June 9, 1953 D. F. BALMER 2,641,327

ACOUSTIC EAR PENDANT

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Fig. 1

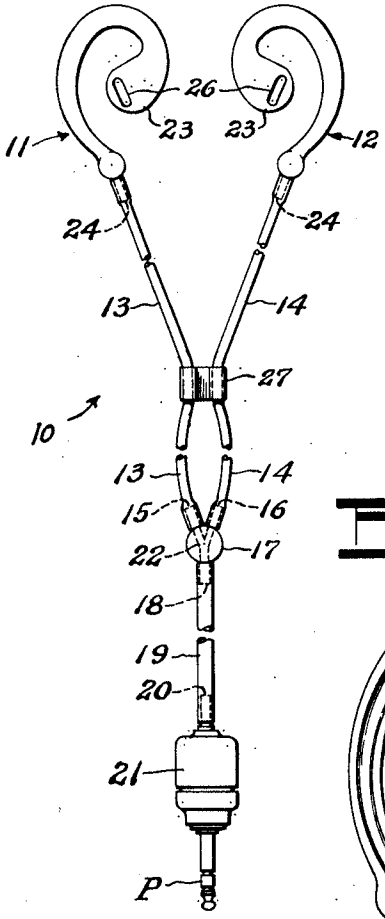

Fig. 2

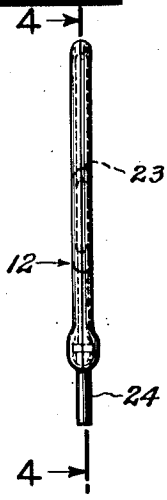

Fig. 3

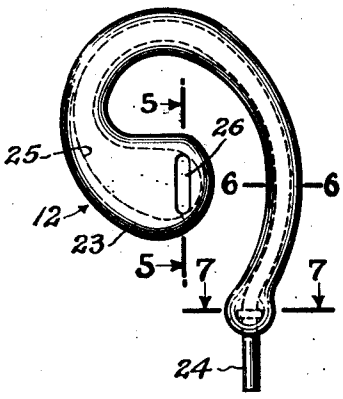

Fig. 4

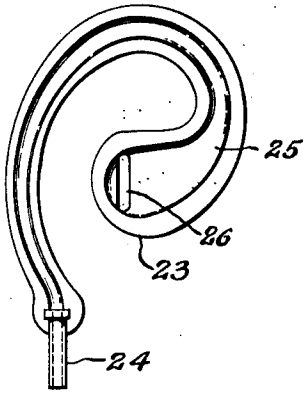

Fig. 5

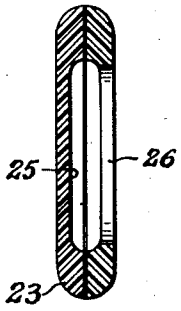

Fig. 6

Fig. 7

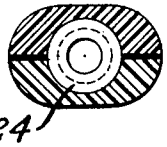

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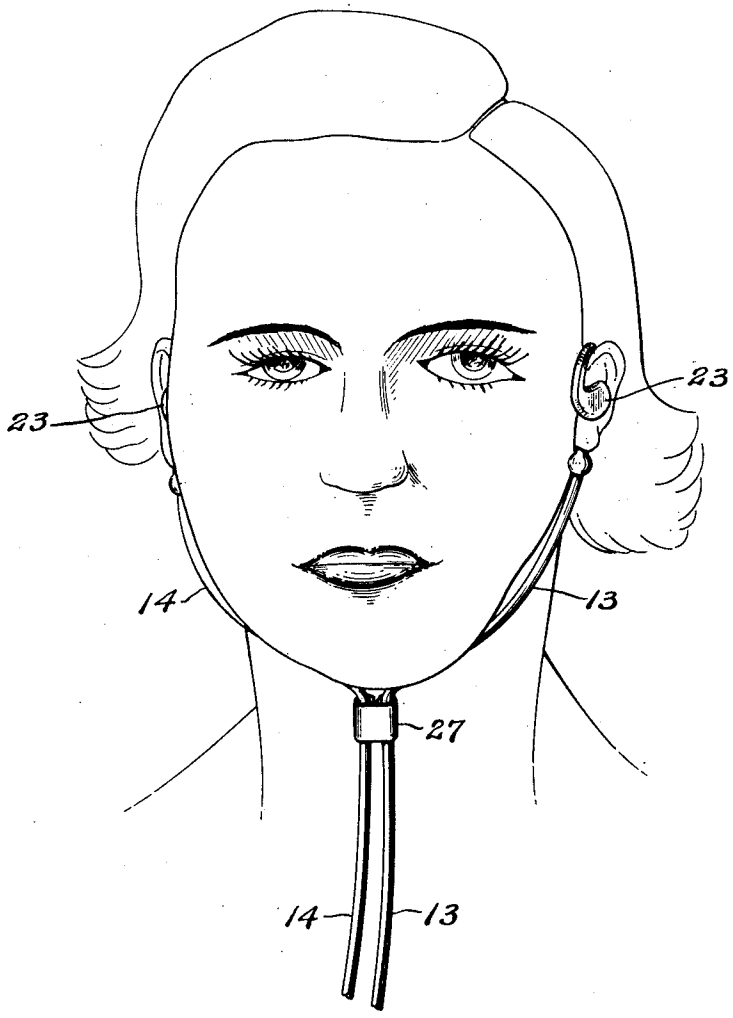
Fig. 8



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UNITED STATES PATENT OFFICE

2,641,327

ACOUSTIC EAR PENDANT

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Application October 13, 1950, Serial No. 189,927

2 Claims. (Cl. 181—23)

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This invention relates to listening devices, and is directed particularly to a compact, light-weight acoustic ear pendant especially suitable for use by stenographers in transcribing electrically recorded speech.

One object of this invention is to provide a listening device of the above nature that will be comfortable, even though worn for long periods of time.

Another object is to provide a hearing device which will be simple to apply to the ears, and which, at the same time, will not disturb the listener's hair.

A further object is to provide a device of the above nature which will be simple in construction, inexpensive to manufacture, easy to install and manipulate, compact, ornamental in appearance, and very efficient and durable in use.

With these and other objects in view, there has been illustrated on the accompanying drawing, one form in which the invention may conveniently be embodied in practice.

In the drawing,

Fig. 1 represents a front assembly view, with sections broken away, of an electro-acoustic ear pendant set.

Fig. 2 is an end view of one of the ear pendants shown in Fig. 1.

Fig. 3 is a side view of the same.

Fig. 4 is a cross-sectional view taken along the line 4—4 of Fig. 2.

Fig. 5 is a cross-sectional view taken along the line 5—5 of Fig. 3.

Fig. 6 is a cross-sectional view taken along the line 6—6 of Fig. 3.

Fig. 7 is a cross-sectional view taken along the line 7—7 of Fig. 3.

Fig. 8 is a drawing illustrating how the ear pendants are fitted over the ears for listening.

Referring now to the drawing, in which like reference numerals denote corresponding parts throughout the several views, the numeral 10 indicates generally the complete listening device including the invention. The device comprises a pair of ear pendants 11, 12 communicating at their lower ends with one end each of a pair of flexible tubes 13, 14 preferably of rubber like plastic material. The other ends of the tubes 13, 14 communicate respectively with the upper tubular arms 15, 16 of a thin, cylindrical Y-connector 17. The lower tubular arm 18 of the Y-connector 17 communicates with the upper end of a flexible tube 19 of the same material as the tubes 13, 14 and of somewhat larger diameter, the lower end of which communicates with the sound channel portion 20 of a sound reproducing electro-acoustical receiver member 21. The receiver member 21 is provided at its lower end with an electrical plug P adapted to be inserted into a jack for connection to the usual audio amplifier of a sound transcriber. The plug P contains an electromagnetically actuated diaphragm, not shown.

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The Y-connector 17 is provided with an internal Y-shaped opening 22 interconnecting the tubular arms 15, 16, and 18, so that sound waves set up by the diaphragm in the receiver member 21 may pass freely through the flexible tubes 19, 13, and 14 to the ear pendants 11, 12.

Each of the complementary ear pendants 11, 12, which are preferably formed of plastic material, is flat and smooth and conforms generally to the shape and curvature of a question mark. Each ear pendant 11, 12 increases in width from its lower end to its upper end and has its upper end terminating in an inwardly-extending enlarged portion 23. The lower end of each of the ear pendants has fixed therein a hollow, downwardly-extending tubular connector member 24, the upper end of which communicates with an internal sound channel 25 extending substantially the full length of the ear pendant, and increasing in width gradually within the enlarged portion 23. The enlarged portion 23 of each of the ear pendants 11, 12 is further provided in its side facing the wearer's ear with a vertically extending elongated opening 26 communicating with the sound channel 25 and open to the air.

The ear pendants 11, 12 are preferably constructed of complementary shell halves having flat smooth abutting sections cemented together as shown in Fig. 7.

The listening device is preferably provided with a link 27 having curved end portions embracing the outer surfaces of the flexible tubes 13, 14, and slidably adjustable therealong. The curved end portions are fitted closely to the tubes 13, 14 so as to have frictional engagement therewith and causing said link to remain in any adjusted position under the user's chin to prevent the listening device from falling off.

Operation

In use, the listener will hook the ear pendants 11, 12 over the back of his ears, so that the elongated openings 26 will lie adjacent the ear openings in alignment with the ear drums. The link 27 will then be adjusted along the flexible tubes 13, 14 to vary the tension on the lower ends of

the pendants, as desired. The receiver member **21** will then be plugged into the usual transcriber amplifier, whereupon sound waves will travel acoustically through the flexible tubes **19**, **13**, and **14**, the sound channels **25** and the openings **26** into the listener's ears.

One advantage of the improved ear pendant is that it is very attractive in appearance, inconspicuous, and very light in weight, and can, therefore, be worn for long periods of time without discomfort.

Another advantage is that the device can easily be applied to or removed from the ears without disturbing the user's hair.

While there has been disclosed in this specification one form in which the invention may be embodied, it is to be understood that the form is shown for the purpose of illustration only, and that the invention is not to be limited to the specific disclosure, but may be modified and embodied in various other forms without departing from its spirit. In short, the invention includes all the modifications and embodiments coming within the scope of the following claims.

Having thus fully described the invention, what is claimed as new, and for which it is desired to secure Letters Patent, is:

1. An acoustical ear pendant comprising a hollow flat curved planar member conforming substantially to the shape of a question mark, the upper section of which is adapted to lie behind the upper part of the listener's ear and is provided with an enlarged downwardly and inwardly extending flat portion lying in front of the concha of said ear, and a depending lower section positioned behind the ear lobe, said member having an internal channel extending throughout its length and gradually increasing in size from said lower section to said downwardly and inwardly extending portion, the latter of which has an elongated narrow vertical slot for communicating sounds from said channel to the concha of the listener's ear, said lower section having an opening for the insertion of a flexible sound receiving tubular conduit.

2. The invention as defined in claim 1, in which said hollow planar member is constructed from a pair of complementary side sections, cemented together around their peripheries.

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References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
526,802	Bowles	Oct. 2, 1894
989,714	Lepre	Apr. 18, 1911
1,143,791	Singer	June 22, 1915
1,556,775	Fensky	Oct. 13, 1925
1,847,607	Hardt	Mar. 1, 1932
1,884,638	Fensky	Oct. 25, 1932
2,474,135	White	June 21, 1949
2,545,731	French	Mar. 20, 1951