United States Patent

[11] 3,539,031

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[54] **SOUND TUBE HEAD SET EAR CUSHION AND AMBIENT NOISE PLUG**
2 Claims, 5 Drawing Figs.

[52] **U.S. Cl.** **181/23**
[51] **Int. Cl.** **G02k 13/00**
[50] **Field of Search** 181/23, 24

[56] **References Cited**

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ABSTRACT: This invention relates to a stethoscopic type sound tube and more particularly to the ear plug attached to the one end thereof: the ear plug serving as a deformable cushion to accommodate various sizes and shapes of ear canals, while forming a sound barrier to ambient noises.

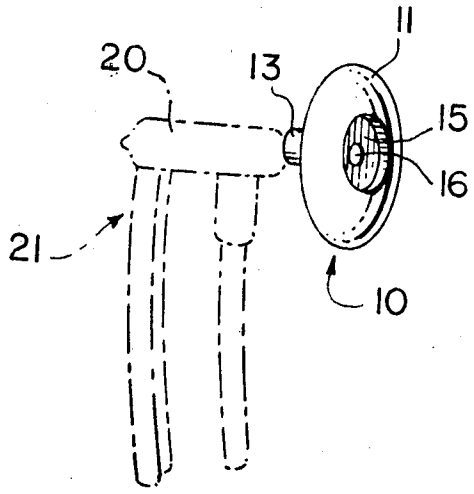


FIG. 1.

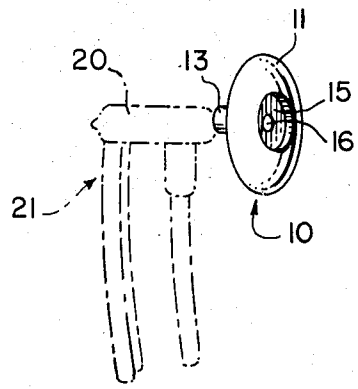


FIG. 2.

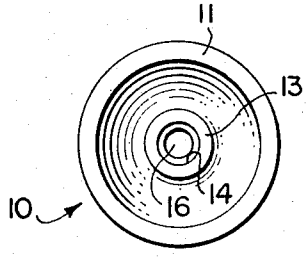


FIG. 3.

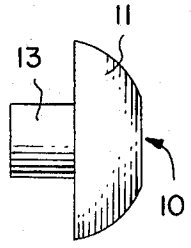


FIG. 4.

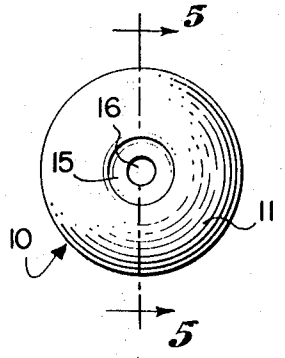
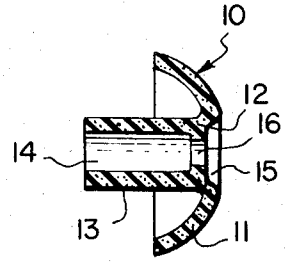


FIG. 5.



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SOUND TUBE HEAD SET EAR CUSHION AND AMBIENT NOISE PLUG

This invention relates to an ear plug attached to the ends of a sound tube and more particularly to an ear plug which is deformable to accommodate various sizes and shapes of ear canal while remaining comfortable to the wearer and serving as an ambient noise sealing device.

An object of the present invention is to provide an ear plug which is self adaptable and comfortable to a wide variety of sizes and shapes of ear canals.

Another object of the present invention is to provide an ear plug for a sound tube which performs the function of sealing the ear canal from ambient noise.

Modern airplanes provide a jack box at each individual seat, whereby the passenger, having received a stethoscopic type sound tube, may plug the tube into the jack box, and by means of a switch, select various recordings of music or the sound track of a movie.

Hygenic laws and sanitation codes dictate that each head set be germ proof and sterile when given (or purchased) by the passenger.

The problem is to provide the ear plug, on the sound tube, with a size and shape which will accommodate the ear canal of the wearer. Since no two ear canals are exactly the same size and/or shape and because every ear canal has ear wax, it becomes impractical to attempt to provide a variety of ear plugs of various sizes and shapes with provision for accommodating various wax conditions in individual ear canals. The ear plug must also be comfortable to the wearer over a period of hours.

Accordingly, it is an object of the present invention to solve the aforementioned problem.

Other objects of the present invention will be pointed out in part and become apparent in part in the following specification and claims.

Referring to the drawings in which similar characters of reference indicate corresponding parts in all the FIGS:

FIG. 1 is a perspective view of the new and improved sound tube head set ear cushion and ambient noise plug;

FIG. 2 is a front elevational view of FIG. 1;

FIG. 3 is a side elevational view of FIG. 1;

FIG. 4 is a rear elevational view of FIG. 1;

FIG. 5 is a vertical cross sectional view taken on line 5–5 of FIG. 4.

The drawing illustrates an ear cushion 10 fabricated from a soft, deformable, vinyl plastic blade 11 hemispherically

shaped and spread at the ends so as to resemble a mushroom.

The blade 11 may be integrally attached or otherwise fastened to the end wall 12 of a central pillar 13 having an axial core 14.

Blade 11 is provided with an axially located chamber 15. A sound passageway 16 connects axial core 14 with chamber 15.

In use, ear cushion 10 is attached to the stem 20 of a stethoscopic type sound tube 21, by means of core 14.

The user will insert blade 11 into an ear canal. The soft, deformable vinyl plastic blade 11 will take the shape, including any physically irregularities, of the ear canal wall and thereby, seal the ear canal from the ambient noises of the surrounding atmosphere.

The distortion of blade 11 in the ear canal shifts the wax in the ear canal in a manner which could block sound passageway 16. To prevent such blockage chamber 15 is provided with a diameter greater than the diameter of said sound passageway, so as to insure a sound area in blade 11 equal to the diameter of said sound passageway 16.

The cabin noise in an airplane in flight exceeds 80 decibels, so that the user may use the plug as a noise excluder or he may operate the jack box switch to a musical or movie sound track selection.

Having shown and described a preferred embodiment of the present invention by way of example, it should be realized that structural changes could be made and other examples given without departing from either the spirit or scope of this invention.

I claim:

1. A sound tube head set ear cushion and ambient noise plug comprising a soft, deformable blade, hemispherically shaped, a central pillar having an end wall provided with a sound passageway and an axial core in communication with said sound passageway, said blade having a chamber, and means fastening said blade to said end wall with said chamber in communication with said sound passageway.

2. A sound tube head set ear cushion and ambient noise plug comprising a blade hemispherically shaped and spread at the ends so as to resemble a mushroom, said blade being fabricated from a soft, deformable, vinyl plastic, a central pillar having an end wall provided with a sound passageway and an axial core in communication with said sound passageway, said blade having a chamber greater in diameter than the diameter of said sound passageway, and means fastening said blade to said end wall with said chamber in communication with said sound passageway.