

The invention refers to a holder for a sound transducer in accordance with the preamble of claim 1.

5 With some holders the sound transducer with its sound connecting piece is stuck fast in the sound opening of the housing of the hearing aid. This can lead to undesired acoustic feedbacks. The adhesive, moreover, can partially glue up the sound opening so that the sound can no longer come out unhindered.

10 However, elastic tube holders are also already previously known (e.g. CH-PS 539 375, CH-PS 648 172, WO-OS 85/03 185, US-PS 40 69 400 and DE-AS 12 22 116). CH-PS 539 375 describes e.g. already a holder of the type named at the beginning, where an earphone and, respectively, a microphone of a hearing aid as sound
15 transducer are inserted on the one hand by means of an elastic tube part prestressed on pressure (subclaim 4) in the associated sound line and on the other hand the respective sound transducer sits at least partially in a pocket with elastic supporting knobs. However,
20 unfortunately the pressure can lead to undesired displacements of the sound transducer to be held in the hearing aid housing, which can only be met by the concerned sound transducer additionally also being inserted into a housing compartment limiting the
25 movement.

The object of the present invention is to give a holder which does not have this disadvantage.

The object is achieved according to the invention through the characterizing features of claim 1.

30 According to the invention the sound transducer is now inserted between sound opening and housing in a fully-elastic pull-producing manner. In this way it sits firmly (not irreversibly displaceable) and accordingly elastically in the holder. An accessible
35 housing compartment, which robs space, is no longer necessary. The inner wall of the hearing aid housing can be used directly as a supporting wall.

40 Further advantages and details of the invention emerge from the following description of an exemplary embodiment with the help of a Figure and in connection with the further subclaims.

The Figure shows an in-the-ear hearing aid module with an earphone holder according to the invention partially in longitudinal section.

45 In the Figure the housing 1 of the in-the-ear hearing aid module comprises at its proximal end 2 a sound conduction opening 3 constructed in the form of a connecting piece. A proximally open annular groove 4 is incorporated into the sound conduction opening 3.

50 The annular side area 5 of the annular groove 4 is an abutment for an annular bead 6 of an elastic tube part 7 (e.g. of rubber cross-linking at high temperature).

The elastic tube part 7 sits with the end pointing

away from the bead 6 on the sound exit connecting piece 8 of an earphone 9 and is glued at the earphone-side end 10 to the earphone 9 by means of adhesive 11 (e.g. by means of a silicon adhesive).

5 Approximately half of the earphone 9 is also embedded in a pocket 12 of elastic synthetic material, e.g. rubber cross-linking at high temperature.

The assembly and subsequent mounting of the earphone 9 results as follows:

10 The elastic tube part 7 during the assembly is part of a tube which is indicated as 13 in a broken-line manner in the Figure. The earphone 9 is mounted by means of the tube 13, pulled over the sound exit connecting piece 8 and glued, in the direction of the
15 arrow 14 into the sound conduction opening 3 of the housing of the hearing aid module. The earphone can now be pressed into the position shown in the Figure so that the bead 6 of the tube 13 snaps behind the annular side area 5 of the annular groove 4.

20 Subsequently, the tube 13 is extended somewhat more in the direction of the arrow 15 so that the bead 6 is extracted from the sound conduction opening 3.

In this position the extracted end of the tube 13 is then cut off directly in front of the bead
25 (indicated in the Figure by the sectional plane S-S).

There now remains only the elastic tube part 7 which, after the extension has stopped, contracts again. In this connection, the earphone 9 is held
30 elastically in the sound conduction opening 3 by means of the bead 6 of the elastic tube part 7 in interplay with the elastic pocket 12 which rests resiliently at the annularly-arranged points 16 at the inner partition 17 of the housing of the hearing aid module.

35 Acoustic feedbacks are avoided. The sound conduction opening is always open.

The hearing aid microphone (not shown) can be held in a similar manner if required.

Claims

1. Holder for a sound transducer (9), more particularly earphone, having sound connecting pieces (8) in a housing of a hearing aid, more particularly an in-the-ear hearing aid, near to the associated sound opening (3), whereby the sound transducer is buttoned in the sound opening by means of an elastic tube part (7) disposed on the sound connecting piece and is also provided at least partially with an elastic support, characterized in that the elastic tube part (7) is slightly prestressed elastically in the longitudinal direction in the sense that it pulls the sound transducer (9) in the direction of the sound opening (3) and the sound transducer (9) is provided with the elastic support which is supported against the inner wall (17) of the hearing aid housing (1) and forms an elastic tension abutment (12).

2. Holder according to claim 1, characterized in that the elastic tube part (7) and the sound opening (3) can be connected to one another by means of a bead-groove connection (4, 6).

3. Holder according to claim 2, characterized in that the elastic tube part (7) comprises an annular bead (6) which can be buttoned into an annular groove (4) of the sound opening (3), the annular groove matching the annular bead.

4. Holder according to claim 3, characterized in that the annular groove (4) is proximally open and only the distal annular side area (5) forms an abutment for an elastic tube part (7) prestressed in longitudinal direction.

5. Holder according to one of claims 1 to 4, characterized in that the tube part (7) projects at least partially over the sound connecting piece (8) of the sound transducer (9) and is buttoned in the sound opening (3) with the projecting part.

6. Holder according to one of claims 1 to 5, characterized in that the elastic tube part (7) is glued to the sound transducer (9).

7. Holder according to one of claims 1 to 6, characterized in that the sound transducer (9) sits at least partially in a pocket (12) of elastic material which touches the inner wall (17) of the housing (1) of the hearing aid at least point-wise and which forms in this way the tension abutment.

8. Holder according to claim 7, characterized in that the pocket (12) approximately covers the half of the sound transducer (9) which is directed away from the sound connecting piece (8).

9. Holder according to one of claims 1 to 8, characterized in that the sound opening (3) likewise has the shape of a connecting piece and the sound transducer (9) is buttoned into this connecting piece by means of the elastic tube part (7).

