

April 20, 1926.

1,581,700

P. V. SUMMER

EAR SUPPORTED TELEPHONE RECEIVER

Filed May 29, 1923

FIG 1

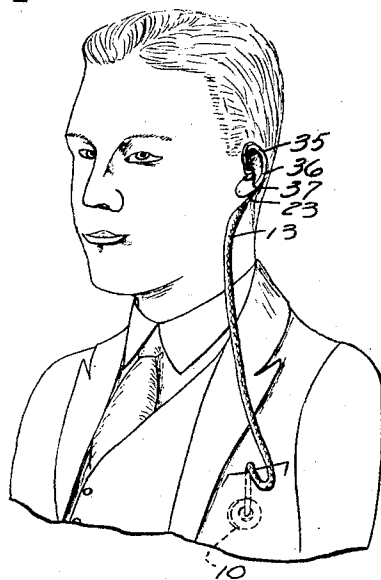


FIG 2

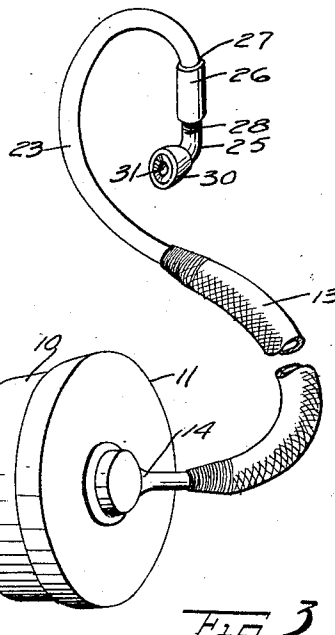


FIG 4

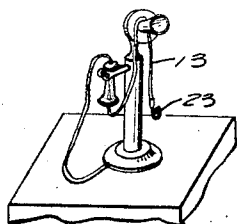


FIG 3

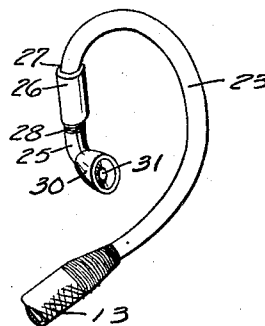


FIG 5

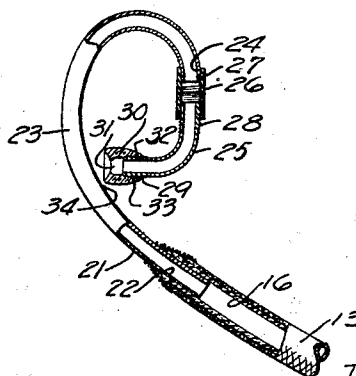
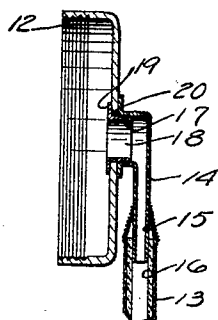


FIG 6



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UNITED STATES PATENT OFFICE.

PHILIP V. SUMMER, OF LONDON, ENGLAND.

EAR-SUPPORTED TELEPHONE RECEIVER.

Application filed May 29, 1923. Serial No. 642,204.

To all whom it may concern:

Be it known that I, PHILIP VICTOR SUMMER, a subject of the King of Great Britain, and a resident of 18 Hanover St., Regent St., London W 1, England, have invented certain new and useful Improvements in Ear-Supported Telephone Receivers, of which the following is a specification.

My invention relates to an ear supported telephone receiver and is adapted for use with telephones and sound producing apparatus of various sorts.

One of the more important uses of devices in accordance with the present invention is in connection with telephone receivers carried by persons who are partially deaf or hard of hearing, doing away with the necessity of holding the receiver to the ear either by hand or by means of head bands or equivalent devices, and making it possible to carry the telephone receiver in the pocket.

The device of the present invention may also be made use of in various other ways, as, for example, in connection with wireless or "radio" telephones, with the ordinary desk or wall telephone receiver, on phonograph machines, transcribing machines, and generally whenever it is desired to carry sound waves from a vibrating member, such as a diaphragm, to the ear.

According to the present invention a sound tube is provided which toward its eduction end is of substantially loop form whereby it is adapted to be passed over and supported by the helix portion or upper portion of the external ear, with the eduction end of the tube in communication with the auditory meatus part of the ear.

My invention also includes the provision of means for securing adjustment between the supporting part of the device and the eduction portion thereof, which adjusting means preferably takes the form of a screw threaded tubular connection. Such screw threaded tubular connection, in addition to permitting adjustment between the mouth or eduction portion of the tube and the loop supporting portion thereof, so as to adapt it for use by persons having ears of various shapes and sizes, also is of convenience in assembling the parts of the device, and furthermore, by means of the relatively rotatable, preferably screw threaded connection between these portions of the device it is readily possible to turn the eduction portion or mouth end of the tube with respect to the

looped or supporting portion thereof, so as to adapt the tube at will for use on the right or left ear of the user.

Another feature of the invention consists in the provision of means of connection to the telephone receiver, which is efficient, simple and compact, and not readily gotten out of order, and is adapted not to interfere with the vibrating diaphragm or other vibratory device of the sound propagating apparatus, such as a telephone receiver, for example.

Further objects and advantages of the invention will appear from the following description of certain embodiments of the invention which have been illustrated in the accompanying drawings. Same are only for illustration and for affording an understanding of the invention and are not for limitation thereof.

In said drawings, Fig. 1 is a perspective view showing a telephone receiving tube in accordance with the present invention connected with a telephone receiver for use by partially deaf persons and carried in the pocket of the user. Fig. 2 is a perspective view on an enlarged scale of the apparatus shown in Fig. 1. Fig. 3 is a view similar to a portion of Fig. 2, and showing the eduction portion turned into position adapted for use on the right ear, as distinguished from the position of Figs. 1 and 2, adapted for the left ear. Fig. 4 is a perspective view showing a tube in accordance with the present invention connected to the receiver of a desk telephone. Fig. 5 is a sectional view showing the preferred manner of connecting the loop and eduction parts of the device together, and Fig. 6 is a sectional view showing a preferred mode of connecting the tube to the cover portion of a telephone receiver.

Reference numeral 10 designates a telephone receiver for the deaf, and 11 designates the cover portion of the telephone receiver, which may be secured in place as by means of the usual screw threads 12. The flexible tube 13 of rubber or similar material, preferably silk covered, has secured thereto at the inlet end thereof the tube 14 of rigid material, preferably metal, the bore 15 of which is in communication with the bore 16 of the flexible tube portion 13. Said rigid tube portion 14 is preferably of elbow form and is provided with an internally screw threaded mouth 17 adapted to receive the internally screw threaded thimble 18 having flange 19. These parts may be readily se-

cured together by inserting the thimble 18 through the opening 20 in the telephone receiver cover 18, and screwing the parts together. If it is desired at any time to use the telephone receiver direct, as by holding it to the ear or by attaching it to a headband or similar device, the ear tube may be readily disconnected by unscrewing parts 17 and 18 from one another and removing same from the cover plate 12.

At the opposite end of the flexible tube 13 there is provided a second tube member 21 also of rigid material, preferably of metal, the bore 22 whereof is in communication with the bore 16 of flexible tube 13. Such tubular member 21 is preferably bent into the form of a loop, as indicated at 23 and the depending portion 24 thereof is in screw threaded connection with a tubular member 25, which is preferably of generally elbow form. In the form shown an internally threaded sleeve 26 is secured at 27 as by brazing, soldering or the like, to the tube portion 24, and the elbow member 25 is screw threaded in the screw threaded portion 28 of sleeve 26.

The eduction end 29 of elbow 25 is provided with a hollow tip-piece 30 which is preferably of rounded exterior form and is adapted to be inserted in the mouth of the auditory meatus of the ear without causing injury thereto. Such tip member 30 may be conveniently of smooth polished material, such as hard rubber or the like, and the bore 31 thereof is provided with a screw thread 32, whereby same may be screwed on the screw threaded part 33 of the eduction portion 29 of elbow 25. Such screw threaded connection makes it possible to adjust the tip-piece 30 to vary the extent of projection thereof from the general plane of loop 23, thereby affording additional facility to adjustment to the particular ear on which it is to be used, and furthermore, is of convenience for assembly purposes. The tip piece 30 is preferably screwed into place on the elbow 25 after the same has been screwed into the threaded member 27, and, reversely, when the parts are to be disconnected, the tip piece 30 is preferably first screwed off, enabling the elbow member 25 to be screwed entirely out without coming into contact with the proximate portion 34 of the loop shaped tubular member 21.

The operation of the device will be readily understood from the foregoing. To make use thereof, same is connected at the induction end to a telephone receiver or the like, and the loop portion 23 is placed over the helix portion 35 of the ear 36 of a user. In this way substantially a hooked support is secured on the side of the user's head. In hooking the device over the helix of the user's ear, the part 34 of the rigid tubular portion 21 to which the flexible tubular

member 13 is connected is preferably brought up behind the external ear 36 of the user, as shown in Fig. 1, the loop part 23 extending thereover in a generally back to front direction, and the tip piece 30 is inserted in the mouth 37 of the auditory meatus of the ear. In this way a firm and substantial support is secured, the parts being, of course, very light, and the mouth of tip 30 is held in proper acoustical relation to the auditory meatus, so that sounds are efficiently carried over the vibrating diaphragm to the organs of hearing. To adapt the device to larger ears the elbow member 25 is screwed out, and for smaller ears it is screwed in, thereby securing such adjustment as may be needed to insure communication of tip 30 with the mouth of the auditory meatus when the loop part 23 is supported upon the helix of the user's ear. Additional adjustment may be secured by screwing the tip 30 in or out on the elbow member 25. For use with the left ear, the elbow member 25 is turned into substantially the position of Figs. 1 and 2, and for the right ear same is turned to substantially the position of Fig. 3.

It will be understood, of course, that if desired the tube may be provided with a Y branch and the loop eduction end duplicated to be used simultaneously with both ears, and various other modifications and changes may be resorted to within the scope of my claims without departing from my invention or sacrificing the advantages thereof.

I claim:

1. In an ear tube an eduction part adapted to communicate with the auditory meatus of the ear, and means for hanging same from the helix portion of the ear, said eduction portion and supporting portion being adjustably connected with one another.

2. In an ear tube an eduction part adapted to communicate with the auditory meatus of the ear, and means for hanging same from the helix portion of the ear, said eduction portion and supporting portion being adjustably connected together by means of a screw threaded connection.

3. An ear tube comprising an eduction portion adapted to communicate with the auditory meatus part of the ear, and comprising another portion adapted to hang from the helix portion of the ear, said eduction portion and said hanging portion being adjustably connected together.

4. An ear tube comprising a rigid portion curved into generally loop form and comprising a plurality of adjustably connected parts, whereby it may be hung on the helix of the ear and adjusted to fit with the eduction end thereof in communication with the auditory meatus of the ear.

5. An ear supported telephone receiving

5 tube comprising a flexible portion adapted to be connected to a telephone receiver at one end and having a rigid portion in the neighborhood of the opposite end curved into substantially the form of a hook, an elbow member adjustably swiveled on the depending portion of the hook portion, a tip member on the eduction end of the elbow mem-

ber, the tip member being adapted to communicate with the auditory meatus of the ear when the hook part is hooked over the helix portion of the ear. 10

In testimony whereof, I have signed my name hereto.

PHILIP V. SUMMER.