

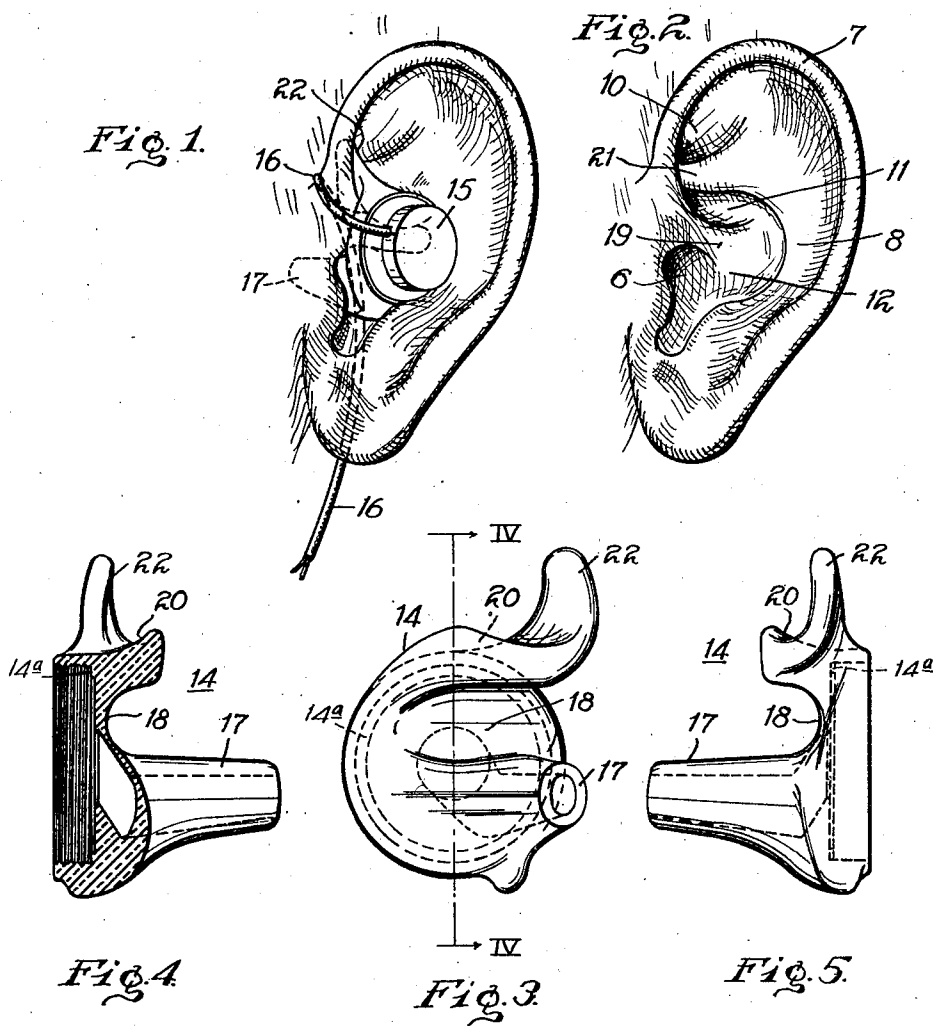
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AUDIPHONE

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AUDIPHONE

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My invention relates to audiphones, and more particularly to caps or holding pieces whereby the phones are supported in the human ear.

Heretofore, difficulty has been experienced in forming these devices, so that they could be comfortably worn, and in many cases, the user frequently has to remove them from his ear by reason of soreness and strain occurring in the ear.

One object of my invention is to provide a device of the character referred to which will not unduly strain the ear and which can be continuously worn with comfort.

Another object of my invention is to provide an audiphone of such form that the sound is more effectively transmitted than in the case of various forms of devices heretofore employed, by reason of the reduction in number of parts and joints through which sound may escape, instead of being transmitted to the auditory passage of the ear.

One form which my invention may take is shown in the accompanying drawing, wherein Fig. 1 is a view showing an audiphone embodying my invention; Fig. 2 is a view showing the ear with the phone removed; Fig. 3 is an inner elevational view of the phone cap of Fig. 1 on an enlarged scale; Fig. 4 is a view taken on the line IV—IV of Fig. 3, and Fig. 5 is an elevational view looking from the right hand side of Fig. 3.

For convenience of description, I will designate the parts of the ear as follows:—The auditory passage 6, helix 7, anti-helix 8, fossa 10 of anti-helix 8, and concha portions 11 and 12. The audiphone cap, designated generally by the numeral 14, is preferably formed in a mold in a single piece of any suitable material and is screw-threaded as shown more clearly in Fig. 4, for attachment to the base or receiver 15 of the audiphone. An annular flange or rib 14^a is provided in the cap to serve as a seat for the diaphragm which forms part of the receiver. The receiver 15 may be of any form well-known in the art and has connection with a conductor 16 which leads to any suitably-located transmitter (not shown).

The cap 14 is provided with a tapering

extension 17 that is perforated to serve as a sound-conducting passageway for directing the sound waves into the auditory passage 6 of the ear. This extension 17 may be of various lengths and much shorter than as shown on the drawing, and snugly fits the auditory passage.

The base is grooved or recessed at 18 in a direction generally tangential to the axis of the base to accommodate the rib-like portion 19 of the ear that is located directly above the entrance to the auditory passage 6. The upper portion of the body of the cap 14 has an upwardly-inclined groove 20 that partially embraces the rib-like portion 21 which is disposed beneath the fossa 10. A horn-like extension 22 at the extreme upper portion of the cap lies against the inner surface of the upper forward portion of the helix 7 and within the fossa 10. The extension 22 is partially embraced by the helix 7 as shown more clearly in Fig. 1 and by reason of the relatively great distance of this extension from the axis of the cap, a comparatively secure holding effect is produced. The grooves 18 and 20 by reason of the fact that they partially embrace the rib-like portions 19 and 21 of the ear also assist in firmly retaining the audiphone in place in the ear. Furthermore, there is a much greater area of contact between the cap 14 and the ear than is commonly found in devices of this kind, which results in less strain on the ear.

The tapering form of the sound passage 17 permits it to snugly engage the ear without the necessity of applying excessive force to hold it in place.

Again, the cap is made of a single piece instead of a plurality of pieces as is common in devices of this kind, thus avoiding the problem of preventing sound from escaping at the joints between such parts.

The screw-threaded connection between the receiver base 15 and the cap 14 permits of the employment of any given base with a cap for either the right or the left ear, thus rendering it unnecessary to have a base of particular form for each ear.

I prefer to make the cap of molded material, since a better fit can be thereby obtained,

through first taking an impression of the ear, by the use of a modeling compound and thereafter molding the cap, somewhat after the practice in dentistry. In those cases where an exact fit is not required, the cap can be
5 made in several sizes and carried in stock, the peculiar formation of the cap making it possible to employ a cap of a given size with ears of various size within not too wide a range, without serious inconvenience to the user.

10 What I claim is:

1. The combination with the base of an audiphone receiver, of a cap therefor having a horn-like extension curved upwardly and
15 rearwardly and shaped to fit behind the upper forward portion of the helix of an ear.

2. The combination with the base of an audiphone receiver, of a cap therefor having a rib-like portion adapted to fit within the
20 upper concha of an ear.

3. A cap for audiphones, having a sound-conducting passageway, and a pair of vertically-spaced grooves disposed thereabove and extending in a generally horizontal direction.

4. A cap for audiphones, having a sound-conducting passageway, a pair of vertically-spaced grooves disposed thereabove and extending in a generally horizontal direction,
25 and a horn-like portion extending upwardly and forming a continuation of the wall of the uppermost groove.

5. A cap for audiphones, having a sound-conducting passageway, and a pair of vertically spaced grooved portions, and having
30 an upwardly-extending horn-like portion formed to fit behind the upper forward portion of the helix of an ear.

6. A cap for audiphones, having a grooved portion adapted to partially surround that
40 rib-like portion of the ear which lies between the concha parts thereof and having a groove adapted to fit that rib-like portion of the ear which is disposed between the fossa and the upper concha portion thereof.

7. An audiphone cap having a rib-like portion shaped to fit within the upper concha of an ear, and a horn-like extension on said portion positioned to lie within the helix of an ear.

8. An audiphone cap having a portion curved to fit within the anti-helix of an ear, and a rib-like portion extending therefrom
50 in position to fit within the upper concha portion of the ear.

9. An audiphone cap having a portion curved to fit within the anti-helix of an ear, and a horn-like portion extending therefrom and shaped to fit within the helix of the ear.

In testimony whereof I, the said JOHN C. ABER, have hereunto set my hand.

JOHN C. ABER.