Jan. 13, 1948. H. R. WARNKE 2,434,251

TELEPHONE HEAD-BANDS

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FIG. 1.

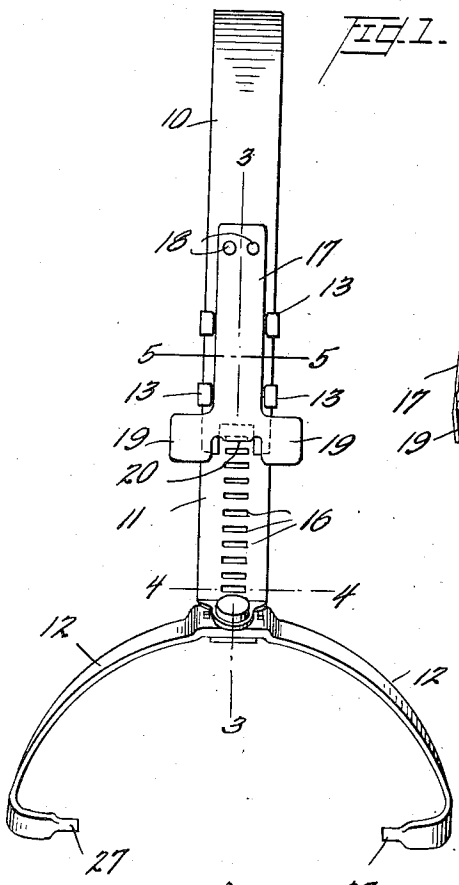


FIG. 2.

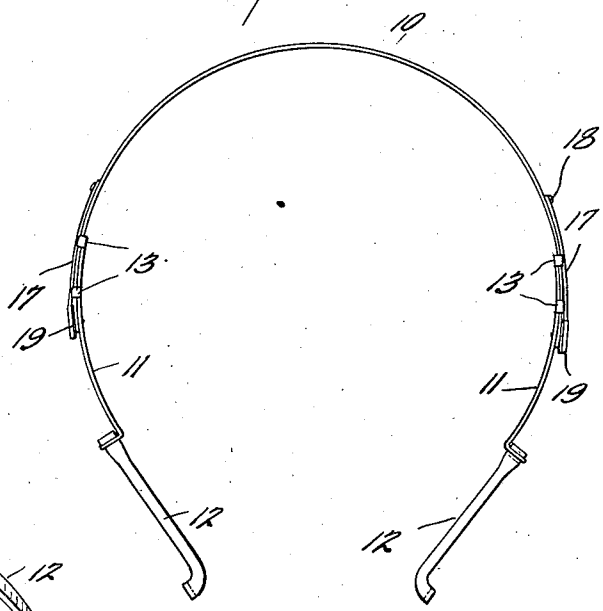


FIG. 3.

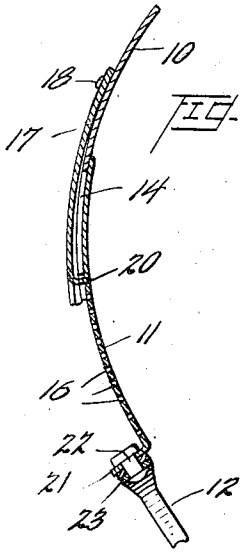
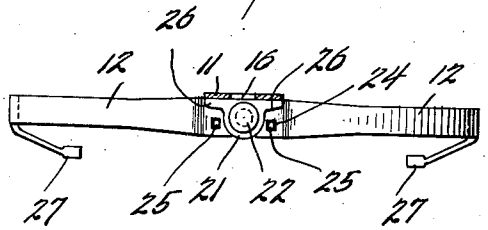


FIG. 4.



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FIG. 5.

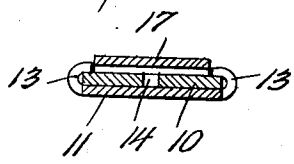


FIG. 6.

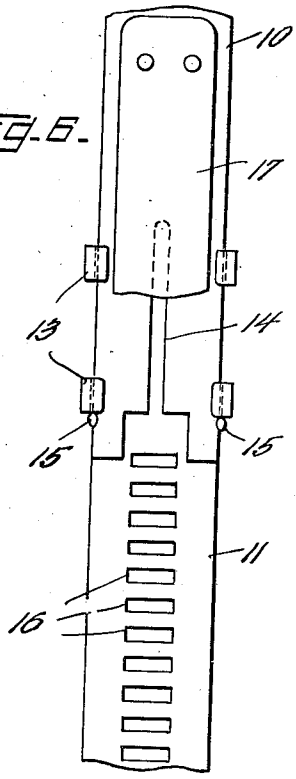


FIG. 7.

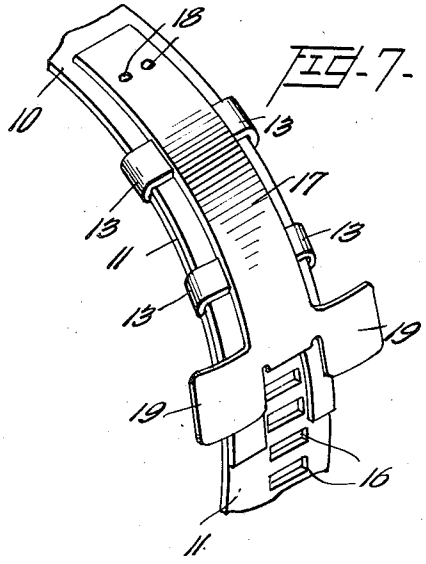
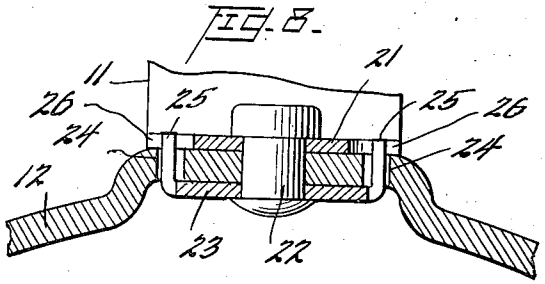


FIG. 8.



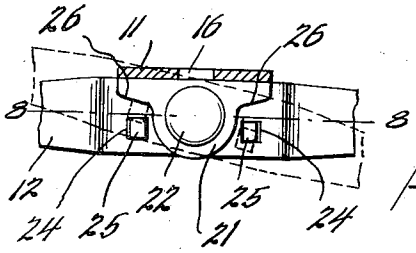


FIG. 9.

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UNITED STATES PATENT OFFICE

2,434,251

TELEPHONE HEADBAND

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Application February 6, 1946, Serial No. 645,746

1 Claim. (Cl. 179—156)

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This invention relates to telephone head sets, and more particularly to head-band devices by means of which one or two receiver instruments are clamped against the ear or ears of a person using a field telephone, radio telephone or the like, or in any application in which an instrument of the type in question is to be held against the ear of an operator or listener.

The general object of the invention is the provision of a novel and advantageous head-band device which is light in weight, simple in construction, easily adjustable to the physical dimensions of the wearer's head and positively held in the adjusted position.

More specifically, it is an object of the invention to provide a head-band device in which the instrument supporting member or "cradle" is readily adjustable in relation to the head-band proper by means which facilitate the adjustment and, at the same time, positively lock the parts together in the adjusted position.

A further object is the provision, in a device of the type described, of a simple and effective connection between the head-band and the cradle whereby the latter is permitted a slight, definitely limited pivotal movement about a substantially vertical axis, for accommodation to the configuration of the wearer, thereby promoting the comfort of the latter, the construction in question being extremely simple and inexpensive.

Other and further objects, features and advantages will be apparent from the description which follows, read in connection with the accompanying drawings in which:

Figure 1 is a side elevation of a bead-band device constructed in accordance with the present invention;

Figure 2 is a front elevation of the device of Figure 1;

Figure 3 is a section on line 3—3 of Figure 1;

Figure 4 is a section on line 4—4 of Figure 1;

Figure 5 is a section on line 5—5 of Figure 1;

Figure 6 is an enlarged detail view of the sliding connection between the head-band proper and the adjusting member;

Figure 7 is a perspective view of the mechanism of Figure 6;

Figure 8 is an enlarged section on line 8—8 of Figure 9; and

Figure 9 is an enlarged detail view similar to Figure 4 and showing the extent of pivotal movement of the instrument cradle.

In order to facilitate an understanding of the invention, reference is made to the embodiments thereof shown in the accompanying drawings, and

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detailed descriptive language is employed. It will nevertheless be understood that no limitation of the invention is thereby intended and that various changes and alterations are contemplated such as would ordinarily occur to one skilled in the art to which the invention relates.

Referring to Figures 1 and 2, the device comprises generally a head-band 10, adjusting members 11 slidably engaging each end of the head-band 10 and instrument cradles 12 pivotally mounted at the free ends of the respective adjusting members 11. The member 10 is preferably constructed of thin, light-weight material possessing a certain desirable degree of resilience so that the instruments are held securely yet not too tightly against the ears of the wearer. Beryllium copper is found to be admirably suited to this purpose, while the same material is preferred for the adjusting members and cradles. Other suitable materials, however, will occur to those skilled in the art to which the invention relates.

Each adjusting member 11 is provided with spaced pairs of hook-like projections or guides 13 (Figures 5 and 6), which extend over the adjacent edges of the head-band 10 and overlie the upper surface thereof thus securing the adjusting member to the head-band for sliding engagement therewith. Preferably, the head-band is provided with a slot 14 and with protuberances 15, which may be formed by peening, for example, whereby the guides 13 may be forced over the protuberances 15 on assembling the member 11 onto the head-band, the slot 14 allowing lateral compression of the end of the head-band for this purpose, the protuberances 15 thereafter serving as end stops for the downward or extending travel of the adjusting member 11.

Each adjusting member 11 is provided with spaced series of slots 16 for cooperation with catch means to be described, for adjustment of the member 11 relative to the head-band. Obviously, the slots 16 may be replaced by apertures of other shapes, or indentations or projections, but slots of approximately the shape illustrated are preferred as providing a more positive locking action.

A leaf spring 17 (Figure 7), which may suitably be made of beryllium copper, is secured to the head-band by riveting or other suitable means as at 18 so as to overlie the adjacent end of the head-band, the spring 17 being sufficiently narrow to provide clearance for the guides 13 of the adjusting member. At its free end the spring 17 is broadened by the provision of projections

19 which may be gripped by the fingers in order to effect adjustment of the device. Between the projections 19 an end portion of the spring 17 is turned down to form a catch member 20 (Figure 3) for engagement with the slot 16 of the member 11. Adjustment is effected by flexing the spring 17 to withdraw the catch member 20 from the slot with which it is engaged, sliding the member 11 relative to the head-band 10 until the desired slot is opposite the catch member 20 and releasing the spring 17 to permit the catch member to penetrate the desired slot.

Each adjusting member 11 is turned outwardly at its free end to form an ear 21 to which the corresponding instrument cradle 12 is secured by means of a pivot 22 and washer 23, the end of the pivot 22 being peened over the washer. The cradle 12 is provided, on either side of the pivot point, with a small aperture 24 through which upstanding lugs 25 formed on the respective ends of the washer 23 project. The lugs 25, in cooperation with shoulders 26 formed on the ear 21, serve as stop means to limit the pivotal movement of the cradles 12 relative to the adjusting members 11. Thus, sufficient pivotal movement may take place to provide for adjustment of the instrument to the ear of the wearer, but the cradle nevertheless is not permitted to reach an alignment where it could interfere with placing the device on the head of the wearer. The cradles 12 are provided with inwardly turned trunnions 27 for mounting an instrument, the casing of which is provided with suitable bearings to receive the trunnions.

If desired, one of the instrument cradles may be omitted and replaced by a pad, when it is desired that only one instrument be used.

From the foregoing description it will be apparent that the present invention provides a

head-band device which is light in weight, easily and inexpensively manufactured, and which eliminates cumbersome and bulky adjustment means which have been used in the past such as thumb screws, wing nuts, bolts, and the like, whereby the entire device fits closely to the head of the wearer and may conveniently be worn under a head covering. This latter feature is especially desirable in the case of instruments adapted for military or naval use, when it is desirable that the operator wear a combat helmet or other head gear for purposes of protection.

Having thus described the invention, what is new and desired to be obtained by Letters Patent is:

In a telephone head-band device, a band member of relatively thin resilient material and generally semi-circular in form, an adjusting member slidably engaging an end of said band member, said adjusting member having substantially the same curvature as said band member and having a series of spaced slots, a leaf spring secured at one end to said band member and having a lateral projection at its free end for selective engagement with said slots, and instrument supporting means carried by the free end of said adjusting member.

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