

(No Model.)

N. A. TANNER.

AUXILIARY MOUTH PIECE FOR TELEPHONES.

No. 342,477.

Patented May 25, 1886.

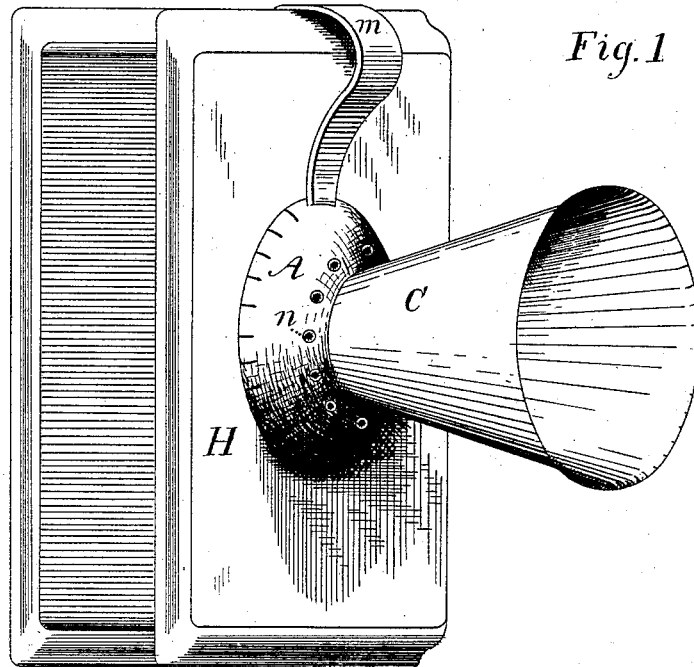


Fig. 1

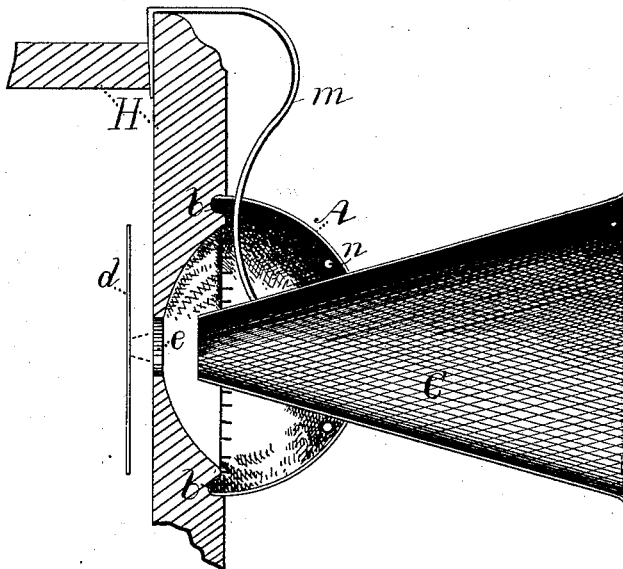


Fig. 2

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## AUXILIARY MOUTH-PIECE FOR TELEPHONES.

SPECIFICATION forming part of Letters Patent No. 342,477, dated May 25, 1886.

Application filed March 19, 1886. Serial No. 195,854. (No model.)

*To all whom it may concern:*

Be it known that I, NORMAN A. TANNER, a resident of the town and county of New Haven, in the State of Connecticut, have invented new and useful Improvements in Auxiliary Mouth-Pieces for Telephones, of which the following is a specification.

The object of my invention is to provide an auxiliary mouth-piece for telephones; and it consists in a novel combination of a sound-chamber and funnel for focusing the sound waves upon the diaphragm of a telephone-transmitter and in a spring-clasp for attaching the device to the case of the transmitter.

In the accompanying drawings, Figure 1 is a perspective view of my improved mouth-piece attached to a telephone-transmitter, and Fig. 2 shows a vertical section centrally through Fig. 1.

Referring to the drawings, A designates a hollow concave shell adapted to fit over the orifice *e* in the front of the transmitter-case H, with its edge received in the annular groove *b*, surrounding the orifice. A hollow frustum or conical funnel, C, is arranged with its small end fitted into and projecting within the concave shell, with its axis at right angles to the transmitter-front, and its sides substantially radial to the center of the telephone-diaphragm *d*, which is therefore nearly at the apex of the cone. The opening at the inner end of the funnel is left sufficiently large to permit free egress of the sound-waves, and the outer end of the same is preferably made slightly bell-mouthed, as shown. The concave shell is formed with a series of perforations or vents, *n*, near its junction with the conical funnel, and in order to conform to slight variations in the size of the annular groove the edge of the shell is slitted, as shown. A spring hook or clamp, *m*, is fastened or soldered at its lower extremity upon the funnel near its smaller end and extends upward through the concave shell near its edge. The spring is bent around at its upper part to hook over the edge of the transmitter-cover with its end inserted downward between the case and cover. The spring clamps the mouth-piece firmly against the cover and holds it securely in place, but permits it to be readily removed from the transmitter when desired. If the device is not held firmly and flatly against the case, a rattling

sound is produced while in use, and the tones of the voice are thereby rendered indistinct.

In the application of this device the conical funnel directs and converges the sound-waves upon the center of the diaphragm and the concave shell serves as a sound-chamber inclosing the orifice of the funnel. The funnel projects into the sound-chamber and extends nearly to the orifice in the transmitter-cover, and the walls of the sound-chamber prevent the divergence of sound-waves from the orifice in the funnel. The perforations *n* in the sound-chamber permit a circulation and equilibrium between the interior of the chamber and the surrounding atmosphere, thus allowing the escape of vapors from the breath, and preventing air-compression within the shell while speaking, and thereby producing such an economy of voice that even a whispered conversation may be carried on. It is important that the funnel shall project within the shell, as shown, for otherwise the sound-waves will not be converged upon the diaphragm with sufficient intensity and effect.

It is evident that the slits in the edge of the concave shell may be omitted when it is formed to accurately fit the annular groove around the orifice in the transmitter-case.

I claim as new and desire to secure by Letters Patent—

1. An auxiliary mouth-piece for telephones, consisting of a concave shell adapted to fit over and around the orifice of the transmitter-case, a conical funnel fitted into and extending into the shell nearly to the orifice in the case, and a spring-clasp secured to the shell and funnel, and bent at its upper end to hook over the transmitter-cover, as and for the purpose specified.

2. In an auxiliary mouth-piece for telephones, the combination of the conical funnel C, the concave shell A, having perforations *n*, and slitted around its edge, and the spring-clasp *m*, secured to the shell and funnel, and bent at its upper end to hook over the transmitter-cover, substantially in the manner described.

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Witnesses:

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