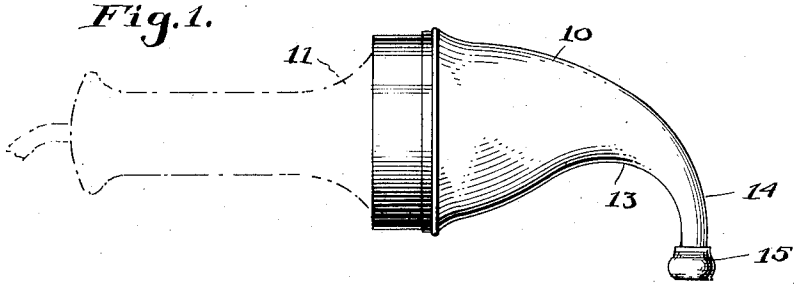
C. E. KRUEGER.

ATTACHMENT TO TELEPHONES.

APPLICATION FILED MAR. 23, 1918.

1,339,518. Patented May 11, 1920.

Fig. 1.



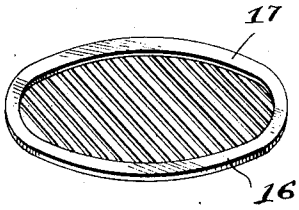


Fig. 3.

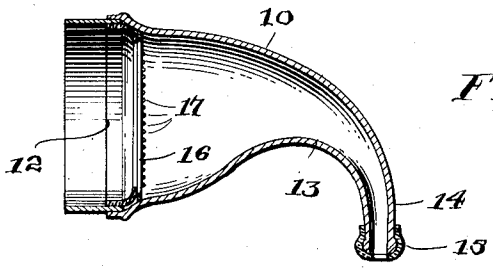


Fig. 2.

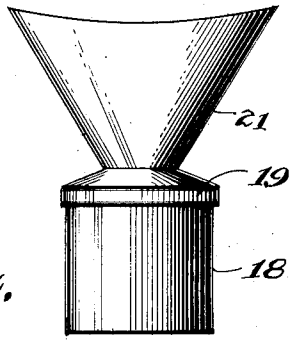


Fig. 4.

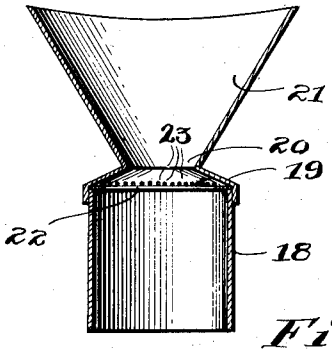


Fig. 5.

Witnesses

Inventor

Carl E. Krueger

By Chandler & Chandler

Attorneys

UNITED STATES PATENT OFFICE.

CARL E. KRUEGER, OF GLENWOOD SPRINGS, COLORADO.

ATTACHMENT TO TELEPHONES.

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To all whom it may concern:

Be it known that I, CARL E. KRUEGER, a citizen of the United States, residing at Glenwood Springs, in the county of Garfield, State of Colorado, have invented certain new and useful Improvements in Attachments to Telephones; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention is an improvement in telephones and has particular reference to a sound amplifying attachment for telephone receivers and transmitters.

An object of the invention is to provide attachments to which an ordinary receiver and transmitter may be connected and which will so clarify or intensify the sound of the human voice, and concentrate the same as to enable persons usually having difficulty in hearing to clearly understand conversations over telephone lines.

Another object is to provide an attachment of the character specified which is simple in construction, easy to manufacture and effective in carrying out the purpose for which it is designed.

The inventive idea involved is capable of receiving a variety of mechanical expressions one of which, for the purpose of illustrating the invention, is shown in the accompanying drawings wherein:—

Figure 1 is a side elevation of the receiver attachment the receiver being shown in dotted lines.

Fig. 2 is a longitudinal section through the attachment.

Fig. 3 is a perspective view of the amplifying or intensifying diaphragm.

Fig. 4 is a side elevation of an attachment for the transmitter of a telephone.

Fig. 5 is a longitudinal section therethrough.

Referring to the drawing and more particularly to Figs. 1 to 3 there is shown therein an attachment for the receiver of a telephone the body portion 10 of which is preferably of a funnel-like formation having its larger end sufficiently large to receive therein the end of the receiver 11 which is usually placed to the ear when listening over a telephone line. Recessed within the body portion and insertible through the outer end thereof is a retaining ring 12 made of any suitable material such as rubber and having its inner edge shaped to conform substantially to the body 10, said ring being adapted to be engaged by the end of the receiver 11 mounted within said body whereby to aid in retaining the attachment in position on said receiver. From the reduced end of the body 10 the same is extended to provide a tapering tube 13, the free end 14 of which is bent laterally or curved and provided upon its extremity with an ear piece 15 which is adapted to be placed to the ear when listening.

In order that the sounds being transmitted through the receiver and the attachment may be amplified or intensified, a diaphragm is preferably mounted within the body 10 adjacent the reduced end thereof. This diaphragm consists of a ring 16 made of any suitable material such as metal, and a plurality of vibratory wires 17 arranged in spaced parallel relation across the opening of the ring and secured at their meeting ends thereto.

From the foregoing description it will be apparent the attachment provides a trumpet-like device to which the receiver of a telephone may be connected and which, applied to the ear, will intensify or amplify the sounds passing through the same in such a manner that persons ordinarily having difficulty in hearing will be enabled to clearly understand conversations over the line.

The invention also contemplates the provision of an amplifying attachment to be applied to the transmitter of a telephone, as shown in Figs. 4 and 5, and in this instance the attachment comprises a cylindrical body 18 open at one end so that the same may be mounted over the transmitter of the telephone and partially closed at its other end by a flange 19 having a reduced or restricted central opening 20 to which is connected the inner or reduced end of a bell-like extension or mouth piece 21. Preferably seated against the flange 19 and disposed within the body 18 is a diaphragm consisting of the ring member 22 which also has the ends of a plurality of vibratory wires 23 secured thereto, said wires being disposed in spaced parallel relation and arranged across the opening of said ring member so that the sound waves entering the mouth piece 21 will be intensified by the diaphragm after which the same will pass into the body 18

and from thence to the ordinary transmitter where the same are again amplified as usual.

What is claimed is:—

1. An attachment of the class described comprising a tubular body portion adapted at one end to fit over a telephone sound transmitting element, and a diaphragm disposed within said body portion and including a ring, and a plurality of vibratory wires having their ends secured to said ring member and extending across the opening thereof in spaced parallel relation.

2. An attachment of the class described comprising a tubular body reduced at one end and having its other end adapted to fit over a telephone sound transmitting element, an extension beyond said reduced end, and a sound intensifying diaphragm across the interior of the body next its reduced end.

3. An attachment of the class described comprising a body portion of funnel-like formation having its large end adapted to receive one end of a sound transmitting element of a telephone receiver, a sound conveying tube disposed at the small end of said body portion and tapered longitudinally, and a sound amplifying diaphragm disposed within said body portion adjacent the small end thereof.

4. An attachment of the class described comprising a body portion of funnel-like formation having one end adapted to receive one end of a telephone receiver, a sound conveying tube disposed at the other end of said body portion and tapered longitudinally, and a sound amplifying diaphragm disposed within said body and including a ring, and a plurality of vibratory wires having their ends secured to said ring and extending across the opening thereof in spaced relation.

In testimony whereof, I affix my signature, in the presence of two witnesses.

CARL E. KRUEGER.

Witnesses:
J. H. Bear,
S. Hymes.