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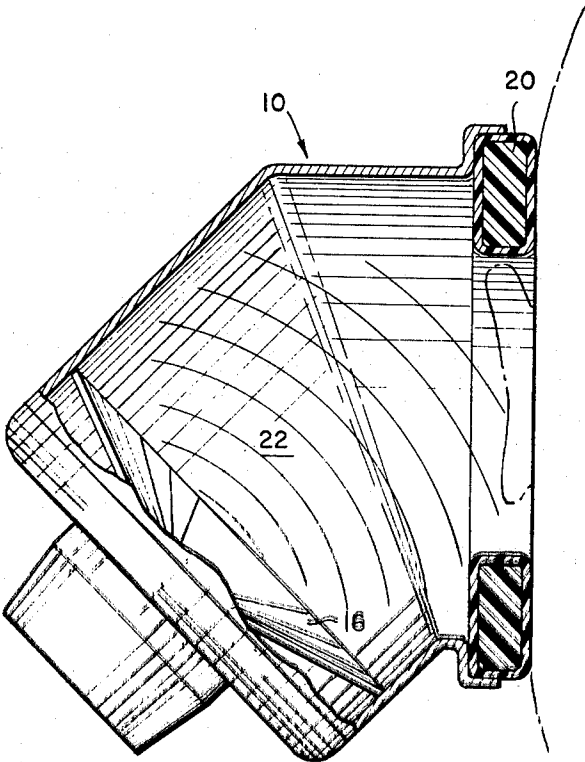
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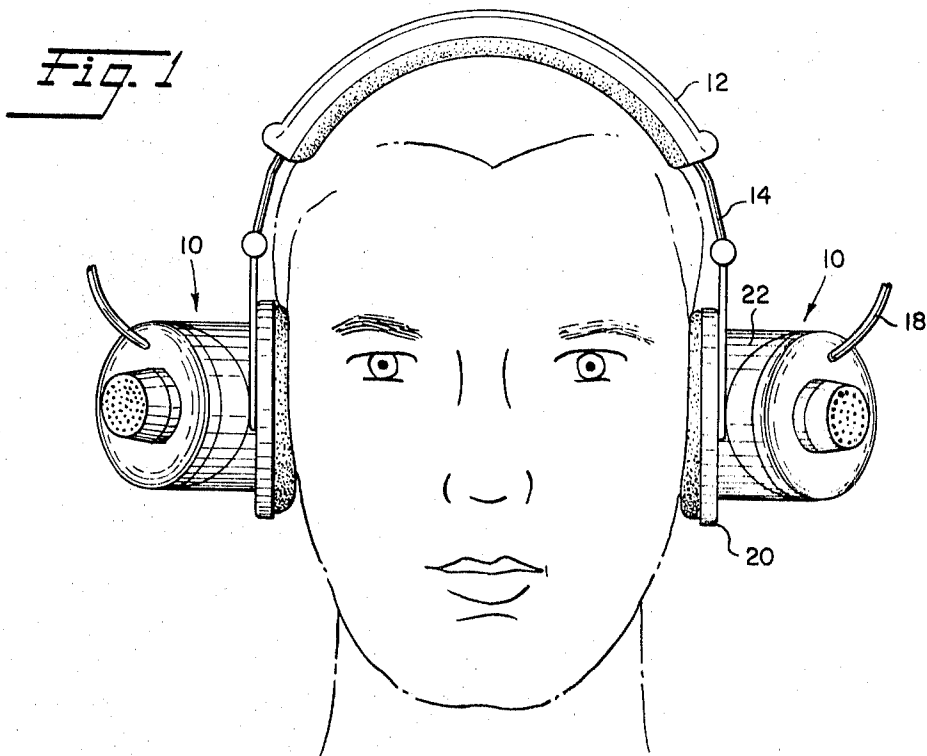
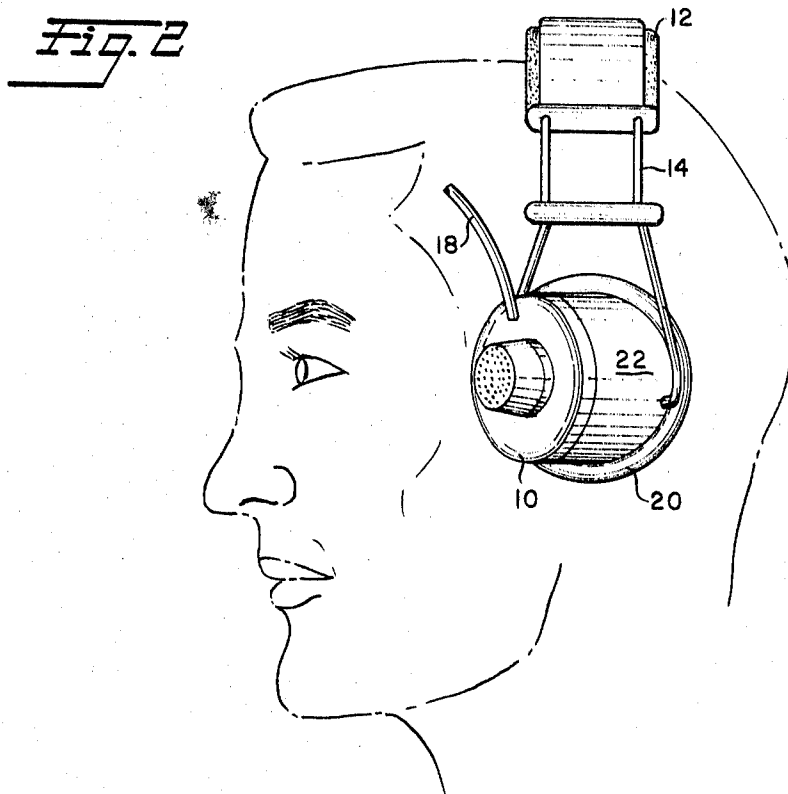
[54] **STEREO EARPHONES**
6 Claims, 4 Drawing Figs.

[52] U.S. Cl..... 179/182 R,
179/156

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H04m 1/05

ABSTRACT: Stereo earphones having transducers positioned forwardly of the user's ears and directed rearwardly toward the ears to provide more realistic stereophonic sound effects.





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Fig. 3

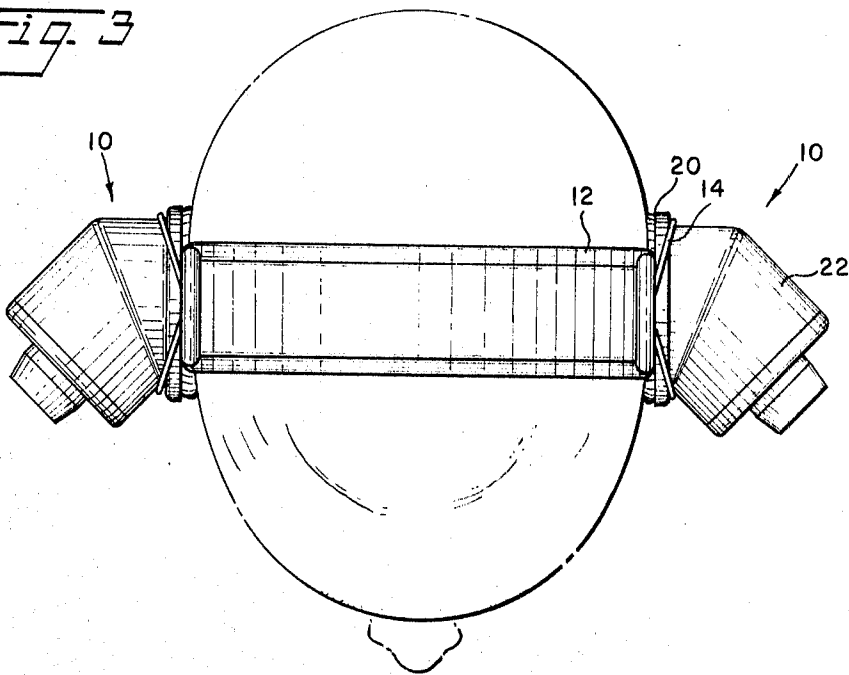
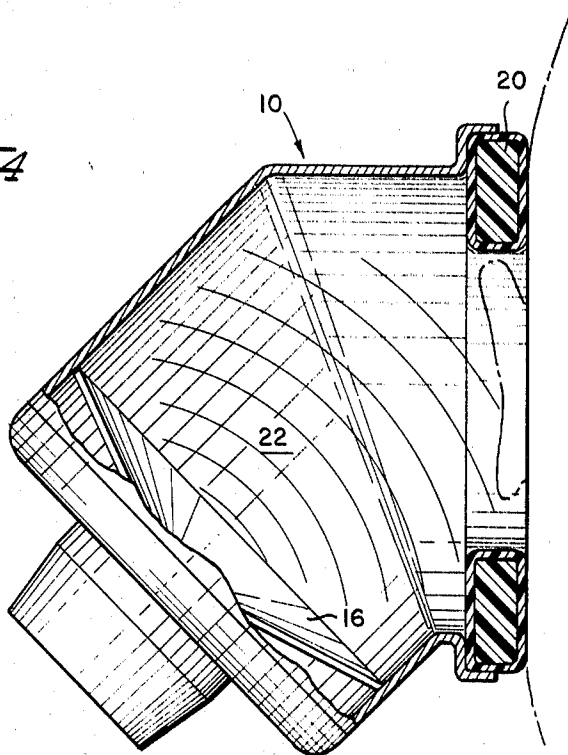


Fig. 4



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STEREO EARPHONES

The present invention relates to improvements in earphones and is concerned more particularly with earphones adapted for improved stereo reception.

In a conventional stereo system the speakers are placed in such a manner that sound is reproduced from points in front of the listener just as in a live performance. The theory of stereo is that a complete sound panorama of an orchestra, for example, is reproduced with various instruments spotted across a stage. This accomplished by mixing the sound from the two speakers in varying degrees. This, a mix of 10 percent left and 90 percent right will place the instruments slightly to the left of the right speaker. A mix of 50-50 percent will cause the instruments to appear to be placed half way between the two speakers. Because the human ears are highly directional in function, it is entirely possible for the listener to pick out the locations of a number of instruments that are located at various points between the speakers. This mix occurs when the recording is made; i.e., two or more microphones are located at a distance from each other and the relative volume of sound from any given instrument reaching the two microphones determines the audible placement to the listener.

Such mix and positioning of instruments is noticeable with the use of current stereo earphones but because of the orientation of the transducers, directly opposite each and in alignment with the listener's ears, the sound panorama of instruments is transmitted in a line directly through his head. The effect is not true and certain sounds often produce aural discomfort.

I have discovered that by locating the sound of the panorama of instruments across a line in front of the ears of the listener rather than directly through the head, a true sound effect is accomplished without any tendency towards aural discomfort. Accordingly, it is the principal object of the present invention to provide stereo earphones having the earphone transducers positioned in front of the ears of the listener, the transducers being aimed rearwardly and angularly toward the ears so that the audio panorama is located in front of the listener and hence in simulation of the audience at a live performance. Thus, the human ears with their highly directional characteristics can better accept the sound and the user or listener is provided with truer fidelity, a more realistic and enjoyable set of stereo earphones.

Other objects and advantages will be apparent from the following detailed description taken in conjunction with the accompanying drawings wherein a preferred embodiment of the principles of the invention has been selected for exemplification.

In the drawings:

FIG. 1 is a front elevational view of earphones constructed in accordance with the present invention and shown positioned upon a user;

FIG. 2 is a side view of FIG. 1;

FIG. 3 is a top view of FIG. 1; and

FIG. 4 is an enlarged view partly in vertical section of one of the earphones shown in FIGS. 1-3.

Referring more particularly to the drawings, wherein like numerals refer to like parts, the earphones of the present in-

vention are indicated in their entirety by the numeral 10. As shown, the earphones 10 are a part of a headset assembly including a headband 12 and depending earphone supporting members 14. It is to be understood, however, that the headband and earphone supports form no part of the present invention and that the particular headband 12 and supporting members 14 herein illustrated are merely representative of conventional or any other kind of such devices.

The earphones 10 are positioned generally to extend forwardly of the ears of the user, as shown in FIGS. 1-3. The speakers or transducers 16 are mounted in the forward portions of the earphones 10 and connected by a power input conductor 18 to the audio device in conjunction with which the stereo earphones are to be used, not shown, because it forms no part of the present invention.

As the principal feature of the invention, the transducers 16, as best shown in FIG. 4, are mounted to face rearwardly and angularly toward the ear of the user in contrast with the transducers of conventional earphones which are mounted transversely of the ear of the user and face directly into the ear or are paired in aural alignment through the user's head.

The usual earcups 20 may be provided for convenience and comfort of the user and, preferably, the earphones 10 also include an audio conducting housing 22 extending rearwardly and angularly from the transducer 16 to the earcup 20.

In a preferred form of the invention the transducers 16 and/or the housing 22 are positioned at an angle of approximately 45° such as illustrated. However, the specific angle is not particularly critical so long as the effect of an audio panorama located in front of the listener is maintained.

It will be apparent from the foregoing that there is provided, in accordance with this invention, very simply designed stereo earphones which convey to the user or listener natural and more enjoyable sound effects and which, in general, are superior to earphones heretofore provided.

It is to be understood that the present invention is not confined to the particular construction and arrangement of parts herein illustrated and described but contemplates all such modifications thereof as may come within the scope of the following claims.

I claim:

1. Improvements in stereo earphones which comprise;

an earphone;

means for positioning the earphone to extend forwardly of the ear of the user; and

a transducer mounted in the forward portion of said earphone and facing rearwardly and angularly toward the ear of the user.

2. The device of claim 1 additionally including an earcup and wherein the earphone includes a sound conducting housing extending rearwardly and angularly from the transducer to the earcup.

3. The device of claim 1 where the positioning means is a headband.

4. The device of claim 2 wherein the positioning means is a headband.

5. The device of claim 1 embodied in a pair of earphones.

6. The device of claim 2 embodied in a pair of earphones.