 in Fig. 1; and Fig. 3 is a transverse section on line 3—3 in Fig. 1.

The transmitter shown in the drawings for the purpose of carrying out my invention, comprises the usual mouth piece 1, a front piece 2 having a threaded connection with the mouth piece 1, and a back piece or casing 3 secured to the front piece 2. The piece 2 is constructed with a central lug or enlargement 4 conveniently held in place by arms 5. This lug 4 is provided with a small central chamber which is filled with granular carbon 6. A suitable electrode 7 is arranged at the front of the chamber, and another electrode 8 is arranged at the rear of the same. A mica or similar diaphragm 9 is arranged across the mouth of the chamber, being conveniently held in place by a threaded washer or ring 10. The rear electrode 8 is provided with a rearwardly extending pin or spindle 11, and on this is placed a small nut 12 which serves to secure the electrode and mica diaphragm 9 together. A main diaphragm 13 is arranged in the rear of the parts above described, being held to the rear of the base 2 by spring clips or fingers 14, 14ª, and insulated from the piece 2 by suitable insulating rings 13ª. The finger 14ª makes electrical connection with the diaphragm 13 and is insulated from the piece 2; and the finger 14 is insulated from the diaphragm 13 and makes electrical connection with the piece 2. This diaphragm 13 is also secured to the pin or spindle 11, and arrangement is made for permitting relative adjustment between the two, a simple construction being to secure a lug or small block 15 to the diaphragm 13 and provide the same with an adjusting screw 16 adapted to engage the spindle 11. Electrical connection is made by connecting conductors with the fingers 14 and 14ª, the current passing from one of them to the diaphragm 13, thence to the spindle 11, electrode 8, granular carbon 6, electrode 7, piece 2, to the other finger. The rear piece or casing 3 can be provided with any suitable shank or tail piece 17 through which the conductors 18, 18, can be led.

It will be seen that the foregoing transmitter is very simple and cheap in construction, and at the same time it will have a very effective microphone operation.

What I claim as my invention is:—

1. In a telephone transmitter, the combination with the main and supplemental diaphragms, of a pair of electrodes, a chamber containing granular material with which the electrodes coöperate, a connection between the main and supplemental diaphragms, secured to one of the same, a member on the other diaphragm slidingly connected with said connection, and means for locking the same in adjusted position.

2. In a telephone transmitter, the combination with the main and supplemental diaphragms, of a pair of electrodes, a chamber containing granular material with which said electrodes coöperate, a pin secured to the supplemental diaphragm, a lug on the main diaphragm having an aperture through which said pin passes, and a set-screw in said lug for locking said pin in adjusted position.

3. In a telephone transmitter, the combination of a main and a supplemental diaphragm, a chamber formed in the casing of the transmitter and provided with granular material, said chamber being closed by the supplemental diaphragm, two electrodes in said chamber, one secured to one wall thereof and the other secured to said supplemental diaphragm, a connection extending between the supplemental and main diaphragms, a collar on said connection, said collar being connected with the main diaphragm, and an adjusting screw in said collar for permitting adjustment of the same along the connection, substantially as described.

4. In a telephone transmitter, the combi-

nation of a chamber for granular material, carried by the casing, a main diaphragm situated behind said chamber, a supplemental diaphragm carrying an electrode located in said chamber, and a connection between the main and supplemental diaphragms, substantially as described.

5. A transmitter, comprising a mouth piece 1, a front piece 2 provided with an enlargement 4 having a chamber containing granular material, an electrode in the rear of said chamber, a supplemental diaphragm 9 closing said chamber, an electrode 8 attached to said diaphragm 9, a pin 11 extending from said electrode 8, a main diaphragm 13 arranged at the rear of the piece 2, a lug carried by the main diaphragm, and provided with an adjusting screw adapted to engage said pin 11, and a casing 3 attached to the piece 2, substantially as described.

6. In a telephone transmitter, the combination of a suitable casing and mouth-piece therefor, a sound vibrated diaphragm mounted in said casing, an electrode secured to said diaphragm and movable therewith, a support between the diaphragm and mouth-piece, a cup carrying an electrode secured to said support, granular carbon in said cup between the electrodes, said support being adapted to hold the cup and the electrode carried thereby, while permitting the passage of sound waves to the diaphragm to cause the vibration of the latter.

7. A telephone transmitter comprising a mouth-piece, a main diaphragm, a cup containing granular material, located between the mouth-piece and the main diaphragm, electrodes in said cup, and a connection between one of said electrodes and the main diaphragm, said cup being supported to permit sound waves to act upon the diaphragm beyond it.

In witness whereof, I hereunto subscribe my name this 29th day of November, A. D. 1902.

RASMUS HANSEN.

Witnesses:
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I. C. LEE.