(No Model.) 2 Sheets—Sheet 1.

G. L. LAVERY.

MOUTH PIECE FOR TELEPHONE TRANSMITTERS.

No. 336,329. Patented Feb. 16, 1886.

Fig. 1

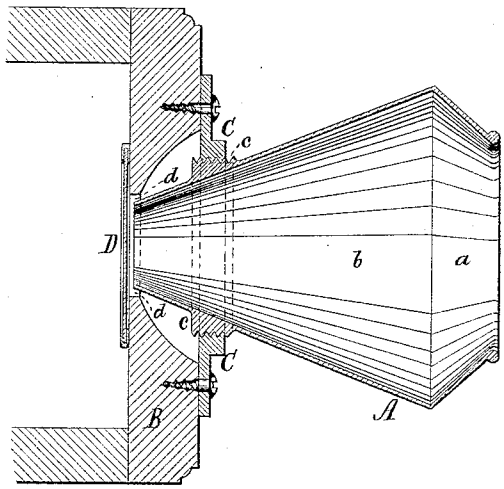
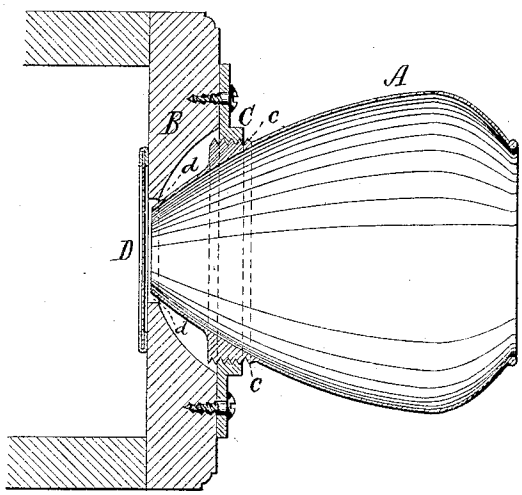


Fig. 2



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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

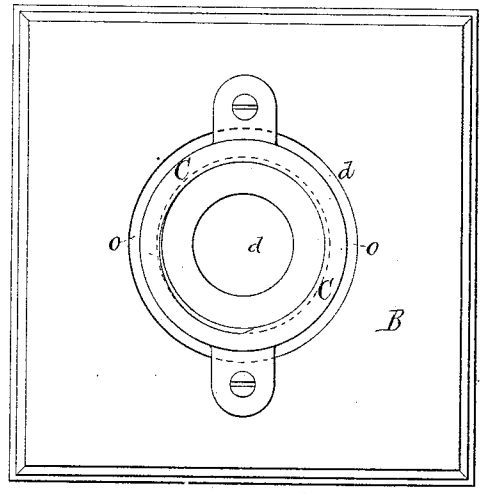
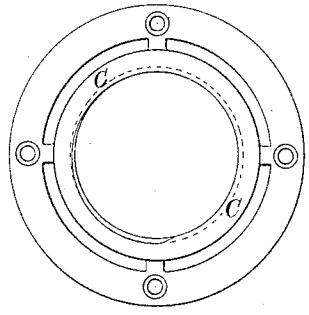


Fig. 4.



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UNITED STATES PATENT OFFICE.

GEORGE LOUIS LAVERY, OF EAST BOSTON, MASSACHUSETTS.

MOUTH-PIECE FOR TELEPHONE-TRANSMITTERS.

SPECIFICATION forming part of Letters Patent No. 336,329, dated February 16, 1886.

Application filed April 6, 1885. Serial No. 142,261. (No model.)

To all whom it may concern:

Be it known that I, GEORGE LOUIS LAVERY, of Boston, in the county of Suffolk, of the Commonwealth of Massachusetts, have invented a new and useful Improvement in Mouth-Pieces of Telephonic Transmitters; and I do hereby declare the same to be described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a transverse section of a mouth-piece of my improved kind and shows its application to a transmitter. Fig. 2 is a section of a mouth-piece of ovoidal form having the characteristics of my invention. Figs. 3 and 4 are hereinafter described.

The mouth-piece, as shown in Fig. 1, consists of two hollow conic frusta united at their larger bases. It is adapted to the transmitter-case so as to screw therein, in order and in a manner to adjust it (the said mouth-piece) nearer to or farther from the diaphragm of the transmitter. In telephoning long distances the mouth-piece has frequently to be nearer the diaphragm to insure the necessary vibration of the latter. With my improvement such mouth-piece can be adjusted with ease and while in use.

Furthermore, my invention is applicable to telephonic receivers as well as to transmitters.

In Fig. 1 of the drawings, A denotes the mouth-piece as composed of the two hollow conic frusta *a* and *b*, united at their larger bases, the outer frustum being the shorter of the two, each frustum being open at its outer end, as shown. The inner frustum has a cylindrical annular projection, *c*, extending from and around it, and screw-threaded on its periphery to engage or screw into an annulus or cap, C, secured to the transmitter-box B, provided with the diaphragm D, and having a flaring mouth, *d*, in front thereof, as shown. The mouth-piece is wholly independent of the case, or, in other words, the opening *d* constitutes no part of the mouth-piece proper, which, made independently of the case B, extends within its opening *d* and screws into the ring or open cap C in front of the said opening and fastened to the case, such having a female screw to receive and co-operate with the male screw of the cylindrical projection *c*. By revolving the mouth-piece one way about its axis it will be made to approach, and by turning it the opposite way it will be caused to recede from, the diaphragm.

I have found a mouth-piece composed of two hollow cones united at their larger bases to be more efficient than one consisting of a single hollow cone. Instead of making the mouth-piece of two cones so united, I sometimes construct it as hollow ovoidal and truncated, as represented in section, Fig. 2. The sound-waves have a better effect on the diaphragm, when, after entering the mouth-piece, as represented, they are allowed to expand and next to contract, and therefore I make the mouth-piece in form to admit of such—that is, I enlarge it in diameter between its two ends and nearer the outer one.

I am aware that in the United States Patent No. 292,881 a mouth-piece is shown as provided with a chamber which in part is hemispherical and in part a conic frustum, the conic frustum portion being made or formed directly within the case of the transmitter. I therefore do not claim any such construction of a mouth-piece, as in my invention the mouth-piece is wholly independent of the case, and, formed as described is adjustable therein with reference to the diaphragm, in a manner to enable it (the mouth-piece) at its lesser end to be made to approach or recede from such diaphragm. The mouth-piece extends into the mouth of the case and screws into a cap covering such mouth, and such cap is open or provided with openings through it. The case-mouth *d* thus surrounds the part of the mouth-piece that is within it, and is open at its front for sound to escape from it, the said mouth. This will be seen by reference to Fig. 3, which is a front view of the mouth *d* and the cap C, such cap being a ring provided with arms or ears radiating from it and fixed to the case by screws going through them into it. The ring has an external diameter less than that of the mouth *d* at its outer end, so as to leave an opening or openings, *o*, between the periphery of the ring and that of the outer end of the mouth. Through such opening or openings the reflected sound of the voice can escape without being driven back or reverberated upon the diaphragm, as will be the case when the mouth is wholly closed, as shown in Fig.

2, it being represented in Fig. 1 as larger in diameter at its outer end than the ring of the cap.

The ring may have instead of ears a continuous flange, having holes through it for the sound to pass, such being as shown in Fig. 4, such flange also having holes through it for the reception of the screws for fastening it to the case of the transmitter.

I claim—

1. The telephonic-transmitter mouth-piece open at its opposite ends, and formed independently of the transmitter-case, and expanded between its ends nearer to the larger or outer than to the lesser or inner thereof.

2. The telephonic mouth-piece open at its opposite ends and formed independently of the transmitter-case, and composed of two hollow conic frusta united at their larger bases.

3. The mouth-piece provided externally with a cylindrical projection extending entirely around it and having its periphery screw-threaded, in combination with and to screw into the annular cap of the case of the transmitter, all being substantially as set forth.

4. The combination, with the telephonic-transmitter case provided with a mouth arranged in front of the diaphragm and open at its outer end to the atmosphere, with a separate mouth-piece, substantially as described, applied to the case by screws, by which such mouth-piece on being revolved may be adjusted nearer to or farther from the diaphragm as circumstances may require.

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Witnesses:

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