Apr. 24, 1923. 1,452,851

L. SCHMIDT

HEAD RECEIVER FOR TELEPHONES

Filed Sept. 30, 1922

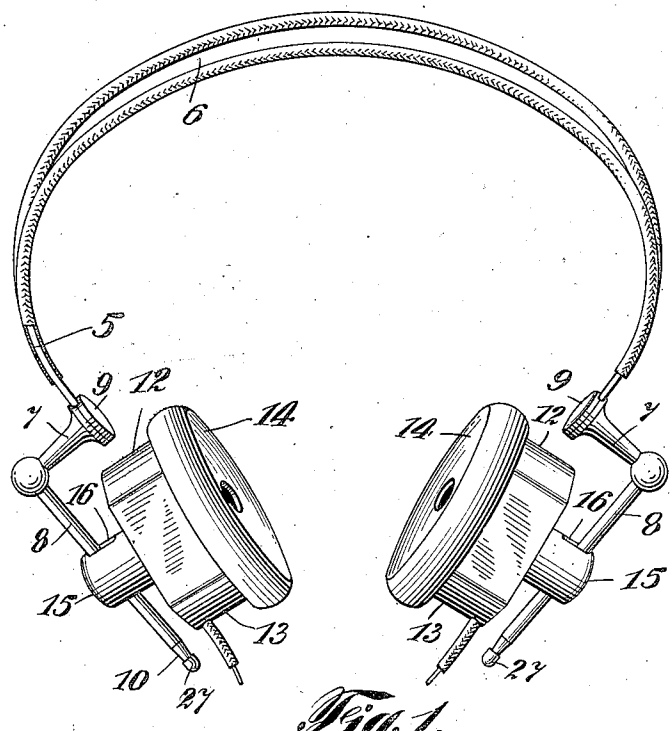


Fig. 1.

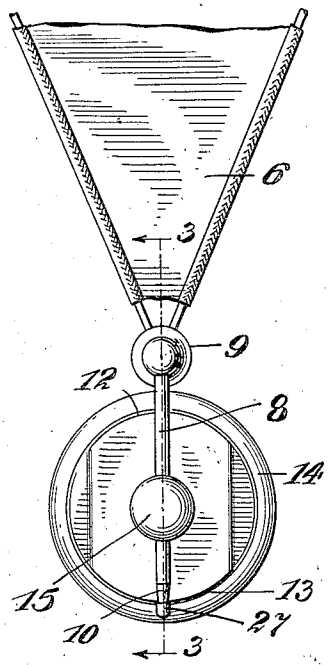


Fig. 2.

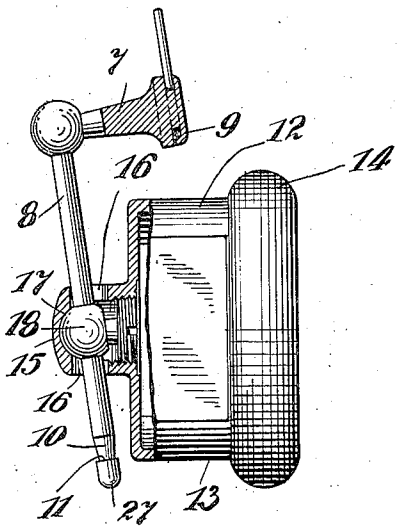


Fig. 3.

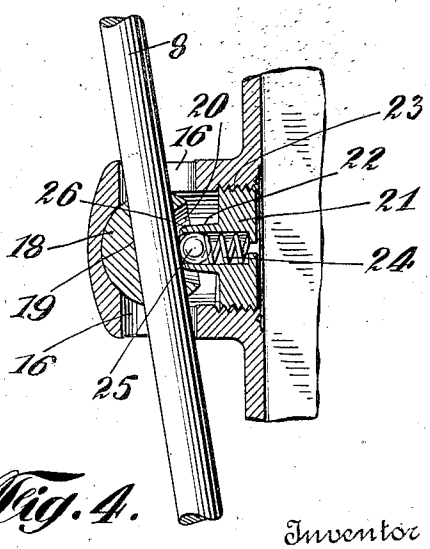


Fig. 4.

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UNITED STATES PATENT OFFICE.

LAMBERT SCHMIDT, OF BROOKLYN, NEW YORK, ASSIGNOR TO RADIOTIVE CORPORATION, OF BROOKLYN, NEW YORK, A CORPORATION OF NEW YORK.

HEAD RECEIVER FOR TELEPHONES.

Application filed September 30, 1922. Serial No. 591,455.

To all whom it may concern:

Be it known that I, LAMBERT SCHMIDT, a citizen of the United States, and a resident of Brooklyn, county of Kings, and State of New York, have invented a certain new and useful Improvement in Head Receivers for Telephones, of which the following is a specification.

This invention relates to head receivers for telephones and is more particularly designed for use in connection with radio telephone apparatus, though not necessarily limited in this respect. It is the primary object and purpose of the present invention to provide a head receiver for telephones of that type wherein the two receivers are connected by a more or less elastic or flexible head band or bridge.

More particularly, it is my aim and purpose to provide an improved adjustable connecting means between the receivers and the ends of the head band whereby the receivers may be readily positioned in accordance with the size or physical peculiarities of the wearer's head so that they will fit snugly against the ears and thereby exclude extraneous sounds or noises.

In one embodiment of my present invention, I form a boss or extension on the rear wall of the receiver casing which houses the magnetic structure and to each end of the head band there is rigidly fixed in any suitable manner a rod or stem. This rod has a swiveled connection with said extension and is adjustable in the line of its axis with respect to such connection. The receiver may thus be easily swung or rotated about the rod and the rod may likewise assume various angular positions with relation to said receiver so that the ear piece of the receiver will fit closely against the wearer's ear. I also provide a very simple and effective means for limiting the normal axial movement of the rod with respect to its swivel connection with the receiver but which means will nevertheless permit of the entire disconnection or separation of the receiver from said rod when desired.

It is a further general object of my invention to provide a telephone head receiver of the above character wherein the use of flexibly adjustable connections such as straps and buckles between the receivers and the head band is avoided and to also eliminate the necessity of employing yoke pieces swiveled to the sides of the receiver casing and to provide in lieu thereof, a novel and simple connection between the ends of the head band and the receivers which admits of the practical universal adjustment of the receivers relative to the head band and will be quite inconspicuous so that the head receivers when in actual use will not detract from the neat appearance of the wearer.

With the above and other objects in view, the invention consists in the improved head receiver for telephones and in the form, construction and arrangement of the several essential parts thereof as will be hereinafter more fully described, illustrated in the accompanying drawings and subsequently incorporated in the subjoined claims.

In the drawing wherein I have disclosed one simple and practical embodiment of the invention and in which similar reference characters designate corresponding parts throughout the several views:

Figure 1 is a perspective view showing one practical construction of the present invention;

Figure 2 is an end elevation;

Figure 3 is a section taken on the line 3—3 of Figure 2; and

Figure 4 is an enlarged detail section through the swivel connection between one of the rods fixed to the head band and the receiver casing.

In the accompanying drawing, for purposes of illustration, I have shown a head band or bridge consisting of a continuous resilient wire having divergently related bowed portions 5. These bowed portions of the wire may, if desired, be encased within and connected by a suitable fabric or other flexible material indicated at 6. This, however, is not essential and the use of such a connecting sheet of material between the spaced portions of the resilient wire may be dispensed with. At the connected ends of the bowed portions 5, the wire is formed into a loop. These loops are permanently and rigidly secured to the ends of angularly disposed arms 7 integrally formed with or suitably connected to one end of the rods 8. While any preferred means might be employed for effecting the rigid connection between the ends of the head band and the arms 7, I preferably form said arms with reduced extensions which are riveted down upon the wire loops at the ends of the head

band as indicated at 9 in Figure 3 of the drawing. Adjacent to its other end each rod 8 is provided with a longitudinally tapered reduced portion 10 providing an annular shoulder 11 at the smaller end thereof. The purpose of such shoulder on the rod 8 will be hereinafter fully explained.

The receivers, generally indicated at 12, may be of any suitable type in so far as the magnetic structure thereof is concerned, such receiver as is well known in the art, having a metal casing or housing 13 for the magnetic structure upon the open side of which an ear piece 14 of non-magnetic material is threaded, said ear piece securing the vibratory sound producing diaphragm over the open side of the casing.

The rear wall of the receiver casing 13 is provided, preferably centrally thereof, with a hollow laterally projecting boss or extension 15. At diametrically opposite points the wall of this boss is provided with openings 16 elongated longitudinally thereof. The interior surface of the outer end wall of the boss 15 is provided with a concave seat 17 to receive the spherical socket member 18 loosely arranged within said boss for rocking or pivotal movement upon said seat.

The socket member 18 which is preferably of bakelite, fibre or other wear resisting composition material is provided with a diametrically extending opening or bore 19 through which the rod 8 rigidly connected to the head band is slidably engaged. The member 18 is further provided in its inner side which is opposed to the casing 13, with a flaring opening 20 of relatively large diameter and which communicates with the bore 19. Into this opening a tubular boss 22 formed on a plug 21 extends, said plug being threaded into the inner end of the boss or extension 15 on the casing wall as shown at 23. The bore of the boss 22 is extended into the body of the plug, thereby providing a chamber which receives a coiled expansion spring 24 acting against a ball 25 to force the same outwardly against an internal seat 26 formed upon the end of the boss 22 so that said ball partially projects beyond the open end of said boss and is held by the expansive action of the spring 24 in frictional bearing contact against the periphery of the rod 8. It will thus be apparent that the receiver is held against casual shifting movement axially of the rod 8 though by applying the requisite pressure the frictional resistance of the ball 25 may be overcome and the receiver readily adjusted to the desired position along said rod. It will further be apparent that it is also possible to swing or rotate the receiver with its socket member 18 about the rod 8, and as seen in Figure 3 of the drawings, said socket member may readily rock upon its seat 17, thus permitting of an angular movement of the rod 8 in the slots 16 with respect to the receiver casing 13. Accordingly it will be apparent that I provide a substantially universal adjustable connection between the receiver casing and the end of the head band. The rods 8 under the action of the resilient head band will therefore always exert an inward pressure against the receiver in the line of the receiver axis and not at an oblique angle with respect thereto so that the ear piece of the receiver will be applied at all points of its periphery with equal pressure against the ear of the operator. While I provide means which serves to effectively hold and retain the receiver in its longitudinally adjusted position upon the rod 8, it is to be noted that this means is entirely concealed and invisible and no manipulation of screws or other elements which might easily become loosened and perhaps lost, is required. It is further to be observed that owing to the provision of a rigid connection between the ends of the head band and the rods 8, said head band after once being applied and positioned over the wearer's head, will not be susceptible to casual shifting movement which would disturb or disarrange the wearer's hair. Also, since no screws or other projecting parts are used for connecting the rods to the head band, the hair will not become entangled therewith which would occasion more or less annoyance in the removal of the device.

The movement of the receiver axially along the rod 8 in a direction away from the head band is limited by the engagement of the ball 25 with the shoulder 11 at the lower end of the rod. However, upon a further and more severe pull upon the rod or the receiver, said shoulder acting against the ball 25 will force the same inwardly against the action of the spring 24 so that the end of the rod may be pulled through the bore 19 of the socket member 18 and the receiver thus entirely disconnected from said rod.

The lower end of the rod 8 is rounded or convex as indicated at 27 so that said rod when again inserted into the bore of the socket member 18 will readily coact with the ball 25 and force the same into the boss 22 to permit of the projection of the rod through said socket member.

From the foregoing description considered in connection with the accompanying drawing, the construction, manner of use and the several advantages of my present invention will be clearly and fully understood. It will be seen that by reason of my improved connecting means between the ends of the resilient head band and the telephone receivers, the instrument when applied and in use upon the head of the operator will be quite inconspicuous. At the same time the ear

pieces of the receivers will be effectively held in proper close contact against the ears so as to exclude extraneous sounds or noises. As above noted, the head band and the means for connecting the same to the rods 8 may be of other form and construction than that which I have herein particularly described. Likewise, it may be possible to produce the same practical results in connection with other forms of receiver instruments by resorting to certain minor mechanical changes. However, as it is apparent that the essential features of the invention might be exemplified in numerous other alternative constructions, it is to be understood that I reserve the privilege of adopting all such legitimate modifications in the form, proportion and relative arrangement of the several elements as may be fairly considered within the spirit and scope of the invention as claimed.

I claim:

1. In a head receiver for telephones, a head band, a cylindrical rod fixed to one end of said head band, a telephone receiver, and two members carried by said receiver, each movable about its own axis and applicable as a unit with the receiver to applied position upon said rod, said members coacting with the rod at opposite sides thereof to yieldingly resist movement of the receiver with relation to the rod and maintain the receiver in adjusted position thereon.

2. A head receiver for telephones comprising a resilient head band, a rod rigidly fixed to one end of said band, a telephone receiver adapted for longitudinal adjustment relative to said rod, and means enclosed within a part of the receiver casing and automatically coacting with said rod for retaining the receiver in its adjusted position against casual shifting movement on said rod.

3. A head receiver for telephones comprising a resilient head band, a rod rigidly fixed to one end of said band, a telephone receiver, means enclosed within a part of the receiver casing and automatically coacting with said rod to permit of the oscillatory movement of the receiver upon the rod and its adjustment longitudinally thereof towards or from the head band and to retain the receiver in such adjusted position.

4. In a head receiver for telephones, a head band, a telephone receiver, a rod rigidly fixed to one of said parts, and two members mounted for independent axial rotation with relation to each other and frictionally co-acting with the opposite sides of said rod to retain the receiver in an adjusted position relative to the head band and yieldingly resist relative movement of the receiver and head band from such adjusted relation.

5. In a head receiver for telephones, a head band, a telephone receiver, a rod rigidly fixed to one of said parts, the other of said parts being provided with a housing, a member oscillatably mounted within said housing for engagement with one side of said rod, and additional independently acting means mounted within the housing and engaging the opposite side of the rod to hold the rod in frictional bearing contact with said member, said means and the member each frictionally resisting axial movement of the rod through said housing to retain the telephone receiver in an adjusted position relative to the head band.

6. A head receiver for telephones comprising a resilient head band, a rod rigidly fixed to one end of said band, a telephone receiver, an oscillatable socket member carried by the receiver casing and adapted to coact with said rod to permit of the oscillatory movement of the receiver relative to the rod, said receiver and the socket member being longitudinally shiftable along the rod, and additional means frictionally coacting with the rod to hold the receiver against casual shifting movement thereon.

7. A head receiver for telephones comprising a resilient head band, a rod rigidly fixed to one end of said band, a telephone receiver, a socket member oscillatably mounted on the receiver casing and having an opening through which said rod is adapted to be engaged, said socket member permitting of a relative angular movement of the receiver and the rod and also rotating as a unit with respect to the receiver about said rod.

8. A head receiver for telephones comprising a resilient head band, a rod rigidly fixed to one end of said band, a telephone receiver, a socket member oscillatably mounted on the receiver casing and having an opening through which said rod is adapted to be engaged, said socket member permitting of a relative angular movement of the receiver and the rod and also rotating as a unit with respect to the receiver about said rod, said receiver and the socket member being also longitudinally shiftable along said rod, and additional means carried by the receiver to yieldingly and frictionally engage the rod and hold the receiver in an adjusted position against casual shifting movement.

9. A head receiver for telephones, comprising a resilient head band, a rod rigidly fixed to one end of said band, a telephone receiver, a socket member oscillatably mounted on the receiver casing and having an opening through which said rod is adapted to be engaged, said socket member permitting of a relative angular movement of the receiver and the rod and also rotating as a unit with the receiver about said rod, said receiver and the socket member being also longitudinally shiftable along said rod,

and additional means carried by the receiver to yieldingly and frictionally engage the rod and hold the receiver in an adjusted position against casual shifting movement, said rod having stop means at one end with which said holding means is adapted to engage to normally prevent detachment of the receiver from said rod but yielding to severe pressure to permit of such detachment.

10. A head receiver for telephones, comprising a resilient head band, a rod rigidly fixed to one end of said band, a telephone receiver having a hollow axial extension at the rear end of the receiver casing, and means mounted within said casing extension and coacting with the rod to permit of a relative angular movement of the rod and the receiver and to retain the receiver in a longitudinally adjusted position upon the rod.

11. In a head receiver for telephones, a resilient head band having a relatively rigid member extending longitudinally from one end thereof, a telephone receiver, and concealed automatically operating means carried by the receiver in non-variable coacting relation with said rigid member to retain the receiver in connection with said member and in a desired adjusted position relative to the head band.

12. In a head receiver for telephones, a resilient head band, a rod permanently and rigidly fixed to one end of said band, and means for adjustably connecting a telephone receiver to said rod including an independently oscillatable member carried by the receiver and having frictional sliding engagement upon said rod.

13. In a head receiver for telephones, a head band, a member fixed to one end of said band and extending longitudinally therefrom, a telephone receiver, and means carried by the receiver including an oscillatable part engageable with or disengageable from said member by a relative movement of the receiver and member longitudinally of the latter, said means frictionally coacting with the member when engaged therewith to retain the receiver in an adjusted position relative to the head band.

14. A telphone receiver having a casing provided with a hollow extension at one side thereof, and means mounted within said extension for detachably and adjustably connecting the receiver to one end of the head band.

15. A telephone receiver having a casing provided with a hollow extension on one side thereof and means mounted within and entirely enclosed by said extension for detachably and adjustably connecting the receiver to one end of the head band.

16. A casing for telephone receivers provided with a hollow axial extension and means housed within said extension for adjustably and detachably connecting the rereceiver to one end of a head band.

In testimony that I claim the foregoing as my invention, I have signed my name hereunder.

LAMBERT SCHMIDT.