May 25, 1926. 1,586,140

R. W. S. BONNETTE

RECEIVER FOR RADIO AND TELEPHONE APPARATUS

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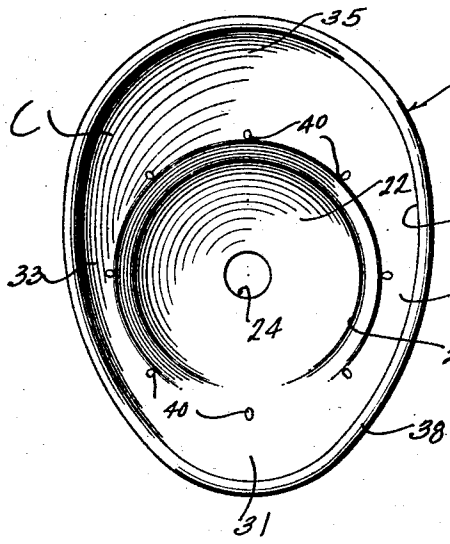


Fig. 1.

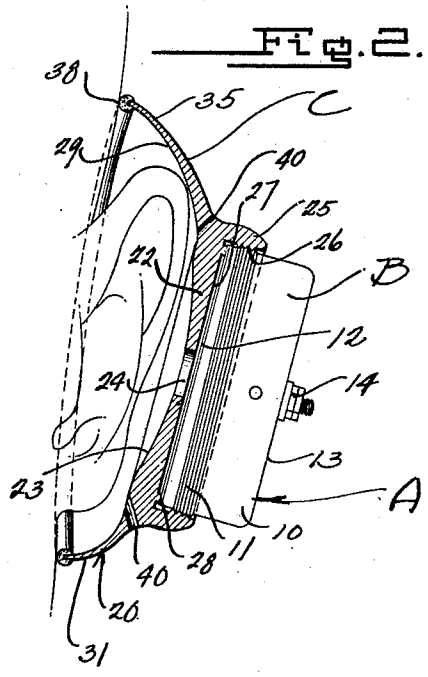


Fig. 2.

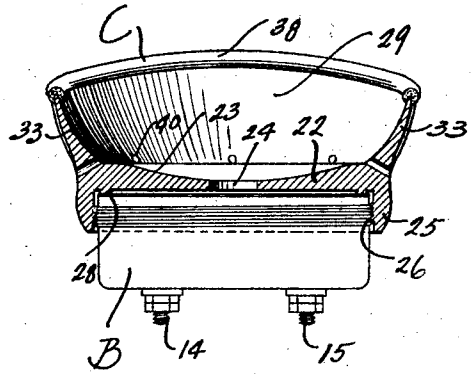


Fig. 3.

Inventor

Ralph W. S. Bonnette

By Lancaster, Allwine

Attorneys

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UNITED STATES PATENT OFFICE.

RALPH W. S. BONNETTE, OF WASHINGTON, DISTRICT OF COLUMBIA.

RECEIVER FOR RADIO AND TELEPHONE APPARATUS.

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This invention relates to improvements in receivers for use in radio and telephone apparatus.

The primary object of the invention is the provision of an improved head engaging member adapted to detachably receive the receiver of radio or telephone apparatus, by means of which the receiver may be comfortably applied to the ear of a person, and in such manner that extraneous noises will not impair the reception of the message or matter being received.

A further and important object of the invention is the provision of an ear receiving cap for the receivers of radio headsets, which is of such a nature as to comfortably receive the ear of a person therein, without engagement, and in such manner that the compartment provided by the cap when against the head of the user, is substantially sound-proof to extraneous sounds, and whereby the faintest portions of matter being received will be audible.

Other objects and advantages of this invention will be apparent during the course of the following detailed description.

In the accompanying drawings, forming a part of this specification, and wherein similar reference characters designate corresponding parts throughout the several views,

Figure 1 is front elevation of the improved cap or ear receiving portion of the receiver.

Figure 2 is a longitudinal cross sectional view taken through the improved receiver cap, showing the application of the same along the head of a user.

Figure 3 is a transverse sectional view taken through the improved cap and its receiver as attached thereto.

In the drawing, wherein for the purpose of illustration is shown only a preferred embodiment of this invention, the letter A may generally designate the receiver, which may include the conventional receiver body B, and the novel head applying cap C for detachable connection to the body B.

The body B, as will be well understood by those skilled in the art to which this invention relates, includes the conventional cylindrical shell 10, provided with external threads 11 thereon, and forwardly supporting the diaphragm 12, which is normally held in position by the magnetic influence of the electro-magnet within the shell 10. At the opposite or outside wall 13 of the shell 10, terminal binding screws 14 and 15 are provided.

Referring to the improved ear receiving and head applying cap C, the same includes the main body 20, formed of some rigid material, such as hard rubber, pyroxyline, or analogous material, preferably of an insulating character. It is formed so as to be oval-shaped in elevation, somewhat in the form of an ellipse, having a major axis which is adapted to extend longitudinally of the ear of a person when the receiver A is applied to the head, as is illustrated in Figure 2 of the drawing. It includes the front wall 22, provided with a concavity 23 inwardly of the front surface thereof, and centrally of said front wall 22 having an axial opening 24 therethrough. Annularly to the rear of the wall 22 is an attaching flange 25, provided with internal screw threads 26, adapted to receive the body B of the receiver therein. At the rear plane surface 27 of the wall 22 an annular abutting flange 28 is provided, projecting from the plane of the surface 27, and against which the outer edge portion of the diaphragm 12 abuts when the body shell 10 is screwed into the annular attaching flange 25. The front wall is to be understood as only including that portion of the cap C within the bounds of the attaching flange 25. Integral with this front wall 22 and extending peripherally about the same, is the flange which provides the compartment 29 within which the ear of the user is received. This flange provides a lower portion 31, which is concavo-convex in cross section, diminishing in thickness from its integral connection with the wall 22, and which extends forwardly of the wall, sloping downwardly therefrom. The said flange provides the side portions 33, which are of course integral with the lower portion 31 and with the wall 22, and which extends forwardly of the front wall 22, at an angle with respect to the plane of the wall 22 which is less than the angle of slope of the lower portion 31 of the said ear receiving flange with respect to said wall 22. At its top the body 20 provides the portion 35, which is concavo-convex in cross section, similar to the portions 31 and 33, but which extends for a greater distance from the plane of the wall 22 than the lower portion 31 or the side portions 33, although it is disposed at an angle with re-

spect to the wall 22, which is substantially the same as the lower portion 31. Thus, the ear receiving flange provided by the portions 31, 33 and 35 provides a compartment 29 which at the lower portion of the receiver cap C is shallow, and which compartment increases in depth toward the upper portion 35 of this flange, so as to comfortably receive the ear of the user therein, as is illustrated in Figure 2 of the drawing. The flange provided by the portions 31, 33 and 35 decreases in thickness from its connection with the wall 22, towards the outer edge thereof, and the outer marginal edge provided by this flange receives a flexible bead 38 thereon, which is provided with a channel groove to receive said edge. This bead 38 is preferably made of fiber, rubber, or analogous flexible material, which will feel comfortable, when abutting the head of the user about the ear. An important feature of the invention is that the major axis of the ellipse or oval formed by the cap is arranged longitudinally of the ear, and the compartment 29 receives the ear therein, without cramping; the flange being of such nature that the flexible bead 38 thereof will abut the side of the head of the wearer about the ear, so that the ear is in a most favorable position to receive messages. In order to accomplish this the distance from the free edge of the lower portion 31 of the flange of the cap to the axis defined by the opening 24 is less than the distance from the axis of the opening 24 to the free edge of the upper portion 35 of the flange. Thus, when the receiver is applied to the ear and head of the wearer, the opening 24 through which the message comes, is properly aligned with the ear canal. It is preferred to provide an annuler series of ducts 40 in the ear receiving flange defining the compartment 29, preferably at the juncture of said flange with the wall 22. As can be seen from Figure 2 of the drawing, the bead defined by the flange of the cap which provides the compartment 29 appears convex in side elevation, and so that the flexible bead 38 may press against the side of the head of the wearer, without necessity of cramping the ear of the wearer in the compartment 29.

From the foregoing description of this invention it is apparent that a receiver for radio and telephone use has been provided, which is a novel departure from the conventional receiver, in that the cap provided by the receiver has a compartment which receives the ear therein without cramping, and which provides a sealed compartment which will eliminate all, or a majority of extraneous noises, so that the message from the receiver will be acute and audible. I am of course aware that various receivers have heretofore been provided, especially with respect to peculiar designs of caps therefor. In the main, caps are adapted for abutment against the ear, and hold the same in a cramped position. Their application is incorrect with practical use, since the compartment between the ear and the receiver is not sealed to its maximum extent, for exclusion of extraneous noises, and the reception of the message is not as acute as is possible with the novel type of receiver herein set forth.

Various changes in the shape, size, and arrangement of parts may be made to the form of the invention herein shown and described, without departing from the spirit of this invention or the scope of the claims.

I claim:

1. As an article of manufacture a cap for telephone receivers comprising a body formed of rigid material and incldng a receiver body attaching flange rearwardly thereof and forwardly thereof providing a substantially elliptical shaped compartment of a size to receive the ear of a wearer therein without cramping when the edge of the cap rests adjacent the side of the head of the wearer, and a flexible head engaging bead carried by the outer edge of the cap about said elliptical shaped compartment.

2. As an article of manufacture a cap for radio receivers comprising a body formed of rigid material, including a substantially circular shaped front wall having a central opening therein, said circular front wall rearwardly thereof being provided with an annular attaching flange, and forwardly and outwardly thereof having an integral flange providing an oval compartment which increases in depth from the lower portion of the campartment to the upper portion thereof.

3. As an article of manufacture a cap for radio receivers comprising a body formed of rigid material, including a substantially circular shaped front wall having a central opening therein, said circular front wall rearwardly thereof being provided with an annular attaching flange, and forwardly and outwardly thereof having an integral flange providing an oval compartment which increases in depth from the lower portion of the compartment to the upper portion thereof, the distance from the central opening of said front wall to the lower edge of said flange being less than the distance from said central opening of the front wall to the other edge of the said flange measured along the major axis of said compartment.

4. A cap for receivers of the class described comprising a rigid body portion having a front wall with a central opening therein and having an annular attaching flange rearwardly of said front wall and forwardly of said front wall having a forward and outwardly extending flange diverging to provide a substantially concave oval-shaped

compartment the lower portion of which compartment is shallower than the upper portion.

5. A cap for receivers of the class described comprising a rigid body portion having a front wall with a central opening therein and having an annular attaching flange rearwardly of said front wall and forwardly of said front wall having a forward and outwardly extending flange diverging to provide a substantially concave oval-shaped compartment the lower portion of which compartment is shallower than the upper portion, said last mentioned flange at the lower portion of the cap being less in length than said flange at the upper portion of said cap.

6. As an article of manufacture a cap for receivers comprising a body of rigid material which includes a front wall of circular formation having a central opening therein, said front wall at the rear thereof being provided with an annular screw threaded receiver body attaching flange, said front wall at the rear surface thereof being provided with an annular projecting flange adjacent and inwardly of said above mentioned attaching flange, said body including a forwardly and divergent flange integral with said front wall and concavo-convex in cross section, diminishing in thickness from said wall at its outer edge toward the outer edge of said last mentioned flange, the last mentioned flange providing a substantially oval-shaped compartment adapted to receive the ear of a wearer therein, and at its outer end being provided with a flexible head engaging bead, said body at the juncture of the last mentioned flange with the front wall being provided with ducts communicating with said compartment, said flange providing said compartment at the upper portion thereof being longer than at the lower portion thereof, whereby the distance from the opening in said front wall to the lower edge of said last mentioned flange is less than the distance from said opening to the upper edge of said last mentioned flange.

7. As an article of manufacture a cap for telephone receivers comprising a body formed of rigid material and including a wall with an opening therein and an attaching flange rearwardly thereof, and a forwardly extending substantially elliptical shaped flange providing an elliptical shaped compartment of a size to receive the ear of a wearer therein without cramping when the edge of the last mentioned flange is in engagement adjacent the side of the head of the wearer, the opening of said wall being disposed closer adjacent to the lower edge of the last mentioned flange than the upper edge of the last mentioned flange whereby to be positioned directly opposite the ear canal of a wearer upon application of the article to the head of a wearer to receive the ear therein.

8. As an article of manufacture a cap for radio receivers comprising a body formed of rigid material and including a front wall having a transverse opening therein, said front wall rearwardly thereof having an attaching flange, and forwardly and outwardly therefrom having an integral rigid flange in diverging relation from the said wall of varying width and providing a compartment the depth of which increases from the lower portion of the compartment to the upper portion thereof.

RALPH W. S. BONNETTE.