

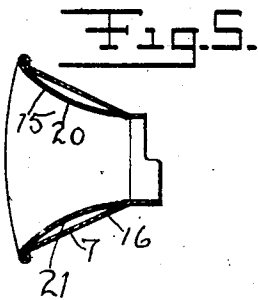
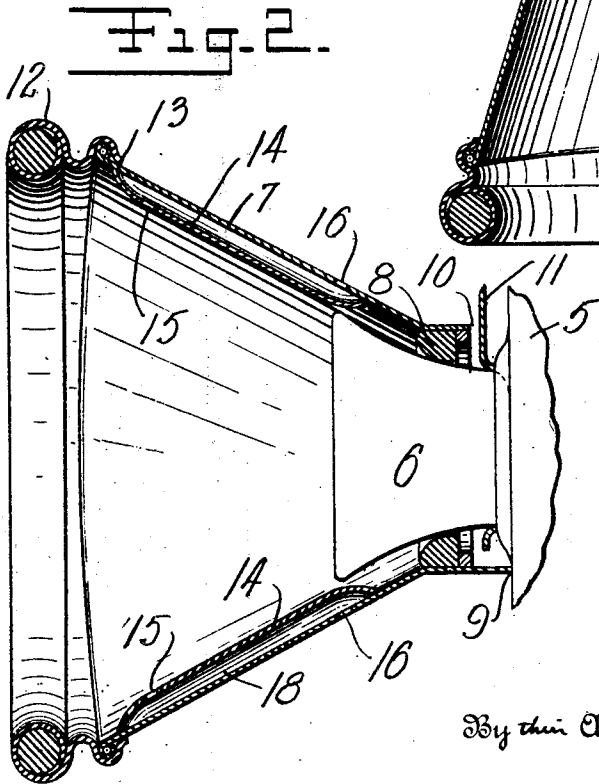
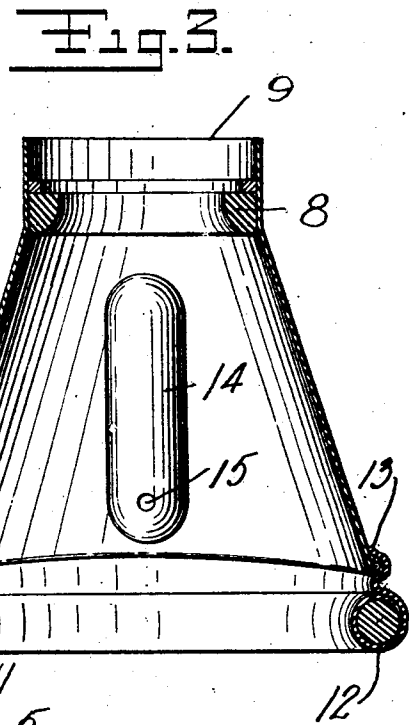
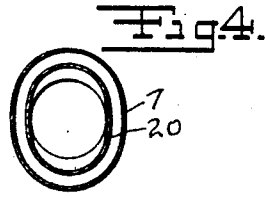
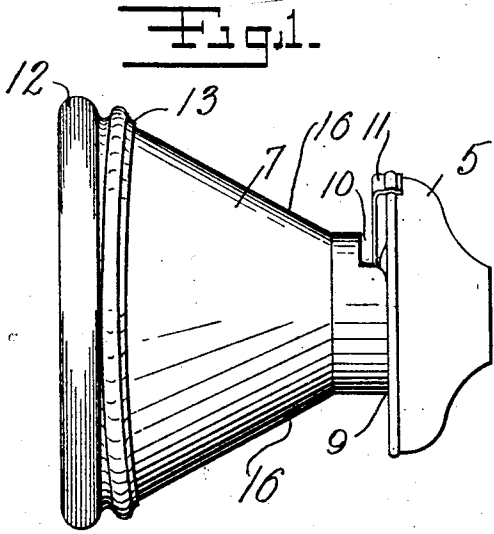
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A. S. CARMAN ET AL

SILENCER ATTACHMENT FOR TELEPHONES

Filed April 19, 1923



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UNITED STATES PATENT OFFICE.

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SILENCER ATTACHMENT FOR TELEPHONES.

Application filed April 19, 1923. Serial No. 633,073.

To all whom it may concern:

Be it known that we, ALBERT S. CARMAN and JOSEPH A. PERIN, Jr., citizens of the United States, and residents, respectively, of New York, in the county of New York and State of New York, and of East Orange, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Silencer Attachments for Telephones, of which the following is a specification.

This invention relates to devices for rendering telephone conversations inaudible except by way of receiving devices forming part of the telephone equipment.

The invention includes an attachment for telephone transmitters which has a relatively small and compact formation but nevertheless having a mouthpiece sufficiently large to receive a considerable area surrounding the lips of the user. By providing a mouthpiece opening sufficiently large to allow full play of the lips and also to include a portion of the nose of the user, a facility of speech that preserves the natural tones of the voice and substantially increases the clearness and audibility of the transmitted sounds over the rendition obtained in the ordinary use of the standard type of transmitter, is obtained. The device is equipped with a cushioned, sound-proof mouthpiece edge and has a converging formation toward the transmitter opening to aid in the transmission of sound waves to the diaphragm.

A feature of the invention resides in the provision of passages through which air can flow into and out of the confined space within the device but which are so formed as to effectually prevent the corresponding passage of sound waves so that in use there can be no formation of pressure or vacuum conditions within the device which would interfere with or prevent speech while, at the same time, the transmission of sound waves to the exterior of the device to render the transmitted speech audible to an unwarranted listener is wholly overcome.

Other features of the invention will be hereinafter referred to.

In the drawings, in which a preferred form of the invention has been selected for illustration,

Figure 1 is a view in side elevation of a

device embodying a preferred form of the invention.

Figure 2 is a vertical section of the device shown in Figure 1 on an enlarged scale.

Figure 3 is a horizontal section of the device shown in Figure 2.

Figures 4 and 5 are views in transverse and longitudinal section respectively of a modified form of the invention.

Referring to the drawings for a more detailed description of the invention, a standard type of telephone transmitter is shown at 5 from which projects the usual mouthpiece 6. The present invention includes a generally conical or funnel-shaped member 7 formed of sheet metal or of other material such as vulcanite or similar material, and whose smaller end is provided with a resilient washer 8 adapted to enclose the mouthpiece 6 of the telephone transmitter and to form therewith a sound proof sealing engagement. In order to mount the protective device 7 in position on the telephone mouthpiece 6 the mouthpiece is removed as will be clear and reinserted in its seat through the aperture provided in the small end of the conical member 7. The converging end of the member 7 directly engages the forward face of the transmitter 5 as at 9 at the lower side of the mouthpiece 6 and at the upper side is cut away as at 10 to provide for the reception of the framework 11 of the indicator holder mounted on the usual transmitter.

The forward and larger end of the protective member 7 is provided with a resilient cushioning member 12 which may be formed of soft rubber and which has a skirt or flange extension as at 13 which securely engages the outer surface of the device to provide sealing contact therewith. The open larger end of the device 7 has a vertically elongated formation in the general form of an ellipse and this particular formation particularly adapts the edge cushion member 12 of the device to be pressed into engagement with the face of the user and to include not only the considerable area about the lips of the user but also a portion of the nose including the nostrils. By this arrangement the operation of talking into the transmitter is very greatly facilitated and the production of natural tones is not interfered with.

In order to prevent the interfering effect of vacuum or pressure conditions on the vibratory diaphragm mounted in the transmitter 5 provision is made for permitting the flow or passage of air into and out of the device 7 and at the same time to prevent the passage of sound waves to the exterior of the device. This is brought about through the use of partition members 14 mounted in the upper and in the lower inside portions of the device 7 as is clearly indicated in Figure 2 of the drawings. These partition members 14 are provided with ports 15 at their outer ends and corresponding ports 16 are formed in the wall of the device of the conical member 7 near the smaller end thereof. This structure, as will be seen, provides what is in effect a channel comprising a chamber 18 formed by the members 14 and the ports 15 and 16 at the opposite ends thereof. This channel because of its general position serves as a trap or lock which effectively prevents the emanation of sound waves through the walls of the device 7 while at the same time permitting the inward and outward flow of air through the chamber 18 and the ports 15 and 16 in accordance with pressure changes that have a tendency to be produced in the operation of speaking into the transmitter mouthpiece 6.

It will be seen that in the use of the device the sound waves are projected directly into the mouthpiece 6 and this action is facilitated by the converging construction of the device 7. In addition the point of emanation of the sound waves from the speaker's lips is beyond the ports 15 leading into the chamber 18 so that sound waves do not directly enter these ports and this arrangement enhances the effectiveness of the trap comprised by the members 14 in preventing the passage of sound waves to the exterior of the device. It will be clear that the device operates equally as well in preventing the entering of extraneous noises into the device during the operation of speaking into the transmitter 6.

A feature of the invention is the ease of interchangeability of the cushioning members 12. It will be seen that they can be readily slipped from their place in engagement with the rim of the conical member 7 for cleansing or for interchange with a fresh cushioning member. For this purpose the

cushioning members may be formed of soft rubber with the cushioning part properly formed of sponge rubber or in a hollow formation for inflation if desired.

In Figures 4 and 5 of the drawing there is shown an embodiment of the invention in which the conical member 7 is provided with an annular interior band or wall 20 completely following the interior of the cone 7 and which forms a double wall therewith to provide an annular sound-proof chamber 21. This form of the invention provides an increased degree of sound insulation while facilitating the passage of air through the chamber by way of the staggered or offset ports 15 and 16.

What we claim is:

1. In a device for insuring the privacy of telephone conversations, a mouthpiece of converging formation having the smaller end adapted to be mounted in cooperative relation to the opening of a standard telephone transmitter, the edge of the larger end of the mouthpiece being provided with a removable resilient contact member adapted to be pressed into sealing engagement with a considerable area of the face of the user including the lips and a portion of the nose, and said mouthpiece being provided on its inner surface with a channel formed to permit the flow of air into and out of the mouthpiece and to prevent the transmission of sound waves therethrough.

2. In a device for insuring the privacy of telephone conversations, a mouthpiece of converging formation having the smaller end adapted to be mounted in cooperative relation to the opening of a standard telephone transmitter, the edge of the larger end of the mouthpiece being provided with an interchangeable cushioning member adapted to be pressed into sealing engagement with a considerable area of the face of the user including the lips and nostrils, and the upper and the lower walls of the mouthpiece being provided with inwardly directed channels connecting with the exterior of the device near one extremity and with the interior of the device at the other end formed to trap sound waves and prevent their escape from the device but to permit the flow of air into and out of the mouthpiece.

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