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R. E. DULINSKY
ADJUSTABLE EARPHONE

2,486,267

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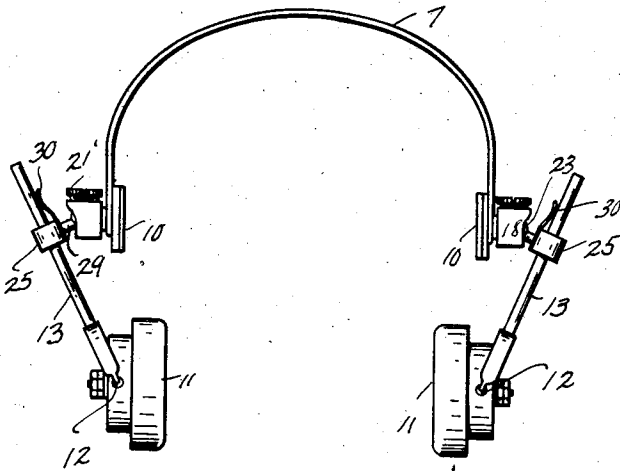


Fig. 1

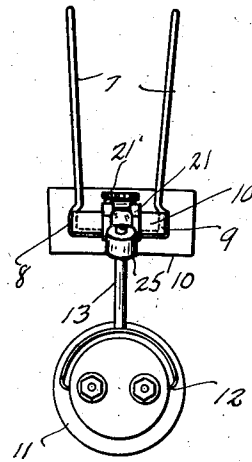


Fig. 2

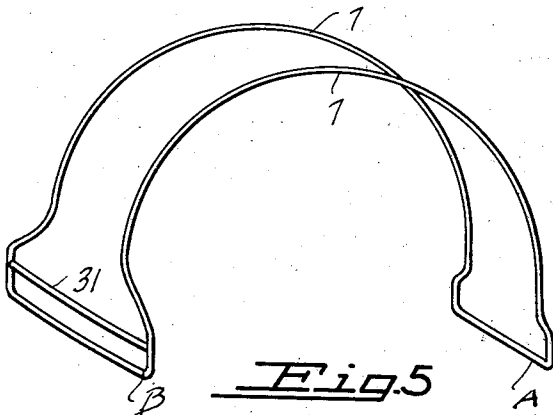


Fig. 5

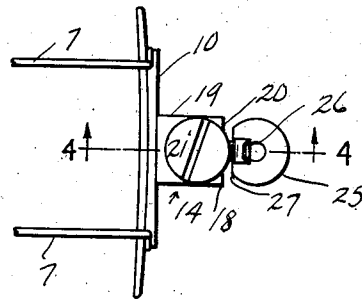


Fig. 3

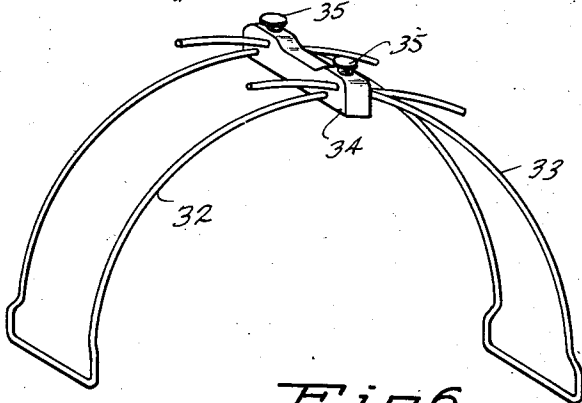


Fig. 6

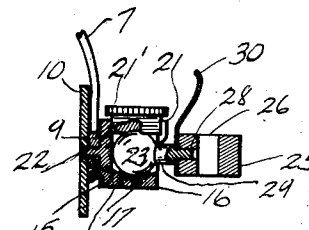


Fig. 4

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ADJUSTABLE EARPHONE

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1 Claim. (Cl. 179-156)

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This invention relates to improvements in ear phone securing means and has particular reference to a mechanism associated with the head rest or clamp of the phones, whereby the ear phones may be readily adjusted to a variety of positions relative to the ears to assure the maximum degree of comfort to the user of the phones.

A further object of the invention is the provision of an adjustable head rest to compensate for differences in sizes of the heads of the users.

Another object of the invention is the production of a clamp of the character described that is simple in construction, economical to manufacture, readily adjustable, positive in operation, strong and durable, and highly efficient in use.

Other objects and advantages will be apparent during the course of the following description:

In the accompanying drawing wherein like numerals are employed to designate like parts throughout the same,

Fig. 1 is a front elevation of the device constructed in accordance with my invention, disclosing the ear phones in an adjusted position relative to the head clamp,

Fig. 2 is a side elevation of the same,

Fig. 3 is a top plan view of a fragmentary section of the head clamp and disclosing the means for adjusting the ear phones, in this instance the ear phone and spindle are detached,

Fig. 4 is a transverse vertical section of the retaining mechanism, the view being taken on the line 4-4 of Fig. 3 and looking in the direction of the arrows,

Fig. 5 is a modified form of the clamp that is employed when a single ear phone is used, and

Fig. 6 is a further modified form of the clamp or head rest disclosing a sectional head rest that is employed to compensate for variations in the size of the head of the user.

It is a well known fact that in the use of ear phones pressure of the phones on the ears is not only annoying and uncomfortable, but tends to produce deafness when the reception sounds are of considerable volume, and especially is this true when the phones snugly or intimately contact the ears. To overcome this inconvenience, I have devised the present invention, wherein by virtue of the construction employed a positioning of the phones in close proximity to the ears or remote therefrom can be easily controlled or manipulated by the operator, thus assuring the maximum degree of comfort without detracting from the accuracy and clearness of reception.

Referring to the drawing the numeral 7 indicates spaced wires that are curved to conform

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to the shape of the top of the head. These wires are looped at their lower ends as at 8 about an extension 9 that is secured to curved plates 10 adapted to snugly engage the sides of the head directly above the ears of the user. This construction of the preferred type of clamp is illustrated to advantage in Fig. 1 of the drawing.

A pair of ear phones is indicated by the numeral 11, each of which has pivotally connected thereto as at 12 a spindle 13.

The mechanism for adjusting my invention to bring the ear phones into close proximity or to remotely position the same relative to the ears of the listener, is illustrated to advantage in Figs. 1, 2, 3 and 4 of the drawing. Since the same mechanism is employed on each side of the head clamp, but one construction will be described.

The numeral 14 indicates as a whole a housing that includes a rear wall 15, a bottom wall 16 having a concave seat 17 provided therein, side walls 18 and 19, an apertured front wall 20, the housing being open at its top as at 21. It will be noted that said housing is internally threaded adjacent its top position to threadedly receive the external threads of a cap or adjusting nut 21'. As disclosed to advantage in Fig. 4, it will be observed that the housing is rigidly supported as at 22 by the plate 10. A metal ball 23 is positioned in said metallic housing and is normally free to rotate therein, but can readily be retained in a fixed position by the actuation of the cap 21' and by the contact of the latter with the ball. A concave thin pliable spring plate 24 rests in the seat 17 of the bottom wall and supports thereon the ball 23. By virtue of this construction the plate adjusts tension on the ball, and being interposed between the ball and the base of the housing eliminates any binding action between these parts.

To provide a connection between the spindle that carries the ear phones and the mechanism that permits the adjustment of such phone, I have provided a collar 25 that receives in its bore 26 the upper end of the spindle 13. An inner flat wall 27 of the collar is equipped with a slot 28 that receives therein an extension or shank 29 carried by the ball. A flat narrow spring member 30, that is connected to said collar and is interposed between the flat wall 27 and a shoulder provided on shank, extends upwardly from said collar and is shaped and curved to make contact with the spindle. Due to the binding action of the spring on the spindle, accidental displacement of the spindle relative to the collar will be eliminated.

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In Fig. 1, I have illustrated the position of the phones when they directly contact the ears, and wherein the spindle is shown as angularly positioned relative to the housing. Should the listener desire to position the phones remote from the ears, it will be only necessary to adjust the cap upwardly and the free movement of the ball in the housing will permit the spindle to assume the position of lying in a vertical plane, and relief can be obtained from the rasping or loud noises emanating from the phones. A tightening of the cap in the housing and contact of the cap with the ball will assure a retention of the ear phones in the desired adjusted position.

In some instances the use of only one ear phone is desired, and I have accordingly illustrated in Fig. 5 a type of head clamp that is employed. The portion A of the clamp is similar to that disclosed in Fig. 1, and functions to receive the mechanism for adjusting a single phone. The opposite end B of the clamp, however, is slightly altered to provide an auxiliary bar 31, that cooperates with the remainder of the head clamp to provide a snug fit of the clamp on the head.

To compensate for differences in sizes and curvatures of the heads of the users, a sectional clamp has been illustrated in Fig. 6, and comprises wire sections 32 and 33 that are spaced and curved and are detachably secured one to the other by a cross-bar 34 that overlies the crown of the head. A pair of adjusting nuts 35 function to retain the free ends of the sections 32 and 33 in the desired adjusted position.

It is to be understood that the forms of my invention herewith shown and described are to be taken as the preferred examples of the same, and that changes relative to the shape, size, material and arrangement of parts may be readily resorted to without departing from the spirit of the invention or the scope of the subjoined claim.

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Having thus described my invention, I claim:

In combination with a head clamp, of means for adjustably positioning an ear phone relative to the ear of the user, said means comprising a casing equipped with an open upper end, a concave base, and an apertured front wall, a ball housed in said casing, an extension carried by said ball and having a shoulder formed thereon, a concave pliable plate positioned on the base of said casing for receiving thereon said ball, a cap threadedly secured in the open end of said casing and capable of retaining said ball in a fixed adjusted position within said casing, a collar having a flat side wall, said collar being supported by the extension of said ball exteriorly of the apertured front wall of said casing, a spindle for the ear phone receivable in the collar and detachably secured thereto, and a spring member extending upwardly relative to said collar and in frictional contact with said ear phone spindle, said spring member being interposed between the flat wall of said collar and the shoulder of the ball extension.

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