

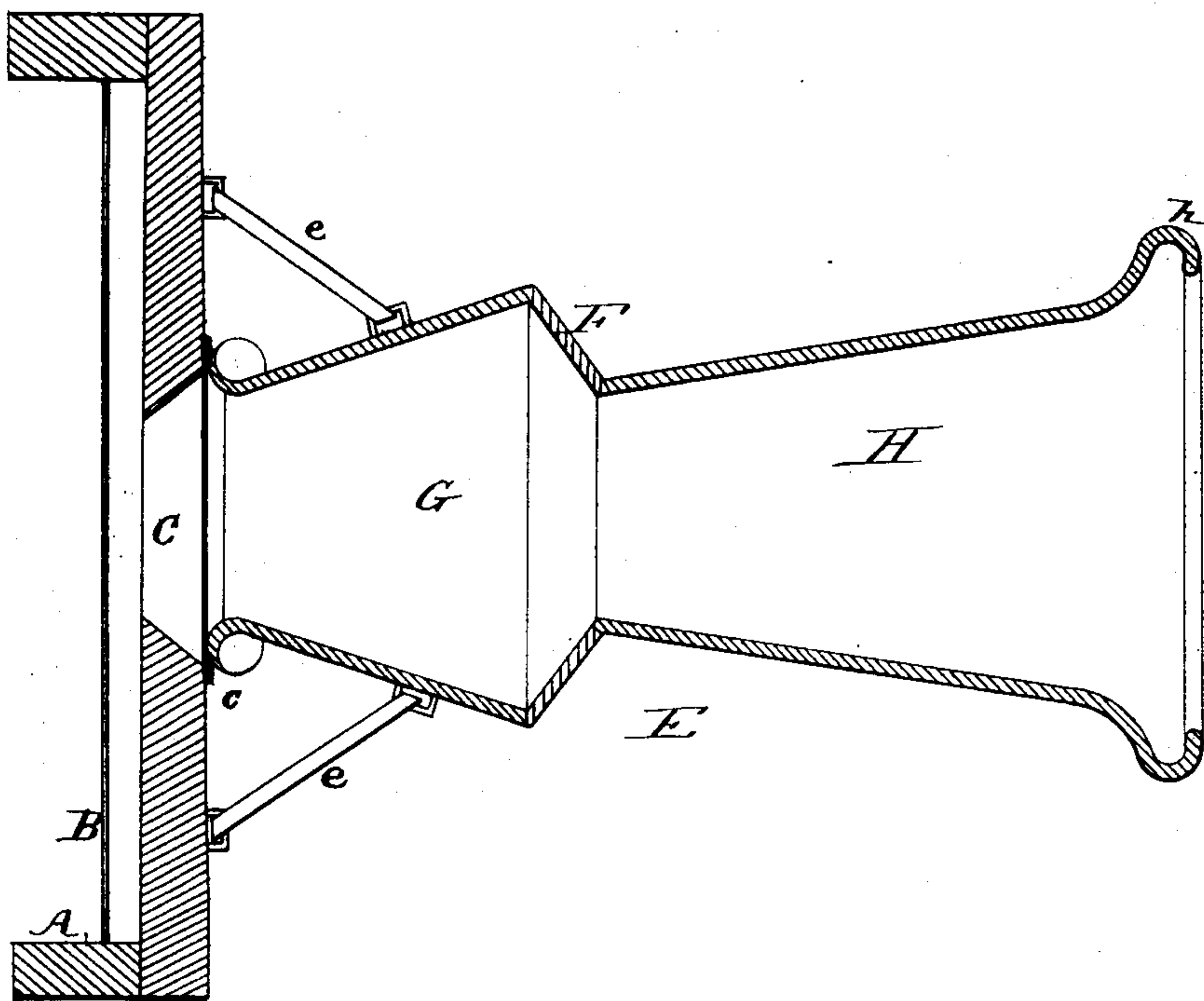
(No Model.)

J. GODFREY.

SOUND CONCENTRATOR FOR TELEPHONIC INSTRUMENTS.

No. 329,732.

Patented Nov. 3, 1885.



WITNESSES:

*W. B. Hayes*  
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# UNITED STATES PATENT OFFICE.

JAMES GODFREY, OF PITTSBURG, PENNSYLVANIA.

## SOUND-CONCENTRATOR FOR TELEPHONIC INSTRUMENTS.

SPECIFICATION forming part of Letters Patent No. 329,732, dated November 3, 1885.

Application filed October 6, 1884. Serial No. 144,852. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES GODFREY, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Sound-Concentrators for Telephonic Instruments; and I do hereby declare the following to be a full, clear, and exact description of the invention, reference being had to the accompanying drawing, which forms a part of this specification, in which the figure shows a longitudinal section of my invention in place upon the box of a telephonic transmitting-instrument.

This invention has relation to trumpet-shaped sound-concentrators for telephonic transmitters; and has for its object the provision of a mouth-piece of a novel character, adapted to be applied to the opening in the transmitter-box and to concentrate the sound upon the diaphragm in a more effectual manner than when the ordinary mouth-piece commonly applied to transmitters is alone used.

This invention has for its further object the provision of means whereby a person using a telephone-transmitter may be enabled to apply the mouth directly to the opening of the transmitter mouth-piece, thereby preventing the conversation from being overheard by bystanders.

The mouth-piece embodying my invention consists of a tubular contrivance made in the form of two cone-frustums united by an annular flange, which serves as a deflector to concentrate the sound-waves which are reflected by the diaphragm of the transmitter and to return them to the center of the diaphragm so that they will impinge upon the center thereof.

My invention further consists in the novel means for attaching the trumpet to the transmitter-box, as hereinafter described and illustrated in the accompanying drawing.

Referring to the accompanying drawing, A designates the box of a telephone-transmitter and B the diaphragm of the said transmitter. C designates the mouth-piece, which is usually applied to or forms part of the box. E designates the trumpet, which forms the subject of my invention. This trumpet, which is composed of any suitable material, as rub-

ber, metal, papier-maché, &c., is composed of two frustums of different lengths united, the narrow end of one to the wide end of the other by means of an annular flange, F, forming a sound-cavity within the confines of the shorter cone G. The larger cone H has at its outer end a bead, *h*, against which the mouth of the operator is applied when the trumpet is in use.

The trumpet constructed as described is applied to the mouth-piece C of the transmitter, a flexible washer, *c*, being inserted between the mouth-piece and the end of the trumpet, and the latter being held in position by means of flexible bands *ee*, which are attached, respectively, to the trumpet and to the transmitter-box or to the wall or surface upon which the transmitter-box is fixed. In practice the sound-waves striking the walls of the longer cone H at different inclinations ultimately impinge upon the diaphragm of the transmitter and upon the walls of the shorter cone. Such of the sound-waves as do not focus directly upon the center of the transmitter-diaphragm are reflected against or toward the annular flange F by the diaphragm and the cone G, and are thrown back and concentrated upon the center of the said diaphragm. In this way all the sounds reach the transmitter-diaphragm and actively affect the same, so that a very low tone of voice need only be used and will effectively vibrate the diaphragm and be transmitted to the receiving-instrument as well or better than when the tone of voice is louder and the trumpet is not employed.

A further advantage of my invention is that conversation may be carried on in public places or in the presence of persons from whom it is desirable to conceal the subject of conversation without the danger of their hearing the same. The mouth of the person using the transmitter being pressed up closely against the trumpet, no sound is allowed to escape, and as all sound-waves are concentrated upon the diaphragm of the transmitter it is possible to transmit speech to a greater distance with the same tone of voice than heretofore.

Having fully described my invention, I claim—

1. The combination, with a telephonic trans-



mitter, of a trumpet composed of two truncated cones united by a deflecting annular flange, said trumpet being attached to the transmitter-box by flexible fastening devices,  
5 substantially as described.

2. A trumpet mouth-piece adapted to be applied to the mouth-piece of a telephonic transmitter, comprising two cone-shaped chambers joined by a dished annular disk, substantially as described.  
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In testimony that I claim the foregoing I have hereunto set my hand, this 1st day of October, 1884.

JAMES GODFREY.

Witnesses:

B. F. BROWN,  
J. E. HIRSCH.