

(No Model.)

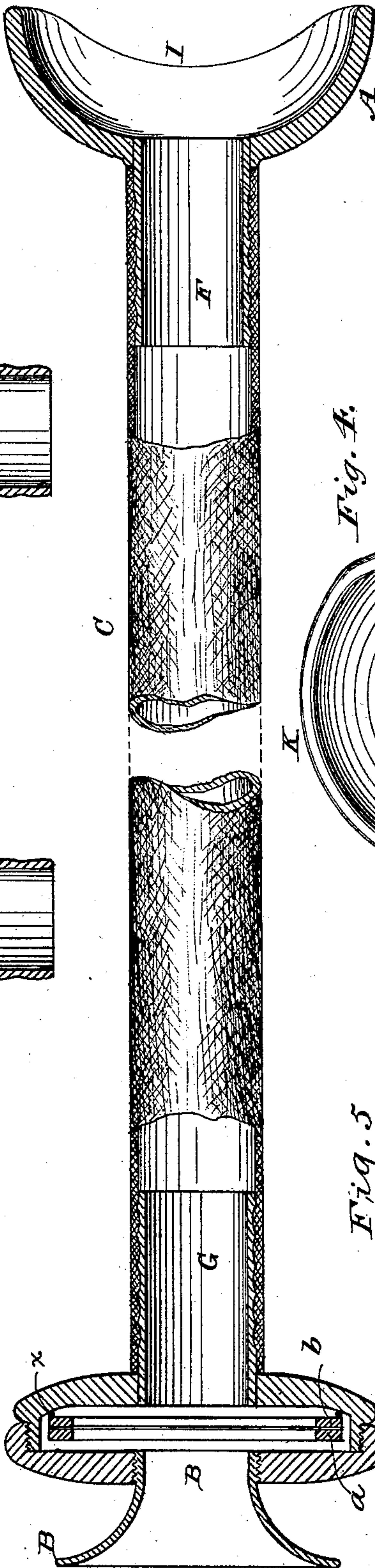
J. A. MALONEY.

AURIPHONE.

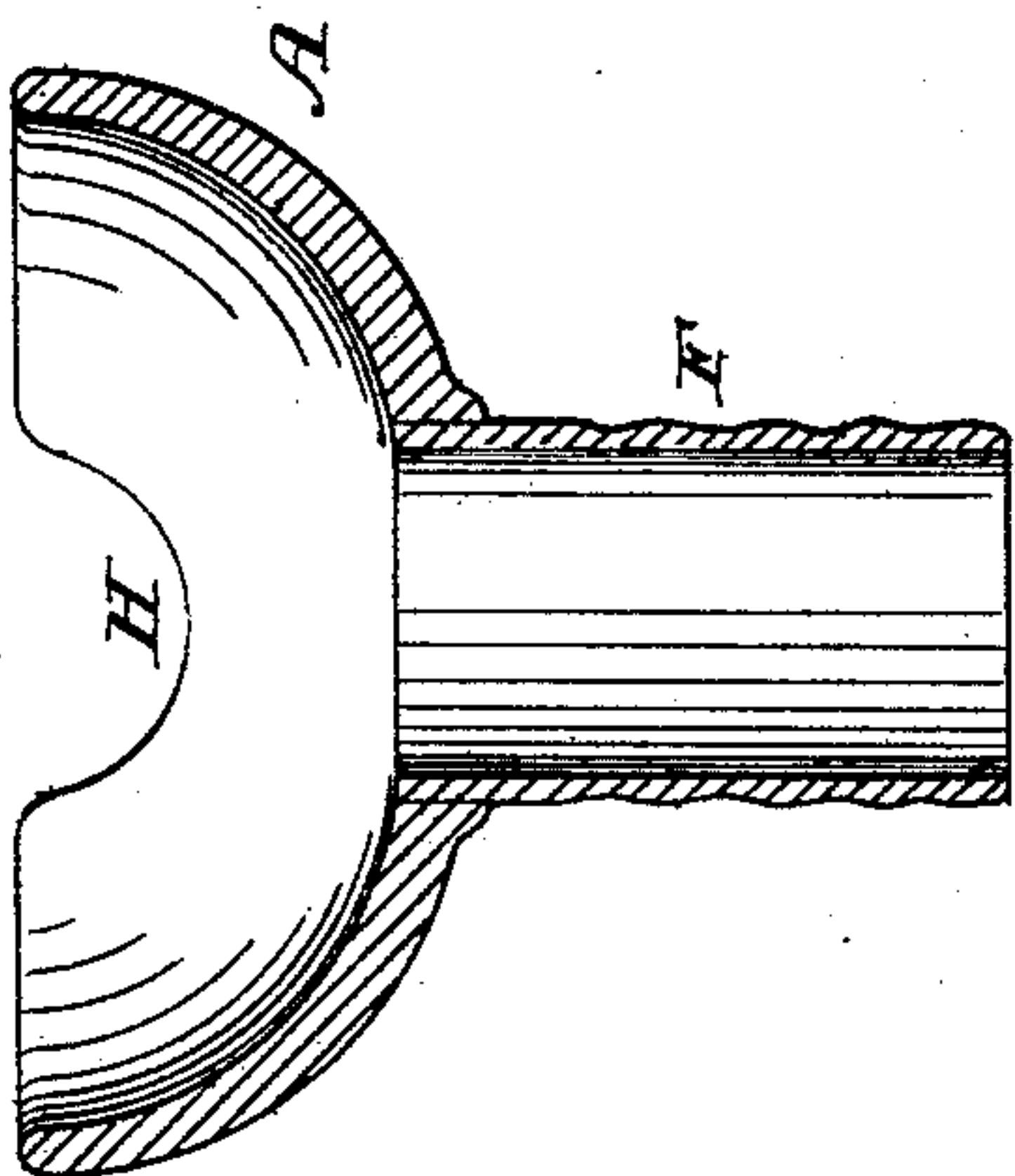
No. 362,100.

Patented May 3, 1887.

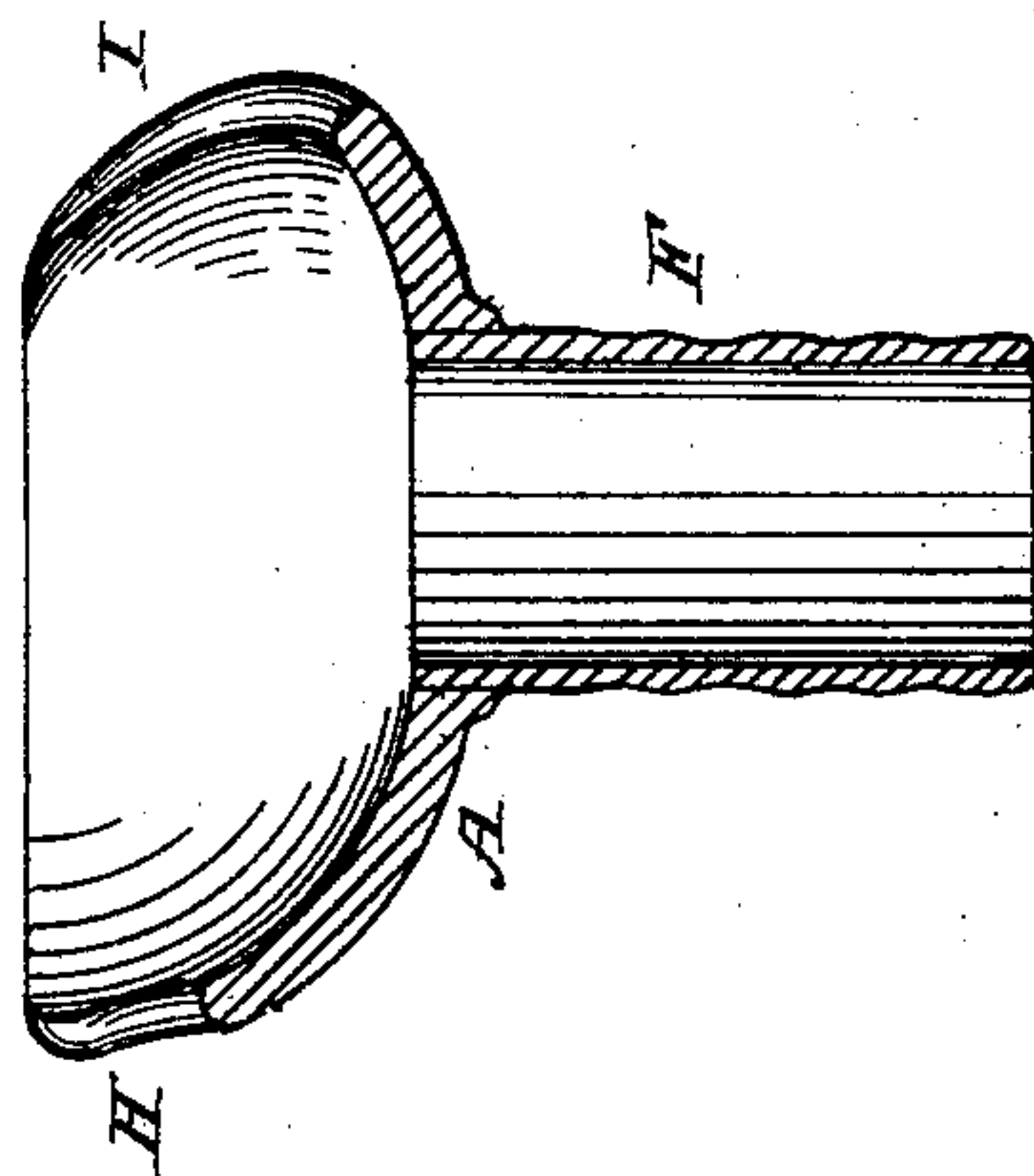
*Fig. 1.*



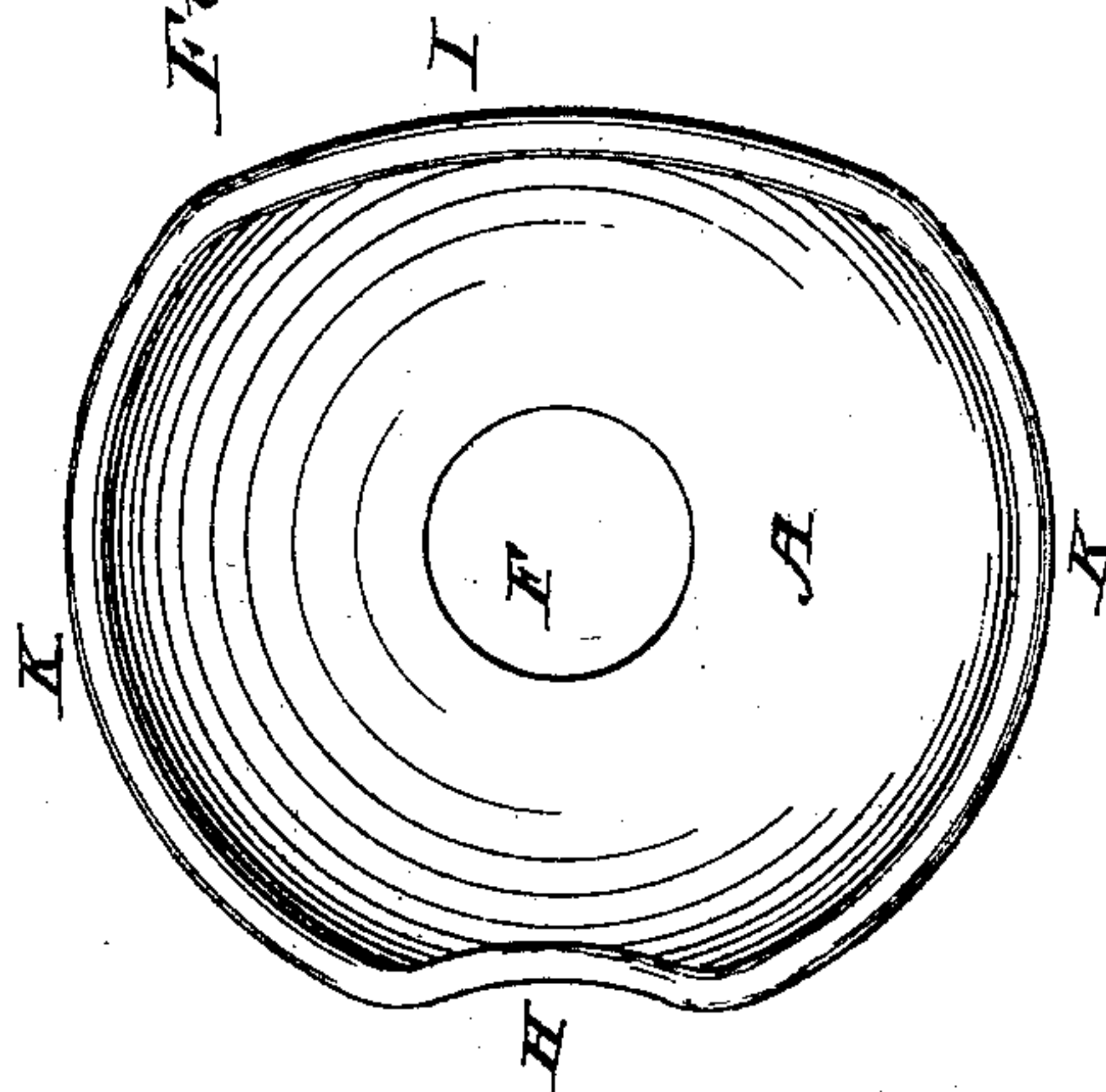
*Fig. 2.*



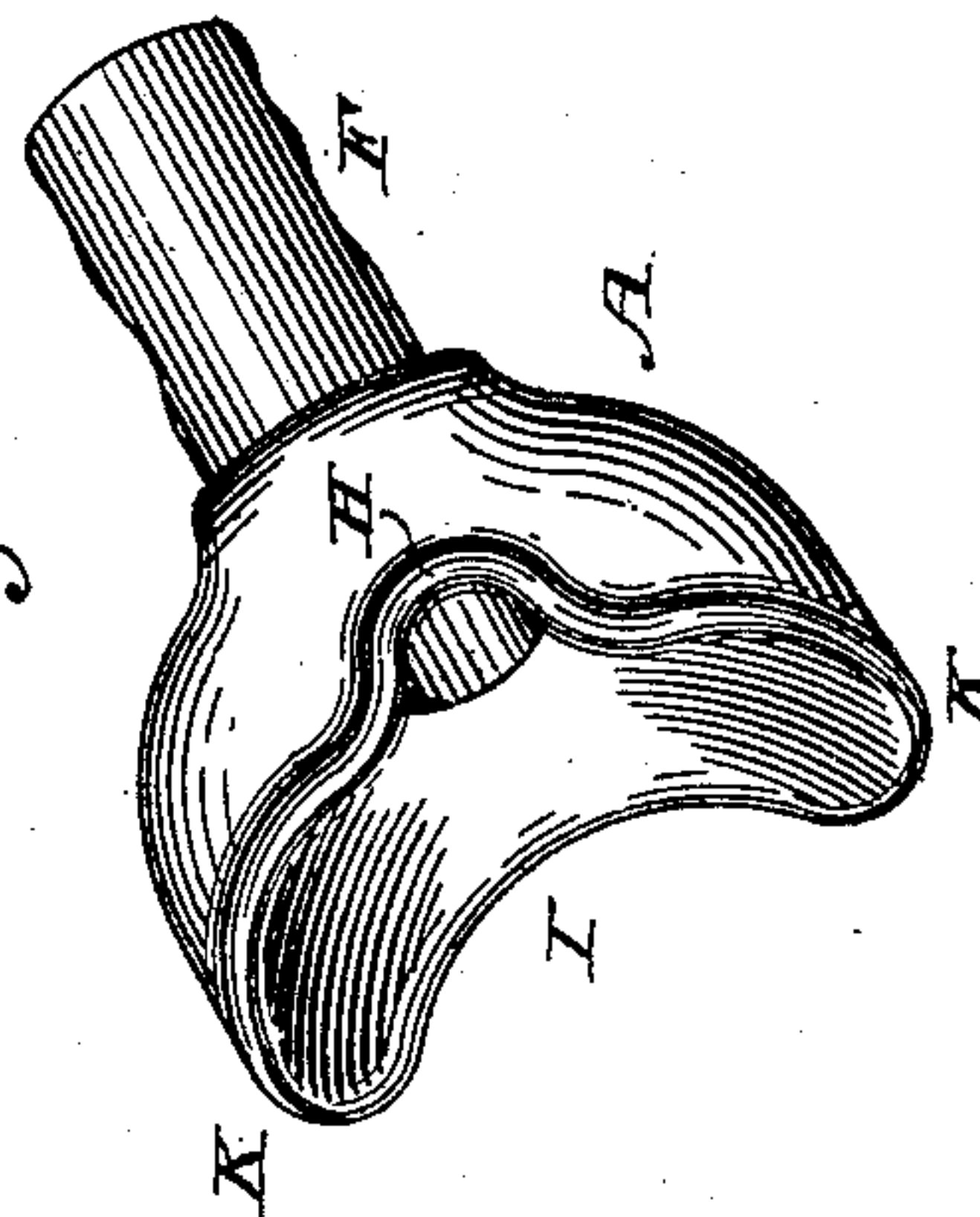
*Fig. 3.*



*Fig. 4.*



*Fig. 5.*



Witnesses  
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# UNITED STATES PATENT OFFICE.

JAMES A. MALONEY, OF WASHINGTON, DISTRICT OF COLUMBIA.

## AURIPHONE.

SPECIFICATION forming part of Letters Patent No. 362,100, dated May 3, 1887.

Application filed December 27, 1886. Serial No. 222,617. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES A. MALONEY, a citizen of the United States, and a resident of the city of Washington, in the District of Columbia, have invented certain new and useful Improvements in Auriphones; and I do hereby declare that the following is a clear and exact description of the invention, which will enable others skilled in the art to make and use the same.

My invention relates to improvements in an instrument designed to assist persons of defective hearing in receiving ordinary conversation or to convey such conversation to other persons over comparatively long distances. Such instruments consists, in the main, of a suitable mouth-piece, an ear-piece, and a membranous or other diaphragm intervening between the two. I have called such instruments "auriphones," and various improvements in the same are shown, described, and claimed by me in other pending applications.

The present invention relates more especially to improvements in the mouth-piece of an auriphone and to the combination of the same with the other essential parts of the instrument.

In the accompanying drawings, which form a part of this specification, I have illustrated, in Figure 1, the completed auriphone partially in section; Figs. 2 and 3, sectional views of the mouth-piece; Fig. 4, a front view of the same, and Fig. 5 a perspective view.

Referring to Fig. 1, B is an ear-piece, of any convenient form, projecting from the case E, in which the diaphragm D, constructed as described in another application, Serial No. 221,761, is mounted.

A is my improved mouth-piece, which is hereinafter more fully described and from which projects rearwardly a tube, F, corrugated upon its outer surface, and to which is applied a tube, C, of suitable length and preferably made of soft rubber. The other end of said tube C is applied to a short tube, G, corrugated upon its outer surface similarly to tube F. The mouth of the speaker is applied at A and the ear of the listener at B, and words spoken in a very low tone of voice are distinctly heard, even if the tube C, which conveys the sound to the diaphragm, be of considerable length. This is due mainly to the

peculiar construction of my improved mouth-piece.

The general form of the mouth-piece is that of a section of a hollow sphere, as is clearly indicated in the drawings; but provision is made to so adapt it to the face of the speaker that none of the sounds uttered by the same will escape from the conveyer-tube C, and that no external or disturbing sounds can enter the same. This purpose is achieved by two curved notches, H and I, cut into the edge of the mouth-piece and on diametrically opposite sides of the same. The notch H is the smaller both in width and in depth. It is delineated to adapt itself to that portion of the face which extends below the septum of the nose and to both sides of the same. The notch I is somewhat deeper and considerably wider than notch H, and is delineated to adapt itself to that portion of the face which extends between the lower lip and the chin. Between these two notches portions K K of the edge of the mouth-piece are circular and concentric with the tube F. These circular portions of the edge adapt themselves well to the face of the speaker, to the right and left of his mouth.

It will thus be seen that when the mouth-piece is used in the manner indicated it will tightly inclose the mouth of the speaker, so that no portion of the sounds uttered by him can escape from the conveyer and that no foreign disturbing sounds can enter the same.

While I have found the semispherical form of mouth-piece to be very effective, I do not mean to limit myself to such form, as the mouth-piece may also be constructed in the general form of a cone or cylinder so long as the edge of the same is shaped to inclose hermetically the mouth of the speaker. By preference, I use for the mouth-piece a material of low resonating power, such as soft rubber; but wood or ebony may also be used.

The diaphragm which I employ is so stretched between two rings, *a* and *b*, that both faces of the same are held under tension, and it is cemented in the case E by the edge *x*, as is clearly described in my application No. 221,761, above referred to, and which I disclaim in this application, except in so far as it is of peculiar advantage in combination with the other parts of my auriphone herein described.

Having now fully described my invention,

what I claim, and desire to secure by Letters Patent, is—

1. A mouth-piece for an auriphone, consisting of a hollow shell having in its edge a small  
5 curved notch delineated to fit the portion of the human face between the septum of the nose and the upper lip and a larger curved notch delineated to fit the face between the lower lip and the chin, substantially as described.
- 10 2. In an auriphone, the combination of a mouth-piece having an edge delineated to conform to the shape of that portion of the human face which immediately surrounds the mouth below the septum of the nose with an ear-piece  
15 and diaphragm and a flexible sound-conveyer

extending between mouth and ear piece, substantially as described.

3. In an auriphone, the combination of a diaphragm stretched between two rings with a mouth-piece which hermetically incloses the  
20 mouth of the speaker and a sound-conveyer tube extending between the two, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two sub-  
25 scribing witnesses.

JAMES A. MALONEY.

Witnesses:

JOHN C. ATHEY,  
O. M. BAIL.