

J. R. HOLCOMB.
Acoustic Telephone

No. 205,864.

Patented July 9, 1878.

Fig. 1.

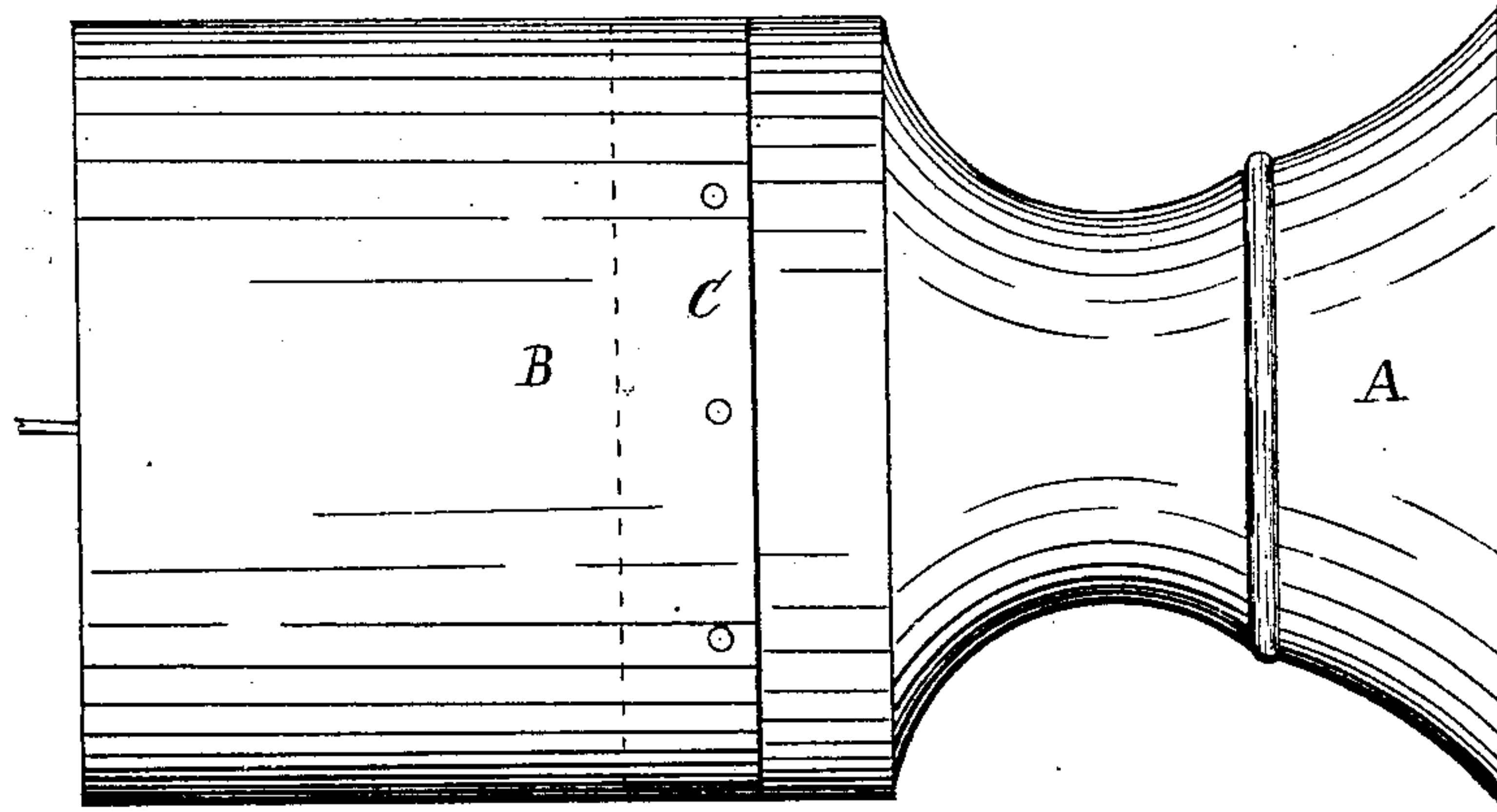


Fig. 2.

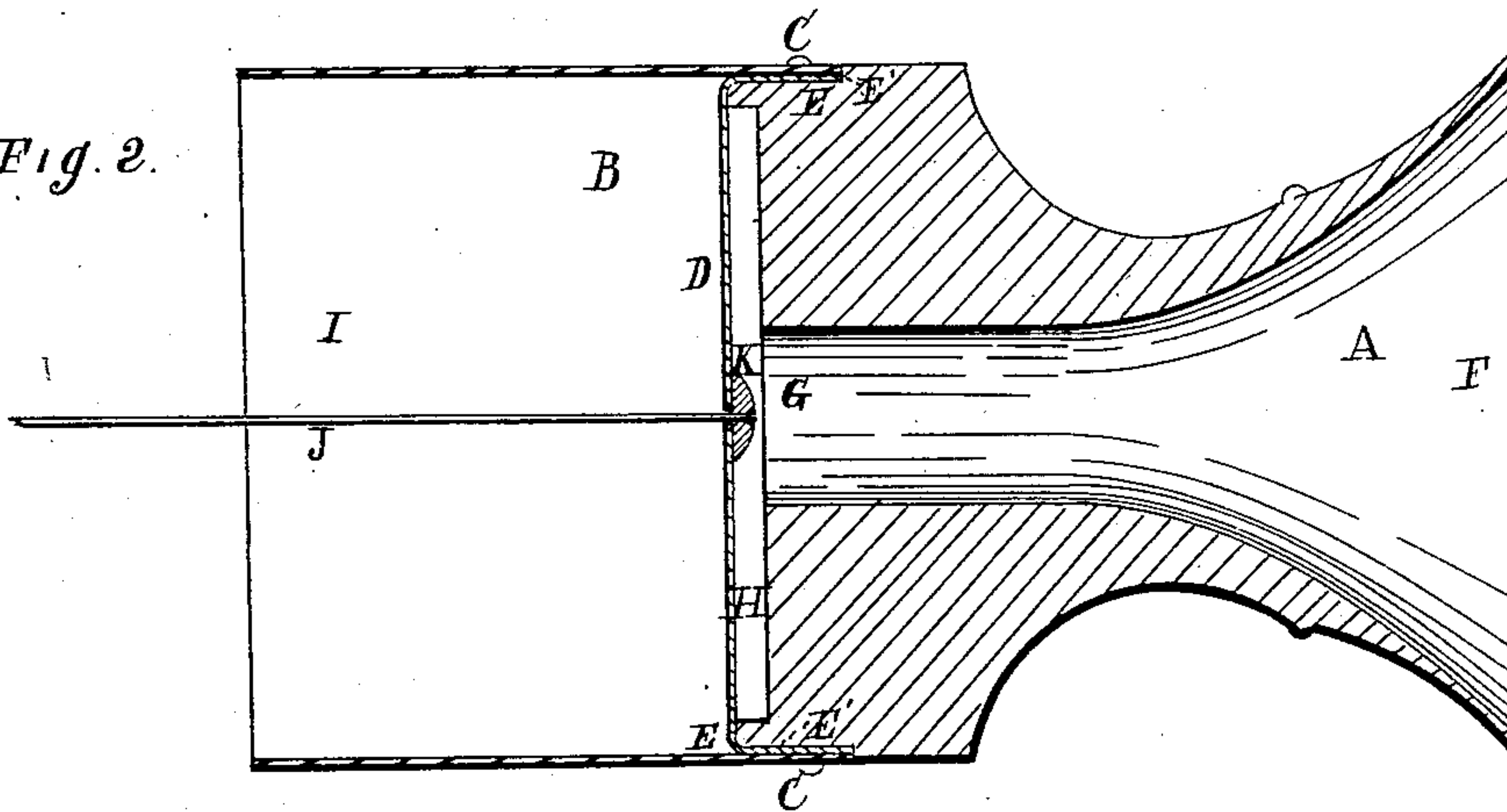
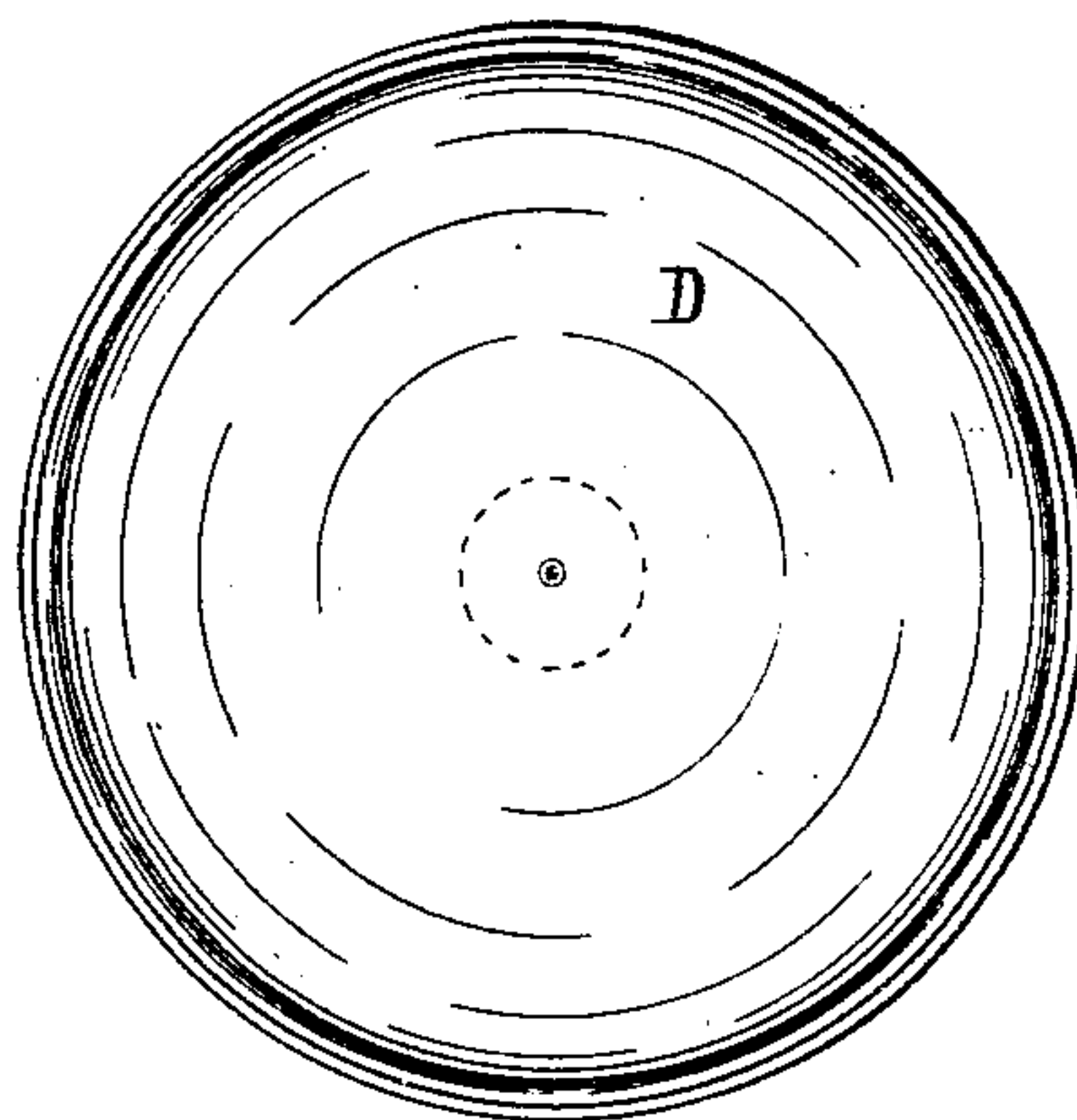


Fig. 3.



Witnesses.

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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN ACOUSTIC TELEPHONES.

Specification forming part of Letters Patent No. **205,864**, dated July 9, 1878; application filed June 19, 1878.

To all whom it may concern:

Be it known that I, JAMES R. HOLCOMB, of York, in the county of Medina and State of Ohio, have invented a certain new and Improved Acoustic Telephone; and I do hereby declare that the following is a full, clear, and complete description thereof, reference being had to the accompanying drawings, making a part of the same.

The nature of this improvement in acoustic telephones relates to the arrangement of a diaphragm within a tube and funnel-shaped mouth-piece, so constructed as to form a recess upon one side of the diaphragm and a chamber upon the other. The improvement also relates to the combination of the tube with the peculiarly-formed mouth-piece, and diaphragm interposed between them, the object of which is to cause the full volume and force of the voice to act directly upon the diaphragm without deflecting; and by means of the mouth-piece the force of the voice is concentrated upon the central part of the diaphragm in contact with the line. Hence there is more energy produced, and the communications are taken over a longer conducting-wire with more distinctness than in the ordinary telephones of this class.

For a more full description, reference will be had to the following specifications and annexed drawings, in which—

Figure 1 is a view of the telephone. Fig. 2 is a transverse vertical section, and Fig. 3 a view of outside end and chamber.

Like letters of reference refer to like parts in the several views.

The mouth-piece A is of wood or other suitable material, to one end of which is fitted the tube B, as seen at C, Figs. 1 and 2, holding the diaphragm D in place, which is first placed on the inner end of the mouth-piece, and then drawn over the side, as seen at E, so that the lapped part E' of the diaphragm is between the tube and mouth-piece, as shown in Fig. 2. By this means the three sections of the instrument are firmly secured together, presenting a neat and finished appearance.

The mouth-piece A is made with an outside

flaring opening at F, and contracts at the inner end G, which is in open relation with the recess and central part of the diaphragm. Between the diaphragm and mouth-piece is a recess, H, and a chamber, I, on the opposite side formed by the tube B. The line J is connected with the diaphragm by means of the button K in the recess opposite the opening G. The diaphragm may be of parchment or its equivalent.

Having described the construction and arrangement of the instrument, I will now set forth the principle of its operation.

In using it, the flaring mouth-piece is applied to the lips, which gives sufficient space for the free utterance of the message to be sent, and is concentrated in its passage through the opening of the mouth-piece and impinged upon the button and central part of the diaphragm, and by means of the recess H deflection is prevented, as all reverberation is confined within the inclosed recess or chamber H. Hence all the force of the voice acts directly upon the central part of the diaphragm, where it is the most sensitive to acoustic influence, and, as there is but little or no reflection in the recess, the volume of sound is expended upon the diaphragm, causing immediate, strong, and distinct vibrations, which are taken over the line with more energy and precision than would be the case if acoustic action is allowed to extend over the entire face of the diaphragm and permitted to be reflected therefrom.

The message over the line is always weak and indistinct in proportion to the acoustic volume lost by reflection from the diaphragm and its insufficient vibration from the force expended upon it; and by means of the chamber I the resonance and vibrations of the diaphragm is to a certain extent protected from atmospheric action and other influences, which cause the volume of sound through the mouth-piece to be clear and distinct in the instrument, and each reverberation is transmitted over a longer line and more distinctly than by the ordinary telephone made with the diaphragm at the end of the tube. The deranging influ-

