April 26, 1949. A. M. MONDL 2,468,267

EARPHONE SOCKET

Filed Oct. 24, 1945

Fig. 1.

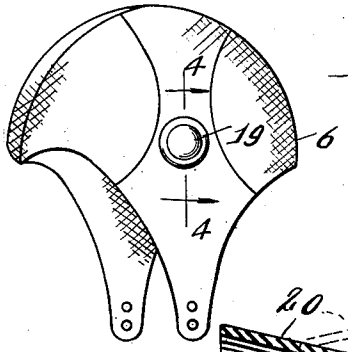


Fig. 2.

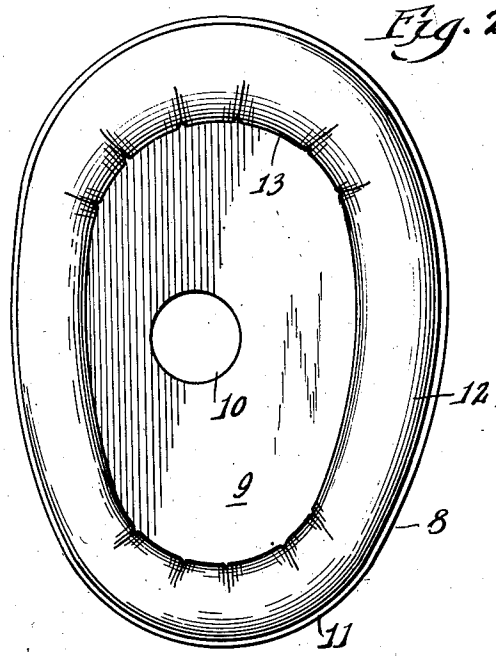


Fig. 5.

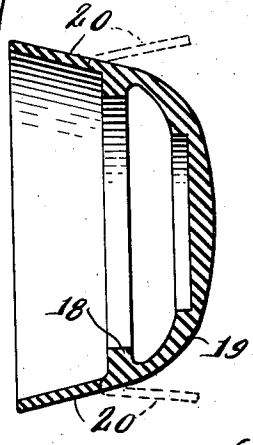


Fig. 3.

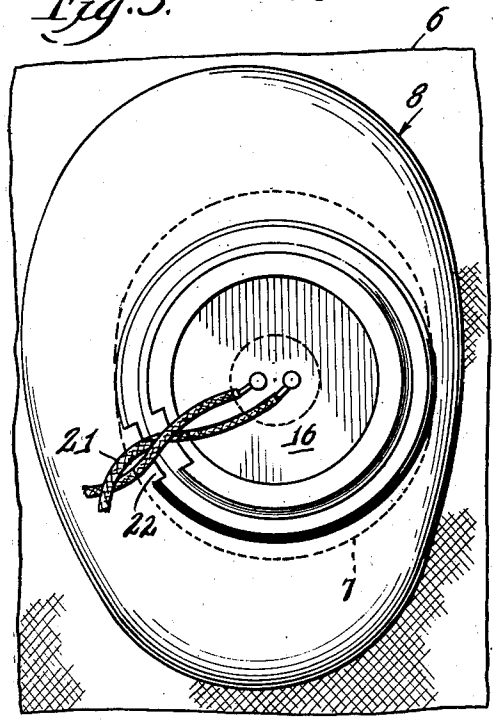
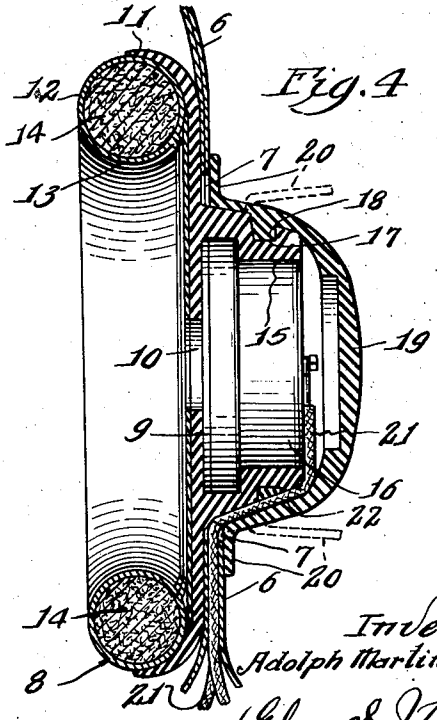


Fig. 4



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EARPHONE SOCKET

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6 Claims. (Cl. 179—156)

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This invention relates to sockets or holding devices for use with earphones for the purpose of deadening or cutting out extraneous sounds and for holding the earphone in adjusted position on the head to secure the best transmission therefrom, and also to support the earphone comfortably on the head. It is particularly adapted for use in connection with helmets such as used by aviators and other persons in the armed forces, and provides means for securely holding the earphone in adjusted position in the helmet.

The objects of the present invention are to provide an improved socket for the purposes above indicated which will be shaped and cushioned so that it will fit closely against the head in a comfortable manner; to provide means for adjustably supporting an earphone in a helmet or the like; to provide means for ready access to the earphone and for attachment to a helmet; and to provide such other novel features and advantages as will appear more fully from the following specification.

In the accompanying drawings illustrating this invention,

Fig. 1 is a side view of a helmet showing the earphone and socket in position;

Fig. 2 is an enlarged inside view of the socket;

Fig. 3 is an enlarged view showing the cap removed;

Fig. 4 is a sectional detail taken substantially on the line 4—4 of Fig. 1; and

Fig. 5 is an enlarged sectional detail of the cap.

As shown in these drawings, 6 indicates generally a helmet or aviator's cap of any suitable construction having a hole or opening 7 in the side thereof opposite the ear of the wearer. My improved socket 8 is made to coact with the helmet and has a substantially flat plate or sheet 9 shaped to conform to the ear with a central opening 10 providing a sound passageway. The disc or plate 9 has a curved peripheral flange 11 which is secured to a correspondingly shaped annular cushion 12. This cushion may be of any suitable form as, for instance, being made with a casing 13 made of chamois skin or other soft material filled with any light resilient substance 14 such as kapok, or the like.

The plate or disc 9 has an integrally formed outwardly projecting socket or holder 15 which is shaped on the inside to conform to the headphone 16 which fits closely therein, as shown in Fig. 4. The disc 9 and socket portion 15 may be made of rubber, synthetic rubber, or other resilient material. The socket 15 is provided with an annular

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groove 17 for receiving a correspondingly shaped annular rib or locking projection 18 on the cap 19 which is shaped substantially as shown and preferably formed of rubber or the like. This cap has an inwardly extending resilient rim or flange 20 which is shaped as shown in full lines, Fig. 5, but which may be sprung or bent outwardly as indicated by the dotted lines when the cap is to be pressed into locking position as shown in Fig. 4.

When the parts are to be assembled for use, the headphone is placed in the socket and the conductor wires 21 which are usually positioned between the layers of the helmet are extended through a notch or recess 22 in the side of the socket 15 and connected with the headphone in the usual manner. The socket portion or receptacle 15 is then projected through the opening 7 with the disc 9 fitting against the inside wall of the helmet. The cap 19 is then attached by inserting the flange or rib 18 in the groove 17 which securely locks the cap in position. The flange or flap portion 20 at this time is sprung or adjusted so that it extends outwardly as indicated in dotted lines. The hole or opening 7 is larger than the projecting portion of the socket which permits the socket to be adjusted laterally until it fits comfortably over the ear and against the head. Then the flap 20 is rolled or sprung inwardly against the outer surface of the helmet as shown in Fig. 4 and exerts sufficient tension to hold the socket in such adjusted position.

From this description it will be seen that my improved socket not only serves to support and protect the headphone, but also deadens the sound so that the wearer may more readily hear the phone messages.

While I have particularly described the socket in connection with helmets, it may also be used without the helmet and give the same advantages with the ordinary head set or earphones. The socket or earphone support may be varied for different types of earphones and changes may be made within the scope of the invention without departing from the spirit thereof as set forth in the following claims in which I claim:

1. The combination with a helmet having an ear opening therethrough, of an earphone socket consisting of a disc formed of resilient material fitting against the inside of the helmet, and having a sound opening therethrough, a cushion ring secured to the disc, and adapted to fit closely against the head of the wearer around the ear, said disc having an integrally formed socket portion extending outwardly through the opening and adapted to receive an earphone said socket

portion being of less diameter than the opening through the helmet whereby it may be adjusted with respect to the helmet, a cap detachably secured to the socket portion and having an outwardly extending resilient flap for engagement with the outer wall of the helmet for holding the socket in adjusted position.

2. The combination with a helmet having a circular opening therethrough, of an earphone socket comprising an inner cushioned portion adapted to surround the ear and engage with the head and having a socket portion extending outwardly through the opening and of less diameter than the opening, a headphone carried by said socket, a cap for the outer end of the socket detachably engaging therewith and having a resilient flange which may be bent outwardly for adjustment of the socket in said opening and then sprung inwardly against the outer surface of the helmet for holding the socket in adjusted position.

3. An earphone socket consisting of a disc formed of rubber with a substantially central sound opening therein and having a peripheral flange, a cushion ring secured to said flange, and adapted to fit closely against the head, an integrally formed earphone support extending outwardly from the disc and having a peripheral groove in the outer wall thereof, and a cap formed of resilient material having a rib for engagement with said groove to lock the cap in position, said cap having an inwardly extending resilient rim adapted to be flexed outwardly to releasing position to permit adjustment of the socket in its supporting helmet and to be sprung inwardly against the helmet to hold the socket in adjusted position.

4. An earphone socket which may be readily attached to a helmet or the like, without stitching, consisting of a plate formed of resilient material and shaped to conform to the ear of the user and having a central opening therein, an annular cushion around the outer periphery of the plate for engagement with the head of the user, said plate having an integrally formed outwardly projecting socket adapted to project through an opening in the helmet, and a cap formed of resilient material fitting over the socket and having a resilient outwardly extending flange which engages with the outer surface of the helmet for clamping the socket in position.

5. The combination with a helmet having an ear flap with a hole therethrough, of an earphone socket comprising a disc engaging with the inner side of the flap, a cushion secured to the outer periphery of the disc and adapted to surround the ear of the user, an earphone holder of less diameter than the hole through the flap formed integrally with the disc and extending out through said hole, and a cap formed of resilient material detachably secured to the disc and having an outwardly extending flange which engages with the outer surface of the flap around the hole for holding the socket in adjusted position, said flange being adapted to be folded back to permit universal adjustment of the socket in the plane of the flap.

6. A quick attachable and detachable and adjustable earphone socket for use with helmets, consisting of a phone receiving portion adapted to project through an opening in the helmet ear flap and having an outwardly extending plate for engagement with the inner surface of the flap and a cap formed of flexible material having detachable locking engagement with the phone receiving portion and adapted to press against the outer surface of the ear flap to fasten the socket in position on the flap.

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