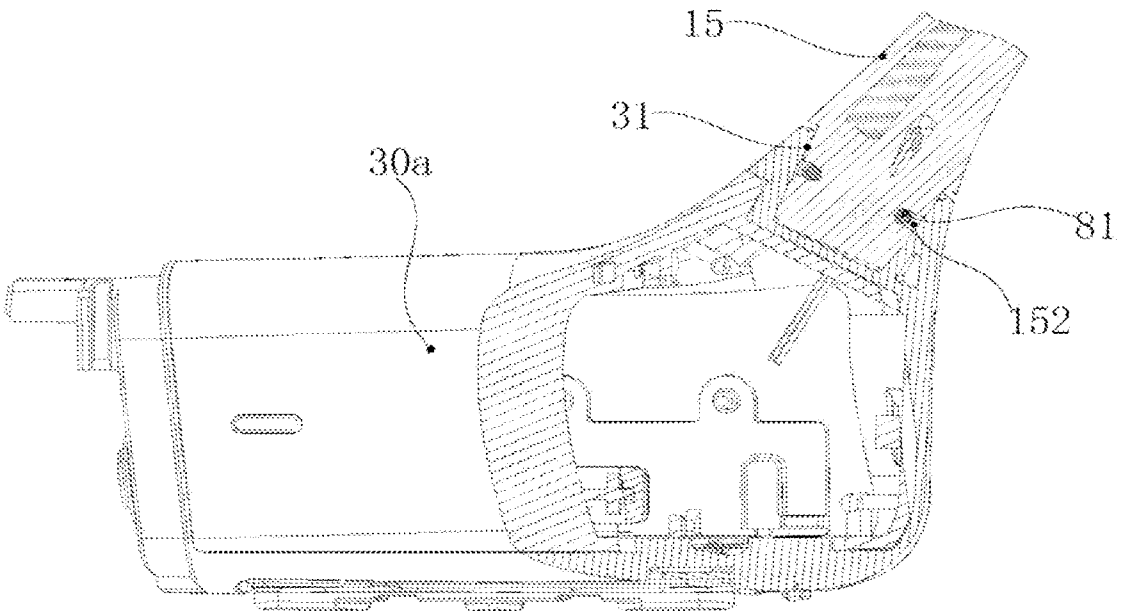


图12

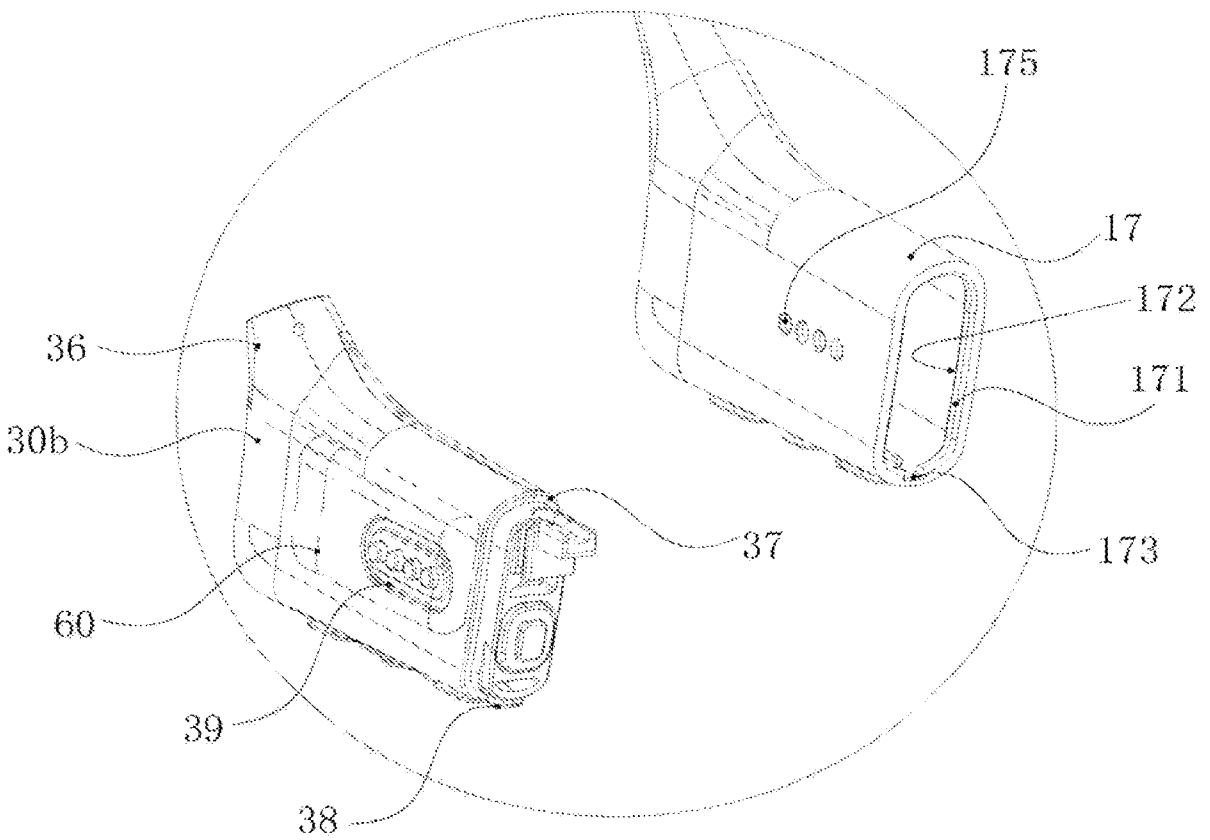


图13

IPR2025-00843; Mojawa
Ex. 1002 - Page 750

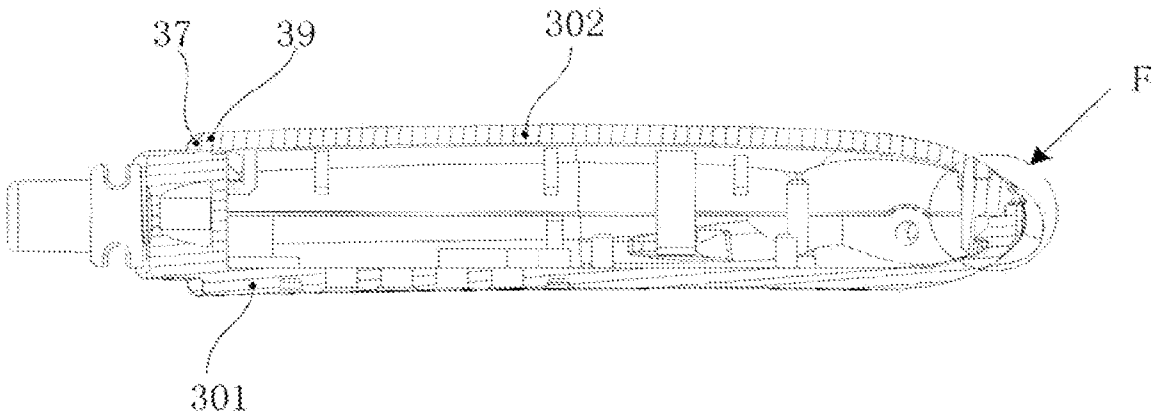


图14

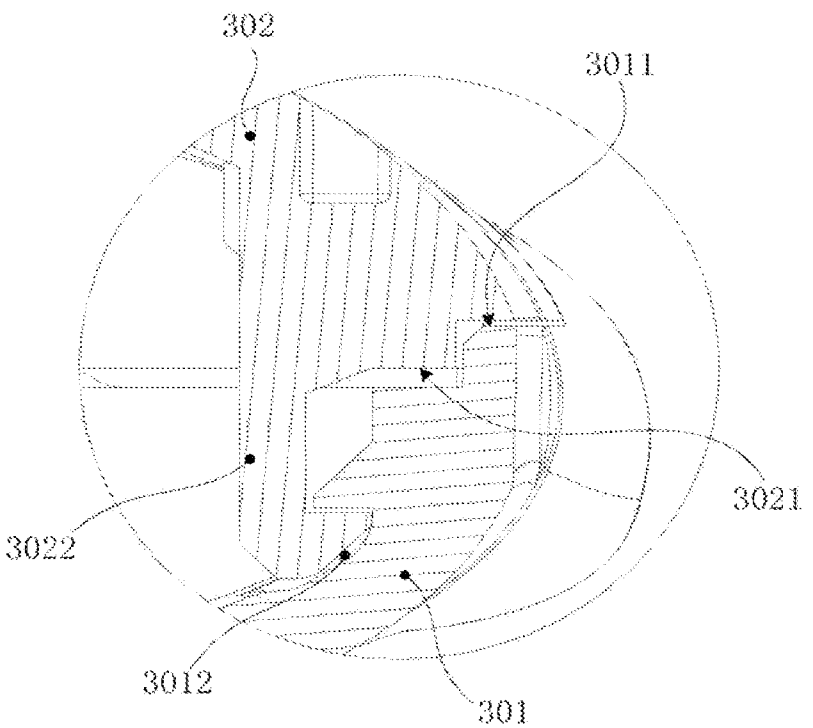


图15

IPR2025-00843; Mojawa
Ex. 1002 - Page 751

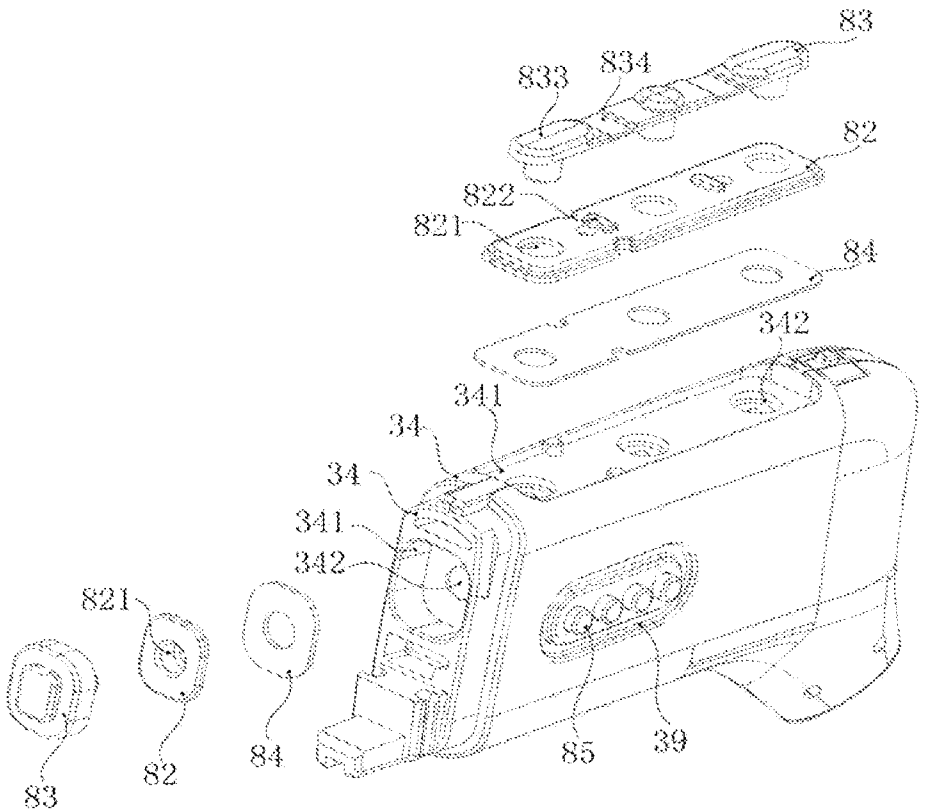


图16

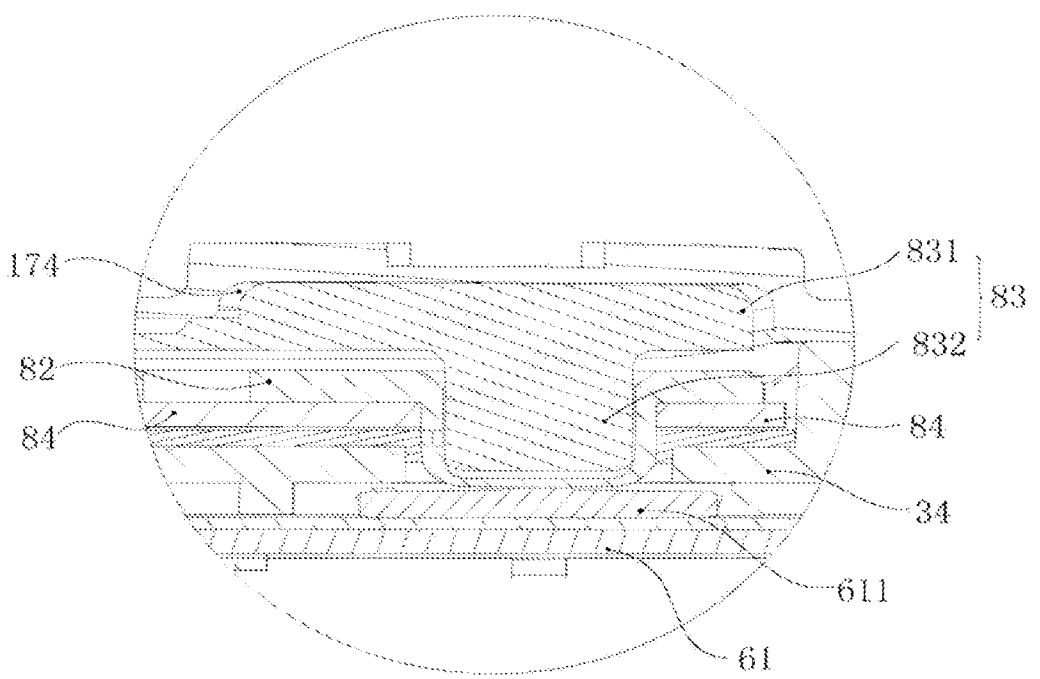


图17

IPR2025-00843; Mojawa
Ex. 1002 - Page 752

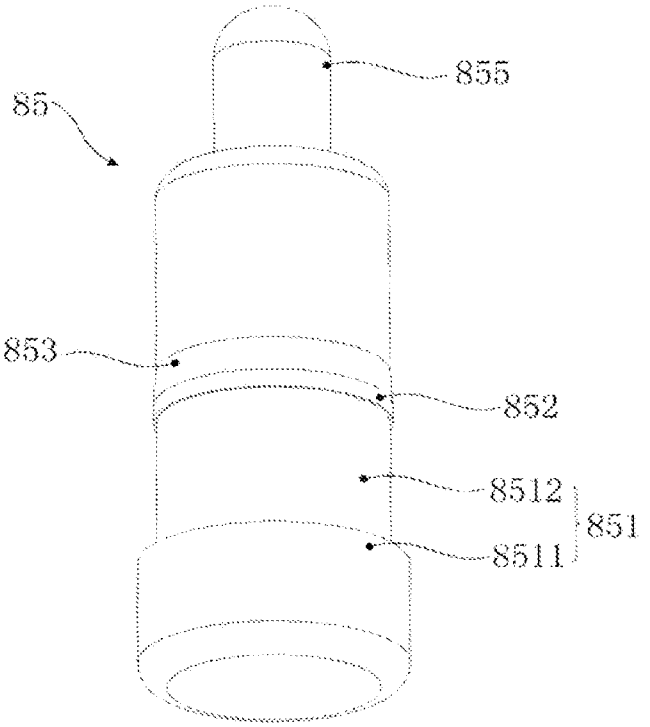


图18

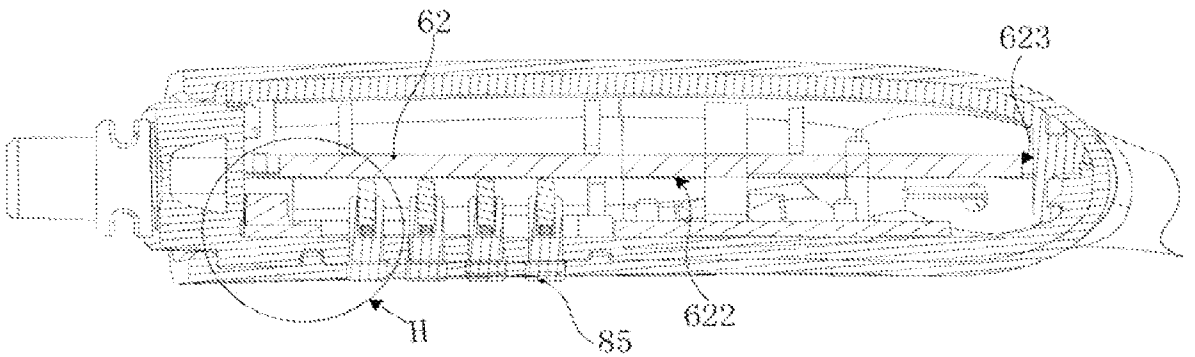


图19

IPR2025-00843; Mojawa
Ex. 1002 - Page 753

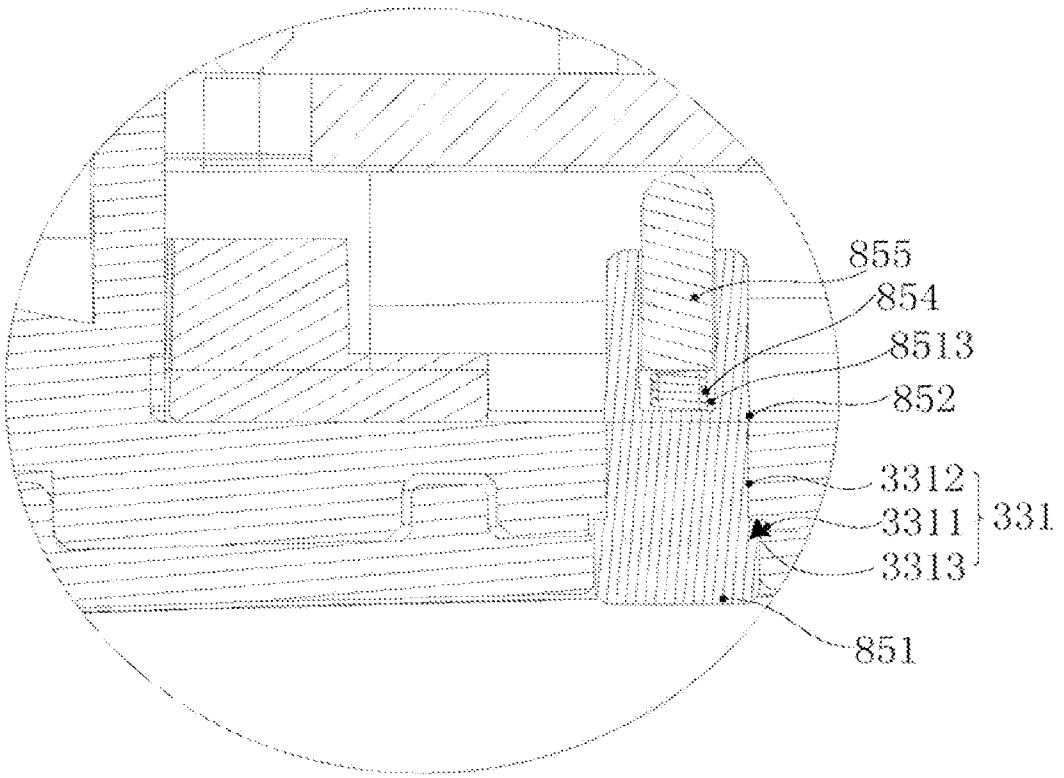


图20

IPR2025-00843; Mojawa
Ex. 1002 - Page 754

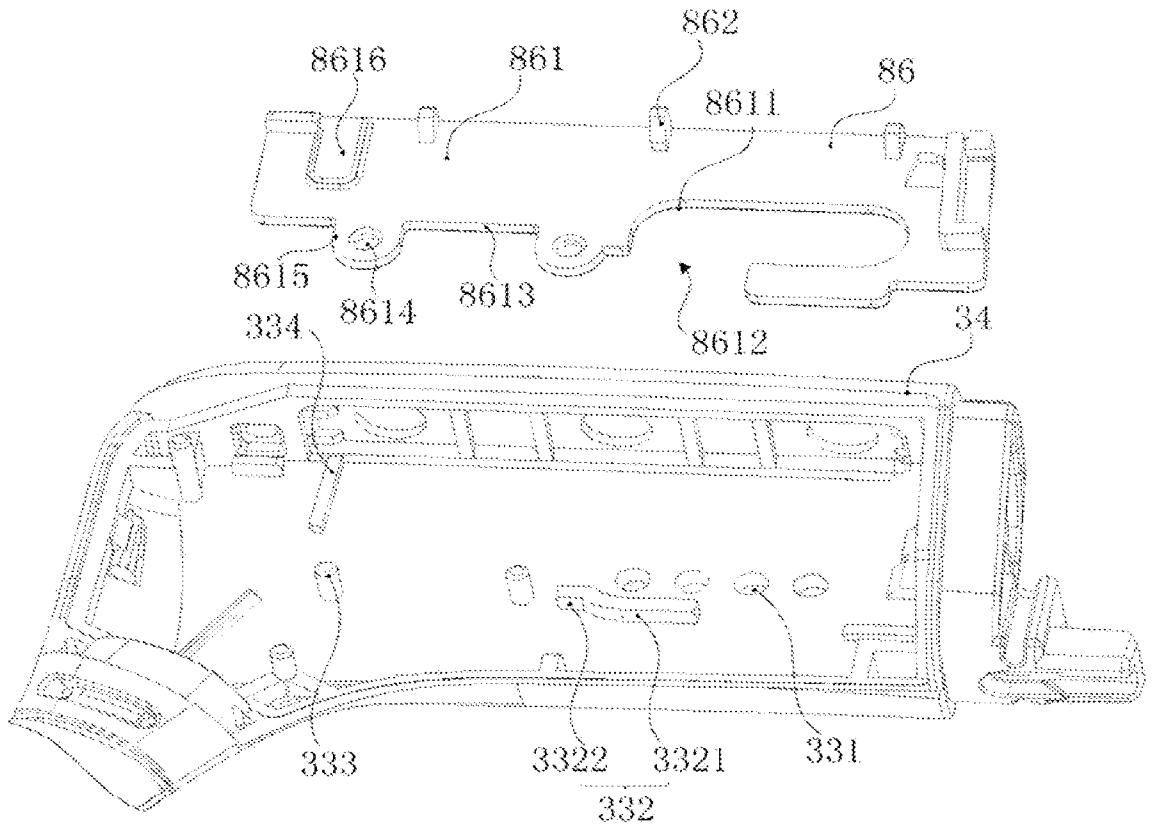


图21

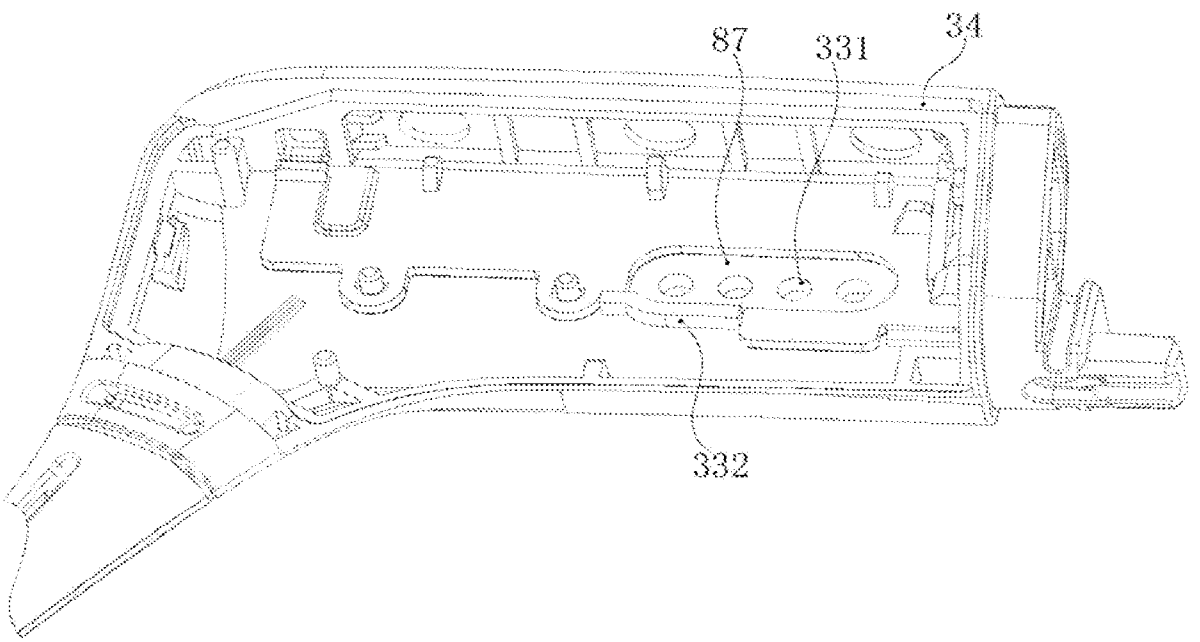


图22

IPR2025-00843; Mojawa
Ex. 1002 - Page 755

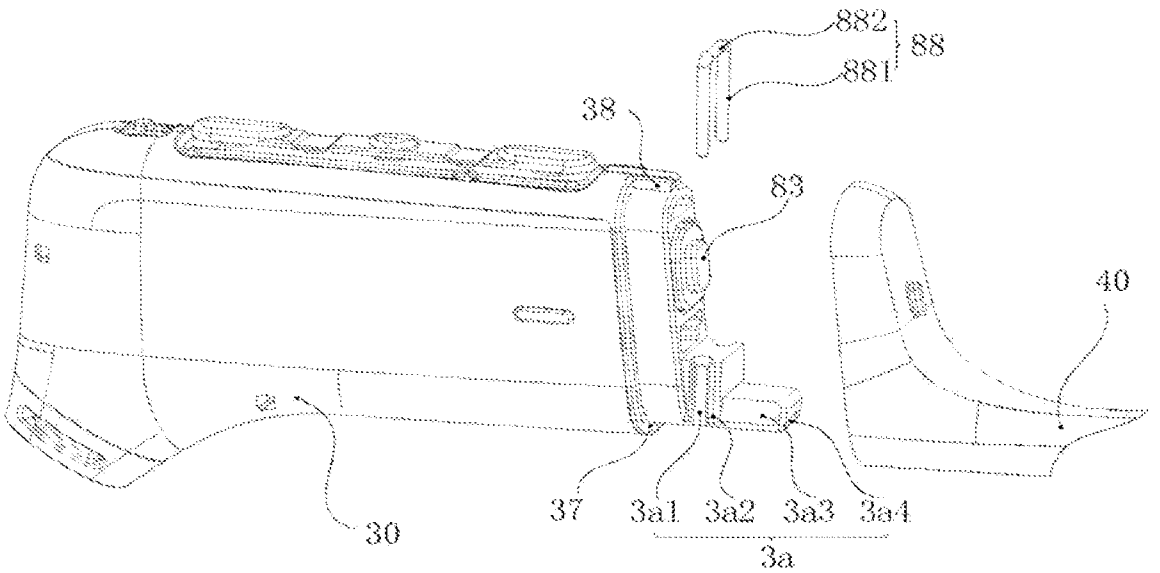


图23

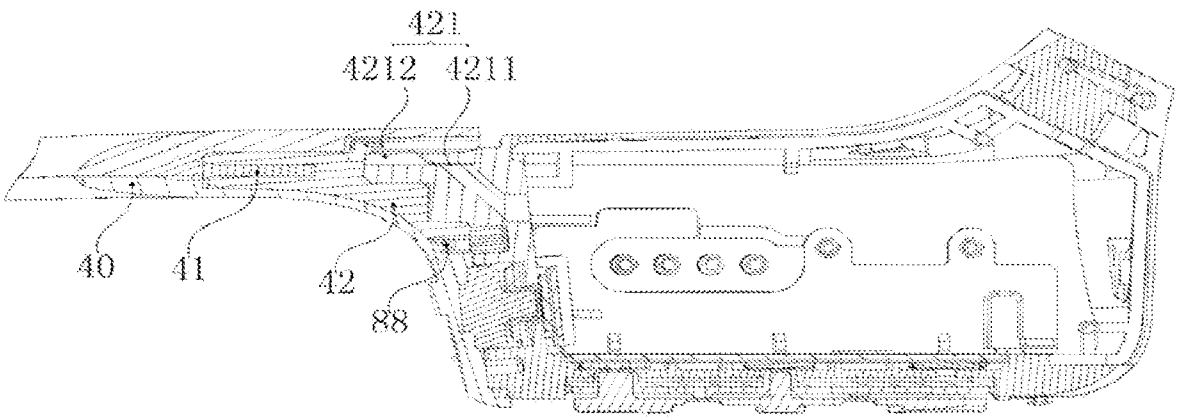


图24

IPR2025-00843; Mojawa
Ex. 1002 - Page 756

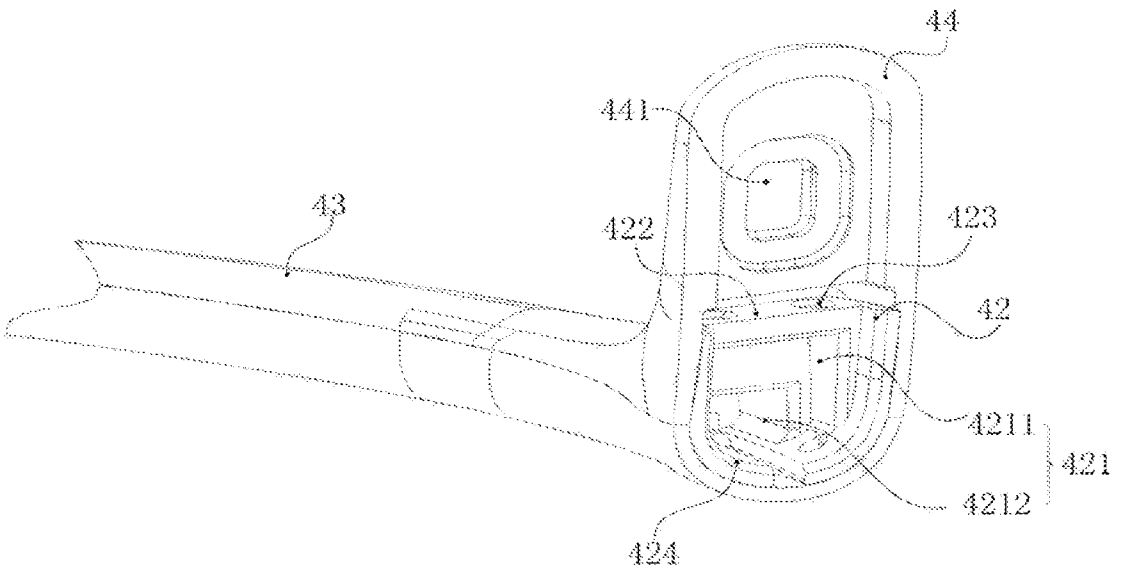


图25

IPR2025-00843; Mojawa
Ex. 1002 - Page 757

(19)中华人民共和国国家知识产权局

(12)发明专利申请

(10)申请公布号 CN 109769167 A
(43)申请公布日 2019.05.17

(21)申请号 201910009887.3

(22)申请日 2019.01.05

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(51)Int.Cl.
H04R 1/10(2006.01)

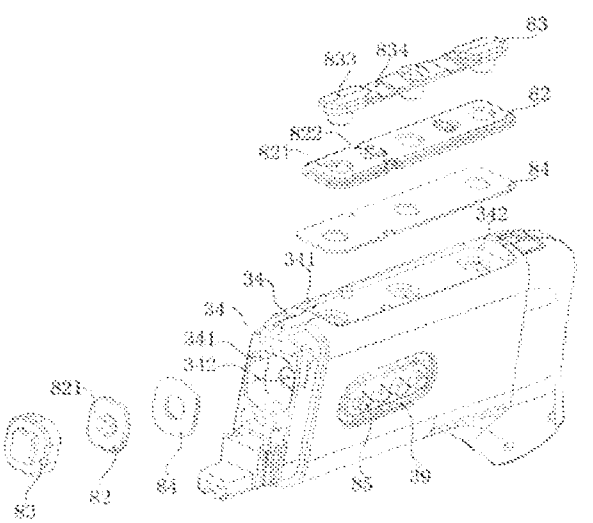
权利要求书2页 说明书19页 附图14页

(54)发明名称

骨传导扬声装置

(57)摘要

本申请公开了一种骨传导扬声装置，包括电路壳体、弹性衬垫、按键及按键电路板，电路壳体包括主侧壁以及与主侧壁连接的辅侧壁，辅侧壁的外表面上设置有第一凹陷区，第一凹陷区内设置有用于连通辅侧壁的外表面和辅侧壁的内表面的按键孔；弹性衬垫设置于第一凹陷区，并设置有与按键孔对应的第二凹陷区，第二凹陷区延伸至按键孔的内部；按键上凸出设置有按键触头，按键本体设置于弹性衬垫远离电路壳体的一侧，且按键触头延伸至第二凹陷区内；按键电路板设置于电路壳体的内部，并设置有与按键孔对应的按键开关，以允许用户在按压按键时由按键触头接触并触发按键开关。通过上述方式，本申请能够减小按键结构所占用的空间，使骨传导扬声装置更加轻薄。



CN 109769167 A

1.一种骨传导扬声装置，其特征在于，包括：

电路壳体，所述电路壳体包括主侧壁以及与所述主侧壁连接的辅侧壁，其中所述辅侧壁的外表面上设置有第一凹陷区，所述第一凹陷区内设置有用于连通所述辅侧壁的外表面和所述辅侧壁的内表面的按键孔；

弹性衬垫，所述弹性衬垫设置于所述第一凹陷区，并设置有与所述按键孔对应的第二凹陷区，其中所述第二凹陷区延伸至所述按键孔的内部；

按键，所述按键上凸出设置有按键触头，其中所述按键本体设置于所述弹性衬垫远离所述电路壳体的一侧，且所述按键触头延伸至所述第二凹陷区内；

按键电路板，所述按键电路板设置于所述电路壳体的内部，并设置有与所述按键孔对应的按键开关，以允许用户在按压所述按键时由所述按键触头接触并触发所述按键开关。

2.根据权利要求1所述的骨传导扬声装置，其特征在于，所述骨传导扬声装置进一步包括刚性衬垫，所述刚性衬垫设置于所述弹性衬垫与所述电路壳体之间，并设置有允许所述第二凹陷区通过的通孔。

3.根据权利要求2所述的骨传导扬声装置，其特征在于，所述弹性衬垫和所述刚性衬垫彼此贴靠固定。

4.根据权利要求1所述的骨传导扬声装置，其特征在于，所述按键包括至少两个彼此间隔设置的按键单体以及用于连接所述按键单体的连接部，其中每个所述按键单体对应设置有一个所述按键触头，其中所述弹性衬垫进一步设置有用于支撑所述连接部的弹性凸块。

5.根据权利要求1所述的骨传导扬声装置，其特征在于，所述骨传导扬声装置进一步包括耳挂，所述耳挂与所述电路壳体接插固定，所述耳挂上注塑有壳体护套，其中所述壳体护套以套装方式包覆于所述电路壳体和所述按键的外围。

6.根据权利要求5所述的骨传导扬声装置，其特征在于，所述壳体护套为一端开口的袋状结构，以使得所述电路壳体及所述按键经由所述壳体护套的开口端进入所述壳体护套的内部。

7.根据权利要求6所述的骨传导扬声装置，其特征在于，所述壳体护套的开口端设置有向内凸出的环状凸缘，所述电路壳体远离所述耳挂的端部呈阶梯状设置，进而形成环形台面，当所述壳体护套包覆于所述电路壳体的外围时，所述环状凸缘抵接于所述环形台面上。

8.根据权利要求7所述的骨传导扬声装置，其特征在于，在所述环状凸缘与所述环形台面的接合区域施加有密封胶，以对所述壳体护套和电路壳体进行密封连接。

9.根据权利要求1所述的骨传导扬声装置，其特征在于，所述骨传导扬声装置进一步包括辅助片，所述辅助片包括板体以及相对于所述板体突出设置的压持脚，所述压持脚用于将所述按键电路板压持于所述辅侧壁的内表面上。

10.根据权利要求9所述的骨传导扬声装置，其特征在于，所述电路壳体的主侧壁上设置有至少一个安装孔，所述骨传导扬声装置进一步包括导电柱，所述导电柱插置于所述安装孔内；

所述板体上设置有镂空区，其中所述板体设置于所述主侧壁的内表面上，且所述安装孔位于所述镂空区内部，进而在所述导电柱外围形成胶槽。

11.根据权利要求10所述的骨传导扬声装置，其特征在于，所述镂空区设置有一缺口，所述主侧壁的内表面上一体成型有与所述缺口对应的条状凸肋，进而利用所述条状凸肋和

IPR2025-00843; Mojawa
Ex. 1002 - Page 759

所述辅助片配合使得所述胶槽呈闭合设置。

IPR2025-00843; Mojawa
Ex. 1002 - Page 760

骨传导扬声装置

技术领域

[0001] 本申请涉及骨传导技术领域，特别是涉及一种骨传导扬声装置。

背景技术

[0002] 骨传导是一种声音传导方式，骨传导扬声装置利用骨传导技术接收声音，由于其能够开放双耳、不伤害鼓膜等优点而受到广大消费者的青睐。

[0003] 骨传导扬声装置的开关按键通常包括朝向外部凸出的弹力壁，以将按键凸出设置，方便用户按压。然而这种设置方式显然需要占用更多的空间，从而导致骨传导扬声装置较厚，不能够满足用户的轻薄化需求。

发明内容

[0004] 本申请主要解决的技术问题是提供一种骨传导扬声装置，能够减小按键结构所占用的空间，使骨传导扬声装置更加轻薄。

[0005] 为解决上述技术问题，本申请采用的一个技术方案是：提供一种骨传导扬声装置，包括：电路壳体，所述电路壳体包括主侧壁以及与所述主侧壁连接的辅侧壁，其中所述辅侧壁的外表面上设置有第一凹陷区，所述第一凹陷区内设置有用于连通所述辅侧壁的外表面和所述辅侧壁的内表面的按键孔；弹性衬垫，所述弹性衬垫设置于所述第一凹陷区，并设置有与所述按键孔对应的第二凹陷区，其中所述第二凹陷区延伸至所述按键孔的内部；按键，所述按键上凸出设置有按键触头，其中所述按键本体设置于所述弹性衬垫远离所述电路壳体的一侧，且所述按键触头延伸至所述第二凹陷区内；按键电路板，所述按键电路板设置于所述电路壳体的内部，并设置有与所述按键孔对应的按键开关，以允许用户在按压所述按键时由所述按键触头接触并触发所述按键开关。

[0006] 本申请的有益效果是：区别于现有技术的情况，本申请骨传导扬声装置通过在弹性衬垫上设置第二凹陷区而使按键的按键触头能够直接伸入至按键孔内部，从而能够缩短按键按压的行程，以减小按键结构所占用的空间，进而使骨传导扬声装置更加轻薄。

附图说明

[0007] 为了更清楚地说明本申请实施例中的技术方案，下面将对实施例描述中所需要使用的附图作简单地介绍，显而易见地，下面描述中的附图仅仅是本申请的一些实施例，对于本领域普通技术人员来讲，在不付出创造性劳动的前提下，还可以根据这些附图获得其他的附图。其中：

[0008] 图1是本申请骨传导扬声装置一实施方式的爆炸结构示意图；

[0009] 图2是本申请骨传导扬声装置一实施方式中耳挂的部分结构示意图；

[0010] 图3是图2中A部分的局部放大图；

[0011] 图4是本申请骨传导扬声装置一实施方式的局部截面图；

[0012] 图5是图4中B部分的局部放大图；

IPR2025-00843; Mojawa
Ex. 1002 - Page 761

[0013] 图6是本申请骨传导扬声装置一实施方式的局部结构截面图；

[0014] 图7是图6中C部分的局部放大图；

[0015] 图8是本申请骨传导扬声装置一实施方式的机芯壳体的部分结构示意图；

[0016] 图9是图8中D部分的局部放大图；

[0017] 图10是本申请骨传导扬声装置一实施方式的机芯壳体的局部截面图；

[0018] 图11是本申请骨传导扬声装置一实施方式中电路壳体与耳挂的部分爆炸图；

[0019] 图12是本申请骨传导扬声装置一实施方式的部分结构的局部截面图；

[0020] 图13是图1中E部分的局部放大图；

[0021] 图14是本申请骨传导扬声装置一实施方式中电路壳体的截面图；

[0022] 图15是图14中F部分的局部放大图；

[0023] 图16是本申请骨传导扬声装置一实施方式中电路壳体与按键结构的爆炸图；

[0024] 图17是图6中G部分的局部放大图；

[0025] 图18是本申请骨传导扬声装置一实施方式中导电柱的结构示意图；

[0026] 图19是本申请骨传导扬声装置一实施方式中电路壳体、导电柱及主控电路板的截面图；

[0027] 图20是图19中H部分的局部放大图；

[0028] 图21是本申请骨传导扬声装置一实施方式中电路壳体与辅助片的局部结构爆炸图；

[0029] 图22是本申请骨传导扬声装置一实施方式中电路壳体与辅助片的局部结构示意图；

[0030] 图23是本申请骨传导扬声装置一实施方式中电路壳体与后挂的局部结构爆炸图；

[0031] 图24是本申请骨传导扬声装置一实施方式中电路壳体与后挂的局部结构截面图；

[0032] 图25是本申请骨传导扬声装置一实施方式中后挂的局部结构示意图。

具体实施方式

[0033] 下面将结合本申请实施例中的附图，对本申请实施例中的技术方案进行清楚、完整地描述，显然，所描述的实施例仅仅是本申请一部分实施例，而不是全部实施例。基于本申请中的实施例，本领域普通技术人员在没有做出创造性的劳动前提下所获得的所有其他实施例，都属于本申请保护的范围。

[0034] 请一并参阅图1至图25，图1至图25绘示了本申请骨传导扬声装置。本申请中的骨传导扬声装置可以为基于骨传导的耳机、MP3或者其它具有扬声功能的装置。具体地，骨传导扬声装置可包括：耳挂10、机芯壳体20、电路壳体30、后挂40，以及耳机芯50、控制电路60、电池70。其中，机芯壳体20与电路壳体30分别设置于耳挂10的两端，后挂40则进一步设置于电路壳体30远离耳挂10的一端。其中，机芯壳体20的数量为两个，分别用于容纳耳机芯50，电路壳体30的数量也为两个，分别用来容纳控制电路60和电池70，后挂40的两端分别连接对应的电路壳体30。

[0035] 其中，耳挂10是指在用户佩戴骨传导扬声装置时，用于环绕并支撑于用户的耳根部位，进而将机芯壳体20及耳机芯50悬挂并固定于用户耳朵预定位置的结构。

[0036] 具体地，耳挂10包括弹性金属丝11、导线12、固定套管13以及设置于弹性金属丝11

IPR2025-00843; Mojawa
Ex. 1002 - Page 762

两端的接插端14和接插端15，还进一步包括保护套管16以及与保护套管16一体成型的壳体护套17。

[0037] 其中，弹性金属丝11主要用于使耳挂10保持为与用户耳朵匹配的形状，并具有一定的弹性，从而能够在用户佩戴时根据用户的耳型以及头型产生一定的弹性形变以适配不同耳型以及头型的用户。本实施方式中，弹性金属丝11可以由记忆合金制成，具有良好的变形恢复能力，从而即便是耳挂10受到外力作用产生形变，在外力去除时，仍然能够恢复至原来的形状以能够继续为用户所使用，从而延长骨传导扬声装置的使用寿命。当然，在其它实施方式当中，弹性金属丝11也可以由非记忆合金制成。

[0038] 导线12可用于与耳机芯50以及控制电路60、电池70等进行电连接，以为耳机芯50的工作进行电量供应以及数据传输。

[0039] 固定套管13用于将导线12固定于弹性金属丝11上。具体地，固定套管13的数量可以为一个或者多个，具体可根据实际需求而定。本实施方式中，固定套管13为至少两个，至少两个固定套管13可沿弹性金属丝11以及导线12的走向而间隔设置，并通过包裹设置在导线12以及弹性金属丝11的外围而将导线12固定于弹性金属丝11上。

[0040] 接插端14和接插端15可由硬质材料，如塑胶等制成。本实施方式中，在制作该接插端14和接插端15时，可以分别以注塑的方式将二者形成于弹性金属丝11的两端。在其它实施方式中，也可以先对接插端14和接插端15分别进行注塑，并在注塑时分别预留与弹性金属丝11端部的连接孔，从而在注塑完成后，通过连接孔而将该接插端14和接插端15分别插接在弹性金属丝11的对应的端部，或者并通过粘接的方式进行固定均可。

[0041] 需要指出的是，本实施方式中，接插端14和接插端15可以不直接注塑形成在导线12的外围，而是在注塑时避开导线12。具体地，可以在注塑接插端14和接插端15时，对位于弹性金属丝11两端的导线12进行固定，以远离接插端14和接插端15的位置，并进一步在接插端14和接插端15上分别设置第一走线通道141和第二走线通道151，以在注塑完成后，将导线12沿第一走线通道141和第二走线通道151延伸设置。具体地，在形成第一走线通道141和第二走线通道151后，可将导线12以穿线的方式穿入该第一走线通道141和第二走线通道151。

[0042] 当然，在其它实施方式中，也可以根据实际情况，将接插端14和接插端15直接注塑在导线12的外围，此处不做具体限定。

[0043] 具体地，在一实施方式中，第一走线通道141可包括第一走线槽1411和连通第一走线槽1411的第一走线孔1412。其中，第一走线槽1411连通接插端14的侧壁面设置，第一走线孔1412的一端与第一走线槽1411的一端连通，另一端与接插端14的外端面连通。接插端14处的导线12沿第一走线槽1411和第一走线孔1412延伸并外露于接插端14的外端面，以进一步与其它结构连接。

[0044] 相应地，第二走线通道151可包括第二走线槽1511和连通第二走线槽1511的第二走线孔1512。其中，第二走线槽1511连通接插端15的侧壁面设置，第二走线孔1512的一端与第二走线槽1511的一端连通，另一端与接插端15的外端面连通。接插端15处的导线12沿第二走线槽1511和第二走线孔1512延伸并外露于接插端15的外端面，以进一步与其它结构连接。

[0045] 其中，接插端14的外端面是指接插端14远离接插端15的一端的端面；相应地，接插

IPR2025-00843; Mojawa
Ex. 1002 - Page 763

端15的外端面是指接插端15远离接插端14的一端的端面。

[0046] 进一步地，保护套管16可注塑形成于弹性金属丝11、导线12、固定套管13、接插端14和接插端15的外围，从而将保护套管16分别与弹性金属丝11、导线12、固定套管13、接插端14和接插端15固定连接，而无需将保护套管16单独注塑形成后再进一步套装在弹性金属丝11以及接插端14、接插端15的外围，从而能够简化制作及装配工序，且通过这种方式，能够使得保护套管16的固定更加牢靠、稳定。

[0047] 进一步地，在成型保护套管16时，同时与该保护套管16一体成型有设置于靠近接插端15一侧的壳体护套17。

[0048] 其中，壳体护套17可与保护套管16一体成型而成为一整体，电路壳体30可通过与接插端15的接插固定而连接设置在耳挂10的一端，壳体护套17则可进一步以套装的方式包覆于在电路壳体30的外围。

[0049] 其中，保护套管16和壳体护套17可以由具有一定弹性的软质材料制成，例如软质的硅胶、橡胶等。

[0050] 具体地，在制造骨传导扬声装置的耳挂10时，可通过如下步骤实现：

[0051] 步骤S101：利用固定套管13将导线12固定于弹性金属丝11上，其中在弹性金属丝11的两端预留出注塑位；

[0052] 具体地，可以先将弹性金属丝11与导线12按照预设的方式，如并排放置在一起，然后，将固定套管13进一步套设在导线12与弹性金属丝11的外围，从而将导线12固定在弹性金属丝11上。

[0053] 其中，由于弹性金属丝11的两端还需要注塑接插端14和接插端15，因此，在固定时，弹性金属丝11的两端不能被固定套管13完全包裹，而需预留出对应的注塑位，以供接插端14和接插端15注塑占用。

[0054] 步骤S102：在弹性金属丝11的两端的注塑位上分别注塑接插端14和接插端15，其中接插端14和接插端15分别设置有第一走线通道141和第二走线通道151；

[0055] 步骤S103：将导线12设置成沿第一走线通道141和第二走线通道151延伸；

[0056] 具体地，此处可在接插端14和接插端15成型完成后，进一步通过手动或者通过机器将导线12的两端分别穿入第一走线通道141和第二走线通道151。其中，导线12位于第一走线通道141和第二走线通道151之间的部分由固定套管13固定于弹性金属丝11上。

[0057] 步骤S104：在弹性金属丝11、导线12、固定套管13、接插端14和接插端15的外围注塑形成保护套管16。

[0058] 在一实施方式中，在执行步骤S104时，进一步以注塑的方式形成与接插端15外围的保护套管16一体成型的壳体护套17。

[0059] 需要指出的是，在其它实施方式中，也可以在安装固定套管13时先不设置导线12，而在接插端14和接插端15注塑之后，再进一步设置导线12，具体步骤如下：

[0060] 步骤S201：将固定套管13套设于弹性金属丝11上，其中在弹性金属丝11的两端预留出注塑位；

[0061] 步骤S202：在弹性金属丝11的两端的注塑位上分别注塑接插端14和接插端15，其中接插端14和接插端15分别设置有第一走线通道141和第二走线通道151；

[0062] 步骤S203：将导线12穿设于固定套管13的内部，以利用固定套管13将导线12固定

IPR2025-00843; Mojawa
Ex. 1002 - Page 764

于弹性金属丝11上，并进一步将导线12设置成沿第一走线通道141和第二走线通道151延伸。

[0063] 需要指出的是，通过这种方式，能够避免在对接插端14和接插端15注塑时受到导线12的干扰，从而有利于成型的顺利进行。

[0064] 其中，本实施方式，以及上述实施方式中方法所涉及到的弹性金属丝11、导线12、固定套管13、接插端14、接插端15与保护套管16的结构、作用以及形成方式等均与上述实施方式中的相同，相关详细内容请参见上述实施方式，此处不再赘述。

[0065] 在一实施方式中，机芯壳体20可用于容纳耳机芯50，并与接插端14接插固定。其中，耳机芯50和机芯壳体20的数量均为两个，分别对应用户的左耳和右耳。

[0066] 具体地，机芯壳体20可以与接插端14通过插接、卡接等方式连接，以将机芯壳体20与耳挂10固定在一起。也就是说，本实施方式中，耳挂10与机芯壳体20可先分别成型，然后再进一步装配在一起，而不是将二者一体直接成型。

[0067] 通过这种方式，可以采用各自对应的模具对耳挂10和机芯壳体20分别成型，而无需采用同一个较大尺寸的模具将二者一体成型，从而可减小模具的尺寸，以降低模具的加工难度，以及成型难度；另外，由于耳挂10和机芯壳体20分别采用不同的模具加工，在生产制造过程中，在需要对耳挂10或机芯壳体20中的某一个的形状或者构造进行调整时，仅调整该结构对应的模具即可，而无需对另外一个结构的模具进行调整，从而能够降低生产成本。

[0068] 当然，在其它实施方式当中，也可以根据情况而使耳挂10与机芯壳体20通过一体成型得到。

[0069] 在一实施方式中，机芯壳体20设置有与机芯壳体20的外端面21连通的接插孔22，接插孔22的内侧壁上设置有止挡块23。

[0070] 其中，机芯壳体20的外端面21是指机芯壳体20朝向耳挂10的端面。接插孔22用于为耳挂10的接插端14插入机芯壳体20提供容置空间，以便进一步实现接插端14与机芯壳体20的接插固定。

[0071] 止挡块23可以由接插孔22的内侧壁沿垂直于该内侧壁的方向凸出形成。具体地，止挡块23可以为多个间隔设置的块状凸起，或者也可以为沿接插孔22内侧壁的环状凸起，此处不做具体限定。

[0072] 其中，接插端14包括插入部142和两个弹性卡勾143。

[0073] 具体地，插入部142至少部分插入于接插孔22内并抵接于止挡块23的外侧面231上。其中，插入部142的外侧壁的形状与接插孔22的内侧壁的形状匹配，以使得插入部142至少部分插入于接插孔22内时，使得插入部142的外侧壁与接插孔22的内侧壁抵接。

[0074] 止挡块23的外侧面231是指止挡块23朝向耳挂10设置的一侧面。插入部142可进一步包括一朝向机芯壳体20的端面1421，该端面1421可与止挡块23的外侧面231匹配，从而在插入部142至少部分插入于接插孔22内时，插入部142的端面1421与止挡块23的外侧面231抵接。

[0075] 具体地，机芯壳体20的接插孔22的沿垂直于接插端14相对于机芯壳体20的插入方向上的截面形状可为椭圆环形或近椭圆环形，对应地，插入部142的横截面可以为与接插孔22匹配的近椭圆形，当然，二者的形状还可以为其它，具体可根据实际需求进行设置。

IPR2025-00843; Mojawa
Ex. 1002 - Page 765

[0076] 进一步地，两个弹性卡勾143可沿垂直于插入方向并排并间隔且对称设置于插入部142朝向机芯壳体20内部的一侧。其中，每个弹性卡勾143可分别包括梁部1431和勾部1432，梁部1431与插入部142朝向机芯壳体20的一侧连接，勾部1432设置在梁部1431远离插入部142的一端，并沿垂直于插入方向延伸。进一步地，每个勾部1432设置有连接平行于插入方向的侧面与远离插入部142的端面的过渡斜面14321。

[0077] 在耳挂10与机芯壳体20的安装过程当中，接插端14由接插孔22逐渐进入机芯壳体20内部，在到达止挡块23的位置时，两个弹性卡勾143的勾部1432会受到止挡块23的阻挡，在外部推力的作用下，止挡块23逐渐挤压勾部1432的过渡斜面14321而使得两个弹性卡勾143发生弹性形变而彼此并拢，在过渡斜面14321通过止挡块23而到达止挡块23靠近机芯壳体20内部的一侧时，弹性卡勾143因失去止挡块23的阻挡而弹性回复，并卡置于止挡块23朝向机芯壳体20内部的内侧面上，从而将止挡块23卡置于接插端14的插入部142和勾部1432之间，进而实现机芯壳体20与接插端14的接插固定。

[0078] 其中，在一实施方式中，在机芯壳体20与接插端14接插固定后，插入部142部分插入于接插孔22内，且在插入部142的外露部分呈阶梯状设置，进而形成与机芯壳体20的外端面21间隔设置的环形台面1422。

[0079] 需要指出的是，插入部142的外露部分是指插入部142外露于机芯壳体20的部分，具体地，可以是指外露于机芯壳体20且靠近机芯壳体20外端面的部分。

[0080] 其中，环形台面1422可以与机芯壳体20的外端面21相对设置，且二者之间的间隔可以是指沿接插方向间隔以及沿垂直于接插方向的间隔。

[0081] 进一步地，保护套管16延伸至环形台面1422朝向机芯壳体20的外端面21的一侧，并在机芯壳体20的接插孔22与接插端14接插固定时，填充于环形台面1422与机芯壳体20的外端面21之间的间隔内，并与机芯壳体20弹性抵接，从而使得外部液体难以从接插端14与机芯壳体20之间的接合处进入机芯壳体20内部，进而实现接插端14与接插孔22之间的密封，以保护机芯壳体20内部的耳机芯50等，从而能够提高对骨传导扬声装置的防水效果。

[0082] 具体地，在一实施方式当中，保护套管16在环形台面1422朝向机芯壳体20的外端面的21一侧形成一环形抵接面161。其中，该环形抵接面161为保护套管16朝向机芯壳体20一侧的端面。

[0083] 进一步地，保护套管16还包括位于该环形抵接面161内部且相对于环形抵接面161凸出设置的环形凸台162。具体地，该环形凸台162具体形成于环形抵接面161朝向接插端14的一侧，并相对于该环形抵接面161沿朝向机芯壳体20的方向凸出设置，进一步地，该环形凸台162还可直接形成于环形台面1422的外围，并覆盖该环形台面1422。

[0084] 进一步地，机芯壳体20包括用于连接机芯壳体20的外端面21和接插孔22的内侧壁的连接斜面24。其中，该连接斜面24具体为机芯壳体20的外端面21与接插孔22的内侧壁之间的过渡面，该连接斜面24与机芯壳体20的外端面21和接插孔22的内侧壁均不在同一平面上。其中，该连接斜面24可以为平面，或者也可以根据实际需求而设置成曲面，或者其它形状，此处不做具体限定。

[0085] 具体地，在机芯壳体20与接插端14接插固定时，环形抵接面161和环形凸台162分别与机芯壳体20的外端面和连接斜面24弹性抵接。

[0086] 需要指出的是，由于机芯壳体20的外端面21和连接斜面24不在同一平面上，从而

IPR2025-00843; Mojawa
Ex. 1002 - Page 766

使得保护套管16与机芯壳体20之间的弹性抵接处不位于同一平面上，从而使得外部液体难以由保护套管16与机芯壳体20之间进入机芯壳体20以进一步进入耳机芯50，从而能够提高骨传导扬声装置的防水效果，以对内部功能结构起到保护作用，进而延长骨传导扬声装置的使用寿命。

[0087] 其中，在一实施方式中，插入部142在环形台面1422朝向机芯壳体20的外端面21的一侧进一步形成有与环形台面1422邻接的环形凹槽1423，其中，环形凸台162可形成于环形凹槽1423内。

[0088] 本实施方式中，环形凹槽1423可形成于环形台面1422朝向机芯壳体20的一侧。在一个应用场景中，环形台面1422为环形凹槽1423的朝向机芯壳体20一侧的侧壁面，此时，环形凸台162沿该侧壁面形成于环形凹槽1423内。

[0089] 在一实施方式中，耳挂10的导线12的位于机芯壳体20的外部的一端可穿过第二走线通道151而进一步连接电路壳体30所容纳的控制电路60、电池70等机芯壳体20外部的外部电路，另一端则沿第一走线通道141而露出于接插端14的外端面，并进一步随插入部142而通过接插孔22而进入机芯壳体20内部。

[0090] 在一实施方式中，机芯壳体20可包括主壳体25以及隔板组件26，其中，隔板组件26位于主壳体25内部，并与主壳体25连接，进而将主壳体25的内部空间27分隔成第一容置空间271和靠近接插孔22一侧的第二容置空间272。

[0091] 具体地，主壳体25包括周侧壁251以及与周侧壁251的一端面连接的底端壁252，周侧壁251与底端壁252共同围绕形成一主壳体25的内部空间27。

[0092] 隔板组件26位于主壳体25的靠近接插孔22的一侧，并包括侧隔板261以及底隔板262。其中，侧隔板261可沿垂直于底端壁252的方向设置，且侧隔板261的两端均与周侧壁251连接，从而对主壳体25的内部空间27进行分隔。底隔板262可与底端壁252平行或者接近平行且间隔设置，并进一步分别与周侧壁251和侧隔板261连接，从而将主壳体25所形成的内部空间27一分为二而形成由侧隔板261、底隔板262和远离接插孔22的周侧壁251、底端壁252共同围成的第一容置空间271，以及由底隔板262与侧隔板261和靠近接插孔22的周侧壁251共同围成的第二容置空间272。其中，第二容置空间272可小于第一容置空间271。

[0093] 当然，隔板组件26也可以通过其它的设置方式对主壳体25的内部空间27进行划分，此处不做具体限定。

[0094] 进一步地，耳机芯50包括功能组件51，该功能组件51设置于第一容置空间271内，可用于振动发声。骨传导扬声装置可进一步包括一端与功能组件51连接的导线80，该导线80的另一端可由第一容置空间271而延伸至第二容置空间272内。

[0095] 具体地，侧隔板261可在远离底端壁252的顶部边缘设置走线槽2611，该走线槽2611可连通第一容置空间271和第二容置空间272。进一步地，导线12的远离功能组件的一端经由该走线槽延伸至第二容置空间272内。

[0096] 另外，耳挂10的导线12的远离电路壳体30的一端随插入部142进入机芯壳体20内部后，可进一步延伸入第二容置空间272内，并在第二容置空间272内与导线80电连接，以形成从第一容置空间271经由第二容置空间272而连接至外部电路的导线通路，从而通过该导线通路将功能组件51与位于机芯壳体20外部的外部电路电连接。

[0097] 具体地，底隔板262上可设置有走线孔2621，该走线孔2621将接插孔22与第二容置

IPR2025-00843; Mojawa
Ex. 1002 - Page 767

空间272连通，从而使得由接插孔22进入机芯壳体20的导线12能够经由该走线孔2621而延伸至第二容置空间272。

[0098] 其中，导线12与导线80在第二容置空间272内连接后，盘绕设置于第二容置空间272内。具体可通过焊接的方式将导线12与导线80连接于一起，进而将功能组件51与外部电路电连接，以通过外部电路为功能组件51的正常工作提供电量或者为耳机芯50传输数据。

[0099] 需要指出的是，在对骨传导扬声装置装配时，导线往往会长于实际需求，以便于装配。然而耳机芯50处多余的导线若不能够进行合理的放置，则容易在功能组件51工作时产生振动而发出异响，从而降低骨传导扬声装置的声音质量，从而影响用户的听音感受。本实施方式中，在机芯壳体20的主壳体25所形成的内部空间27当中分离出第二容置空间272以用于容置多余的导线12和导线80，从而避免或者减少多余的导线对因振动而对骨传导扬声装置所发出的声音的影响，以提高声音质量。

[0100] 在一实施方式中，隔板组件26进一步包括内隔板263，内隔板263进一步将第二容置空间272分隔成两个子容置空间2721。具体地，该内隔板263垂直于主壳体25的底端壁252设置，分别与侧隔板261和周侧壁251连接，并进一步延伸至走线孔2621处，从而在将第二容置空间272分隔为两个子容置空间2721的同时，还进一步将走线孔2621划分为两个，两个走线孔2621可分别与对应的子容置空间2721连通。

[0101] 本实施方式中，导线12和导线80可分别为两根，其中两根导线12分别沿对应的走线孔2621而分开延伸至各自的子容置空间2721内，而两根导线80则仍一起通过走线槽2611而进入第二容置空间272，并在进入第二容置空间272后分开，并分别在对应的子容置空间2721内与对应的导线12焊接于一起，并进一步盘绕设置于对应的子容置空间2721内。

[0102] 进一步地，在一实施方式中，第二容置空间272可进一步由密封胶进行填充。通过这种方式，能够将第二容置空间272内所容置的导线12和导线80进一步固定，以进一步降低由于导线振动而对声音质量造成的不良影响，从而提高骨传导扬声装置的声音质量，同时能够对导线12与导线80之间的焊接点起到保护作用，另外，将第二容置空间272密封设置还能够达到防水防尘的目的。

[0103] 在一实施方式中，电路壳体30与接插端15接插固定，从而将电路壳体30固定在耳挂10远离机芯壳体20的一端。其中，在用户佩戴使用时，容纳电池70的电路壳体30和容纳控制电路60的电路壳体30可分别对应用户的左侧和右侧，二者在与对应的接插端15的接插方式上可以不同。

[0104] 具体地，电路壳体30可以与接插端15通过插接、卡接等方式连接。也就是说，本实施方式中，耳挂10与电路壳体30可先分别独立成型，然后并在成型完成后再进一步装配在一起，而不是直接将二者一体成型。

[0105] 通过这种方式，可以采用各自对应的模具对耳挂10和电路壳体30分别成型，而无需采用同一个较大尺寸的模具将二者一体成型，从而可减小成型模具的尺寸，以降低模具的加工难度，以及成型难度；另外，由于耳挂10和电路壳体30分别采用不同的模具加工，在生产制造过程中，在需要对耳挂10或电路壳体30中的某一个的形状或者构造进行调整时，仅调整该结构对应的模具即可，而无需对另外一个结构的模具进行调整，从而能够降低生产成本。

[0106] 进一步地，在一实施方式中，电路壳体30设置有接插孔31，该接插孔31的内表面的

IPR2025-00843; Mojawa
Ex. 1002 - Page 768

形状可与接插端15的至少部分外表面的形状匹配，从而使得接插端15能够至少部分插入至接插孔31内。

[0107] 进一步地，在接插端15的相对两侧分别设置有与接插端15相对于接插孔31的插入方向垂直设置的开槽152。具体地，两个开槽152对称且间隔设置于接插端15的相对两侧，且均在沿插入方向的垂直方向上连通接插端15的侧壁。

[0108] 相应地，电路壳体30的第一侧壁30a上设置有与两个开槽152位置对应的贯穿该第一侧壁30a的两个通孔32。

[0109] 其中，电路壳体30可以呈扁平状设置，例如，电路壳体30于第二接插孔31处的横截面可以为椭圆形，或者能够形成扁平状设置的其它形状。本实施方式中，电路壳体30的面积较大的两个相对设置的侧壁为主侧壁33，连接两个主侧壁33的面积较小的且相对设置的两对侧壁为辅侧壁34。本实施方式中，电路壳体30的第一侧壁30a既可以为该电路壳体30的主侧壁33也可以为电路壳体30的辅侧壁34，具体可以根据实际需求进行设定。

[0110] 当然，在其它实施方式中，电路壳体30于接插孔31处的横截面还可以为圆形等其它形状，具体可根据实际需求进行设置。

[0111] 进一步地，骨传导扬声装置还可以包括固定件81，固定件81包括两条平行设置的插脚811和用于连接插脚811的连接部812。具体地，连接部812可垂直连接设置于两条插脚811的朝向同一方向的一端，从而形成U型的固定件81。

[0112] 其中，两个插脚811远离连接部812的一端从电路壳体30的外侧经通孔32插入至开槽152，而将连接部812阻挡于电路壳体30的外侧，进而实现电路壳体30与接插端15的接插固定。

[0113] 进一步地，在一实施方式中，电路壳体30的第一侧壁30a上进一步形成有用于连接两个通孔32的条状凹槽35，在利用固定件81接插固定时，连接部812能够进一步部分或者全部沉设于条状凹槽35内。从而一方面能够使得骨传导扬声装置整体更加统一，进而使得套装在电路壳体30外围的壳体护套17上无需专门成型设置与连接部812对应的凹槽，简化壳体护套17的模具；另一方面，还能够在一定程度上减小骨传导扬声装置整体所占用的空间。

[0114] 其中，在一个应用场景中，可以在将连接部812部分或者全部沉设于条状凹槽35内后，进一步在条状凹槽35内施胶，通过这种方式，一方面能够将固定件81固定在电路壳体30上，从而使得接插端15与接插孔31之间的接插更加稳固；另一方面，在连接部812沉设于条状凹槽35后，进一步通过施胶将凹槽35填平，以与电路壳体30的第一侧壁30a保持一致，从而在套设壳体护套17后，使得该凹槽35与周边结构之间更加平整连贯。

[0115] 其中，在一实施方式中，与电路壳体30的第一侧壁30a相对的电路壳体30的第二侧壁30b上进一步设置有与通孔32相对的通孔36，插脚811进一步经开槽152插入至通孔36内。

[0116] 具体地，电路壳体30的第一侧壁30a和电路壳体30的第二侧壁30b均可为电路壳体30的主侧壁33或者辅侧壁34。在本实施方式中，电路壳体30的第一侧壁30a和第二侧壁30b分别为电路壳体30的两个相对设置的主侧壁33。也就是说，两个通孔32以及两个通孔36分别设置于电路壳体30的面积较大的侧壁上，进而固定件81的两个插脚811之间可以设置较大的间隔，以增大固定件81的跨度，从而能够提高接插端15与接插孔31之间接插的稳定性。

[0117] 本实施方式中，插脚811经通孔32插入至开槽152内，并进一步经开槽152插入至通孔36内，也就是说插脚811能够将电路壳体30的两相对主侧壁33以及接插端15完全贯穿并

IPR2025-00843; Mojawa
Ex. 1002 - Page 769

固定于一起，从而能够使得接插端15与电路壳体30之间接插更加牢固。

[0118] 进一步地，如上述实施方式中所述，在保护套管16成型时，同时与该保护套管16一体成型有设置于靠近接插端15一侧的壳体护套17。

[0119] 其中，该壳体护套17与电路壳体30分别成型，并使得该壳体护套17的内侧壁的形状与电路壳体30的外侧壁匹配，进而在二者分别成型完成之后，将壳体护套17以套装的方式包覆于电路壳体30的外围。

[0120] 需要指出的是，由于在壳体护套17成型时的环境温度较高，而高温环境可能会对电路壳体30所容纳的控制电路60或电池70造成一定的损伤，因此，在成型阶段，将电路壳体30和壳体护套17分别成型，然后再套装在一起，从而能够避免壳体护套17在成型时，高温对控制电路60或电池70所带来的损伤，从而降低成型对控制电路60或电池70所带来的不利影响。

[0121] 进一步地，壳体护套17可以为一端开口的袋状结构，以使得电路壳体30经由壳体护套17的开口端进入壳体护套17的内部。

[0122] 本实施方式中，壳体护套17在与保护套管16一体成型而形成之后，可以通过从开口端对壳体护套17进行翻卷而将其从模具上取下；在对壳体护套17进行外观检查以及丝印等表面处理时，可进一步将壳体护套17通过开口而套设在预设结构上进行操作，并在操作完成后，进一步通过从开口处对壳体护套17进行翻卷而将其从该预设结构上取下；在检查及处理等操作完成后，可进一步通过开口而将壳体护套17套装在电路壳体30的外围。上述操作中，在将壳体护套17取下并不限定于上述翻卷的方式，还可通过充气等方式，此处不做具体限定。

[0123] 具体地，壳体护套17的开口端为壳体护套17背离保护套管16的一端，从而该电路壳体30从壳体护套17远离保护套管16的一端进入壳体护套17的内部，以为该壳体护套17所包覆。

[0124] 在一实施方式中，壳体护套17的开口端设置有向内凸出的环状凸缘171。进一步地，电路壳体30远离耳挂10的端部呈阶梯状设置，进而形成环形台面37。当壳体护套17包覆于电路壳体30的外围时，环状凸缘171抵接于环形台面37上。

[0125] 具体地，环状凸缘171由壳体护套17的开口端的内壁面朝向壳体护套17内部凸出一定的厚度形成，并包括一朝向耳挂10的凸缘面172。

[0126] 其中，环形台面37与凸缘面172相对，并朝向电路壳体30背离耳挂10的方向。

[0127] 该环状凸缘171的凸缘面172的高度不大于环形台面37的高度，从而使得在环状凸缘171的凸缘面172与环形台面37相抵接时，壳体护套17的内壁面能够与电路壳体30的侧壁面充分抵接，从而使得壳体护套17能够紧密包覆于电路壳体30的外围。

[0128] 进一步地，在一实施方式中，在环状凸缘171与环形台面37上的接合区域内可进一步施加有密封胶。具体地，在对壳体护套17进行套装时，可以在环形台面37上涂覆密封胶，从而将壳体护套17与电路壳体30进行密封连接。

[0129] 其中，在一实施方式中，电路壳体30上还设置有定位块38，该定位块38设置于环形台面37上，并沿电路壳体30背离耳挂10的方向延伸。具体地，该定位块38可设置于电路壳体30的辅侧壁34上，且该定位块38在辅侧壁34上凸出的厚度与环形台面37的高度一致。其中，定位块38的数量可以根据需求设置一个或者多个。

IPR2025-00843; Mojawa
Ex. 1002 - Page 770

[0130] 相应地，壳体护套17的环状凸缘171处设置有与定位块38对应的定位槽173，从而在壳体护套17包覆于电路壳体30的外围时，该定位槽173覆盖在至少部分定位块38上。

[0131] 通过这种方式，在对壳体护套17进行套装时，可以根据定位块38和定位槽173的位置对壳体护套17进行定位，以方便操作人员快速、准确得安装。当然，在其它实施方式中，也可以根据实际需求不设置定位块。

[0132] 在一实施方式中，电路壳体30包括彼此扣合的两个子壳体，分别为第一子壳体301和第二子壳体302。具体地，两个子壳体可以沿电路壳体30的中线而对称扣合，或者也可以根据实际需求通过其他方式进行扣合。另外，用于容纳控制电路60的电路壳体30的两个子壳体的扣合方式可以与用于容纳电池70的电路壳体30的两个子壳体的扣合方式可以相同，也可以不同。

[0133] 在一个应用场景中，电路壳体30的环形台面37可形成于第一子壳体301上，两个子壳体在环形台面37朝向耳挂10的一侧接合，从而使得壳体护套17能够对两个子壳体的接合缝进行全覆盖，从而能够在一定程度上对电路壳体30的内部空间进行密封，以提高骨传导扬声装置的防水效果。

[0134] 在另一应用场景中，电路壳体30的环形台面37还可以由两个子壳体共同形成，从而使得二者至少部分部位在环形台面37背离耳挂10的一侧结合。此时，壳体护套17不能够覆盖两个子壳体的位于环形台面37背离耳挂10一侧的接合缝。本应用场景中，可以进一步通过其它方式对该部分的接合缝进行覆盖。

[0135] 进一步地，在一实施方式中，两个子壳体彼此对接的接合面为互相契合的阶梯形状。

[0136] 具体地，第一子壳体301的朝向第二子壳体302的端面为阶梯状的第一阶梯面3011，第二子壳体302的朝向第一子壳体301的端面为阶梯状的第二阶梯面3021。第一阶梯面3011和第二阶梯面3021的形状及尺寸均一致，从而能够互相配合抵接在一起。

[0137] 通过这种方式，电路壳体30的两个子壳体互相抵接的结合面成阶梯状而不在同一平面上，从而能够阻挡电路壳体30外部的液体由电路壳体30的外围进入电路壳体30的内部，进而进一步提高骨传导扬声装置的防水效果，以对电路壳体30内部的控制电路60或者电池70等进行保护。

[0138] 进一步地，在第二子壳体302的第二阶梯面3021上设置有朝向第一子壳体30a的安装卡勾3022，对应地，第一子壳体301的内部设置有与该安装卡勾3022匹配的安装勾槽3012。在对第一子壳体301和第二子壳体302进行安装时，安装卡勾3022能够在外部推力越过安装勾槽3012的外侧壁而进入该安装勾槽3012，并使得安装卡勾3022的勾部勾接安装勾槽3012的内侧壁，从而实现第一子壳体301与第二子壳体302的扣合。

[0139] 在一实施方式中，骨传导扬声装置进一步设置有按键机构。

[0140] 具体地，电路壳体30的辅侧壁34的外表面上设置有第一凹陷区341，该第一凹陷区341内进一步设置有按键孔342，该按键孔342连通辅侧壁34的外表面和内表面。

[0141] 其中，电路壳体30的辅侧壁34可以包括，在用户佩戴该骨传导扬声装置时，朝向用户头部后侧的辅侧壁34，也可以包括在用户佩戴时，朝向用户头部下侧的辅侧壁34。

[0142] 第一凹陷区341的数量可以为一个或者多个，且每个第一凹陷区341内可以设置一个或者多个按键孔342，具体可以根据实际需求设置，此处不做具体限定。

IPR2025-00843; Mojawa
Ex. 1002 - Page 771

[0143] 本实施方式中，骨传导扬声装置还进一步包括弹性衬垫82、按键83，控制电路60包括按键电路板61。

[0144] 其中，弹性衬垫82设置于第一凹陷区341，具体固定于第一凹陷区341对应的辅侧壁34的外表面上，以覆盖于按键孔342的外部从而避免外部液体通过按键孔342进入到电路壳体30的内部，以起到密封防水的作用。

[0145] 进一步地，该弹性衬垫82上设置有与按键孔342对应的第二凹陷区821，该第二凹陷区821延伸至按键孔342的内部。

[0146] 具体地，该弹性衬垫82可以由软性材质制成，例如软性的硅胶、橡胶等。且该弹性衬垫82较薄，直接与辅侧壁34的外表面粘接时，难以粘接牢靠。

[0147] 因此，在一实施方式中，可进一步在弹性衬垫82与电路壳体30之间设置刚性衬垫84，该钢性衬垫84与弹性衬垫82彼此贴靠固定，具体可以通过贴合、粘接、注塑等的方式实现，并进一步将钢性衬垫84与辅侧壁34进行粘接，具体可以通过采用双面胶进行粘接，以在钢性衬垫84与辅侧壁34之间形成一粘胶层，从而使得弹性衬垫82能够牢靠地固定在辅侧壁34的外表面。而且，由于弹性衬垫82质软且薄，因此在用户按压按键的过程当中难以保持平整状态，而通过与钢性衬垫84的贴靠固定，能够使弹性衬垫82保持平整。

[0148] 进一步地，钢性衬垫84上设置有允许第二凹陷区821通过的通孔841，从而使得弹性衬垫82的第二凹陷区821能够进一步通过通孔841而延伸至按键孔342的内部。

[0149] 具体地，钢性衬垫84可以由不锈钢制成，或者其它钢性材料，如塑胶等硬质材料。并可通过一体成型而与弹性衬垫82贴靠在一起。

[0150] 另外，按键83包括按键本体831，以及设置在按键本体831一侧凸出设置的按键触头832。其中，按键本体831设置于弹性衬垫82远离电路壳体30的一侧，且按键触头832延伸至第二凹陷区821内，以随第二凹陷区821而延伸至按键孔342内部。

[0151] 进一步地，由于本实施方式中骨传导扬声装置较为轻薄，按键83的按压行程较短，若采用软质的按键则会降低用户按压手感而带来不好的体验。本实施方式中，按键83可由硬质的塑胶材料制成，以使得用户按压时能够具有良好的手感。

[0152] 进一步地，按键电路板61设置于电路壳体30的内部，其上设置有与按键孔342对应的按键开关611。从而在用户按压按键时，按键触头832接触并触发按键开关611，以进一步实现相应的功能。

[0153] 本实施方式中，通过在弹性衬垫82上设置第二凹陷区821，一方面，第二凹陷区821的设置能够覆盖整个按键孔342，从而能够同时提高防水效果；另一方面，在自然状态下，按键触头832便能够通过第二凹陷区821而延伸入按键孔342内部，从而能够缩短按键按压的行程，以减小按键结构所占用的空间，进而使骨传导扬声装置既能够有好的防水性能，又占用较少的空间。

[0154] 在一实施方式中，按键83可包括按键单体833，按键单体833的数量可以为一个或者多个。

[0155] 在一个应用场景中，按键83可包括至少两个彼此间隔设置的按键单体833以及用于连接按键单体833的连接部834。其中，多个按键单体833以及连接部834可一体成型。对应地，每个按键单体833对应设置有一个按键触头832，并进而对应一个按键孔342以及一个按键开关611。

IPR2025-00843; Mojawa
Ex. 1002 - Page 772

[0156] 也就是说，本实施方式中，对应于一个第一凹陷区341可以设置多个按键单体833，用户可通过按压不同的按键单体833而触发不同的按键开关611，并进而实现多种功能。

[0157] 进一步地，弹性衬垫82上可设置用于支撑连接部834的弹性凸块822。由于按键83包括连接设置的多个按键单体833，弹性凸块822的设置使得用户在按压其中一个按键单体833时，能够使得该按键单体833受到单独的按压，而避免通过联动而将其它的按键单体833一并按压的情况发生，从而能够准确得触发对应的按键开关611。需要指出的，该弹性凸块822并非是必要的，例如也可以是不具有弹性的凸出结构，或者也可以不设置凸出结构，具体可根据实际情况进行设置。

[0158] 在一实施方式中，壳体护套17的内壁上设置有与按键对应的凹槽174，从而能够以套装方式包覆于电路壳体30和按键的外围。

[0159] 在一实施方式中，骨传导扬声装置还进一步包括有至少一个导电柱85，容纳于电路壳体30内部的控制电路60还包括主控电路板62，该导电柱85可用于连接电路壳体30内部的主控电路板62以及电路壳体30外部的充电电路和/或数据传输线路等，以对骨传导扬声装置进行充电和/或数据传输等。

[0160] 相应地，电路壳体30的主侧壁33上设置至少一个安装孔331，导电柱85可插置于对应的安装孔331内。其中，导电柱85和安装孔331可一一对应，本实施方式中，导电柱85和安装孔331的数量均为四个，四个导电柱85分别插置于对应的安装孔331内，并排呈一条直线而均匀间隔设置。其中，位于外侧的两个导电柱85可作为充电接口，而位于中间的两个导电柱85可作为数据传输接口。当然，导电柱85以及安装孔331也可以按照其它的排布方式进行设置，此处不做具体限定。

[0161] 其中，导电柱85可包括插置于安装孔331内的柱状本体851。其中柱状本体851的外周面上设置有定位凸台852，该定位凸台852可用于与主侧壁33的内表面卡接，进而将导电柱85固定于安装孔331。

[0162] 具体地，定位凸台852可以绕柱状本体851的周向呈环形设置，进一步地，在环形的定位凸台852朝向电路壳体30内部的一侧设置有连接柱状本体851外周面以及定位凸台852的延伸斜面853。在安装导电柱85时，将该导电柱85由电路壳体30的外部，沿延伸斜面853而逐渐插入安装孔331而进入电路壳体30的内部，并进而通过定位凸台852，在定位凸台852完全通过安装孔331之后，该定位凸台852朝向电路壳体30外部的台面与主侧壁33的内表面卡接，进而将导电柱85固定于安装孔331内。

[0163] 上述方式中，定位凸台852的设置使得在装配过程中，导电柱85能够从电路壳体30的主侧壁33的外表面插入安装孔331后，并可通过按压的方式即可将定位凸台852按压入安装孔331内，从而与电路壳体30的主侧壁33的内表面卡接固定，而无需从电路壳体30的内部进行安装，从而使得骨传导扬声装置的装配更加便捷，提高生产装配效率.进一步地，延伸斜面853的设置使得在装配过程中，定位凸台852能够更加顺利地通过安装孔331。定位凸台852的设置则能够使得导电柱85进入安装孔331内时与主侧壁33的内表面卡接而不易从导电孔内划出，从而能够将导电柱85牢靠地固定于安装孔331内。

[0164] 具体地，在一实施方式中，柱状本体851沿柱状本体851相对于安装孔331的插入方向划分为第一柱状本体8511和第二柱状本体8512，二者可由导电的金属材质，如铜、银或者合金等一体成型而为一整体结构。其中，在垂直于导电柱85插入安装孔331的插入方向上，

IPR2025-00843; Mojawa
Ex. 1002 - Page 773

第一柱状本体8511的横截面可大于第二柱状本体8512的横截面。其中，定位凸台852可设置于第二柱状本体8512上。

[0165] 相应地，安装孔331沿插入方向划分为横截面与第一柱状本体851和第二柱状本体851对应的第一孔段3311和第二孔段3312，进而在第一孔段3311和第二孔段3312的连接处形成一环形台面3313，其中，该环形台面3313与主侧壁33的外表面连通。

[0166] 进一步地，当柱状本体851插置于安装孔331内时，第一柱状本体8511朝向第二柱状本体8512的一侧支撑于环形台面3313上，同时，位于第二柱状本体8512外周面上的定位凸台852朝向第一柱状本体8511的一侧卡接于主侧壁33的内表面上，进而将导电柱85从安装孔331周围的主侧壁33的内外两侧面同时卡接，从而将导电柱85固定于安装孔331内。

[0167] 在一实施方式中，柱状本体851沿轴向设置有容置腔8513，容置腔8513的开口端于第二柱状本体8512朝向电路壳体30内部的端面上。具体地，该容置腔8513可沿平行于插入方向而贯通至第二柱状本体8512的位于电路壳体30内部一侧的部分，并在到达定位凸台852之前终止。当然，在其它实施方式当中，可以根据需求设置容置腔8513的具体位置，此处不做限定。

[0168] 进一步地，导电柱85包括设置于容置腔8513内的弹簧854以及导电触头855，导电触头855的一端可于容置腔8513内部与弹簧854抵接，另一端从容置腔8513的开口端外露于电路壳体30的内部。其中，导电触头855的材质可与柱状本体851的材质相同，弹簧854可以通过一定的手段如粘接、焊接等方式与第二柱状本体851以及导电触头855连接，或者还可以直接放置于容置腔8513内，并通过柱状本体851与电路壳体30的主侧壁33的卡接以及导电触头855与主控电路板62的抵接而弹性夹持于容置腔8513内部。

[0169] 进一步地，电路壳体30内部的主控电路板62上设置有与导电柱85位置对应的触点621，具体如图7所示。具体地，主控电路板62包括面积较大的主表面622以及连接主表面622的面积较小的侧表面623，其中，主控电路板62的主表面622可平行或者近似平行于电路壳体30的主侧壁33，其中，触点621对应设置于主控电路板62的主表面622上。

[0170] 其中，导电柱85插入安装孔331的插入方向与导电柱85的轴向平行，并垂直于主侧壁33，进而垂直于主控电路板62的主表面622。在将导电柱85安装于安装孔331内后，弹簧854受到导电触头855以及柱状本体851的夹持而产生弹性形变，以将导电触头855弹性压持于对应的触点621上，从而实现导电柱85与主控电路板62的电连接。

[0171] 在一实施方式中，骨传导扬声装置还进一步包括一位于电路壳体30内部的辅助片86。

[0172] 该辅助片86包括一板体861，该板体861上设置有镂空区8611，该板体861可通过热熔或者热压、粘接等方式设置于主侧壁33的内表面上，并使得设置于主侧壁33上的安装孔331位于镂空区8611内部。具体地，板体861的板面可平行贴靠于主侧壁33的内表面上。

[0173] 其中，该辅助片86具有一定的厚度，在其设置于主侧壁33的内表面上后，与该辅助片86的镂空区8611的内侧壁与主侧壁33共同构成一位于插置于安装孔331内的导电柱85外围的胶槽87。

[0174] 进一步地，可在胶槽87内施加密封胶，从而从电路壳体30的内部对安装孔331进行密封，以提高电路壳体30的密闭性，进而提高骨传导扬声装置的防水性能。

[0175] 其中，该辅助片86的材质可与电路壳体30的材质相同，并与电路壳体30分别成型。

IPR2025-00843; Mojawa
Ex. 1002 - Page 774

需要指出的是，在电路壳体30成型阶段，安装孔331附近往往还具有其它结构，例如需要成型按键孔342等，这些结构在成型时所对应的模具可能需要从电路壳体30的内部退出，而此时若直接在电路壳体30内部一体成型对应于安装孔331的胶槽87，则胶槽87的凸起可能会干涉这些结构的模具的顺利退出，从而为生产带来不便。本实施方式中，辅助片86与电路壳体30分别为独立的结构，在二者分别成型后，可通过将辅助片86安装于电路壳体30的内部而与电路壳体30的主侧壁33共同构成胶槽87，从而在电路壳体30的成型阶段不会阻挡部分结构的模具从电路壳体30的内部退出，从而有利于生产的顺利进行。

[0176] 在一实施方式中，在对电路壳体30进行成型时，模具的退出仅占用胶槽87所占据的空间的部分空间，从而，可以在不影响退模的情况下，在主侧壁33的内表面上一体成型胶槽87的一部分，而胶槽87的另一部分仍可由辅助片86辅助构成。

[0177] 具体地，主侧壁33的内表面上一体成型有第一条状凸肋332，该第一条状凸肋332所在的位置不影响电路壳体30的模具退模。辅助片86的镂空区8611设置有一缺口8612。其中，第一条状凸肋332与该缺口8612对应。在电路壳体30和辅助片86分别成型之后，可将该辅助片86于主侧壁33的内表面，以使得第一条状凸肋332至少部分嵌合于缺口8612处，进而利用第一条状凸肋332和辅助片86配合使得胶槽87呈闭合设置。

[0178] 本实施方式中，由于第一条状凸肋332不会对模具的退出产生阻挡，因此，胶槽87的侧壁可由一体成型于主侧壁33内表面的第一条状凸肋332与辅助片86共同构成。

[0179] 进一步地，在一实施方式中，第一条状凸肋332还进一步延伸成与板体861的侧边缘8613抵接，进而对板体861进行定位。

[0180] 具体地，该第一条状凸肋332包括凸肋主体3321和定位臂3322，其中，凸肋主体3321用于与镂空区8611的缺口8612匹配并与其嵌合，从而共同形成胶槽87的侧壁；而定位臂3322则由凸肋主体3321的一端进一步延伸而成，并延伸至板体861的一侧边缘8613处与该侧边缘8613抵接，从而对该板体861于该侧边缘8613处进行定位。

[0181] 其中，第一条状凸肋332在主侧壁33的内表面上凸出的高度可大于辅助片86的厚度，当然，也可以小于或者等于，只要能够与辅助片86共同构成胶槽87，以及能够对辅助片86的板体861起到定位作用即可，此处不做具体限定。

[0182] 在一实施方式中，板体861上进一步设置有定位孔8614，其中，定位孔8614贯通板体861的主板面设置。进一步地，主侧壁33的内表面上一体成型有与定位孔8614对应的定位柱333，在将辅助片86设置在主侧壁33的内表面后，该定位柱333插置于定位孔8614内，从而进一步对辅助片进行定位。

[0183] 其中，定位孔8614和定位柱333的数量一致，本实施方式中，二者的数量均为两个。

[0184] 在一个应用场景中，板体861的侧边缘8613形成有至少两个凸耳8615，两个定位孔8614可分别设置于对应的凸耳8615上。

[0185] 进一步地，主侧壁33的内表面上一体成型有一第二条状凸肋334，该第二条状凸肋334可沿朝向辅侧壁34的方向延伸设置，并可与第一条状凸肋332的定位臂3322的延伸方向互相垂直。

[0186] 对应地，板体861上还设置有与第二条状凸肋334对应的条状定位槽8616，该定位槽8616沿远离该主侧壁33的方向凹陷设置，且其一端与板体861的侧边缘8613连接并可与该侧边缘8613垂直设置。

IPR2025-00843; Mojawa
Ex. 1002 - Page 775

[0187] 在一个应用场景中，定位槽8616可以仅由板体861的贴合主侧壁33的表面凹陷形成，定位槽8616的深度小于板体861的厚度，此时，板体861的与凹陷的表面相背设置的面不受定位槽8616的影响；在另一个应用场景中，定位槽8616的深度大于板体861的深度，从而使得在板体861的靠近主侧壁33的表面凹陷时，另一相对表面朝向凹陷的方向凸出，从而配合形成定位槽8616。

[0188] 具体地，在将辅助片86设置在主侧壁33的内表面后，第二条状凸肋334嵌入于条状定位槽8616内，以进一步对板体861进行定位。

[0189] 在一实施方式中，按键电路板61垂直于主控电路板62而与电路壳体30的辅侧壁34平行间隔设置。具体地，如上所述，按键机构所对应的辅侧壁34可包括两种，一种是在用户佩戴该骨传导扬声装置时，朝向用户头部后侧的辅侧壁34，另一种是在用户佩戴时朝向用户头部下侧的辅侧壁34。本实施方式中，按键电路板61可以为两个，并分别与对应的两种辅侧壁34平行间隔设置。

[0190] 其中，按键电路板61可设置于辅助片86的板体861的朝向辅侧壁34的一侧。进一步地，辅助片86包括相对于板体861凸出设置的压持脚862。具体地，压持脚862沿垂直于板体861的主表面的方向凸出设置于板体861的朝向辅侧壁34的侧边缘处，且压持脚862的数量可以为一个或者多个。本实施方式中，压持脚862可通过其朝向辅侧壁34的侧面而将按键电路板61压持于辅侧壁34的内表面上，从而对按键电路板61起到固定的作用。

[0191] 在一实施方式中，主控电路板62与主侧壁33间隔设置，而辅助片86的板体861的主表面与主侧壁33平行而进一步与主控电路板62间隔设置。

[0192] 其中，压持脚862具体由板体861沿背离辅助片86所靠近的电路壳体30的主侧壁33且朝向主控电路板62的方向凸出，并延伸至主控电路板62的板面处以对主控电路板62起到压持作用，从而使得主控电路板62支撑于至少部分压持脚862上。

[0193] 在一实施方式中，壳体护套17上设置有与所述导电柱85对应的外露孔175，在将壳体护套17套装在电路壳体30外围后，导电柱85位于电路壳体30外部的一端进一步通过该外露孔175外露，进而与骨传导扬声装置外部的电路连接，以使得该骨传导扬声装置通过导电柱进行电量供应或者数据传输。

[0194] 进一步地，电路壳体30的外表面凹陷设置有环绕多个安装孔331的胶槽39。具体地，胶槽39可为椭圆环形，多个安装孔331分别设置于椭圆环形的胶槽39所环绕的电路壳体30上。

[0195] 本实施方式中，该胶槽39内施加有密封胶，进而壳体护套17与电路壳体30装配完成后，壳体护套17能够通过该密封胶在安装孔331的外围与电路壳体30密封连接，从而避免外部液体通过外露孔175而进入壳体护套17内部时，壳体护套17在电路壳体30外围产生滑动，且能够进一步从电路壳体30的外部对安装孔331进行密封，以进一步提高电路壳体30的密闭性，进而进一步提高骨传导扬声装置的防水性能。

[0196] 在一实施方式中，电路壳体30在远离耳挂10的一端进一步设置有接插端3a，后挂40包括弹性金属丝41以及设置于弹性金属丝41的两端的接插端42，其中接插端3a与接插端42彼此接插固定。

[0197] 其中，由于骨传导扬声装置的耳机芯50分别为左右两个，对应的机芯壳体20、耳挂10以及电路壳体30也设置为左右两个，后挂40通过分别与两个电路壳体30接插固定的方式

IPR2025-00843; Mojawa
Ex. 1002 - Page 776

将位于两侧的机芯壳体20、耳挂10以及电路壳体30连接在一起，并在用户佩戴时悬挂设置于用户头部后侧。

[0198] 具体地，弹性金属丝41的材质与性能等可以与弹性金属丝11相同，相关详细内容请参见前述对弹性金属丝11的相关描述，此处不再赘述。

[0199] 接插端42可以通过注塑的方式形成在弹性金属丝41的两端。具体地，接插端42可以由塑胶等材料制成。

[0200] 在一实施方式中，接插端42设置有接插孔421，该接插端3a至少部分插入至接插孔421内，本实施方式中，接插端3a可具体设置在环形台面37背离耳挂10的一侧。接插端3a与接插孔421之间的接插方式和接插端15与接插孔31之间的接插方式可以相同，也可以不同。

[0201] 其中，在接插端3a的相对两侧分别设置有与接插端3a相对于接插孔421的插入方向垂直设置的开槽3a1。两个开槽3a1可间隔且对称设置于接插端3a的两侧。进一步地，该两个开槽3a1可均在垂直于插入方向上与接插端3a的对应的侧壁连通。

[0202] 相应地，接插端42的第一侧壁422上设置有与两个开槽3a1位置对应的通孔423。其中，接插端42包括用于定义接插孔421的环绕设置的侧壁，接插端42的第一侧壁422可以是在接插端3a与接插端42接插固定时，接插端42的能够与开槽3a1的延伸方向相交的侧壁。

[0203] 其中，骨传导扬声装置进一步包括固定件88，固定件88包括两条平行设置的插脚881和用于连接插脚881的连接部882。本实施方式中，两条插脚881平行设置，连接部882可垂直连接设置于两条插脚881的同一侧，从而形成与固定件81形状相似的U型的固定件88。

[0204] 需要指出的是，固定件88可与固定件81的形状相似，但是具体的尺寸参数可以适应于周边结构而不同，本实施方式中，插脚881的长度大于插脚811的长度，连接部812长度小于连接部882的长度等，此处不做具体限定。

[0205] 进一步地，插脚881可从接插端42的外侧经通孔423插入至开槽3a1，而将连接部882阻挡于接插端3a的外侧，进而实现接插端42与接插端3a的接插固定。

[0206] 通过上述方式，骨传导扬声装置的固定件88包括两条平行设置的插脚881和用于连接插脚881的连接部882，以使得固定件88在一定跨度上对接插端3a和接插端42进行接插固定，从而使得电路壳体30与后挂40之间的固定更加稳定、牢靠；而且固定件88结构简单，插入和取出方便，从而使得接插端3a与接插端42之间的接插固定为可拆卸，且能够使得骨传导扬声装置的装配更加方便。

[0207] 进一步地，在一实施方式中，接插端42的与第一侧壁422相对的第二侧壁424上进一步设置有与通孔423相对的通孔425，插脚881进一步经开槽3a1插入至通孔425内。

[0208] 在本实施方式中，插脚881经通孔423插入至开槽3a1内，并进一步经开槽3a1插入至通孔425内，也就是说插脚881能够将后挂40的接插端42的相对两侧壁以及接插端3a完全贯穿并连接于一起，从而能够使得电路壳体30与后挂40之间接插更加牢固。

[0209] 具体地，在一实施方式中，接插端3a沿接插端3a相对于接插孔421的插入方向进一步划分为第一接插段3a2和第二接插段3a3。

[0210] 其中，接插端3a可设置在电路壳体30的端部的靠近一辅侧壁34一侧，该辅侧壁34具体可以是与上述实施方式中的定位块38所在的辅侧壁34相对的另一辅侧壁34。

[0211] 进一步地，第一接插段3a2和第二接插段3a3可在靠近定位块38的一侧沿接插端3a相对于接插孔421的插入方向而呈阶梯状设置，从而使得在垂直于插入方向的截面方向上，

IPR2025-00843; Mojawa
Ex. 1002 - Page 777

第一接插段3a2的截面大于第二接插段3a3的截面。

[0212] 相应地，接插孔421沿接插端3a相对于接插孔421的插入方向进一步划分为形状分别与第一接插段3a2和第二接插段3a3相匹配的第一孔段4211和第二孔段4212，从而使得在接插端3a插入至接插孔421内时，第一接插段3a2和第二接插段3a3分别插置于第一孔段4211和第二孔段内4212。

[0213] 进一步地，开槽3a1可设置于第一接插段3a2上，具体地，开槽3a1可沿接插端3a到定位块38的方向，即电路壳体30的两个辅侧壁34相对的方向而延伸设置，从而贯通第一接插段3a2的与电路壳体30的主侧壁33垂直的两侧壁，且进一步沿垂直插入方向贯穿第一接插段3a2的平行于电路壳体30的主侧壁33的两侧壁。

[0214] 其中，接插端42上设置的通孔423可与开槽3a1的朝向定位块38的一侧对应，而通孔425则可与开槽3a1的远离定位块38的一侧对应。

[0215] 进一步地，在一实施方式中，第一接插段3a2和第二接插段3a3的顶侧彼此共面设置。其中，第一接插段3a2和第二接插段3a3的顶侧是指在用户正常佩戴骨传导扬声装置时，第一接插段3a2和第二接插段3a3的朝向头部顶侧的一侧，也即与第一接插段3a2和第二接插段3a3所形成的阶梯状相背的一侧。

[0216] 进一步地，第一接插段3a2和第二接插段3a3的顶侧共面且形成有用于容纳导线的走线槽3a4。该走线槽3a4可沿接插端3a与接插孔421的接插方向延伸，可用于容纳经过后挂40而连通控制电路60和电池70的导线。

[0217] 本实施方式中，可先将接插端3a插置于接插孔421内，然后从第一接插段3a2的朝向定位块38的一侧插入开槽3a1。具体地，本实施方式中，接插端3a设置于电路壳体30的朝向后挂40的端面的远离定位块38的一侧，因此，在接插端3a朝向定位块38的一侧还具有一定的空间，从而在对电路壳体30以及后挂40进行插接安装时，可以将固定件88从接插端3a2的底侧，即第一接插段3a2朝向定位块38的一侧由通孔423插入至开槽3a1并进而插入至通孔425内，以实现电路壳体30与后挂40的插接固定。通过这种方式，能够将固定件88完全隐藏于电路壳体30与后挂40所形成的内部空间当中而不外露，从而无需占用额外的空间。

[0218] 进一步地，在一实施方式中，后挂40还包括注塑于弹性金属丝41以及接插端42外围的第二保护套管43以及与第二保护套管43一体成型的端部保护盖44。

[0219] 其中，第二保护套管43以及端部保护盖44的材质均可以与保护套管16及壳体护套17的材质相同，例如均可以为具有一定弹性的软质材料，例如软质的硅胶、橡胶等。

[0220] 端部保护盖44具体可形成于弹性金属丝41的两端，可以与位于弹性金属丝41的两端的接插端42一体成型于该接插端42的外围。

[0221] 需要指出的是，壳体护套17仅由电路壳体30的朝向耳挂10的一端包裹至电路壳体30的环形台面37处，因此，电路壳体30的环形台面37的朝向后挂40的部分则外露于壳体护套17的外围。进一步地，本实施方式中，端部保护盖44以及接插端42共同形成的内侧壁的形状与该电路壳体30所外露的端部的形状匹配，以进一步覆盖于该外露的电路壳体30的端部的外围，且该端部保护盖44的朝向电路壳体30的端面与壳体护套17的朝向后挂40的端面弹性抵接，以进一步提供密封。

[0222] 进一步地，在一实施方式中，壳体护套17所外露的电路壳体30的端部还设置有按键孔342，对应地，按键孔342内设置有按键83，端部保护盖44覆盖该按键83，并设置有用于

IPR2025-00843; Mojawa
Ex. 1002 - Page 778

容纳按键83的按键容置槽441。

[0223] 具体地，该按键孔342可间隔设置于接插端3a朝向定位块38的一侧，且按键孔342的数量可以为一个或者多个，具体可根据电路壳体30内部的控制电路60的具体结构以及电路壳体30本身的结构来确定，此处不做具体限定。

[0224] 以上所述仅为本申请的实施方式，并非因此限制本申请的专利范围，凡是利用本申请说明书及附图内容所作的等效结构或等效流程变换，或直接或间接运用在其他相关的技术领域，均同理包括在本申请的专利保护范围内。

IPR2025-00843; Mojawa
Ex. 1002 - Page 779

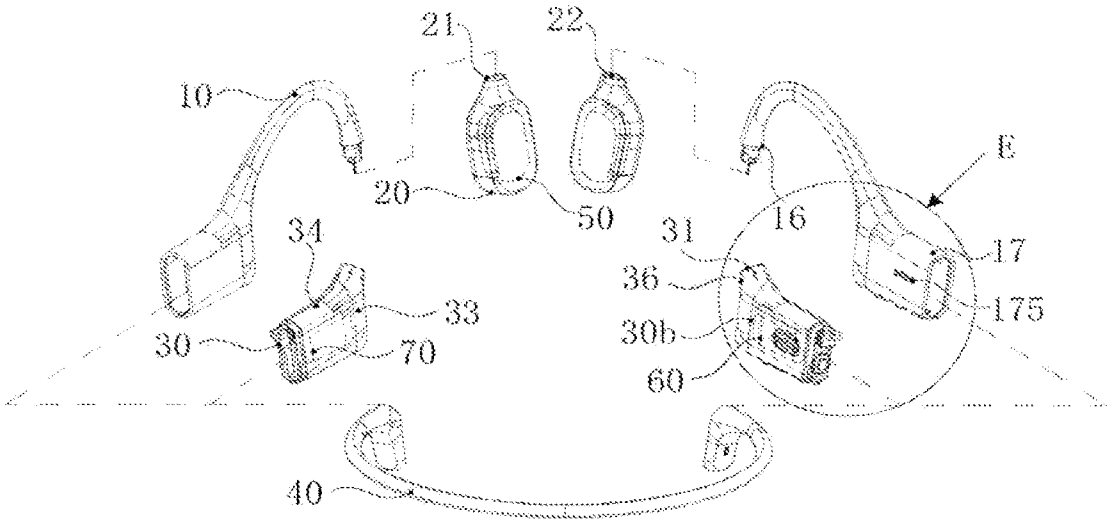


图1

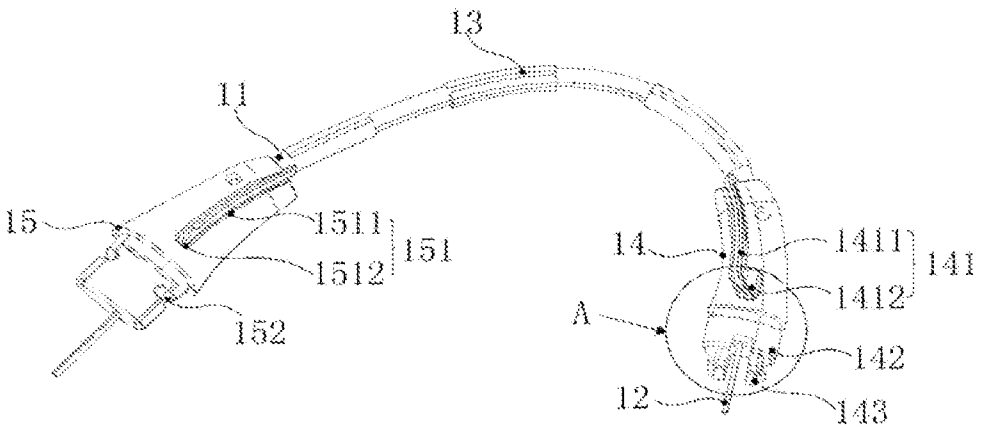


图2

IPR2025-00843; Mojawa
Ex. 1002 - Page 780

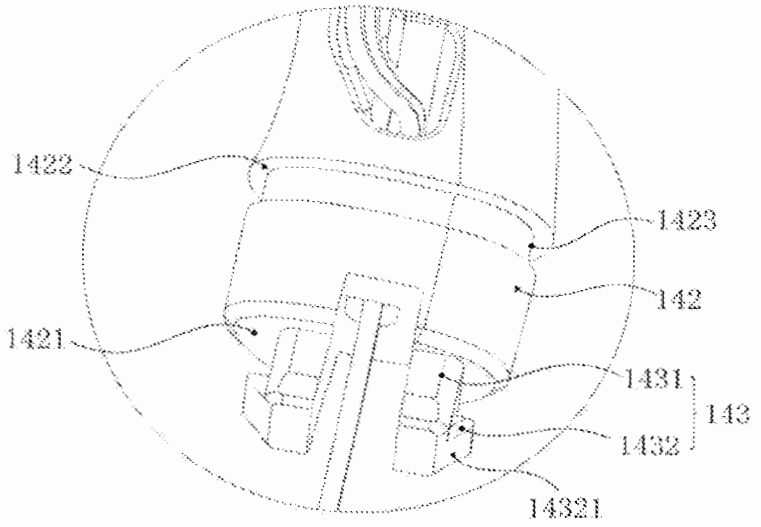


图3

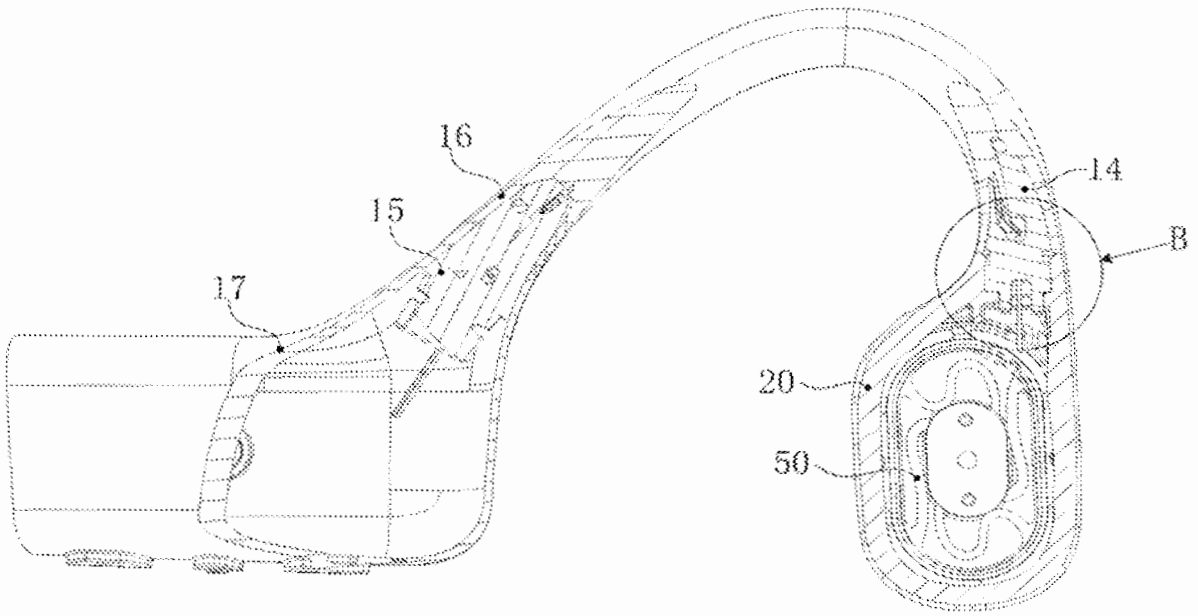


图4

IPR2025-00843; Mojawa
Ex. 1002 - Page 781

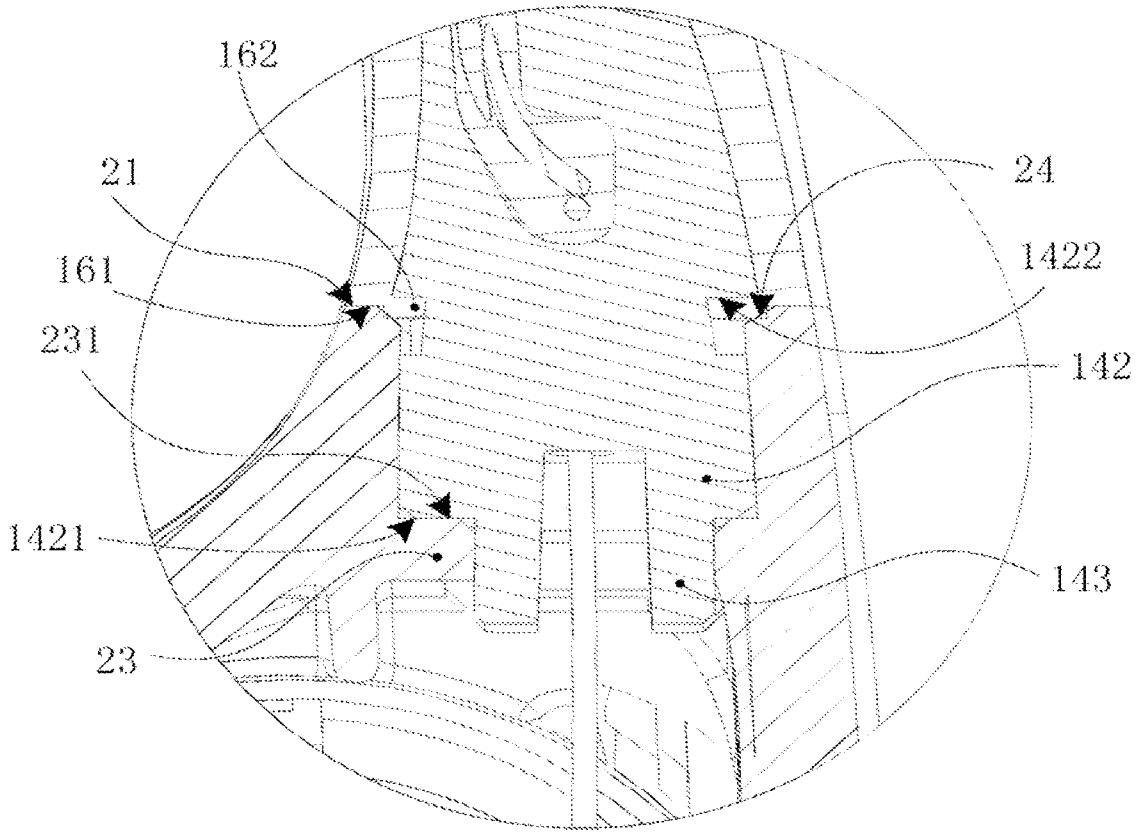


图5

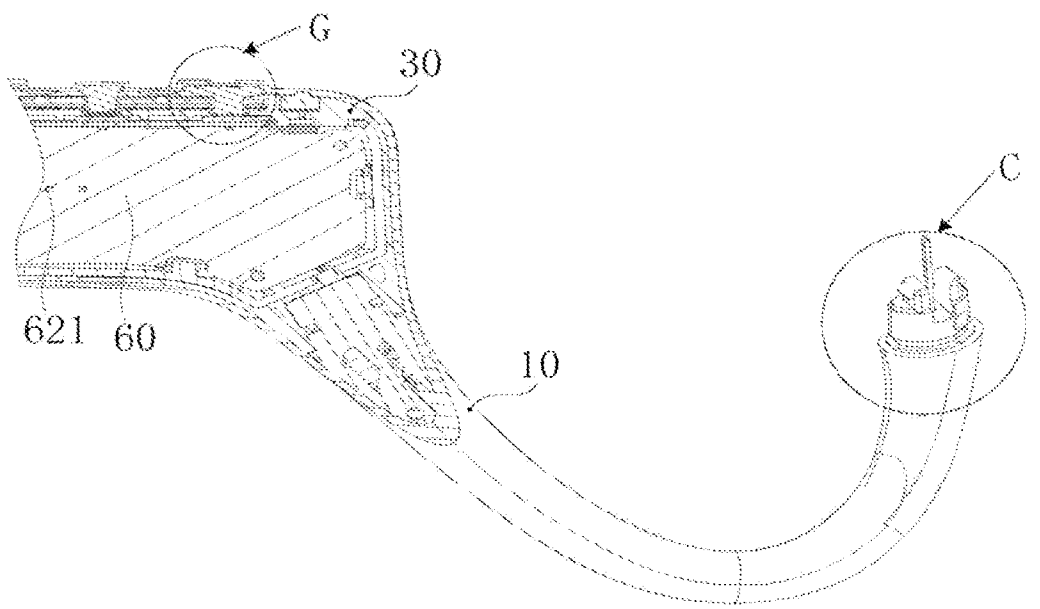


图6

IPR2025-00843; Mojawa
Ex. 1002 - Page 782

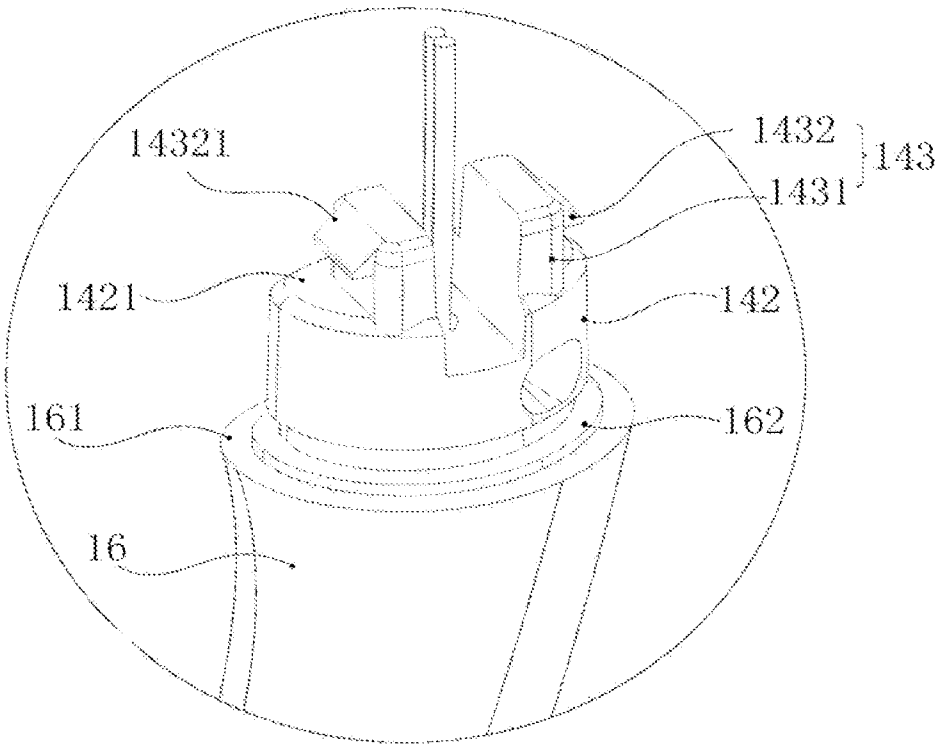


图7

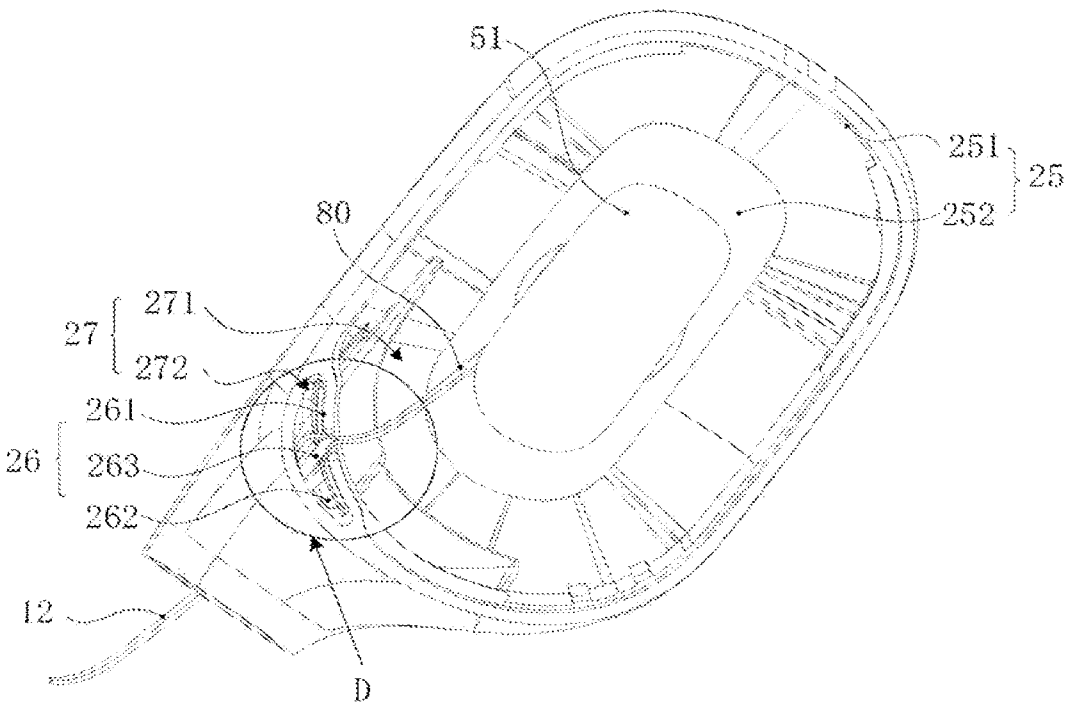


图8

IPR2025-00843; Mojawa
Ex. 1002 - Page 783

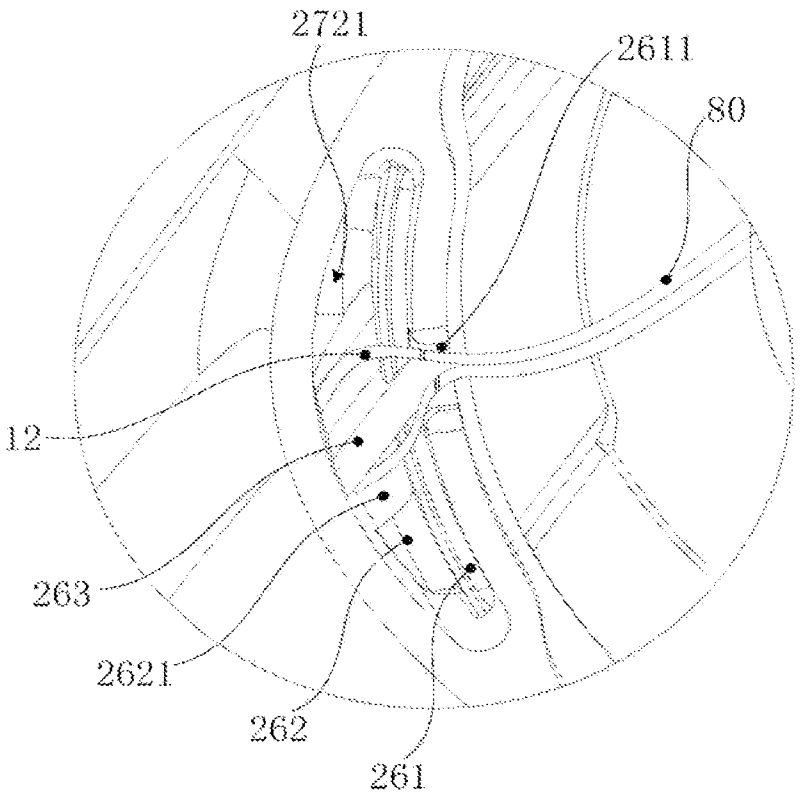


图9

IPR2025-00843; Mojawa
Ex. 1002 - Page 784

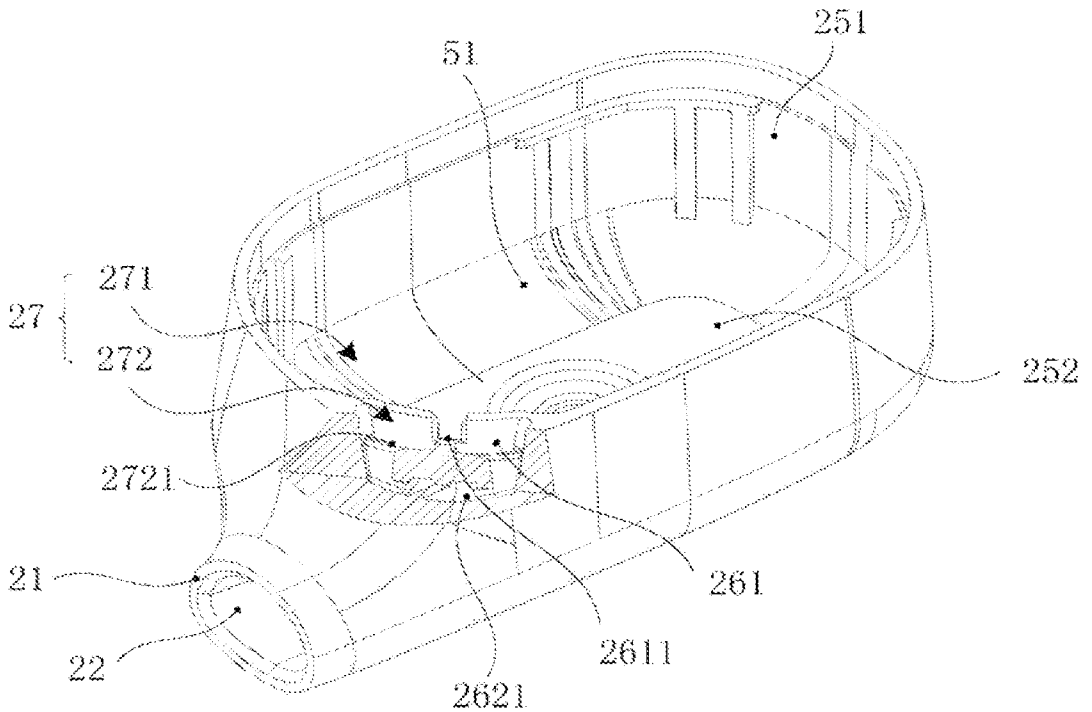


图10

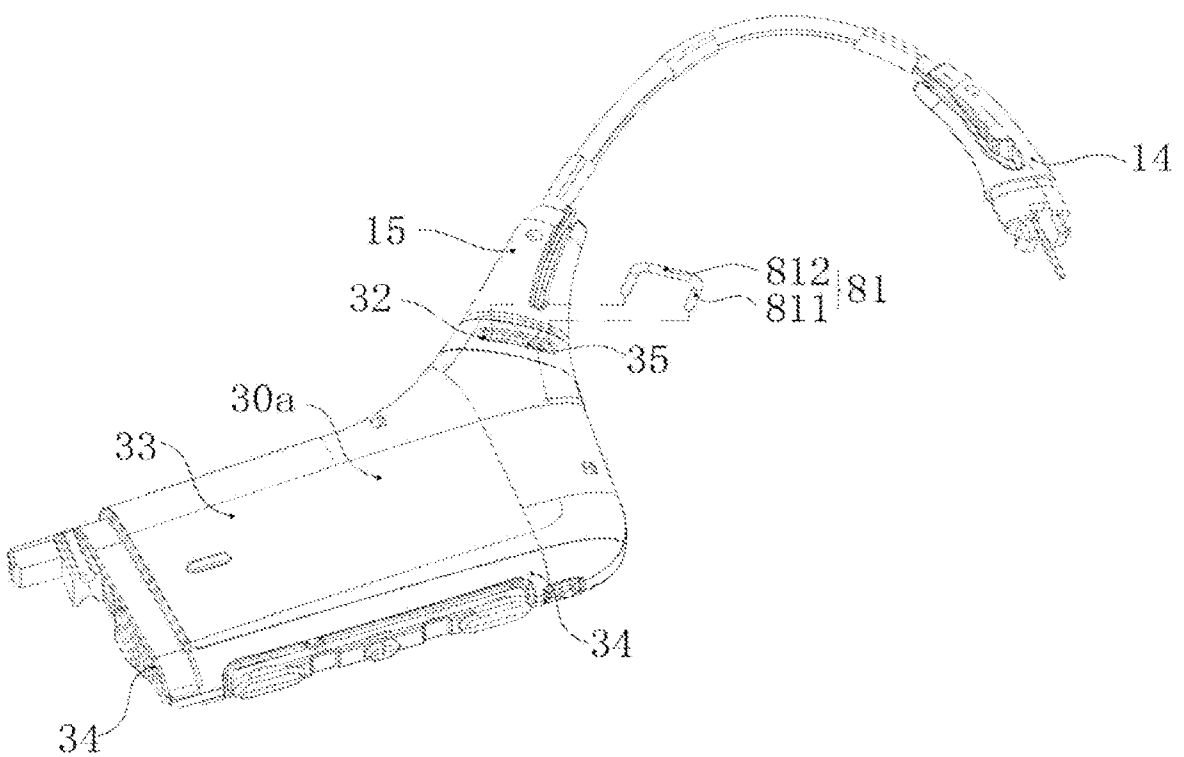


图11

IPR2025-00843; Mojawa
Ex. 1002 - Page 785

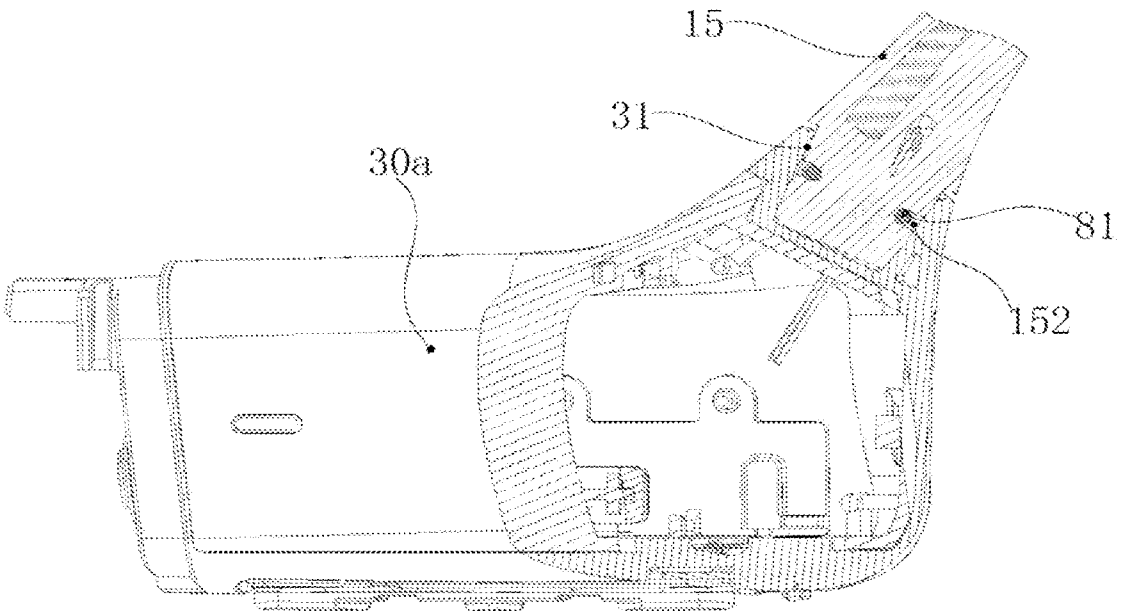


图12

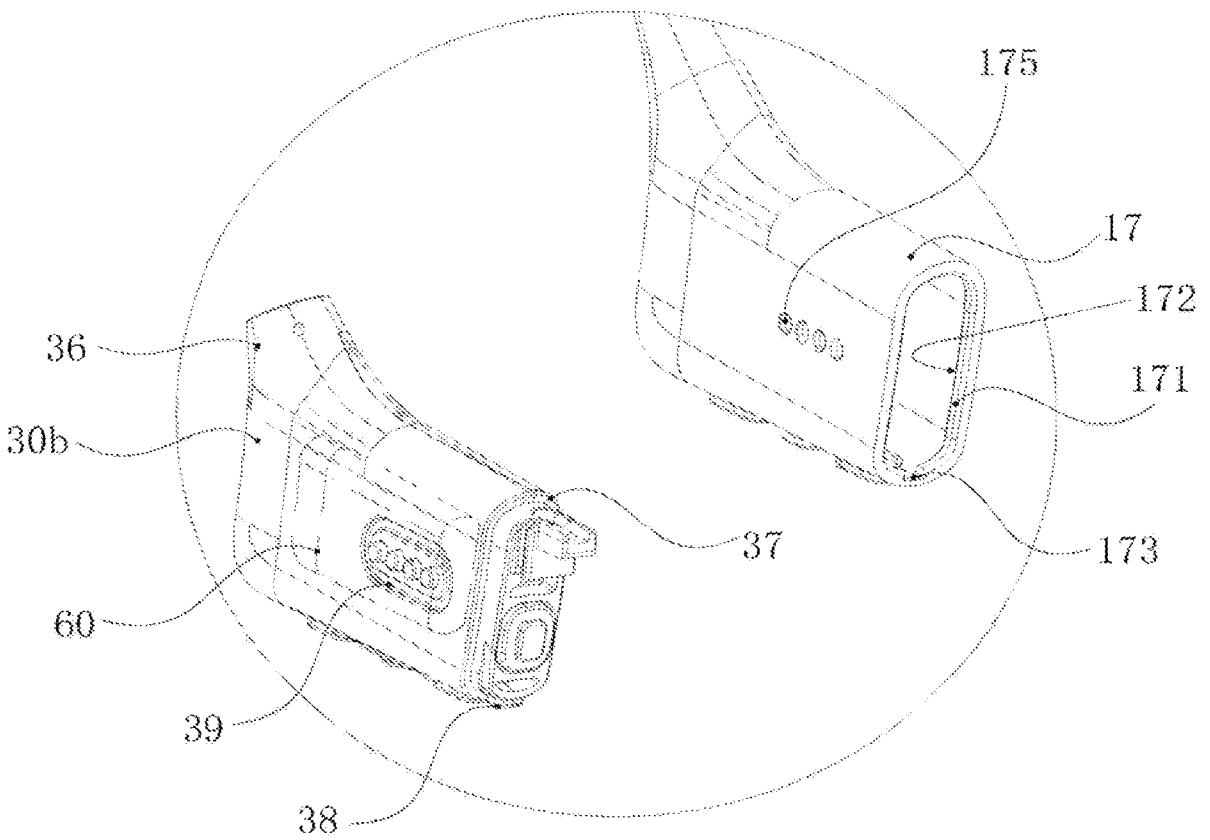


图13

IPR2025-00843; Mojawa
Ex. 1002 - Page 786

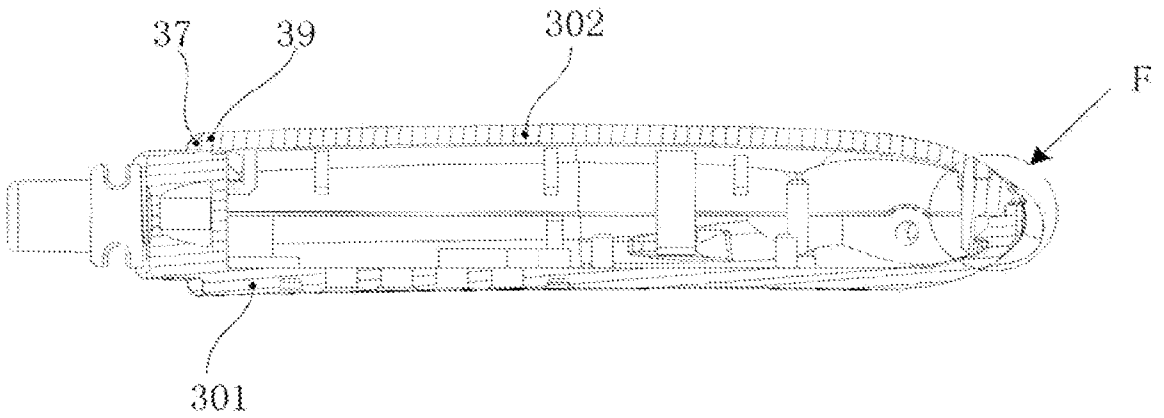


图14

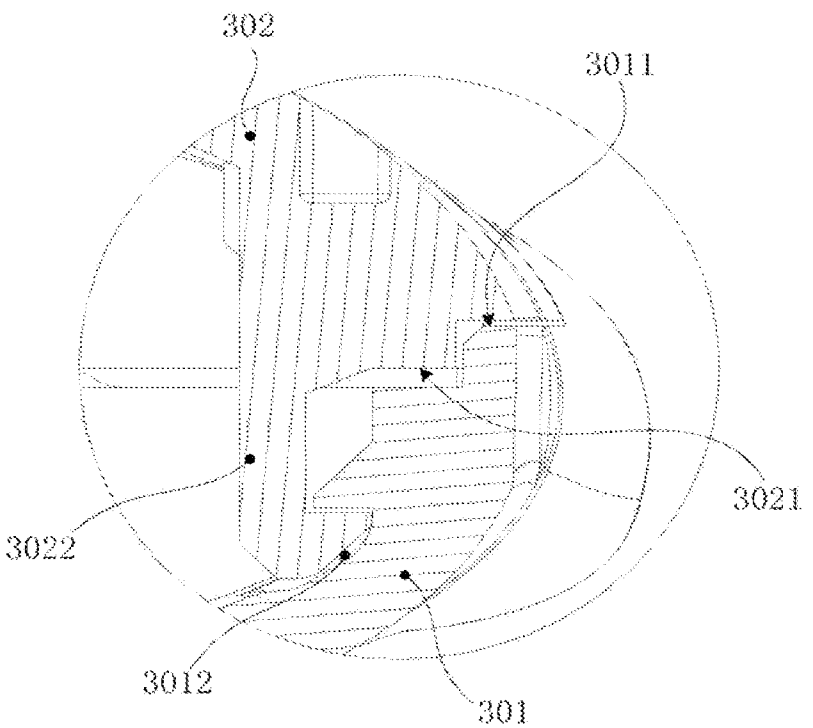


图15

IPR2025-00843; Mojawa
Ex. 1002 - Page 787

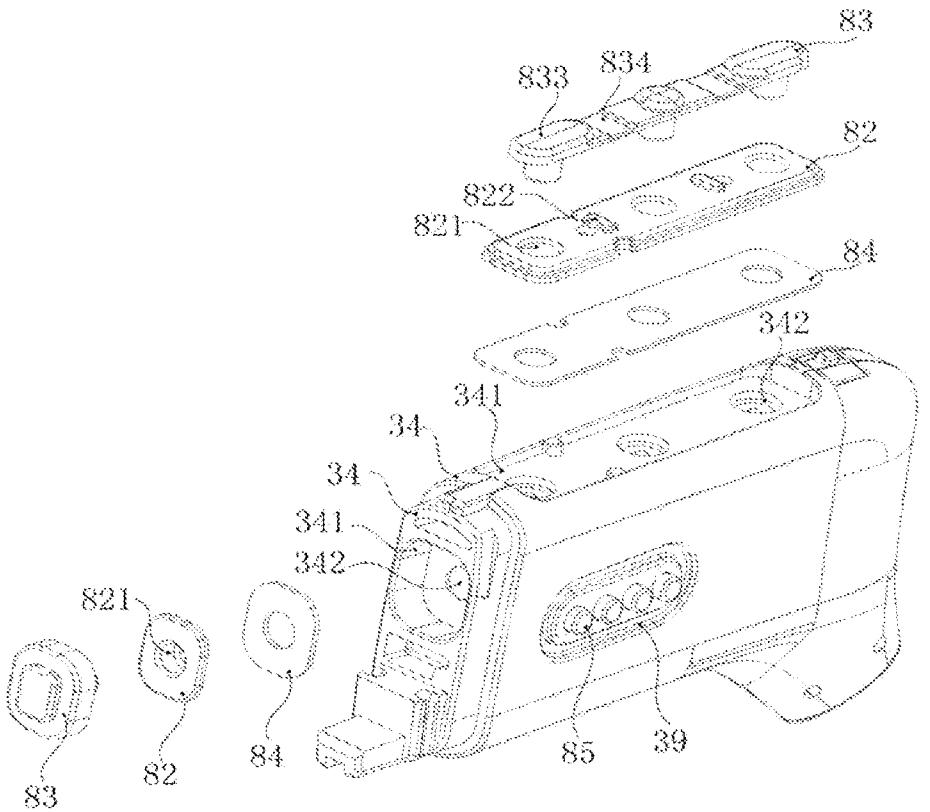


图16

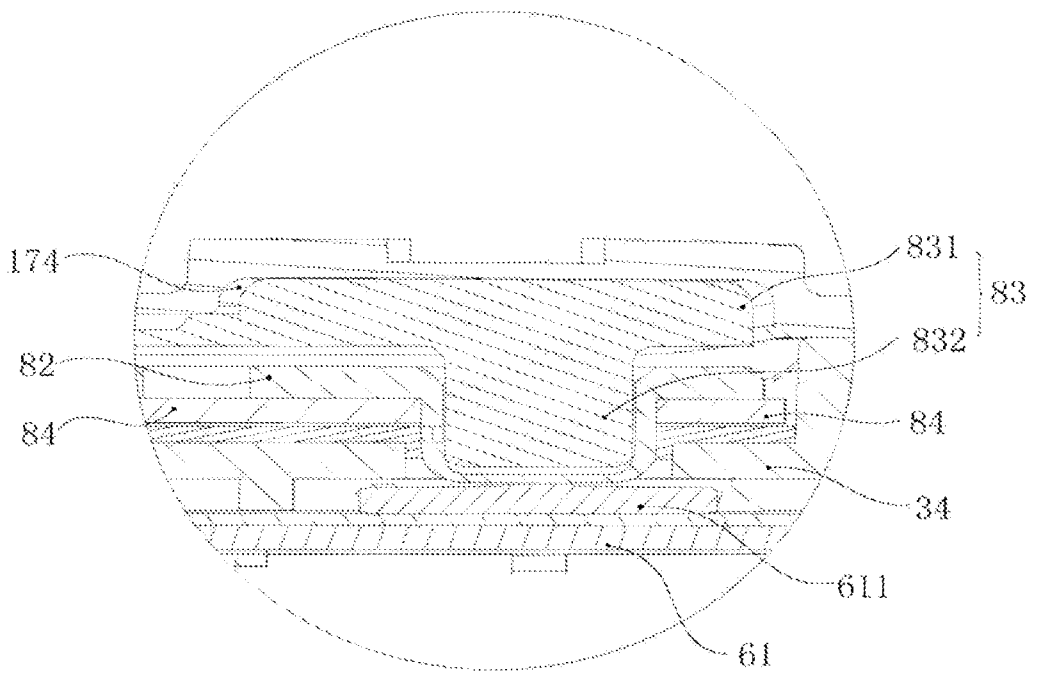


图17

IPR2025-00843; Mojawa
Ex. 1002 - Page 788

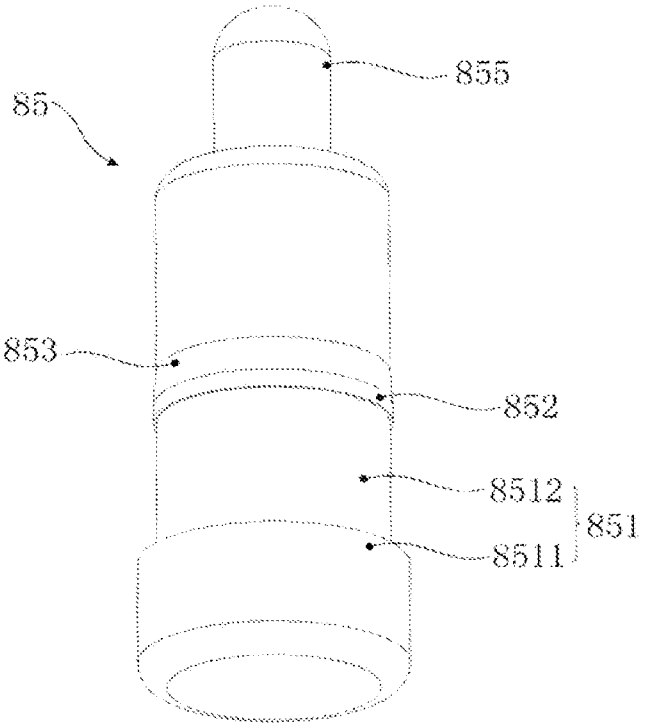


图18

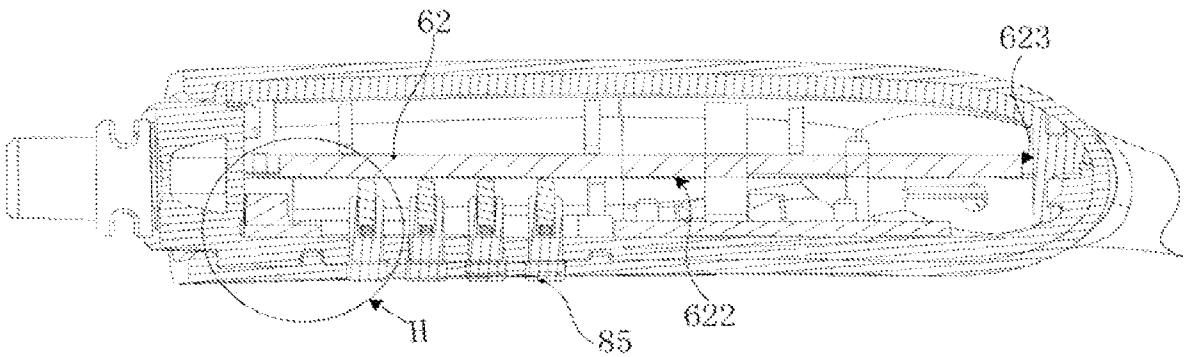


图19

IPR2025-00843; Mojawa
Ex. 1002 - Page 789

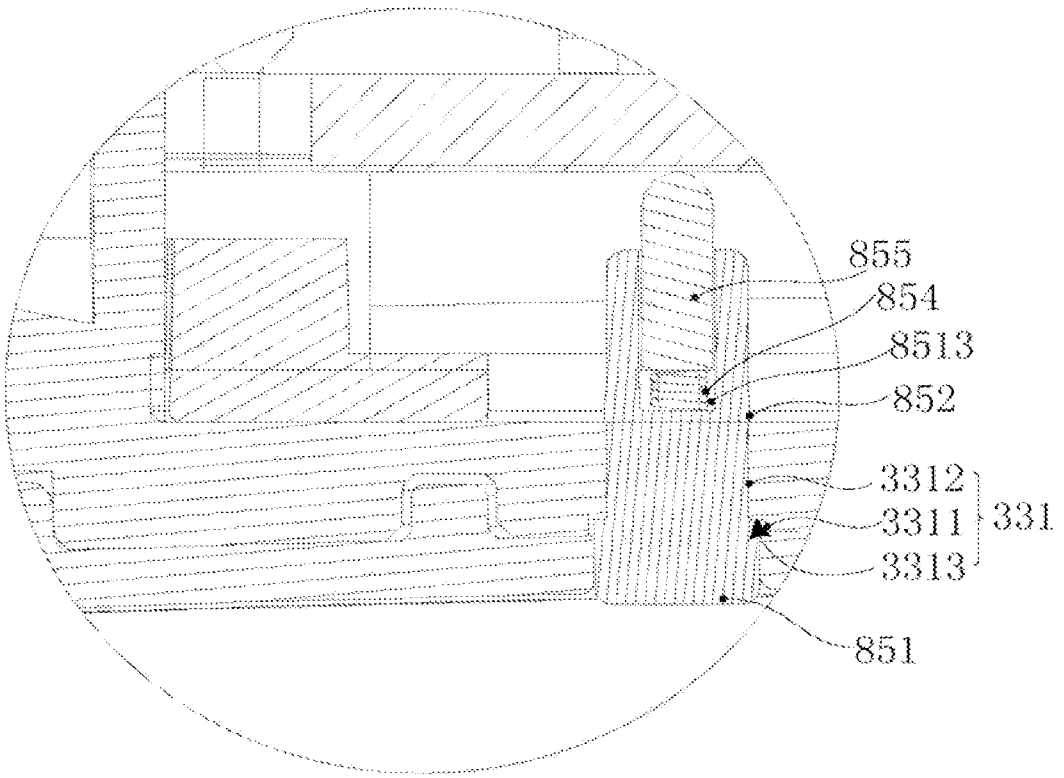


图20

IPR2025-00843; Mojawa
Ex. 1002 - Page 790

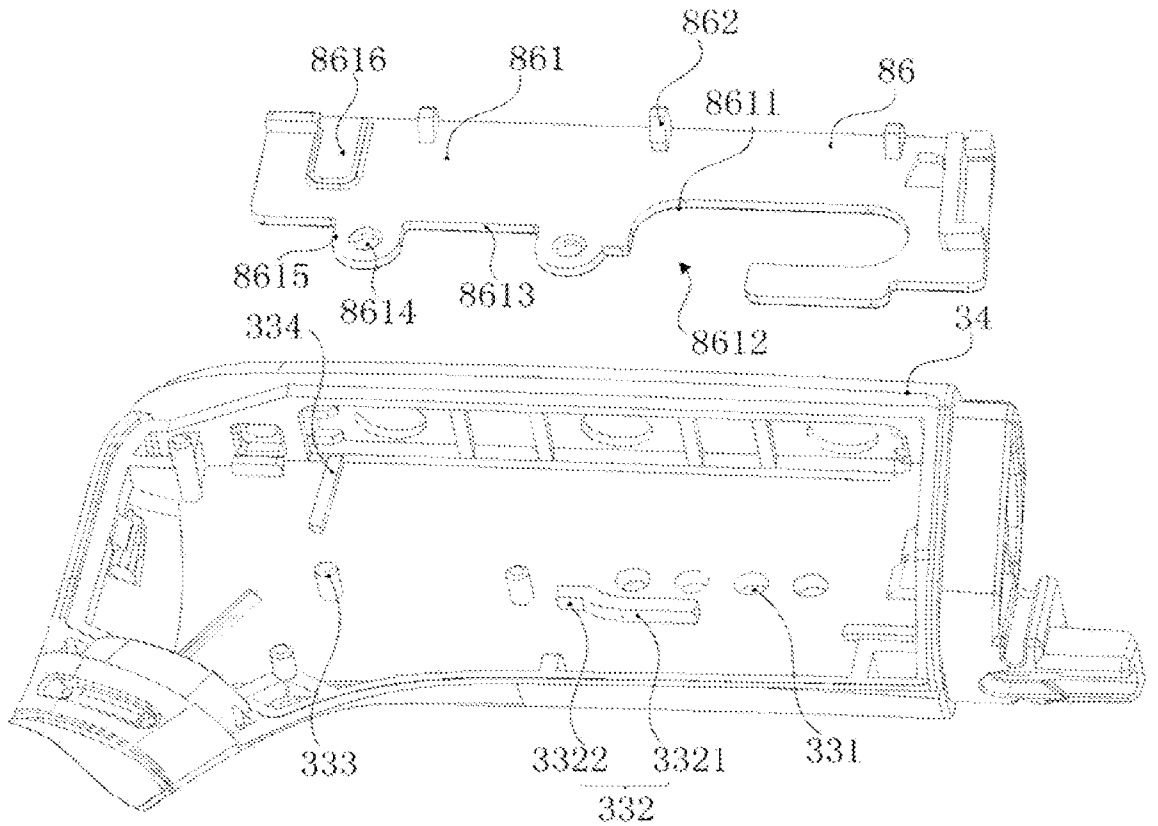


图21

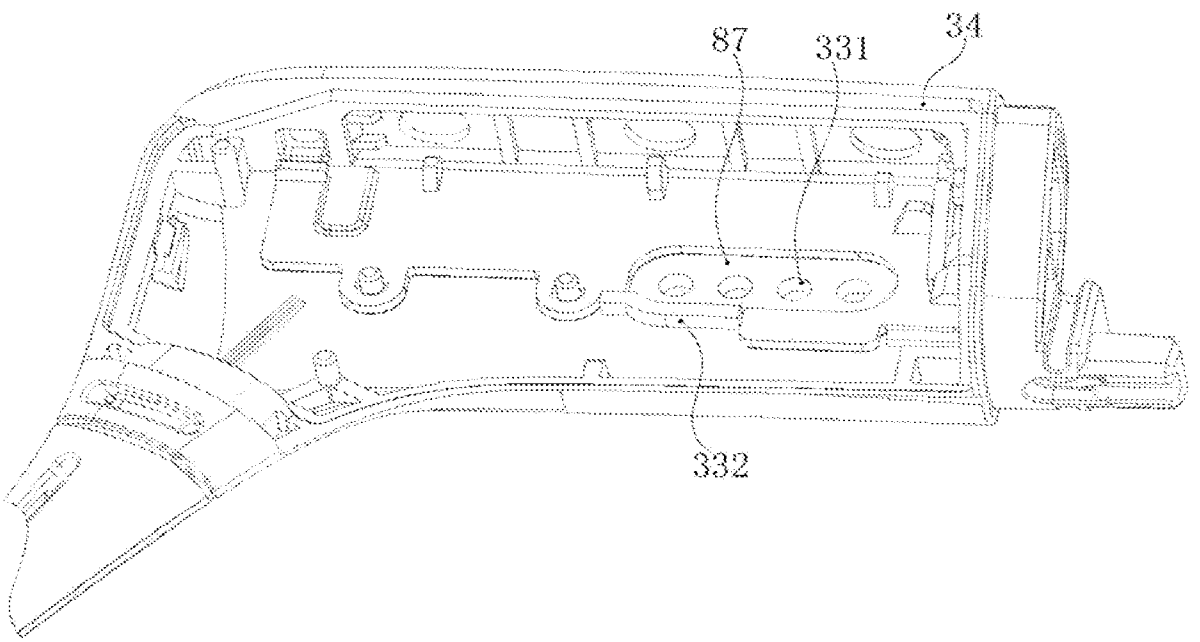


图22

IPR2025-00843; Mojawa
Ex. 1002 - Page 791

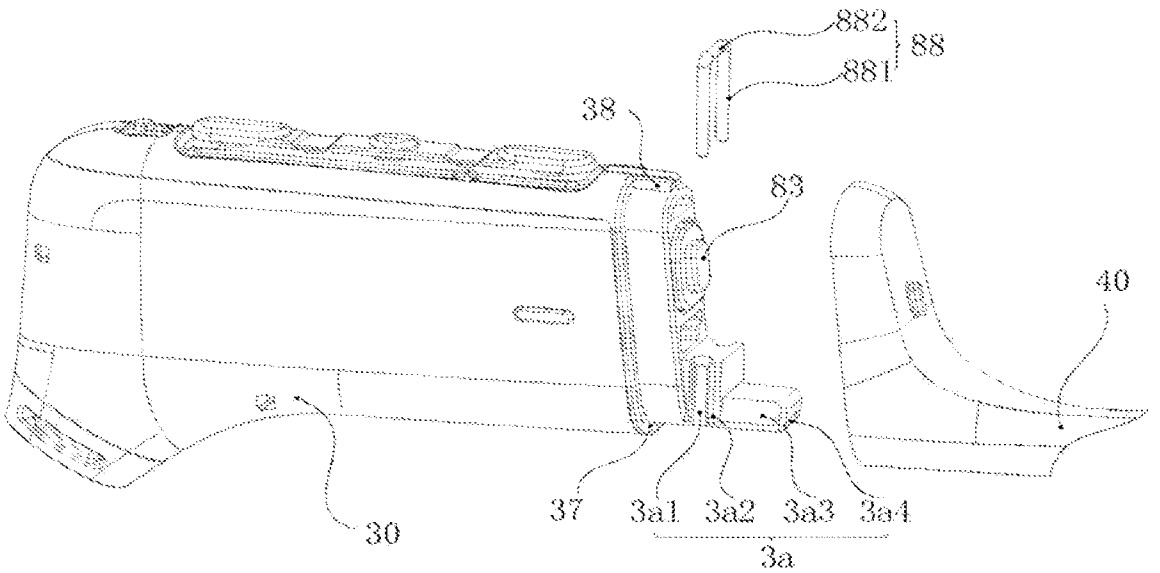


图23

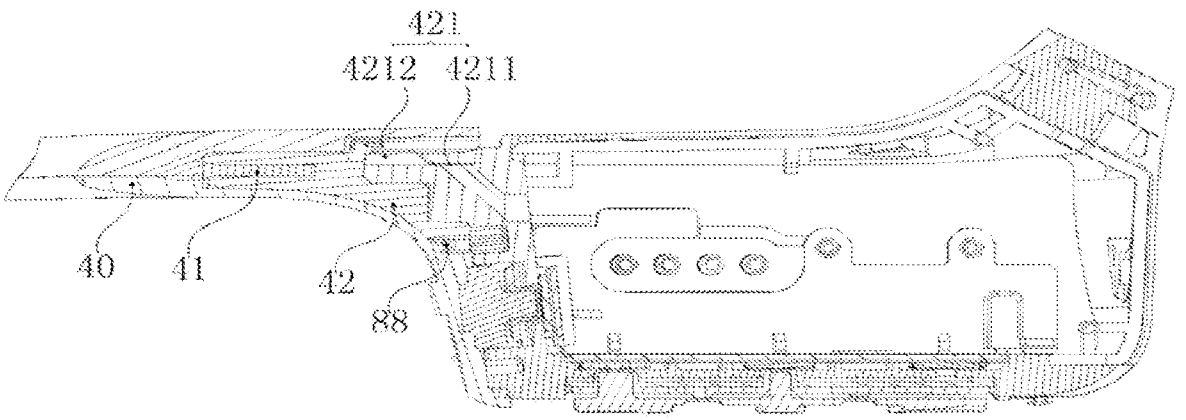


图24

IPR2025-00843; Mojawa
Ex. 1002 - Page 792

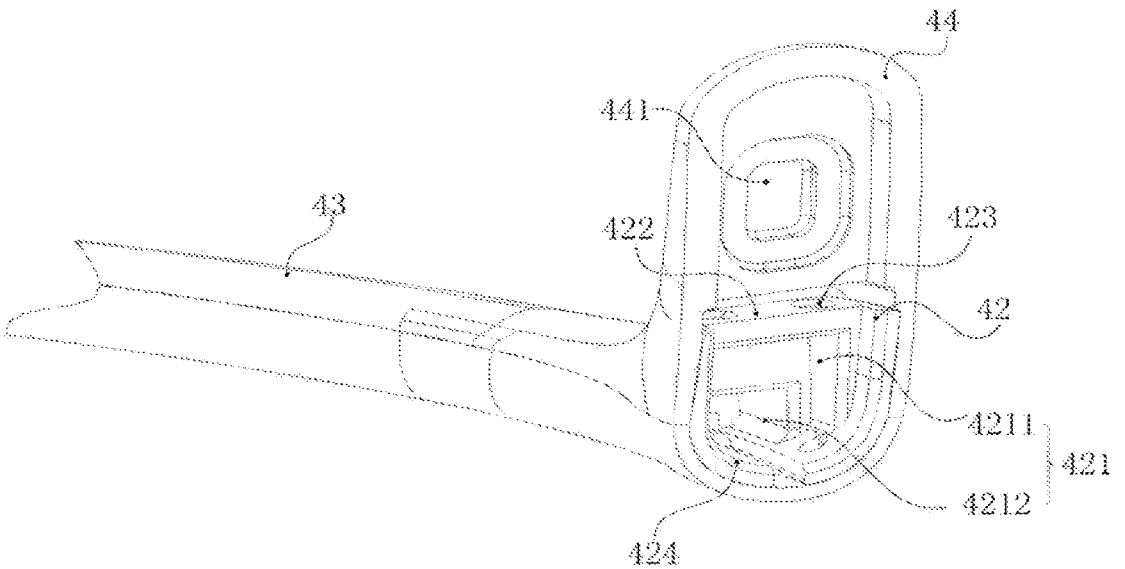


图25

IPR2025-00843; Mojawa
Ex. 1002 - Page 793

The manufacturing method of osteoacusis loudspeaker arrangement and its ear-hang

Abstract

This application discloses the manufacturing method of a kind of osteoacusis loudspeaker arrangement and its ear-hang, which includes ear-hang, and ear-hang includes elastic metallic yarn, conducting wire and fixed sleeving, first patches end and second and patch end and protection sleeve pipe ; Wherein, conducting wire is fixed on elastic metallic yarn by fixed sleeving; first, which patches end and second, patches end and is respectively arranged at the both ends of elastic metallic yarn, and protection sleeve pipe is formed in elastic metallic yarn, conducting wire, fixed sleeving, first patches end and second and patch the periphery at end to be molded.By the above-mentioned means, the application can simplify production and the assembly process of osteoacusis loudspeaker arrangement, and makes the protection sleeve pipe in the ear-hang of osteoacusis loudspeaker arrangement fix more firm, stablizes.

CN109788386A

China

Other languages: Chinese

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Worldwide applications

2019 CN WO WO WO WO

Application CN201910009927.4A events

2019-01-05	Application filed by 深圳市韶音科技有限公司
2019-01-05	Priority to CN201910009927.4A
2019-05-21	Publication of CN109788386A
2019-08-24	Priority claimed from PCT/CN2019/102400

Info: Patent citations (16), Cited by (2), Legal events, Similar documents, Priority and Related Applications

External links: Espacenet, Global Dossier, Discuss

Description

The manufacturing method of osteoacusis loudspeaker arrangement and its ear-hang

Technical field

This application involves bone conduction technology fields, more particularly to the manufacturer of a kind of osteoacusis loudspeaker arrangement and its ear-hang Method.

Background technique

Osteoacusis is a kind of sound conduction mode, and osteoacusis loudspeaker arrangement receives sound using bone conduction technology, due to it Ears can be opened, do not injure the advantages that eardrum and the favor by the majority of consumers.

Osteoacusis loudspeaker arrangement includes ear-hang, and in the production process of ear-hang, can will be arranged can in peripheral protection sleeve pipe it is

Claims (14)

Hide Dependent

1. a kind of osteoacusis loudspeaker arrangement, which is characterized in that the osteoacusis loudspeaker arrangement includes ear-hang, and the ear-hang includes:

Elastic metallic yarn ;

The conducting wire is fixed on the elastic metallic yarn by conducting wire and fixed sleeving, the fixed sleeving ;

First, which patches end and second, patches end, is respectively arranged at the both ends of the elastic metallic yarn ;

Protection sleeve pipe is formed in the elastic metallic yarn with injection molding, the conducting wire, the fixed sleeving, described first patches end The periphery for patching end with second.

separately formed with internal structure, and protection sleeve pipe after molding is set in the periphery of internal structure in turn.However this mode Process is tedious for the production and assembly for often making ear-hang, and leans between ear-hang and internal structure it is possible that being not fixed firmly Situation, to reduce the quality of osteoacusis loudspeaker arrangement.

Summary of the invention

The application is mainly solving the technical problems that provide the manufacturing method of a kind of osteoacusis loudspeaker arrangement and its ear-hang, energy Enough simplify production and the assembly process of osteoacusis loudspeaker arrangement, and makes the protection sleeve pipe in the ear-hang of osteoacusis loudspeaker arrangement solid It is more firm, stablely fixed.

In order to solve the above technical problems, the technical solution that the application uses is: a kind of osteoacusis loudspeaker arrangement is provided, The osteoacusis loudspeaker arrangement includes ear-hang, and the ear-hang includes: elastic metallic yarn ; Conducting wire and fixed sleeving, the fixing sleeve The conducting wire is fixed on the elastic metallic yarn by pipe ; First, which patches end and second, patches end, is respectively arranged at the elasticity The both ends of wire ; Protection sleeve pipe is formed in the elastic metallic yarn, the conducting wire, the fixed sleeving, described the with injection molding One, which patches end and second, patches the periphery at end.

In order to solve the above technical problems, another technical solution that the application uses is: providing a kind of osteoacusis loudspeaking dress The manufacturing method for the ear-hang set, the manufacturing method includes: that fixed sleeving is sheathed on elastic metallic yarn, wherein in the bullet Property wire both ends reserve injection molding position ; It is molded first respectively on the injection molding position at the both ends of the elastic metallic yarn and patches end End is patched with second, wherein described first patches end and second and patch end to be respectively arranged with the first cable tray and the second cabling logical Road ; Conducting wire is arranged to extend along first cable tray and the second cable tray, wherein the conducting wire is located at described first Part between cable tray and second cable tray is fixed on the elastic metallic yarn ; The elastic metallic yarn, The conducting wire, the fixed sleeving, described first patch end and second patch end periphery injection molding form protection sleeve pipe.

The beneficial effect of the application is: it is in contrast to the prior art, in the application osteoacusis loudspeaker arrangement, and protective case Pipe can be molded be formed in elastic metallic yarn, conducting wire, fixed sleeving, first patch end and second patch end periphery, to will protect Protecting pipe patches end and second with

2. osteoacusis loudspeaker arrangement according to claim 1, which is characterized in that described first, which patches end and second, patches end It is formed in the both ends of the elastic metallic yarn with injection molding manner respectively, described first, which patches end and second, patches and be respectively set on end There are the first cable tray and the second cable tray, the conducting wire extends along first cable tray and the second cable tray.

3. osteoacusis loudspeaker arrangement according to claim 1, which is characterized in that the conducting wire is penetrated described in a manner of threading First cable tray and second cable tray.

4. osteoacusis loudspeaker arrangement according to claim 2, which is characterized in that first cable tray is walked including first Wire casing be connected to first cabling channel and described first patch end outer end face the first cable hole, the conducting wire is along described One cabling channel and first cable hole extend and expose to the described first outer end face for patching end ; The second cable tray packet Include the second cabling channel be connected to second cabling channel and described first patch end outer end face the second cable hole, the conducting wire Extend along second cabling channel and second cable hole and exposes to the described second outer end face for patching end.

5. osteoacusis loudspeaker arrangement according to claim 1, which is characterized in that the fixed sleeving is at least two, and It is arranged along the elastic metallic yarn interval.

6. osteoacusis loudspeaker arrangement according to claim 1, which is characterized in that the osteoacusis loudspeaker arrangement further wraps It includes:

Machine core shell for accommodating earphone core, and patches termination with described first and inserts fixation ;

Circuit shell for accommodating control circuit or battery, and patches termination with described second and inserts fixation.

7. osteoacusis loudspeaker arrangement according to claim 6, which is characterized in that the machine core shell is provided with and the machine First jointing holes of the outer end face connection of core shell body, are provided with stop block on the inner sidewall of first

elastic metallic yam, conducting wire, fixed sleeving, first respectively and patches end and be fixedly connected, without will Protection sleeve pipe be individually molded formed after be further sleeved on elastic metallic yam and first patch end, second patch end outside It encloses, so as to simplify production and assembly process, and in this way, the fixation of protection sleeve pipe can be made more firm, steady It is fixed.

Detailed description of the invention

In order to more clearly explain the technical solutions in the embodiments of the present application, make required in being described below to embodiment Attached drawing is briefly described, it should be apparent that, the drawings in the following description are only some examples of the present application, for For those of ordinary skill in the art, without creative efforts, it can also be obtained according to these attached drawings other Attached drawing.Wherein:

Fig. 1 is the configuration schematic diagram of one embodiment of the application osteoacusis loudspeaker arrangement ;

Fig. 2 is the partial structure diagram of ear-hang in one embodiment of the application osteoacusis loudspeaker arrangement ;

Fig. 3 is the partial enlarged view of part A in Fig. 2 ;

Fig. 4 is the partial cross-sectional view of one embodiment of the application osteoacusis loudspeaker arrangement ;

Fig. 5 is the partial enlarged view of part B in Fig. 4 ;

Fig. 6 is the partial structurtes sectional view of one embodiment of the application osteoacusis loudspeaker arrangement ;

Fig. 7 is the partial enlarged view of C portion in Fig. 6 ;

Fig. 8 is the partial structure diagram of the machine core shell of one embodiment of the application osteoacusis loudspeaker arrangement ;

Fig. 9 is the partial enlarged view of the part D in Fig. 8 ;

Figure 10 is the partial cross-sectional view of the machine core shell of one embodiment of the application osteoacusis loudspeaker arrangement ;

Figure 11 is the part explosive view of circuit shell and ear-hang in one embodiment of the application osteoacusis loudspeaker arrangement ;

Figure 12 is the partial cross-sectional view of the part-structure of one embodiment of the application osteoacusis loudspeaker arrangement ;

Figure 13 is the partial enlarged view of the part E in Fig. 1 ;

jointing holes, and described first Patching end includes:

Insertion section is at least partially inserted into first jointing holes and being connected on the lateral surface of the stop block ;

Two elastic clamping hooks are set to the insertion section towards the side of the machine core enclosure interior, and two elastic clamping hooks can Close up each other under the action of external thrust and the stop block, and after the stop block elastic recovery at being placed in State on the medial surface of stop block, so realize the machine core shell with described first patch end patch fixation.

8. osteoacusis loudspeaker arrangement according to claim 7, which is characterized in that the insertion section partial insertion is in described The stepped setting of exposed parts in one jointing holes, and in the insertion section, and then form the outer end with the machine core shell The circular table of face interval setting, the protection sleeve pipe further extend to the circular table towards the outer of the machine core shell The side of end face, and patch in the machine core shell with described first and abutted when termination inserts fixed with the machine core shell body elasticity, And then realize sealing.

9. osteoacusis loudspeaker arrangement according to claim 6, which is characterized in that the circuit shell is provided with second and patches Hole, described second, which patches end, is at least partially inserted into second jointing holes, wherein patching opposite the two of end described second Side, which is respectively arranged with, patches the vertically disposed fluting of direction of insertion held relative to second jointing holes with described second, described Two through-holes corresponding with two slotting positions, the osteoacusis loudspeaker arrangement are provided on the first side wall of circuit shell It further comprise fixing piece, the fixing piece includes two pins disposed in parallel and the interconnecting piece for connecting the pin, Wherein the pin is inserted into the fluting through the through-hole from the outside of the circuit shell, and then realizes the circuit shell With described second patch end patch fixation.

10. osteoacusis loudspeaker arrangement according to claim 6, which is characterized in that the ear-hang further comprise with it is described Second patches the integrally formed shell sheath of the protection sleeve pipe of end

Figure 14 is the sectional view of circuit shell in one embodiment of the application osteoacusis loudspeaker arrangement ;

Figure 15 is the partial enlarged view of the part F in Figure 14 ;

Figure 16 is the explosive view of circuit shell and press-key structure in one embodiment of the application osteoacusis loudspeaker arrangement ;

Figure 17 is the partial enlarged view of the part G in Fig. 6 ;

Figure 18 is the structural schematic diagram of conductive column in one embodiment of the application osteoacusis loudspeaker arrangement ;

Figure 19 is cutting for circuit shell in one embodiment of the application osteoacusis loudspeaker arrangement, conductive column and main control board Face figure ;

Figure 20 is the partial enlarged view of the part H in Figure 19 ;

Figure 21 is that the partial structurtes of circuit shell and auxiliary piece are exploded in one embodiment of the application osteoacusis loudspeaker arrangement Figure ;

Figure 22 is that the partial structurtes of circuit shell and auxiliary piece are illustrated in one embodiment of the application osteoacusis loudspeaker arrangement Figure ;

Figure 23 is circuit shell and the partial structurtes explosive view hung afterwards in one embodiment of the application osteoacusis loudspeaker arrangement ;

Figure 24 is circuit shell and the partial structurtes sectional view hung afterwards in one embodiment of the application osteoacusis loudspeaker arrangement ;

Figure 25 is the rear partial structural diagram hung in one embodiment of the application osteoacusis loudspeaker arrangement.

Specific embodiment

Below in conjunction with the attached drawing in the embodiment of the present application, technical solutions in the embodiments of the present application carries out clear, complete Site preparation description, it is clear that described embodiments are only a part of embodiments of the present application, rather than whole embodiments.Based on this Embodiment in application, those of ordinary skill in the art are obtained every other under the premise of not making creative labor Embodiment shall fall in the protection scope of this application.

Also referring to Fig. 1 to Figure 25, Fig. 1 to Figure 25 depicts the application osteoacusis loudspeaker arrangement.Bone in the application Conducting loudspeaker arrangement can be earphone, MP3 or other

periphery, and the shell sheath is coated on institute in a manner of being set with State the periphery of circuit shell.

11. a kind of manufacturing method of the ear-hang of osteoacusis loudspeaker arrangement, which is characterized in that the manufacturing method includes:

Fixed sleeving is sheathed on elastic metallic yarn, wherein reserving injection molding position at the both ends of the elastic metallic yarn ;

It is molded first respectively on the injection molding position at the both ends of the elastic metallic yarn to patch end and second patch end, wherein described the One, which patches end and second, patches end and is respectively arranged with the first cable tray and the second cable tray ;

Conducting wire is arranged to extend along first cable tray and the second cable tray, wherein the conducting wire is located at described the Part between one cable tray and second cable tray is fixed on the elastic metallic yarn ;

End and second, which is patched, in the elastic metallic yarn, the conducting wire, the fixed sleeving, described first patches the periphery note at end Moulding is at protection sleeve pipe.

12. manufacturing method according to claim 11, which is characterized in that fixed sleeving to be sheathed on elastic metallic yarn Step further comprises:

The conducting wire is fixed on the elastic metallic yarn using the fixed sleeving.

13. manufacturing method according to claim 11, which is characterized in that being arranged to conducting wire along first cable tray Extend with the second cable tray, wherein the conducting wire is between first cable tray and second cable tray Part further comprises by the step that the fixed sleeving is fixed on the elastic metallic yarn:

Conducting wire is arranged in the inside of the fixed sleeving, the conducting wire is fixed on the elasticity using the fixed sleeving On wire, and further the conducting wire is arranged to extend along first cable tray and the second cable tray.

14. manufacturing method according to claim 11, which is characterized in that it is described the elastic metallic yarn, the conducting wire, The protection sleeve pipe, described first patch end and second patch end periphery injection

devices with loud-speaking function based on osteoacusis.Specifically, bone passes Lead loudspeaker arrangement can include: ear-hang 10, machine core shell 20, circuit shell 30, hang afterwards 40 and earphone core 50, control circuit 60, Battery 70.Wherein, machine core shell 20 and circuit shell 30 are respectively arranged at the both ends of ear-hang 10, and rear extension 40 is then further disposed upon The one end of circuit shell 30 far from ear-hang 10.Wherein, the quantity of machine core shell 20 is two, is respectively used to accommodate earphone core 50, The quantity of circuit shell 30 is also two, is respectively intended to accommodate control circuit 60 and battery 70, the both ends of rear extension 40 are separately connected Corresponding circuit shell 30.

Wherein, ear-hang 10 refers to when user wears osteoacusis loudspeaker arrangement, for surrounding and supporting the basal part of the ear in user Position, and then machine core shell 20 and earphone core 50 are hung and are fixed on the structure in user's ear predetermined position.

Specifically, ear-hang 10 includes elastic metallic yarn 11, conducting wire 12, fixed sleeving 13 and is set to elastic metallic yarn 11 The end that patches at both ends 14 and patches end 15, still further comprise protection sleeve pipe 16 and with the integrally formed shell of protection sleeve pipe 16 Sheath 17.

Wherein, elastic metallic yarn 11 be mainly used for making ear-hang 10 remain with the matched shape of user's ear, and have one Fixed elasticity generates certain elastic deformation so as to the ear type and head dummy when user wears according to user to be adapted to not With the user of ear type and head dummy.In present embodiment, elastic metallic yarn 11 can be made of memorial alloy, have good change Shape recovery capability, in external force removal, still is able to restore to original so that even ear-hang 10 is by external force generation deformation The shape come is can continue to be used by user, to extend the service life of osteoacusis loudspeaker arrangement.Certainly, in other realities It applies in mode, elastic metallic yarn 11 can also be made of non-memory alloy.

Conducting wire 12 can be used for being electrically connected with earphone core 50 and control circuit 60, battery 70 etc., for earphone core 50 Work carry out electricity supply and data transmission.

Fixed sleeving 13 is used to conducting wire 12 being fixed on elastic metallic yarn 11.Specifically, the quantity of fixed sleeving 13 can Think one or more, specifically depending on actual needs.In present embodiment, fixed sleeving 13 is at least two, until Few two fixed sleevings 13 can be spaced setting along the trend of elastic metallic yarn 11 and conducting wire 12, and led by wrapping up setting The periphery of line 12 and elastic metallic yarn 11 and conducting wire 12 is fixed on elastic metallic yarn 11.

molding the step of forming protection sleeve pipe further wrap It includes:

The integrally formed shell sheath of the protection sleeve pipe for patching end periphery with described second is formed with injection molding manner, wherein institute It states shell sheath and is coated on the periphery for patching the slotting fixed circuit shell of termination with described second in a manner of being set with.

Patching end 14 and patching end 15 can be made of hard material, such as plastic cement.In present embodiment, patched making this When end 14 is with end 15 is patched, the two can be formed in the both ends of elastic metallic yarn 11 in a manner of injection molding respectively.In other realities It applies in mode, can also first dock spigot 14 and patch and hold 15 to be molded respectively, and be reserved respectively and elasticity gold in injection molding Belong to the connecting hole of 11 end of silk, to patch end 14 by this by connecting hole after the completion of injection molding and patch end 15 and insert respectively it connects in the corresponding end of elastic metallic yarn 11, or and is fixed by way of bonding.

It should be pointed out that patching end 14 and patching end 15 can not directly be molded and be formed in conducting wire in present embodiment 12 periphery, but conducting wire 12 is avoided in injection molding.It specifically, can be when injection molding patches end 14 and patches end 15, to being located at The conducting wire 12 at 11 both ends of elastic metallic yarn is fixed, and with the separate position for patching end 14 and patching end 15, and is further connecing it spigot 14 and patches the first cable tray 141 and the second cable tray 151 is respectively set on end 15, it, will with after the completion of injection molding Conducting wire 12 is extended along the first cable tray 141 and the second cable tray 151.Specifically, the first cable tray 141 is being formed After the second cable tray 151, conducting wire 12 can be penetrated to first cable tray 141 and the second cable tray in a manner of threading 151.

Certainly, in other embodiments, it will can also patch end 14 according to the actual situation and patch the directly injection molding of end 15 In the periphery of conducting wire 12, it is not specifically limited herein.

Specifically, in one embodiment, the first cable tray 141 may include that the first cabling channel 1411 is walked with being connected to first First cable hole 1412 of wire casing 1411.Wherein, the connection of the first cabling channel 1411 patches the side wall surface setting at end 14, the first cabling The one end in hole 1412 is connected to one end of the first cabling channel 1411, and the other end is connected to the outer end face for patching end 14.Patch end 14 The conducting wire 12 at place extends along the first cabling channel 1411 and the first cable hole 1412 and exposes to the outer end face for patching end 14, with into one Step is connect with other structures.

Correspondingly, the second cable tray 151 may include the second cabling channel 1511 and be connected to the second of the second cabling channel 1511 Cable hole 1512.Wherein, the second cabling channel 1511 connection patches end 15 side wall surface setting, one end of the second cable hole 1512 with One end of second cabling channel 1511 is connected to, and the other end is connected to the outer end face for patching end 15.The

conducting wire 12 at end 15 is patched along the Two cabling channels 1511 and the second cable hole 1512 extend and expose to the outer end face for patching end 15, further to connect with other structures It connects.

Wherein, the outer end face for patching end 14, which refers to, patches end face of the end 14 far from the one end for patching end 15 ; Correspondingly, it patches The outer end face at end 15, which refers to, patches end face of the end 15 far from the one end for patching end 14.

Further, protection sleeve pipe 16, which can be molded, is formed in elastic metallic yarn 11, conducting wire 12, fixed sleeving 13, patches end 14 and patch end 15 periphery, thus by protection sleeve pipe 16 respectively with elastic metallic yarn 11, conducting wire 12, fixed sleeving 13, patch End 14 is fixedly connected with end 15 is patched, without protection sleeve pipe 16 is individually further sleeved on elastic metallic after injection molding is formed Silk 11 and the periphery for patching end 14, patching end 15, so as to simplify production and assembly process, and in this way, energy Enough so that the fixation of protection sleeve pipe 16 is more firm, stablizes.

Further, in overmold pipe 16, while with the protection sleeve pipe 16 integrally formed with being disposed in proximity to connect The shell sheath 17 of 15 side of spigot.

Wherein, shell sheath 17 can be made of one piece with protection sleeve pipe 16 and be integral, circuit shell 30 can by with Patch patching fixed and connecting one end that ear-hang 10 is set for end 15, shell sheath 17 then can the further packet in a manner of suit It is overlying in the periphery of circuit shell 30.

Wherein, protection sleeve pipe 16 and shell sheath 17 can be made of the soft material with certain elasticity, such as soft Silica gel, rubber etc..

Specifically, it when manufacturing the ear-hang 10 of osteoacusis loudspeaker arrangement, can be achieved by the steps of:

Step S101: conducting wire 12 is fixed on elastic metallic yarn 11 using fixed sleeving 13, wherein in elastic metallic yarn 11 both ends reserve injection molding position ;

Specifically, can by first by elastic metallic yarn 11 and conducting wire 12 according in a manner of preset, such as it is placed side by side together, so Afterwards, fixed sleeving 13 is further set in the periphery of conducting wire 12 Yu elastic metallic yarn 11, so that conducting wire 12 is fixed on elasticity On wire 11

Wherein, since the both ends of elastic metallic yarn 11 also need injection molding to patch end 14 and patch end 15, in fixation When, it is fully wrapped around that the both ends of elastic metallic yarn 11 cannot be fixed casing 13, and need to reserve corresponding injection molding

position, for patching End 14 is occupied with 15 injection molding of end is patched.

Step S102: injection molding patches end 14 and patches end 15 respectively on the injection molding position at the both ends of elastic metallic yarn 11, In patch end 14 and patch end and 15 be respectively arranged with the first cable tray 141 and the second cable tray 151 ;

Step S103: conducting wire 12 is arranged to extend along the first cable tray 141 and the second cable tray 151 ;

It specifically, herein can be after the completion of patching end 14 and patching 15 molding of end, further by either manually or by machine The both ends of conducting wire 12 are respectively penetrated the first cable tray 141 and the second cable tray 151 by device.Wherein, conducting wire 12 is located at first Part between cable tray 141 and the second cable tray 151 is fixed on elastic metallic yarn 11 by fixed sleeving 13.

Step S104: it in elastic metallic yarn 11, conducting wire 12, fixed sleeving 13, patches end 14 and patches the peripheral of end 15 and infuse Moulding is at protection sleeve pipe 16.

In one embodiment, when executing step S104,15 periphery of end is further formed and patched in a manner of injection molding The integrally formed shell sheath 17 of protection sleeve pipe 16.

It should be pointed out that in other embodiments, conducting wire 12 can also be first not provided with when installing fixed sleeving 13, And it is patching end 14 and is patching 15 injection molding of end and then further setting conducting wire 12, the specific steps are as follows:

Step S201: fixed sleeving 13 is sheathed on elastic metallic yarn 11, wherein pre- at the both ends of elastic metallic yarn 11 Reserve injection molding position ;

Step S202: injection molding patches end 14 and patches end 15 respectively on the injection molding position at the both ends of elastic metallic yarn 11, In patch end 14 and patch end and 15 be respectively arranged with the first cable tray 141 and the second cable tray 151 ;

Conducting wire 12: being arranged in the inside of fixed sleeving 13 by step S203, with using fixed sleeving 13 that conducting wire 12 is fixed In on elastic metallic yarn 11, and further conducting wire 12 is arranged to prolong along the first cable tray 141 and the second cable tray 151 It stretches.

It should be pointed out that in this way, can be avoided and led when docking spigot 14 and patching 15 injection molding of end The interference of line 12, to be conducive to molding go on smoothly.

Wherein, elastic metallic yarn 11 involved by method in present embodiment and above embodiment, conducting

wire 12, Fixed sleeving 13, patch end 14, patch end 15 and structure, effect and the generation type of protection sleeve pipe 16 etc. with above-mentioned implementation Identical in mode, related detailed content refers to above embodiment, and details are not described herein again.

In one embodiment, machine core shell 20 can be used for accommodating earphone core 50, and patch fixation with end 14 is patched.Its In, the quantity of earphone core 50 and machine core shell 20 is two, respectively corresponds the left and right ear of user.

Specifically, machine core shell 20 can be connect with end 14 is patched by modes such as grafting, clampings, by machine core shell 20 It is fixed together with ear-hang 10.That is, ear-hang 10 can be first separately formed with machine core shell 20, then in present embodiment Further it is assembled together, rather than by the Iwo one straight forming.

In this way, ear-hang 10 and machine core shell 20 can be separately formed using corresponding mold, and nothing The two need to be integrally formed using the mold of the same larger size, so as to reduce the size of mold, to reduce adding for mold Work difficulty, and molding difficulty ; In addition, being produced since different mold processing is respectively adopted in ear-hang 10 and machine core shell 20 In manufacturing process, need in ear-hang 10 or machine core shell 20 the shape of some or construction be adjusted when, only adjust The corresponding mold of the whole structure, is adjusted without the mold to another structure, is produced into so as to reduce This.

Certainly, in other embodiment, according to circumstances ear-hang 10 and machine core shell 20 can also be made to pass through one Molding obtains.

In one embodiment, machine core shell 20 is provided with the jointing holes 22 being connected to the outer end face 21 of machine core shell 20, Stop block 23 is provided on the inner sidewall of jointing holes 22.

Wherein, the outer end face 21 of machine core shell 20 refers to machine core shell 20 towards the end face of ear-hang 10.Jointing holes 22 are used for Accommodating space is provided for the 14 insertion machine core shell 20 of end that patches of ear-hang 10, patches end 14 and machine core shell to further realize 20 patch fixation.

Stop block 23, which can be protruded by the inner sidewall of jointing holes 22 along the direction perpendicular to the inner sidewall, to be formed.Specifically, Stop block 23 can be multiple spaced block-shaped protrusions, or may be the annular projection along 22 inner sidewall of jointing holes, It is not specifically limited herein.

Wherein, patching end 14 includes insertion section 142 and two elastic clamping hooks 143.

Specifically, insertion section 142 is at least partially inserted into jointing holes 22 and being connected to the lateral surface 231 of stop block 23 On.Wherein, the shape of the inner sidewall of the shape with jointing holes 22 of the lateral wall of insertion section 142 matches so that insertion section 142 to When small part is inserted in jointing holes 22, so that the lateral wall of insertion section 142 is abutted with the inner sidewall of jointing holes 22.

The lateral surface 231 of stop block 23 refers to the one side that stop block 23 is arranged towards ear-hang 10.It insertion section 142 can be into one Step includes one towards the end face of machine core shell 20 1421, which can match with the lateral surface 231 of stop block 23, thus Insertion section 142 is at least partially inserted into when in jointing holes 22, the end face 1421 of insertion section 142 and the lateral surface 231 of stop block 23 It abuts.

Specifically, the edge of the jointing holes 22 of machine core shell 20 is perpendicular to patching 14 insertion side relative to machine core shell 20 of end Upward cross sectional shape can be oval ring or nearly oval ring, and accordingly, the cross section of insertion section 142 can be and jointing holes 22 matched nearly ellipses, certainly, the shape of the two can also be it is other, can specifically be configured according to actual needs.

Further, two elastic clamping hooks 143 can be along being perpendicularly to the insertion direction side by side and be spaced and be symmetrically disposed on insertion Portion 142 is towards the side inside machine core shell 20.Wherein, each elastic clamping hook 143 can respectively include beam portion 1431 and hook part 1432, beam portion 1431 is connect with the side of insertion section 142 towards machine core shell 20, and the setting of hook part 1432 is in beam portion 1431 far from slotting Enter the one end in portion 142, and edge is perpendicularly to the insertion direction extension.Further, each hook part 1432 be provided with connection be parallel to it is slotting Enter the side in direction and the intermediate incline 14321 of the end face far from insertion section 142.

In the installation process of ear-hang 10 and machine core shell 20, patches end 14 and progress into machine core shell by jointing holes 22 Inside 20, when reaching the position of stop block 23, the hook part 1432 of two elastic clamping hooks 143 will receive the blocking of stop block 23, Under the action of external thrust, stop block 23 gradually squeezes the intermediate incline 14321 of hook part 1432 and makes two elastic clamping hooks 143 occur elastic deformations and close up each other, reach stop block 23 close to machine core shell by stop block 23 in intermediate incline 14321 When side inside body 20, elastic clamping hook 143 is placed in 23 court of stop block because losing the blocking of stop block 23 due to elastic recovery To on the medial surface inside machine core shell 20, so that stop block 23 to be placed in the

insertion section 142 and hook part 1432 for patching end 14 Between, and then realize that machine core shell 20 patches fixation with end 14 is patched.

Wherein, in one embodiment, machine core shell 20 and patch end 14 patch it is fixed after, 142 part of insertion section is inserted Enter in jointing holes 22, and the stepped setting of the exposed parts in insertion section 142, and then forms the outer end with machine core shell 20 The spaced circular table 1422 in face 21.

It should be pointed out that the exposed parts of insertion section 142 refer to that insertion section 142 exposes to the part of machine core shell 20, Specifically, it can refer to and expose to machine core shell 20 and the part close to 20 outer end face of machine core shell.

Wherein, circular table 1422 can be oppositely arranged with the outer end face 21 of machine core shell 20, and interval between the two It can refer to that edge patches direction interval and along perpendicular to the interval for patching direction.

Further, protection sleeve pipe 16 extend to circular table 1422 towards machine core shell 20 outer end face 21 side, And in the jointing holes of machine core shell 20 22 and when patching end 14 and patching fixed, it is filled in circular table 1422 and machine core shell 20 In interval between outer end face 21, and is abutted with the elasticity of machine core shell 20 so that outside liquid be difficult to from patch end 14 and Joint between machine core shell 20 enters inside machine core shell 20, so realize patch end 14 and jointing holes 22 between it is close Envelope, to protect the earphone core 50 etc. inside machine core shell 20, so as to improve the waterproof effect to osteoacusis loudspeaker arrangement.

Specifically, in an embodiment, protection sleeve pipe 16 is in circular table 1422 towards the outer end of machine core shell 20 21 sides in face form an annular abutment face 161.Wherein, which is protection sleeve pipe 16 towards machine core shell 20 The end face of side.

Further, protection sleeve pipe 16 further includes being located at 161 inside of annular abutment face and relative to annular abutment face 161 Protrude the annular convex platform 162 of setting.Specifically, which is specifically formed in annular abutment face 161 towards patching end 14 Side, and relative to the annular abutment face 161 along towards the direction of machine core shell 20 protrude be arranged, further, the annular Boss 162 is also formed directly in the periphery of circular table 1422, and covers the circular table 1422.

Further, machine core shell 20 includes the inner sidewall of the outer end face 21 for connecting machine core shell 20 and jointing holes 22 Connection inclined-plane 24.Wherein, the connection inclined-plane 24 be specially machine core shell 20 outer end face 21 and jointing holes 22 inner sidewall it Between transition face, the outer end

face 21 of the connection inclined-plane 24 and machine core shell 20 and the inner sidewall of jointing holes 22 be not in same plane On.Wherein, which can be plane, perhaps can also be arranged to curved surface or other shapes according to actual needs Shape is not specifically limited herein.

Specifically, machine core shell 20 and patch end 14 patch fixed when, annular abutment face 161 and annular convex platform 162 divide Not with the outer end face of machine core shell 20 and connect the elasticity of inclined-plane 24 and abut.

It should be pointed out that due to machine core shell 20 outer end face 21 and connection inclined-plane 24 not in the same plane, thus So that the elastic place of abutting between protection sleeve pipe 16 and machine core shell 20 is not in the same plane, so that outside liquid is difficult By entering machine core shell 20 between protection sleeve pipe 16 and machine core shell 20 to travel further into earphone core 50, so as to improve The waterproof effect of osteoacusis loudspeaker arrangement to play a protective role to intemal functional architecture, and then extends osteoacusis loudspeaker arrangement Service life.

Wherein, in one embodiment, insertion section 142 is in circular table 1422 towards the outer end face 21 of machine core shell 20 Side is formed further with the annular groove 1423 adjacent with circular table 1422, wherein annular convex platform 162 can be formed in annular In groove 1423.

In present embodiment, annular groove 1423 can be formed in circular table 1422 towards the side of machine core shell 20.? In one application scenarios, circular table 1422 is the side wall surface towards 20 side of machine core shell of annular groove 1423, at this point, ring Shape boss 162 is formed in annular groove 1423 along the side wall surface.

In one embodiment, one end of the outside positioned at machine core shell 20 of the conducting wire 12 of ear-hang 10 may pass through second and walk Line passage 151 and further connect outer outside the machine cores shells 20 such as control circuit 60, battery 70 that circuit shell 30 is accommodated Portion's circuit, the other end are then exposed to the outer end face for patching end 14 along the first cable tray 141, and further with insertion section 142 And entered inside machine core shell 20 by jointing holes 22.

In one embodiment, machine core shell 20 may include main casing 25 and baffle assembly 26, wherein baffle assembly 26 It is connect inside main casing 25, and with main casing 25, and then the inner space of main casing 25 27 is separated into the first accommodating sky Between 271 and close to 22 side of jointing holes the second accommodating space 272.

Specifically, main casing 25 includes all side walls 251 and the base end wall 252 connecting with an end face of all side walls 251, week Side wall 251 and base end wall 252 are jointly around the inner space 27 for forming a main casing 25.

Baffle assembly 26 is located at the side of the close jointing holes 22 of main casing 25, and including side partition 261 and base spacer 262.Wherein, side partition 261 can along perpendicular to base end wall 252 direction be arranged, and the both ends of side partition 261 with all side walls 251 connections, so that the inner space 27 to main casing 25 is separated.Base spacer 262 can be parallel or close with base end wall 252 Parallel and interval setting, and further connect respectively with all side walls 251 and side partition 261, so that main casing 25 is formed by inner space 27 is divided into two and is formed by side partition 261, base spacer 262 and all side walls 251 far from jointing holes 22, base end wall 252 the first accommodating spaces 271 surrounded jointly, and by base spacer 262 and side partition 261 and close to all side walls of jointing holes 22 251 the second accommodating spaces 272 surrounded jointly.Wherein, the second accommodating space 272 is smaller than the first accommodating space 271.

Certainly, baffle assembly 26 can also be drawn by inner space 27 of other set-up modes to main casing 25 Point, it is not specifically limited herein.

Further, earphone core 50 includes functional unit 51, which is set in the first accommodating space 271, It can be used for vibration sounding.Osteoacusis loudspeaker arrangement can further comprise the conducting wire 80 that one end is connect with functional unit 51, the conducting wire 80 other end can be extended in the second accommodating space 272 by the first accommodating space 271.

Specifically, cabling channel 2611, the cabling channel can be arranged in the top edge far from base end wall 252 in side partition 261 2611 can be connected to the first accommodating space 271 and the second accommodating space 272.Further, the one of the separate functional unit of conducting wire 12 End extends in the second accommodating space 272 via the cabling channel.

In addition, one end of the separate circuit shell 30 of the conducting wire 12 of ear-hang 10 enters in machine core shell 20 with insertion section 142 It behind portion, may be further extended in the second accommodating space 272, and be electrically connected in the second accommodating space 272 with conducting wire 80, with shape At the conductive paths for being connected to external circuit via the second accommodating space 272 from the first accommodating space 271, to be led by this Functional unit 51 is electrically connected by line access with the external circuit being located at outside machine core shell 20.

Specifically, it may be provided with cable hole 2621 on base spacer 262, which accommodates jointing holes 22 and second Space 272 is connected to, so that can be prolonged via the cable hole 2621 by the conducting wire 12 that jointing holes 22 enter machine core shell 20 Extend to the second accommodating space 272.

Wherein, after conducting wire 12 and conducting wire 80 connect in the second accommodating space 272, coiling is set to the second accommodating space In 272.Specifically conducting wire 12 and conducting wire 80 can be connected together by welding, and then by functional unit 51 and external electrical Road electrical connection, to provide electricity as the normal work of functional unit 51 by external circuit or be that earphone core 50 transmits data.

It should be pointed out that conducting wire is often longer than actual demand, when assembling to osteoacusis loudspeaker arrangement in order to fill Match.If however conducting wire extra at earphone core 50 can not be placed reasonably, and the production when functional unit 51 works is easy Life is vibrated and issues abnormal sound, so that the sound quality of osteoacusis loudspeaker arrangement is reduced, to influence the audition impression of user.This reality Apply in mode, the main casing 25 of machine core shell 20 be formed by inner space 27 isolate the second accommodating space 272 with For accommodating extra conducting wire 12 and conducting wire 80, thus avoid or reduce extra conducting wire to due to vibration to osteoacusis loudspeaking The influence for the sound that device is issued, to improve sound quality.

In one embodiment, baffle assembly 26 further comprises internal partition 263, and internal partition 263 further holds second 272 are separated into two sub-accommodating spaces 2721 between emptying.Specifically, base end wall 262 of the internal partition 263 perpendicular to main casing 25 Setting connect with side partition 261 and all side walls 251 respectively, and further extends at cable hole 2621, to hold by second 272 while be divided into two sub-accommodating space 2721 between emptying, and cable hole 2621 is further also divided into two, two are walked String holes 2621 can be connected to corresponding sub-accommodating space 2721 respectively.

In present embodiment, conducting wire 12 and conducting wire 80 may respectively be two, wherein two conducting wires 12 respectively along it is corresponding walk String holes 2621 and separately extend in respective sub-accommodating space 2721, and two conducting wires 80 then still together pass through cabling channel 2611 And enter the second accommodating space 272, and separate after entering the second accommodating space 272, and respectively in corresponding sub- accommodating space It is welded in together in 2721 with corresponding

conducting wire 12, and further coiling is set in corresponding sub- accommodating space 2721.

Further, in one embodiment, the second accommodating space 272 can be further filled by sealant.Pass through This mode can further fix the conducting wire 12 accommodated in the second accommodating space 272 and conducting wire 80, to further decrease The adverse effect caused by sound quality as conductor vibration, to improve the sound quality of osteoacusis loudspeaker arrangement, simultaneously it can play a protective role to the pad between conducting wire 12 and conducting wire 80, in addition, also by 272 sealed set of the second accommodating space it can achieve the purpose that water proof and dust proof.

In one embodiment, circuit shell 30 patches fixation with end 15 is patched, so that circuit shell 30 is fixed on ear Hang 10 one end far from machine core shell 20.Wherein, it is worn in user in use, accommodating the circuit shell 30 of battery 70 and accommodating control The circuit shell 30 of circuit 60 processed can respectively correspond the left and right side of user, the two with the corresponding side of patching for patching end 15 It can be different in formula.

Specifically, circuit shell 30 can be connect with end 15 is patched by modes such as grafting, clampings.That is, this reality It applies in mode, ear-hang 10 first can be formed independently with circuit shell 30, then and after the completion of molding be further assembled in Together, rather than directly the two is integrally formed.

In this way, ear-hang 10 and circuit shell 30 can be separately formed using corresponding mold, and nothing The two need to be integrally formed using the mold of the same larger size, so as to reduce the size of molding die, to reduce mold Difficulty of processing, and molding difficulty ; In addition, since different mold processing is respectively adopted in ear-hang 10 and circuit shell 30, During the manufacturing, need in ear-hang 10 or circuit shell 30 the shape of some or construction be adjusted when, The corresponding mold of the structure is only adjusted, is adjusted without the mold to another structure, so as to reduce life Produce cost.

Further, in one embodiment, circuit shell 30 is provided with jointing holes 31, the inner surface of the jointing holes 31 Shape can match with the shape of at least partly outer surface for patching end 15 so that patch hold 15 can be at least partially inserted into In jointing holes 31.

Further, insertion of the end 15 relative to jointing holes 31 is respectively arranged with and patched in the opposite sides for patching end 15 The vertically disposed fluting 152 in direction.Specifically, two flutings 152 are symmetrical and are arranged at intervals at the opposite sides for patching end 15, and Connection patches the side wall at end 15 in the vertical direction along direction of insertion.

Correspondingly, be provided on the first side wall 30a of circuit shell 30 it is corresponding with two 152 positions of fluting through this Two through-holes 32 of one side wall 30a.

Wherein, circuit shell 30 can be in flat setting, for example, circuit shell 30 is transversal at the second jointing holes 31 Face can be ellipse, or be capable of forming the other shapes of flat setting.In present embodiment, the area of circuit shell 30 Biggish two side walls being oppositely arranged be major side wall 33, connect two major side walls 33 area it is lesser and be oppositely arranged two To sidewall 34 supplemented by side wall.In present embodiment, the first side wall 30a of circuit shell 30 both can be the master of the circuit shell 30 The auxiliary sidewall 34 of side wall 33 or circuit shell 30, can specifically be set according to actual needs.

Certainly, in other embodiments, cross section of the circuit shell 30 at jointing holes 31 can also wait it to be round its shape can be specifically configured according to actual needs.

Further, osteoacusis loudspeaker arrangement can also include fixing piece 81, and fixing piece 81 includes two disposed in parallel Pin 811 and interconnecting piece 812 for connecting pin 811.Specifically, interconnecting piece 812 can vertically be connected in two pins 811 towards unidirectional one end, to form U-shaped fixing piece 81.

Wherein, two one end of pin 811 far from interconnecting piece 812 are inserted into out from the outside via through holes 32 of circuit shell 30 Slot 152, and interconnecting piece 812 is barred to the outside of circuit shell 30, and then realize circuit shell 30 and patch patching for end 15 It is fixed.

Further, in one embodiment, it is formed further on the first side wall 30a of circuit shell 30 for connecting The strip groove 35 of two through-holes 32, when patching fixed using fixing piece 81, interconnecting piece 812 can be further partially or complete Portion is heavy to be set in strip groove 35.To on the one hand enable to osteoacusis loudspeaker arrangement whole more unified, so that set Groove corresponding with interconnecting piece 812 is set without special molding on the shell sheath 17 of 30 periphery of circuit shell, simplifies shell The mold of body sheath 17 ; On the other hand, additionally it is possible to reduce osteoacusis loudspeaker arrangement integrally occupied space to a certain extent.

It wherein, can be some or all of heavy in strip groove 35 by interconnecting piece 812 in an application scenarios Afterwards, further in 35 internal sizing of strip groove, in this way, on the one hand fixing piece 81 can be fixed on circuit shell 30 On, it is more consolidated so that patching patching between end 15 and jointing holes 31 ; On the other hand, heavy set on item in interconnecting piece 812 After shape groove 35, further groove 35 is filled and led up by sizing, is consistent with the first side wall 30a with

circuit shell 30, from And after being arranged shell sheath 17, so that more smooth coherent between the groove 35 and peripheral structure.

Wherein, in one embodiment, second side of the circuit shell 30 opposite with the first side wall 30a of circuit shell 30 The through-hole 36 opposite with through-hole 32 is further provided on wall 30b, pin 811 is further inserted into through-hole 36 through fluting 152.

Specifically, the first side wall 30a of the circuit shell 30 and second sidewall 30b of circuit shell 30 can be circuit shell 30 major side wall 33 or auxiliary sidewall 34.In the present embodiment, the first side wall 30a and second sidewall 30b of circuit shell 30 The respectively major side wall 33 that is oppositely arranged of two of circuit shell 30.That is, two through-holes 32 and two through-holes 36 divide Be not set on the biggish side wall of area of circuit shell 30, so can be set between two pins 811 of fixing piece 81 compared with Big interval, to increase the span of fixing piece 81, so as to improve the stability for patching and patching between end 15 and jointing holes 31.

In present embodiment, 811 via through holes 32 of pin be inserted into fluting 152 in, and further through fluting 152 be inserted into it is logical In hole 36, that is to say, that pin 811 by two opposing major side walls 33 of circuit shell 30 and can patch end 15 completely through simultaneously Be fixed together so that patch end 15 and circuit shell 30 between patch it is stronger.

Further, as described in above embodiment, protection sleeve pipe 16 form when, while with the protection sleeve pipe 16 1 It is body formed to have the shell sheath 17 for being disposed in proximity to patch 15 sides of end.

Wherein, which is separately formed with circuit shell 30, and makes the shape of the inner sidewall of the shell sheath 17 Shape is matched with the lateral wall of circuit shell 30, and then after the two is separately formed completion, by shell sheath 17 with the side of suit Formula is coated on the periphery of circuit shell 30.

It should be pointed out that since the environment temperature when shell sheath 17 forms is higher, and hot environment may be right The control circuit 60 or battery 70 that circuit shell 30 is accommodated cause certain damage, therefore, in formative stage, by circuit shell 30 and shell sheath 17 be separately formed, be then set in together again, so as to avoid shell sheath 17 at the time of molding, high temperature pair Damage brought by control circuit 60 or battery 70, to reduce molding to unfavorable shadow brought by control circuit 60 or battery 70 It rings.

Further, shell sheath 17 can be bag shaped structure open at one end, so that circuit shell 30 is via shell The open end of sheath 17 enters the inside of shell sheath 17.

In present embodiment, shell sheath 17 be integrally formed with protection sleeve pipe 16 and after being formed, can be by from opening Mouth end carries out

turnup to shell sheath 17 and is removed from the mold ; Visual examination and silk-screen are being carried out to shell sheath 17 When Deng being surface-treated, further shell sheath 17 can be set in preset structure by opening and be operated, and operated After the completion, further it is removed from the preset structure and carrying out turnup to shell sheath 17 from opening ; It is checking And after the completion of the operations such as processing, shell sheath 17 can be further sleeved on to the periphery of circuit shell 30 by being open.It is above-mentioned In operation, shell sheath 17 is being removed to the mode for being not limited to above-mentioned turnup, can not also done herein by modes such as inflations It is specific to limit.

Specifically, the open end of shell sheath 17 is one end that shell sheath 17 deviates from protection sleeve pipe 16, thus the circuit Shell 30 enters the inside of shell sheath 17 from shell sheath 17 far from one end of protection sleeve pipe 16, for 17 institute of shell sheath Cladding.

In one embodiment, the open end of shell sheath 17 is provided with inwardly projecting collar flange 171.Further Ground, the stepped setting in end of the circuit shell 30 far from ear-hang 10, and then form circular table 37.When shell sheath 17 coats When the periphery of circuit shell 30, collar flange 171 is connected on circular table 37.

Specifically, collar flange 171 by shell sheath 17 open end inner wall towards protruding inside shell sheath 17 Certain thickness is formed, and including one towards ear-hang 10 flange surface 172.

Wherein, circular table 37 and flange surface 172 are opposite, and deviate from the direction of ear-hang 10 towards circuit shell 30.

The height of the flange surface 172 of the collar flange 171 is not more than the height of circular table 37, so that cyclic annular convex When the flange surface 172 and circular table 37 of edge 171 abut against, the inner wall of shell sheath 17 can be with the side wall of circuit shell 30 Face sufficiently abuts, so that shell sheath 17 can closely be coated on the periphery of circuit shell 30.

It further, in one embodiment, can be into one in the engaging zones on collar flange 171 and circular table 37 Step is applied with sealant.Specifically, when being set with to shell sheath 17, sealant can be coated on circular table 37. To which shell sheath 17 and circuit shell 30 are connected and sealed.

Wherein, in one embodiment, it is additionally provided with locating piece 38 in circuit shell 30, which is set to annular On table top 37, and extend along circuit shell 30 away from the direction of ear-hang 10.Specifically, which may be disposed at circuit shell in 30 auxiliary sidewall 34, and the thickness that the locating piece 38 is protruded above in auxiliary sidewall 34 is consistent with the height of

circular table 37.Wherein, One or more can be arranged in the quantity of locating piece 38 according to demand.

Correspondingly, it is provided with locating slot 173 corresponding with locating piece 38 at the collar flange 171 of shell sheath 17, thus When shell sheath 17 is coated on the periphery of circuit shell 30, which is covered at least partly locating piece 38.

It in this way, can be according to the position of locating piece 38 and locating slot 173 when being set with to shell sheath 17 It sets and shell sheath 17 is positioned, it is quick to facilitate operation personnel, accurate to install.Certainly, in other embodiments, It can be not provided with locating piece according to actual needs.

In one embodiment, circuit shell 30 includes the two sub-shells fastened each other, the respectively first sub- shell 301 With the second sub- shell 302.Specifically, two sub-shells can along circuit shell 30 middle line and symmetrically fasten, or can also be with It is fastened by other means according to actual needs.In addition, two sons of the circuit shell 30 for accommodating control circuit 60 The manner of shell can be identical with the manner of two sub- shells of the circuit shell 30 for accommodating battery 70, It can also be different.

In an application scenarios, the circular table 37 of circuit shell 30 can be formed on the first sub- shell 301, two sons Shell is engaged in circular table 37 towards the side of ear-hang 10, so that shell sheath 17 can be to the engagement of two sub- shells Seam carries out all standing, is sealed so as to the inner space to a certain extent to circuit shell 30, to improve osteoacusis The waterproof effect of loudspeaker arrangement.

In another application scene, the circular table 37 of circuit shell 30 can also be collectively formed by two sub- shells, from And the two at least partly position is combined in circular table 37 away from the side of ear-hang 10.At this point, shell sheath 17 can not The joint close for being located at circular table 37 and deviating from 10 side of ear-hang of two sub- shells of covering.It, can be further in this application scene The joint close of the part is covered otherwise.

Further, in one embodiment, the joint surface that two sub-shells abut each other is the stairstepping agreed with mutually Shape.

Specifically, the end face of the second sub- shell 302 of direction of the first sub- shell 301 is stair-stepping first cascaded surface 3011, the end face of the first sub- shell 301 of direction of the second sub- shell 302 is stair-stepping second cascaded surface 3021.First ladder The shape and size uniformity of face 3011 and the second cascaded surface 3021 cause, and abut together so as to work in coordination.

In this way, the faying face that two sub- shells of circuit shell 30 mutually abut against is into a ladder without same

In plane, so as to stop the liquid outside circuit shell 30 to be entered in circuit shell 30 by the periphery of circuit shell 30 Portion, and then further increase the waterproof effect of osteoacusis loudspeaker arrangement, with to inside circuit shell 30 control circuit 60 or Battery 70 etc. is protected.

Further, the peace towards the first sub- shell 30a is provided on the second cascaded surface 3021 of the second sub- shell 302 Be loaded hook 3022, and accordingly, being internally provided with for the first sub-shell 301 hooks slot with the matched installation of the installation hook 3022 3012.When installing to the first sub-shell 301 and the second sub- shell 302, installation hook 3022 can be got in external thrust It crosses installation to hook the lateral wall of slot 3012 and enter the installation and hook slot 3012, and the hook part hook joint installation for installing hook 3022 is hooked The inner sidewall of slot 3012, to realize the fastening of the first sub- shell 301 and the second sub- shell 302.

In one embodiment, osteoacusis loudspeaker arrangement is further provided with press button mechanism.

Specifically, it is provided with the first depressed area 341 on the outer surface of the auxiliary sidewall 34 of circuit shell 30, first depressed area Key hole 342 is further provided in 341, which is connected to outer surface and the inner surface of auxiliary sidewall 34.

Wherein, the auxiliary sidewall 34 of circuit shell 30 may include that, when user wears the osteoacusis loudspeaker arrangement, direction is used The auxiliary sidewall 34 of family back head, also may include user wear when, towards user's head on the downside of auxiliary sidewall 34.

The quantity of first depressed area 341 can be one or more, and can be set one in each first depressed area 341 A or multiple key holes 342, can specifically be arranged according to actual needs, be not specifically limited herein.

In present embodiment, osteoacusis loudspeaker arrangement still further comprises elastic backing 82, key 83, and control circuit 60 is wrapped Include button circuit board 61.

Wherein, elastic backing 82 is set to the first depressed area 341, is specifically fixed on the corresponding auxiliary side in the first depressed area 341 On the outer surface of wall 34, to be covered in the outside of key hole 342 to avoid outside liquid from entering circuit by key hole 342 The inside of shell 30, to play the role of sealing waterproof.

Further, second depressed area 821 corresponding with key hole 342 is provided on the elastic backing 82, this is second recessed Fall into the inside that area 821 extends to key hole 342.

Specifically, which can be made of soft materials, such as soft silica gel, rubber etc..And the elasticity Pad it is 82 relatively thin, when directly Nian Jie with the outer surface of auxiliary sidewall 34, it is difficult to which it is firm to be bonded.

Therefore, in one embodiment, rigid liner further can be set between elastic backing 82 and circuit shell 30 84, rigidity liner 84 is fixed against each other with elastic backing 82, specifically can be real by way of fitting, bonding, injection molding etc. It is existing, and further carry out with auxiliary sidewall 34 rigidity liner 84 be bonded, can be specifically bonded by using double-sided adhesive, with An adhesive-layer is formed between rigidity liner 84 and auxiliary sidewall 34, so that elastic backing 82 can be clamped securely to auxiliary side wall 34 outer surface.Moreover, because 82 matter of elastic backing is soft and thin, therefore it is difficult to keep flat in the process of user's pressing keys Whole state, and by the fixation that reclines with rigidity liner 84, elastic backing 82 can be made to keep smooth.

Further, it is provided with the through-hole 841 for allowing the second depressed area 821 to pass through on rigidity liner 84, so that bullet Property liner 82 the second depressed area 821 inside of key hole 342 can be further extended to by through-hole 841.

Specifically, rigidity liner 84 can be made of stainless steel or other rigid materials, such as plastic cement hard material. And it can be sticked together by integrated molding and elastic backing 82.

In addition, key 83 includes keying body 831, and the key touching of 831 side of keying body protrusion setting is set First 832.Wherein, keying body 831 is set to side of the elastic backing 82 far from circuit shell 30, and key contact 832 extends To the second depressed area 821, to be extended to inside key hole 342 with the second depressed area 821.

Further, due in present embodiment osteoacusis loudspeaker arrangement it is more frivolous, the pressing stroke of key 83 is shorter, User can be then reduced according to soft key to press feel and bring bad experience.In present embodiment, key 83 can be by The plastic material of hard is made, so that user can have good feel when pressing.

Further, button circuit board 61 is set to the inside of circuit shell 30, is provided with corresponding with key hole 342 Key switch 611.To which in user's pressing keys, key contact 832 contacts and triggers key switch 611, with further Realize corresponding function.

In present embodiment, by the way that the second depressed area 821 is arranged on elastic backing 82, on the one hand, the second depressed area 821 Setting can cover entire key hole 342, so as to improve waterproof effect simultaneously ; On the other hand, in its natural

state, press Key contact 832 just can be extended into inside key hole 342 by the second depressed area 821, so as to shorten key press Stroke to reduce the occupied space of press-key structure, and then the waterproof performance that have osteoacusis loudspeaker arrangement can either, and accounts for With less space.

In one embodiment, key 83 may include key monomer 833, the quantity of key monomer 833 can for one or Person is multiple.

In an application scenarios, key 83 may include at least two key monomers 833 being intervally installed and use In the interconnecting piece 834 of connection key monomer 833.Wherein, multiple key monomers 833 and interconnecting piece 834 can be integrally formed.It is corresponding Ground, each key monomer 833 are correspondingly arranged on a key contact 832, and correspond to a key hole 342 and one in turn and press Key switch 611.

That is, multiple key monomers 833 can be set corresponding to first depressed area 341 in present embodiment, User can trigger different key switches 611 by pressing different key monomers 833, and realize multiple functions in turn.

Further, the settiable elastic projection 822 for being used to support interconnecting piece 834 on elastic backing 82.Due to key 83 Multiple key monomers 833 including connection setting, the setting of elastic projection 822 is so that user is pressing one of key monomer When 833, the key monomer 833 is enabled to individually to be pressed, and avoid passing through linkage and by other key monomers 833 The case where pressing together must trigger corresponding key switch 611 so as to accurate.It is noted that the elastic projection 822 are not necessary, such as are also possible to the projective structure without elasticity, or can also be not provided with projective structure, have Body can be configured according to the actual situation.

In one embodiment, groove 174 corresponding with key is provided on the inner wall of shell sheath 17, so as to Suit mode is coated on the periphery of circuit shell 30 and key.

In one embodiment, osteoacusis loudspeaker arrangement further comprises at least one conductive column 85, is contained in electricity Control circuit 60 inside road shell 30 further includes main control board 62, which can be used for connecting inside circuit shell 30 Main control board 62 and circuit shell 30 outside charging circuit and/or data transmission link etc., to osteoacusis loudspeaking Device carries out charging and/or data transmission etc..

Correspondingly, at least one mounting hole 331 is set in the major side wall 33 of circuit shell 30, and conductive column 85 can be inserted in pair In the mounting hole 331 answered.Wherein, conductive column 85 and mounting hole 331 can correspond, in present embodiment,

conductive column 85 and peace The quantity for filling hole 331 is four, and four conductive columns 85 are inserted in respectively in corresponding mounting hole 331, is side by side in straight line And uniform intervals are arranged.Wherein, two conductive columns 85 positioned at outside can be used as charging interface, and be located in the middle two conductions Column 85 can be used as data transmission interface.Certainly, conductive column 85 and mounting hole 331 can also be carried out according to other arrangement modes Setting, is not specifically limited herein.

Wherein, conductive column 85 may include the cylindrical body 851 being inserted in mounting hole 331.Wherein cylindrical body 851 is outer Positioning convex platform 852 is provided on circumferential surface, which can be used for being clamped with the inner surface of major side wall 33, and then will be conductive Column 85 is fixed on mounting hole 331.

Specifically, positioning convex platform 852 can be arranged in a ring around the circumferential direction of cylindrical body 851, further, in annular Positioning convex platform 852 is provided with connection 851 outer peripheral surface of cylindrical body and positioning convex platform 852 towards the side inside circuit shell 30 Extension inclined-plane 853.When installing conductive column 85, by the conductive column 85 by the outside of circuit shell 30, along extending inclined-plane 853 It is gradually inserted the inside of mounting hole 331 and entrance circuit shell 30, and in turn by positioning convex platform 852, it is complete in positioning convex platform 852 After mounting hole 331, inner surface card of the positioning convex platform 852 towards table top and major side wall 33 outside circuit shell 30 It connects, and then conductive column 85 is fixed in mounting hole 331.

In aforesaid way, so that in assembling process, conductive column 85 can be from circuit shell 30 for the setting of positioning convex platform 852 Major side wall 33 outer surface insertion mounting hole 331 after, and positioning convex platform 852 can be pressed into peace by way of pressing It fills in hole 331, to be connected and fixed with the inner surface of the major side wall 33 of circuit shell 30, without from the inside of circuit shell 30 It is installed, so that the assembly of osteoacusis loudspeaker arrangement is more convenient, improves production assembly efficiency further, extend So that in assembling process, positioning convex platform 852 can more be smoothly through mounting hole 331 for the setting on inclined-plane 853.Positioning convex platform 852 setting then enables to conductive column 85 to be clamped when entering in mounting hole 331 with the inner surface of major side wall 33 and is not easy from leading It is marked in electric hole, so as to which conductive column 85 to be stably attached in mounting hole 331.

Specifically, in one embodiment, insertion side of the cylindrical body 851 along cylindrical body 851 relative to

mounting hole 331 To being divided into the first cylindrical body 8511 and the second cylindrical body 8512, the two can by conductive metal material, as copper, silver or Alloy etc. is integrally formed and is integral structure.Wherein, it is being inserted into the direction of insertion of mounting hole 331 perpendicular to conductive column 85, The cross section of first cylindrical body 8511 can be greater than the cross section of the second cylindrical body 8512.Wherein, positioning convex platform 852 is settable In in the second cylindrical body 8512.

Correspondingly, mounting hole 331 is divided into cross section and the first cylindrical body 851 and the second cylindrical body along direction of insertion 851 corresponding first hole sections 3311 and the second hole section 3312, and then in the junction of the first hole section 3311 and the second hole section 3312 Form a circular table 3313, wherein the circular table 3313 is connected to the outer surface of major side wall 33.

Further, when cylindrical body 851 is inserted in mounting hole 331, the first cylindrical body 8511 is towards the second column The side of shape ontology 8512 is supported on circular table 3313, meanwhile, the positioning on 8512 outer peripheral surface of the second cylindrical body The side of boss 852 towards the first cylindrical body 8511 is connected on the inner surface of major side wall 33, and then by conductive column 85 from peace Face is clamped simultaneously inside and outside major side wall 33 around dress hole 331, so that conductive column 85 is fixed in mounting hole 331.

In one embodiment, cylindrical body 851 is axially disposed an accommodating cavity 8513, the open end of accommodating cavity 8513 in Second cylindrical body 8512 is towards on the end face inside circuit shell 30.Specifically, which can be inserted into along being parallel to Direction and penetrate through to the part positioned at 30 interior side of circuit shell of the second cylindrical body 8512, and reach positioning convex platform It is terminated before 852.Certainly, in other embodiment, the specific location of accommodating cavity 8513 can be set according to demand, herein Without limitation.

Further, conductive column 85 includes the spring 854 and conductive contact 855 being set in accommodating cavity 8513, conductive One end of contact 855 can be abutted in 8513 inside of accommodating cavity with spring 854, and the other end is exposed to from the open end of accommodating cavity 8513 The inside of circuit shell 30.Wherein, the material of conductive contact 855 can be identical as the material of cylindrical body 851, and spring 854 can be with It is such as bonded by certain means, welds mode and connect with the second cylindrical body 851 and conductive contact 855, or may be used also To be placed directly in accommodating cavity 8513, and passes through the clamping of cylindrical body 851 and the major side wall 33 of circuit shell 30 and lead The abutting of

electrical contact 855 and main control board 62 and resilient clamp are inside accommodating cavity 8513.

Further, contact corresponding with 85 position of conductive column is provided on the main control board 62 inside circuit shell 30 621, it is specific as shown in Figure 7.Specifically, main control board 62 includes the biggish main surface 622 of area and connection main surface 622 The lesser side surface 623 of area, wherein the main surface 622 of main control board 62 can be parallel or be approximately parallel to circuit shell The major side wall 33 of body 30, wherein contact 621 is correspondingly arranged in the main surface 622 of main control board 62.

Wherein, the direction of insertion of the insertion of conductive column 85 mounting hole 331 is axial parallel with conductive column 85, and perpendicular to main side Wall 33, and then perpendicular to the main surface of main control board 62 622.After conductive column 85 is installed in mounting hole 331, spring 854 by conductive contact 855 and cylindrical body 851 clamping and generate elastic deformation, the elasticity of conductive contact 855 is pressed In on corresponding contact 621, to realize being electrically connected for conductive column 85 and main control board 62.

In one embodiment, osteoacusis loudspeaker arrangement still further comprises an auxiliary piece being located inside circuit shell 30 86。

The auxiliary piece 86 includes a plate body 861, is provided with vacancy section 8611 on the plate body 861, which can pass through heat The modes such as molten or hot pressing, bonding are set on the inner surface of major side wall 33, and make the mounting hole being set in major side wall 33 331 are located inside vacancy section 8611.Specifically, the plate face of plate body 861 can be posted by parallel on the inner surface of major side wall 33.

Wherein, the auxiliary piece 86 have certain thickness, on the inner surface that it is set to major side wall 33 after, with the auxiliary The inner sidewall and major side wall 33 of the vacancy section 8611 of piece 86 collectively form one and are located at outside the conductive column 85 being inserted in mounting hole 331 The glue groove 87 enclosed.

Further, sealant can be applied in glue groove 87, to carry out from the inside of circuit shell 30 to mounting hole 331 Sealing to improve the airtightness of circuit shell 30, and then improves the waterproof performance of osteoacusis loudspeaker arrangement.

Wherein, the material of the auxiliary piece 86 can be identical as the material of circuit shell 30, and is separately formed with circuit shell 30. It should be pointed out that mounting hole 331 nearby has other structures toward contact, such as needs into 30 formative stage of circuit shell Type key hole 342 etc., corresponding mold

may need the inside from circuit shell 30 to exit to these structures at the time of molding, and this If when directly inside circuit shell 30 be integrally formed correspond to mounting hole 331 glue groove 87, the protrusion of glue groove 87 may Interfere smoothly exiting for the mold of these structures, to make troubles for production.In present embodiment, auxiliary piece 86 and circuit shell Body 30 is independent structure respectively, can be by the way that auxiliary piece 86 to be installed on to the inside of circuit shell 30 after the two is separately formed And glue groove 87 is collectively formed with the major side wall of circuit shell 30 33, so that the formative stage in circuit shell 30 will not stop portions The mold of structure is exited from the inside of circuit shell 30, to be conducive to going on smoothly for production.

In one embodiment, when forming to circuit shell 30, exiting for mold is only taken up occupied by glue groove 87 Space segment space, it is thus possible to be integrally formed glue on the inner surface of major side wall 33 in the case where not influencing to move back mould A part of slot 87, and another part of glue groove 87 still can be assisted constituting by auxiliary piece 86.

Specifically, integrally formed with the first strip fin 332, the first strip fin 332 on the inner surface of major side wall 33 The mold that the position at place does not influence circuit shell 30 moves back mould.The vacancy section 8611 of auxiliary piece 86 is provided with a notch 8612.Its In, the first strip fin 332 is corresponding with the notch 8612.It, can should after circuit shell 30 and auxiliary piece 86 are separately formed Auxiliary piece 86 is in the inner surface of major side wall 33, so that the first strip fin 332 is at least partly embedded at notch 8612, in turn Cooperated using the first strip fin 332 and auxiliary piece 86 so that glue groove 87 is in closure setting.

In present embodiment, since the first strip fin 332 will not exit generation blocking to mold, glue groove 87 Side wall can be collectively formed by the first strip fin 332 for being shaped in 33 inner surface of major side wall with auxiliary piece 86.

Further, in one embodiment, the first strip fin 332 also further extends into the side with plate body 861 Edge 8613 abuts, and then positions to plate body 861.

Specifically, which includes fin main body 3321 and registration arm 3322, wherein fin main body 3321 for the notch 8612 of vacancy section 8611 matching and chimeric with its, so that the side wall of glue groove 87 be collectively formed ; And it positions Arm 3322 is then further extended by one end of fin main body 3321, and extend at the one side edge 8613 of plate body 861 with The side edge 8613 abuts, to position at the side edge 8613 to the plate body 861.

Wherein, the first strip fin 332 can be greater than the thickness of auxiliary piece 86 in the height that the inner surface of major side wall 33 protrudes above Degree, it is

of course also possible to be less than or equal to, as long as glue groove 87 can be collectively formed with auxiliary piece 86, and can be to auxiliary piece 86 plate body 861 plays positioning action, is not specifically limited herein.

In one embodiment, location hole 8614 is further provided on plate body 861, wherein 8614 run-through board of location hole The mainboard face of body 861 is arranged.Further, integrally formed with positioning corresponding with location hole 8614 on the inner surface of major side wall 33 Column 333, after the inner surface of major side wall 33 is arranged in auxiliary piece 86, which is inserted in location hole 8614, thus Further auxiliary piece is positioned.

Wherein, location hole 8614 is consistent with the quantity of positioning column 333, and in present embodiment, the quantity of the two is two.

In an application scenarios, the side edge 8613 of plate body 861 is formed at least two lugs 8615, two location holes 8614 can be respectively arranged on corresponding lug 8615.

Further, integrally formed with one second strip fin 334, the second strip fin on the inner surface of major side wall 33 334 can be extended along towards the direction of auxiliary sidewall 34, and can be with the extending direction of the registration arm 3322 of the first strip fin 332 It is orthogonal.

Accordingly, strip locating slot 8616 corresponding with the second strip fin 334, the positioning are additionally provided on plate body 861 Slot 8616 is recessed setting along the direction far from the major side wall 33, and one end is connect and can be with the side edge 8613 of plate body 861 The side edge 8613 is vertically arranged.

In an application scenarios, locating slot 8616 can be only by the surface indentation shape of the fitting major side wall 33 of plate body 861 At the depth of locating slot 8616 is less than the thickness of plate body 861, at this point, the face of plate body 861 being arranged with the surface opposite of recess is not It is influenced by locating slot 8616 ; In another application scenarios, the depth of locating slot 8616 is greater than the depth of plate body 861, thus So that another apparent surface is towards the direction of recess protrusion, to match in the surface indentation of the close major side wall 33 of plate body 861 Conjunction forms locating slot 8616.

Specifically, after the inner surface of major side wall 33 is arranged in auxiliary piece 86, the second strip fin 334 is embedded in strip In locating slot 8616, further to be positioned to plate body 861.

In one embodiment, button circuit board 61 perpendicular to main control board 62 the auxiliary sidewall 34 with circuit shell 30 Parallel interval setting.Specifically, as described above, auxiliary sidewall 34 corresponding to press button mechanism may include two kinds, one is in

user When wearing the osteoacusis loudspeaker arrangement, towards user's head on rear side of auxiliary sidewall 34, another kind be user wear when towards use The auxiliary sidewall 34 of account subordinate side.In present embodiment, button circuit board 61 can be two, and auxiliary with corresponding two kinds respectively The setting of sidewall 34 parallel interval.

Wherein, button circuit board 61 may be disposed at the side towards auxiliary sidewall 34 of the plate body 861 of auxiliary piece 86.Further Ground, auxiliary piece 86 include the pressure holding foot 862 relative to the protrusion setting of plate body 861.Specifically, pressure holding foot 862 is along perpendicular to plate body The direction protrusion of 861 main surface is set at the side edge towards auxiliary sidewall 34 of plate body 851, and presses the quantity of foot 862 It can be one or more.In present embodiment, pressure holding foot 862 can be electric by key towards the side of auxiliary sidewall 34 by it The pressure holding of road plate 61 is on the inner surface of auxiliary sidewall 34, to play fixed effect to button circuit board 61.

In one embodiment, main control board 62 and the interval of major side wall 33 are arranged, and the master of the plate body 861 of auxiliary piece 86 Surface is parallel with major side wall 33 and is further spaced and is arranged with main control board 62.

Wherein, pressure holding foot 862 is specifically by plate body 861 along the major side wall 33 away from the close circuit shell 30 of auxiliary piece 86 And it is protruded towards the direction of main control board 62, and extend at the plate face of main control board 62 to be played to main control board 62 Chip hold down at least partly presses on foot 862 so that main control board 62 is supported in.

In one embodiment, exposed hole 175 corresponding with the conductive column 85 is provided on shell sheath 17, by shell After body sheath 17 is sleeved on 30 periphery of circuit shell, it is outer that one end that conductive column 85 is located at outside circuit shell 30 further passes through this Reveal hole 175 it is exposed, and then with the circuit connection outside osteoacusis loudspeaker arrangement so that the osteoacusis loudspeaker arrangement passes through conduction Column carries out electricity supply or data transmission.

Further, the outer surface depressions of circuit shell 30 are provided with the glue groove 39 around multiple mounting holes 331.Specifically Ground, glue groove 39 can be oval ring, and multiple mounting holes 331 are respectively arranged at the circular circuit shell of glue groove 39 of oval ring On 30.

In present embodiment, sealant is applied in the glue groove 39, and then shell sheath 17 has been assembled with circuit shell 30 Cheng Hou, shell sheath 17 can be tightly connected in the periphery of mounting hole 331

with circuit shell 30 by the sealant, to avoid When outside liquid enters 17 inside of shell sheath by exposed hole 175, shell sheath 17 generates cunning in 30 periphery of circuit shell It is dynamic, and further mounting hole 331 can be sealed from the outside of circuit shell 30, to further increase circuit shell 30 Airtightness, and then further increase the waterproof performance of osteoacusis loudspeaker arrangement.

In one embodiment, circuit shell 30 is further provided in one end far from ear-hang 10 and patches end 3a, rear to hang 40 include elastic metallic yarn 41 and are set to the both ends of elastic metallic yarn 41 and patch end 42, wherein patching end 3a and patching end 42 patch fixation each other.

Wherein, since the earphone core 50 of osteoacusis loudspeaker arrangement is respectively left and right two, corresponding machine core shell 20, ear-hang 10 and circuit shell 30 be also configured as left and right two, it is rear to hang 40 by patching fixed mode with two circuit shells 30 respectively The machine core shell 20, ear-hang 10 and the circuit shell 30 that are located at two sides are linked together, and the suspension setting when user wears On rear side of user's head.

Specifically, material with performance of elastic metallic yarn 41 etc. can be identical as elastic metallic yarn 11, related detailed content The aforementioned associated description to elastic metallic yarn 11 is referred to, details are not described herein again.

Patch the both ends that end 42 can be formed in elastic metallic yarn 41 by way of injection molding.Specifically, patching end 42 can To be made of materials such as plastic cement.

In one embodiment, it patches end 42 and is provided with jointing holes 421, this patches end 3a and is at least partially inserted into jointing holes In 421, in present embodiment, the side that circular table 37 deviates from ear-hang 10 can be specifically located at by patching end 3a.Patch end 3a with Plugging mode between jointing holes 421 and the plugging mode patched between end 15 and jointing holes 31 may be the same or different.

Wherein, insertion side of the end 3a relative to jointing holes 421 is respectively arranged with and patched in the opposite sides for patching end 3a To vertically disposed fluting 3a1.Two fluting 3a1 can be spaced and be symmetrically disposed on the two sides for patching end 3a.Further, this two A fluting 3a1 can be connected in the corresponding side wall for being perpendicularly to the insertion direction with patching end 3a.

Correspondingly, it patches and is provided with through-hole 423 corresponding with two fluting positions 3a1 on the first side wall 422 at end 42.Its In, patching end 42 includes the side wall around setting for defining jointing holes 421, and the first side wall 422 for patching end 42

can be Patch end 3a and patch end 42 patch fixed when, patch end 42 can be with the side wall that intersect of extending direction of fluting 3a1.

Wherein, osteoacusis loudspeaker arrangement further comprises fixing piece 88, and fixing piece 88 includes two pins disposed in parallel 881 and the interconnecting piece 882 for connecting pin 881.In present embodiment, two pins 881 are arranged in parallel, and interconnecting piece 882 can It is vertically connected in the same side of two pins 881, to form U-shaped fixing piece 88 similar with 81 shape of fixing piece

It should be pointed out that fixing piece 88 can be similar to the shape of fixing piece 81, but specific dimensional parameters can fit Should be different in peripheral structure, in present embodiment, the length of pin 881 is greater than the length of pin 811,812 length of interconnecting piece Less than the length etc. of interconnecting piece 882, it is not specifically limited herein.

Further, pin 881 can be inserted into fluting 3a1 from the outside via through holes 423 for patching end 42, and by interconnecting piece 882 are barred from the outside for patching end 3a, and then realize to patch end 42 and patch and hold 3a's to patch fixation.

By the above-mentioned means, the fixing piece 88 of osteoacusis loudspeaker arrangement includes two pins 881 disposed in parallel and is used for The interconnecting piece 882 of pin 881 is connected, is patched so that fixing piece 88 docks spigot 3a in certain span and patches end 42 It is fixed, so that circuit shell 30 and the rear fixation hung between 40 are more stable, firm ; And 88 structure of fixing piece is simple, It is inserted and removed from conveniently, is fixed as detachably so that patching end 3a and patching patching between end 42, and enable to bone The assembly for conducting loudspeaker arrangement is more convenient.

Further, in one embodiment, the second sidewall 424 opposite with the first side wall 422 for patching end 42 is enterprising One step is provided with the through-hole 425 opposite with through-hole 423, and pin 881 is further inserted into through-hole 425 through fluting 3a1.

In the present embodiment, 881 via through holes 423 of pin are inserted into fluting 3a1, and further through fluting 3a1 insertion To through-hole 425, that is to say, that pin 881 can by it is rear hang 40 patch end 42 two lateral walls and patch end 3a it is complete Run through and be connected together, so that being patched between circuit shell 30 and rear extension 40 stronger.

Specifically, in one embodiment, patch end 3a along patch end 3a relative to jointing holes 421 direction of insertion into one Step, which is divided into first and patches section 3a2 and second, patches a section 3a3.

Wherein, patching end 3a may be provided at a close auxiliary sidewall 34 side for end for circuit shell 30, the auxiliary sidewall 34 It specifically can be another auxiliary sidewall 34 opposite with the auxiliary sidewall 34 where the locating piece 38 in above embodiment.

Further, first patch section 3a2 and second patch section 3a3 can close to locating piece 38 a lateral edge patch end 3a Relative to jointing holes 421 direction of insertion and stepped setting so that in the cross-wise direction being perpendicularly to the insertion direction, First section for patching section 3a2 is greater than the second section for patching section 3a3.

Correspondingly, jointing holes 421 are further divided into shape point relative to the direction of insertion of jointing holes 421 along patching end 3a Section 3a2 and second is not patched with first and patches the first hole section 4211 and the second hole section 4212 that section 3a3 matches, so that End 3a is patched when being inserted into jointing holes 421, first, which patches section 3a2 and second, patches section 3a3 and be inserted in the first hole section respectively 4211 and second 4212 in hole section.

Further, fluting 3a1 may be disposed at first and patch on section 3a2, and specifically, fluting 3a1 can be arrived along end 3a is patched The direction of locating piece 38, the i.e. opposite direction of the auxiliary sidewall 34 of the two of circuit shell 30 and be extended, so that perforation first connects The two sidewalls vertical with the major side wall 33 of circuit shell 30 of section 3a2 are inserted, and are further connect through first along being inserted perpendicularly into direction Insert the two sidewalls of the major side wall 33 for being parallel to circuit shell 30 of section 3a2.

Wherein, patching the through-hole 423 being arranged on end 42 can be corresponding with the fluting side towards locating piece 38 of 3a1, and leads to It hole 425 then can be corresponding with fluting remotely located piece 38 of the side of 3a1.

Further, in one embodiment, it first patches section 3a2 and second and patches the top side of section 3a3 and coplanar with each other set It sets.Wherein, the first top side for patching that section 3a2 and second patches section 3a3 refers to when user normally wears osteoacusis loudspeaker arrangement, First patches the side that section 3a2 and second patches the headward top side of section 3a3, namely patches section 3a2 and second with first and connect It inserts section 3a3 and is formed by ladder-like opposite side.

Further, first patch section 3a2 and second patch section 3a3 top side it is coplanar and be formed with for accommodating conducting wire Cabling channel 3a4.Cabling channel 3a4 can extend along the direction that patches for patching end 3a and jointing holes 421, can be used for accommodating passing through and hang

later 40 and be connected to the conducting wire of control circuit 60 and battery 70.

In present embodiment, it will can first patch end 3a and be inserted in jointing holes 421, the court for then patching section 3a2 from first Fluting 3a1 is inserted into the side of locating piece 38.Specifically, in present embodiment, the court that end 3a is set to circuit shell 30 is patched Remotely located piece 38 of side of 40 end face is hung backward, therefore, also has one in the side for patching end 3a towards locating piece 38 Fixed space, thus to circuit shell 30 and it is rear hang 40 and carry out grafting installation when, can be by fixing piece 88 from patching end 3a2 Bottom side, i.e., first patch section 3a2 towards the side of locating piece 38 by through-hole 423 is inserted into fluting 3a1 and in turn be inserted into it is logical In hole 425, to realize that circuit shell 30 is hung 40 and be plugged and fixed with rear.It in this way, can be completely hidden by fixing piece 88 It is hidden in circuit shell 30 to be formed by inner space with rear extension 40 without exposed, without occupying additional space.

Further, in one embodiment, rear extension 40 further includes injection molding in elastic metallic yarn 41 and patches outside end 42 The second protection sleeve pipe 43 for enclosing and with the integrally formed end protection cap 44 of the second protection sleeve pipe 43.

Wherein, the material of the second protection sleeve pipe 43 and end protection cap 44 can be with protection sleeve pipe 16 and shell sheath 17 material is identical, such as all can be have the soft material, such as soft silica gel, rubber etc. of certain elasticity.

End protection cap 44 can specifically be formed in the both ends of elastic metallic yarn 41, can be located at elastic metallic yarn 41 two The end 42 that patches at end is shaped in the periphery for patching end 42.

It should be pointed out that shell sheath 17 is only wrapped up by one end towards ear-hang 10 of circuit shell 30 to circuit shell At 30 circular table 37, therefore, the part that 40 are hung after the direction of the circular table 37 of circuit shell 30 then exposes to shell shield The periphery of set 17.Further, in present embodiment, end protection cap 44 and the shape for patching the inner sidewall that end 42 is collectively formed The shape of the shape end exposed with the circuit shell 30 matches, to be further covered in the end of the exposed circuit shell 30 Periphery, and hung after the direction of the end face towards circuit shell 30 of the end protection cap 44 and shell sheath 17 40 end face bullet Property abut, to further provide for sealing.

Further, in one embodiment, the end of the exposed circuit shell 30 of shell sheath 17 be additionally provided with by Keyhole 342 is accordingly provided with key 83, end protection cap 44 covers the key 83, and is provided with and is used in key hole 342 Accommodate the key accommodation groove 441 of key 83.

Specifically, 342 space set of key hole is in patching end 3a towards the side of locating piece 38, and key hole 342 Quantity can be one or more, specifically can be according to the specific structure and electricity of the control circuit 60 inside circuit shell 30 The structure of road shell 30 itself determines, is not specifically limited herein.

The foregoing is merely presently filed embodiments, are not intended to limit the scope of the patents of the application, all to utilize this Equivalent structure or equivalent flow shift made by application specification and accompanying drawing content, it is relevant to be applied directly or indirectly in other Technical field similarly includes in the scope of patent protection of the application.

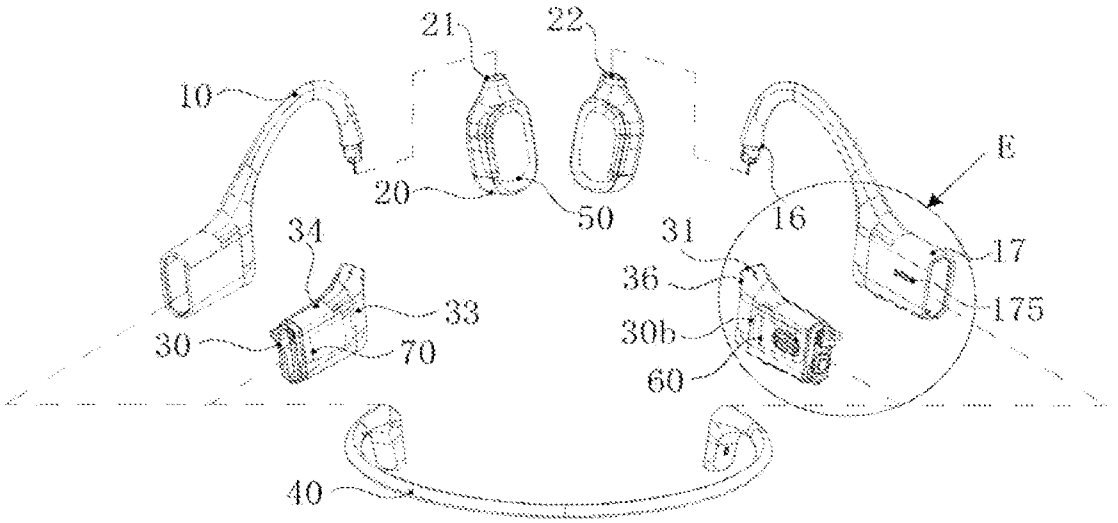


图1

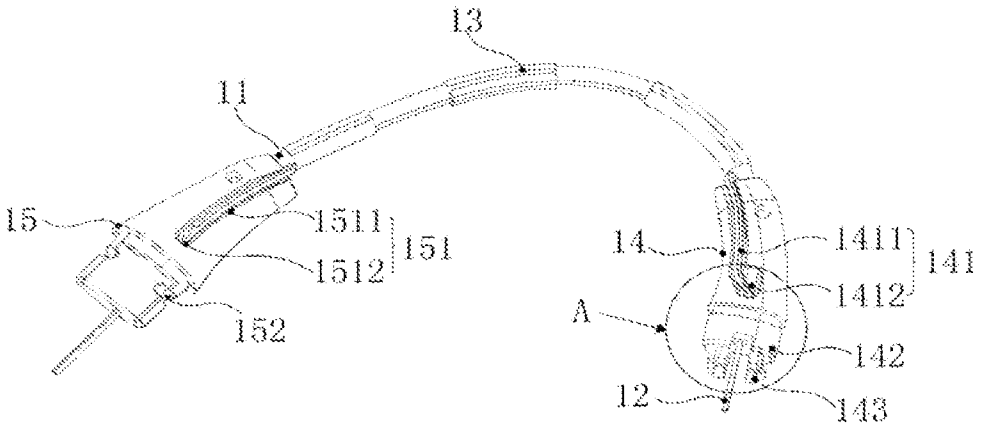


图2

IPR2025-00843; Mojawa
Ex. 1002 - Page 827

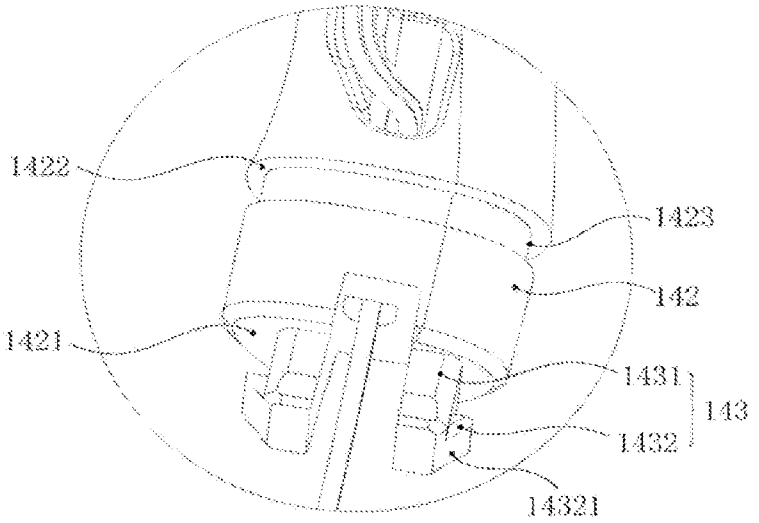


图3

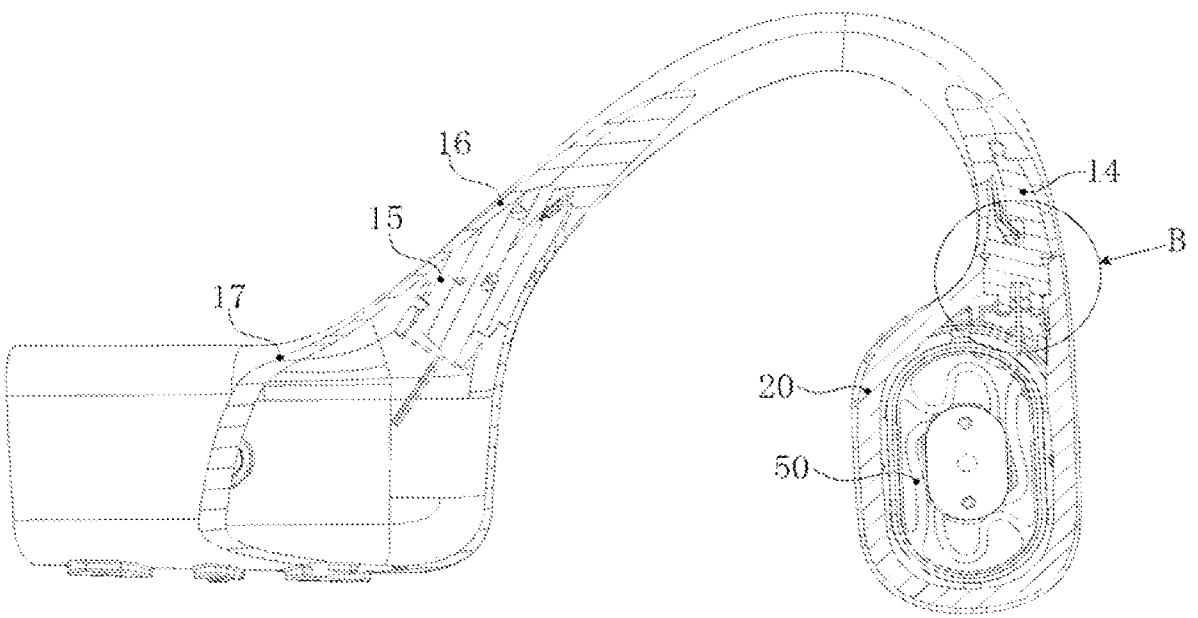


图4

IPR2025-00843; Mojawa
Ex. 1002 - Page 828

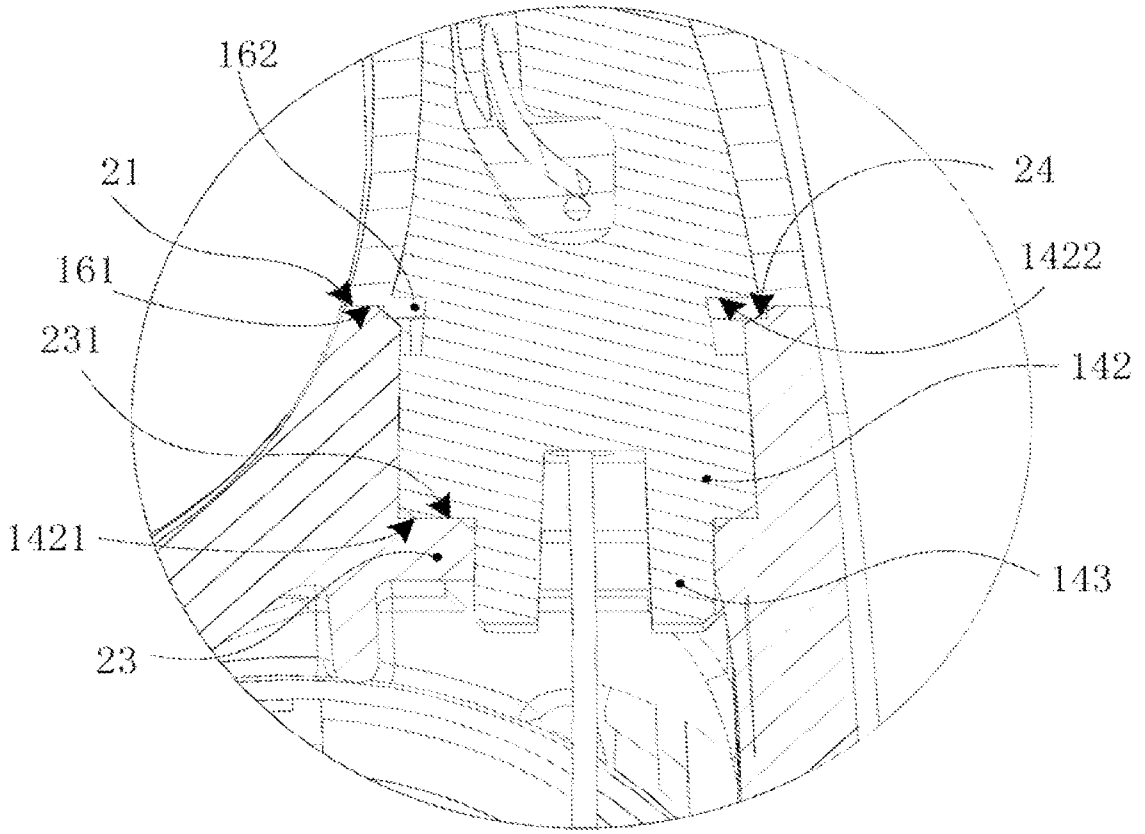


图5

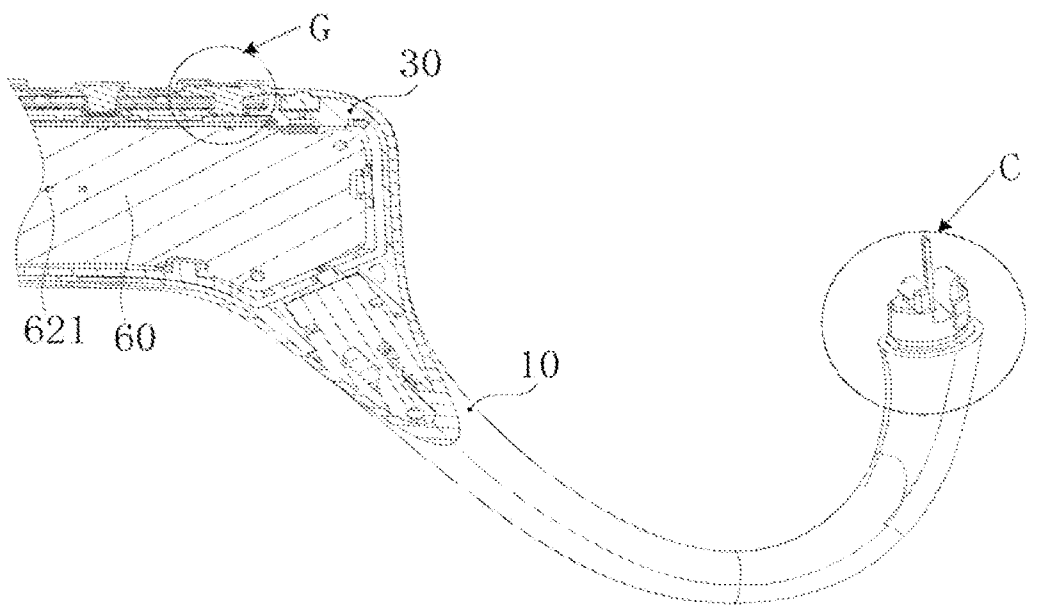


图6

IPR2025-00843; Mojawa
Ex. 1002 - Page 829

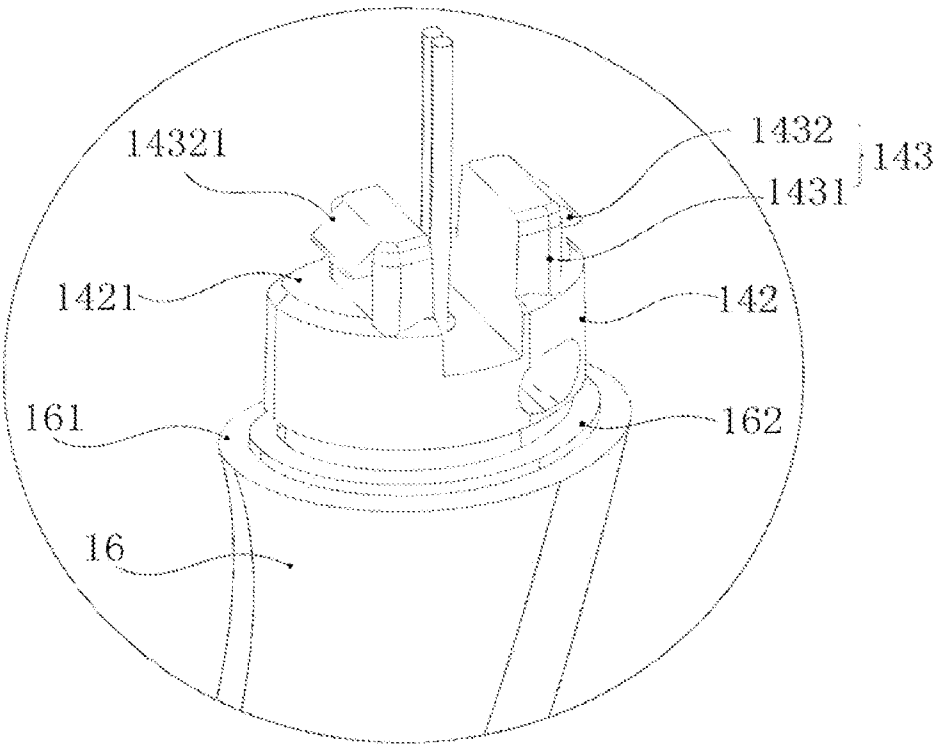


图7

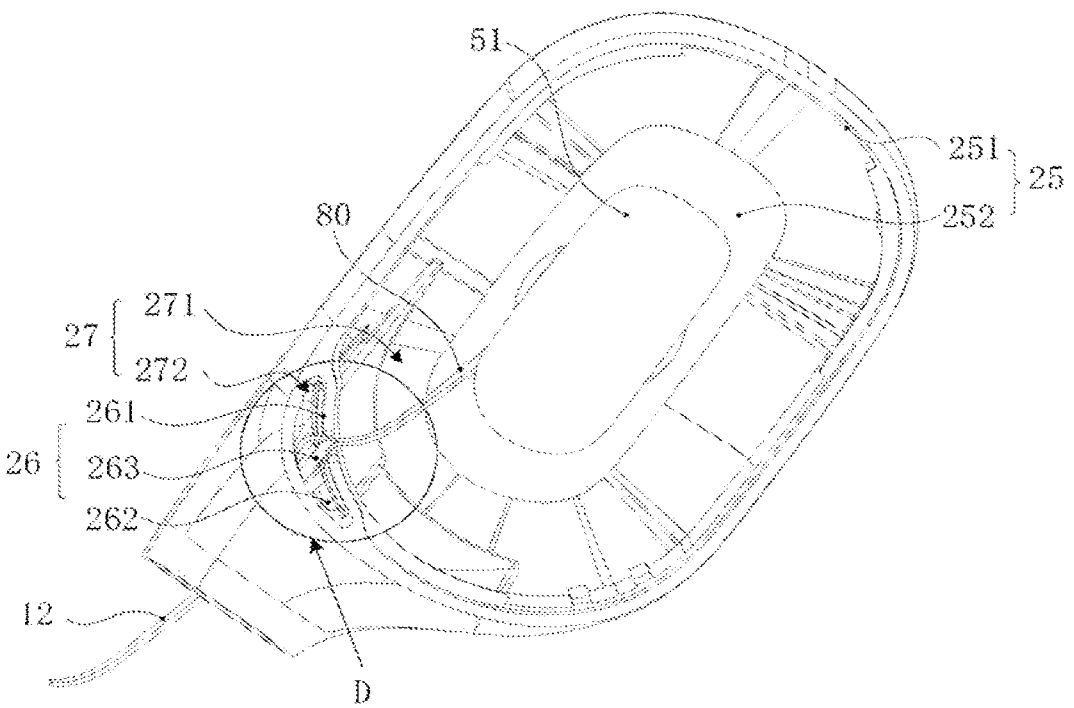


图8

IPR2025-00843; Mojawa
Ex. 1002 - Page 830

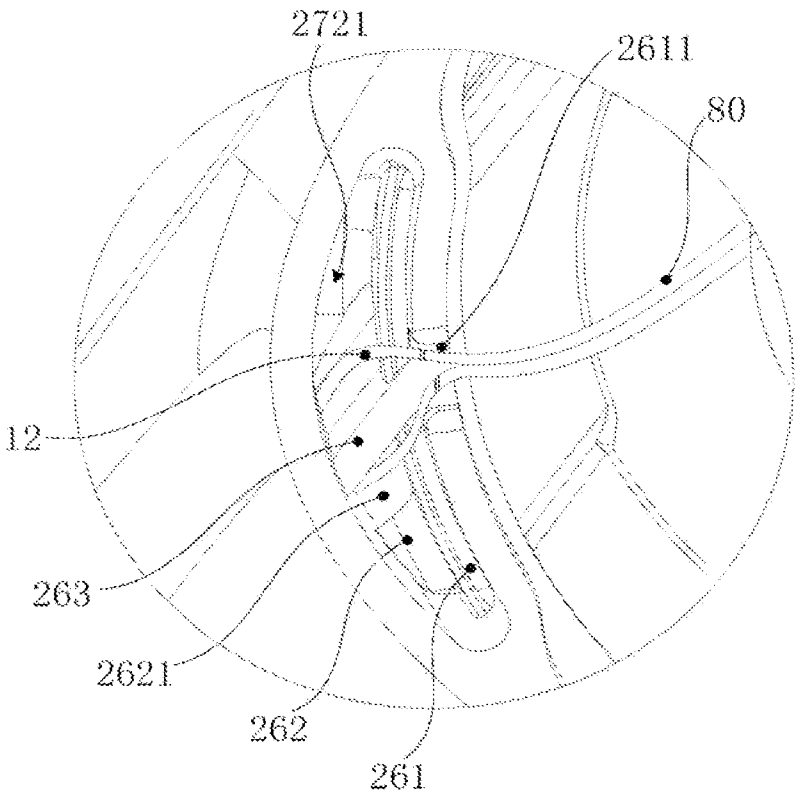


图9

IPR2025-00843; Mojawa
Ex. 1002 - Page 831

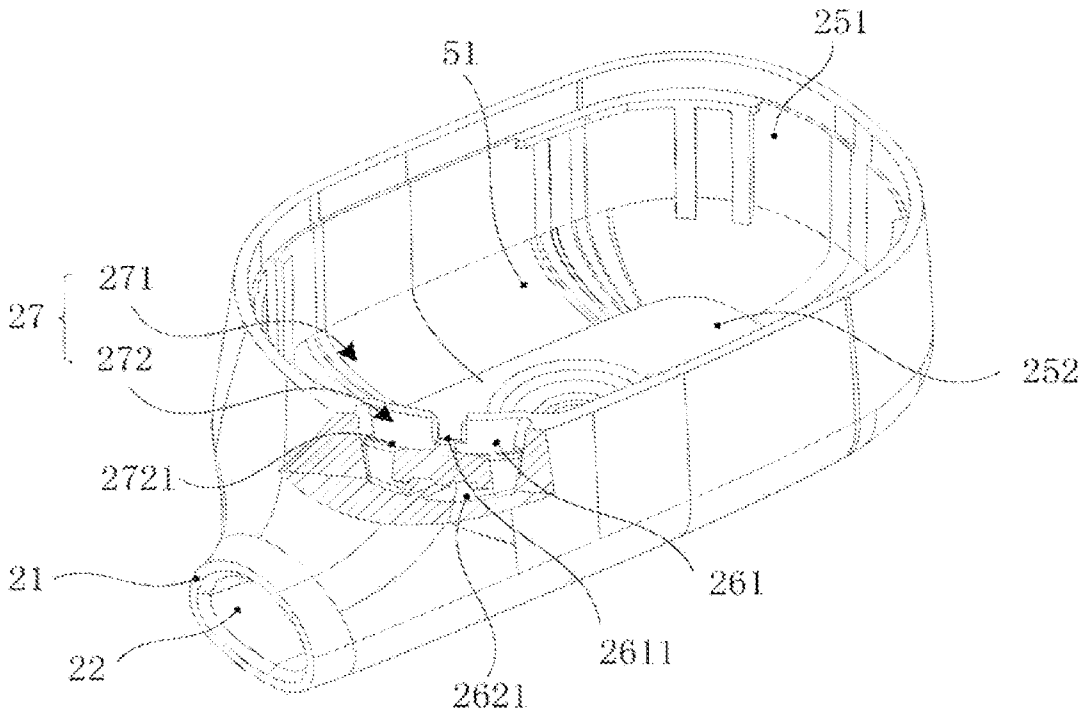


图10

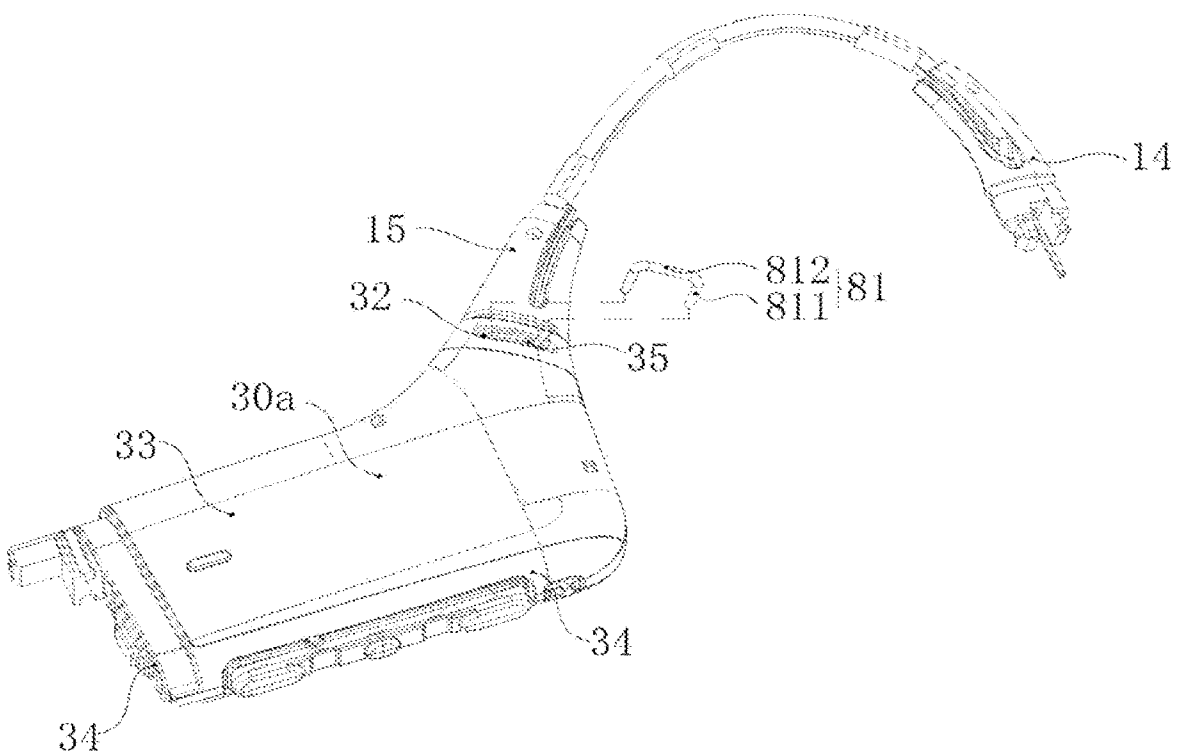


图11

IPR2025-00843; Mojawa
Ex. 1002 - Page 832

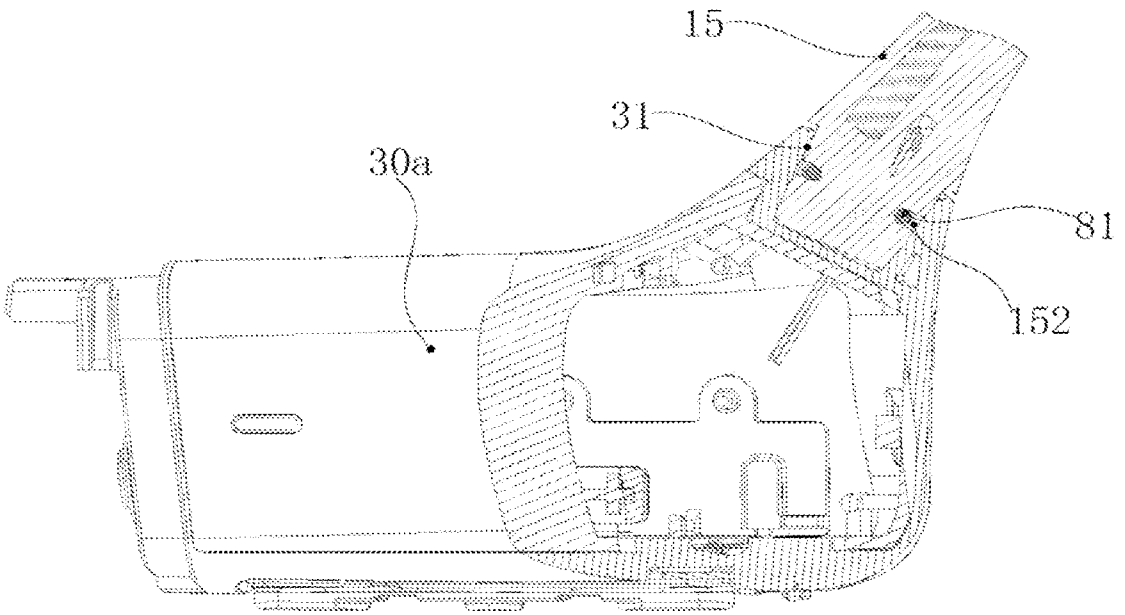


图12

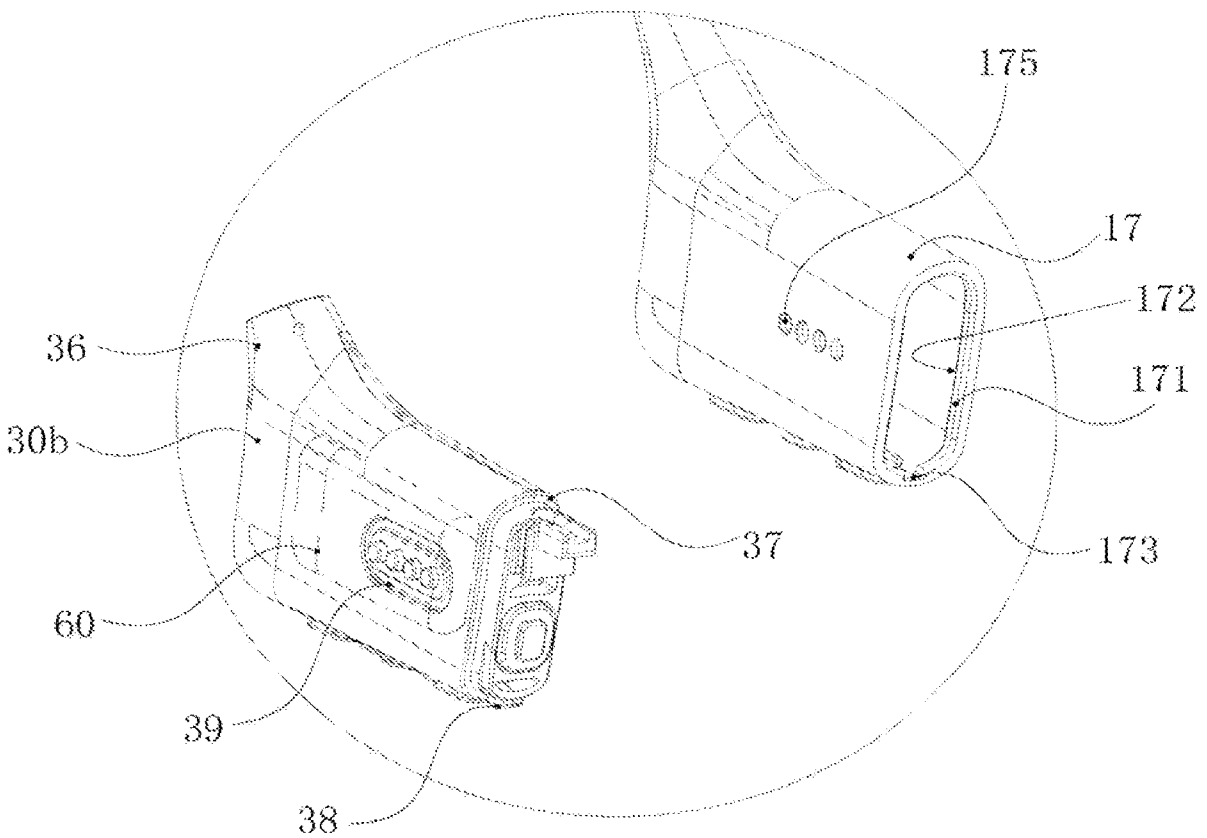


图13

IPR2025-00843; Mojawa
Ex. 1002 - Page 833

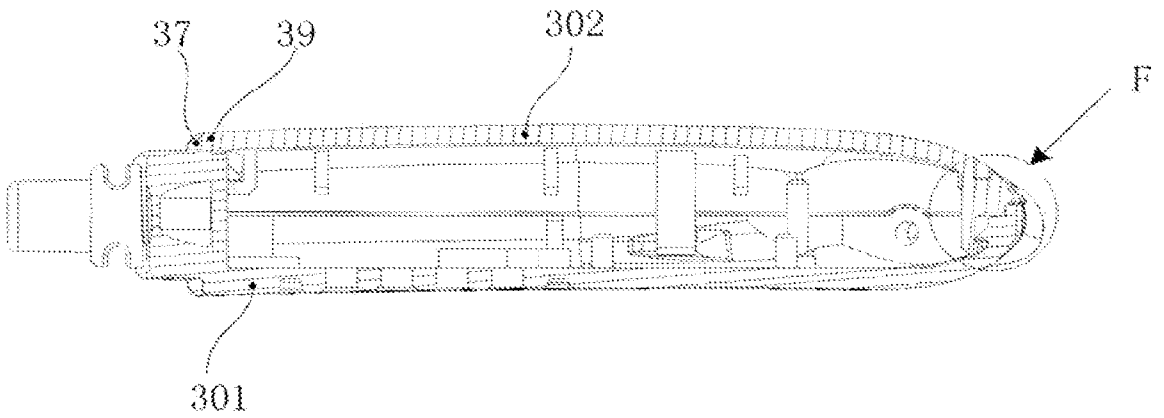


图14

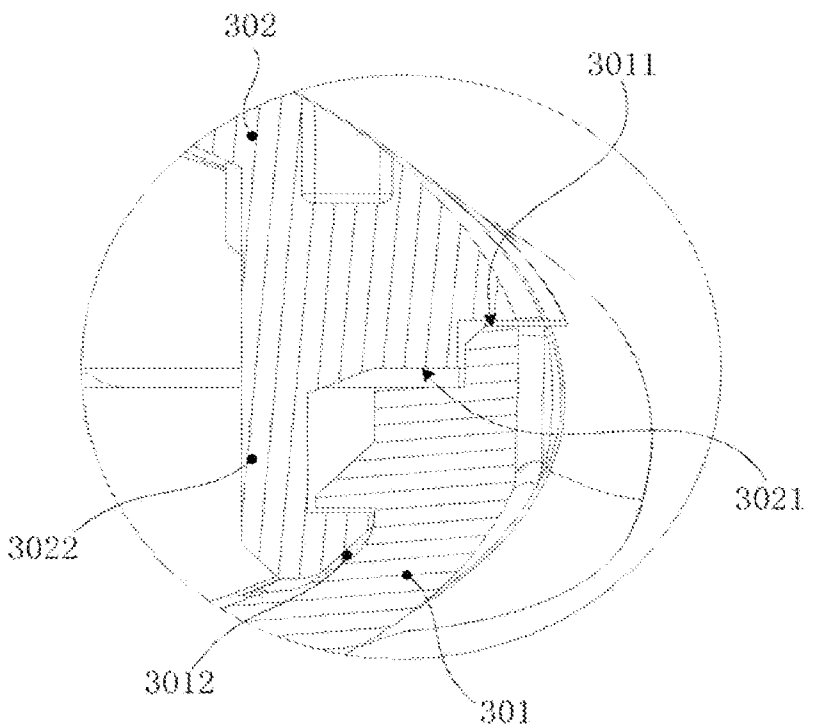


图15

IPR2025-00843; Mojawa
Ex. 1002 - Page 834

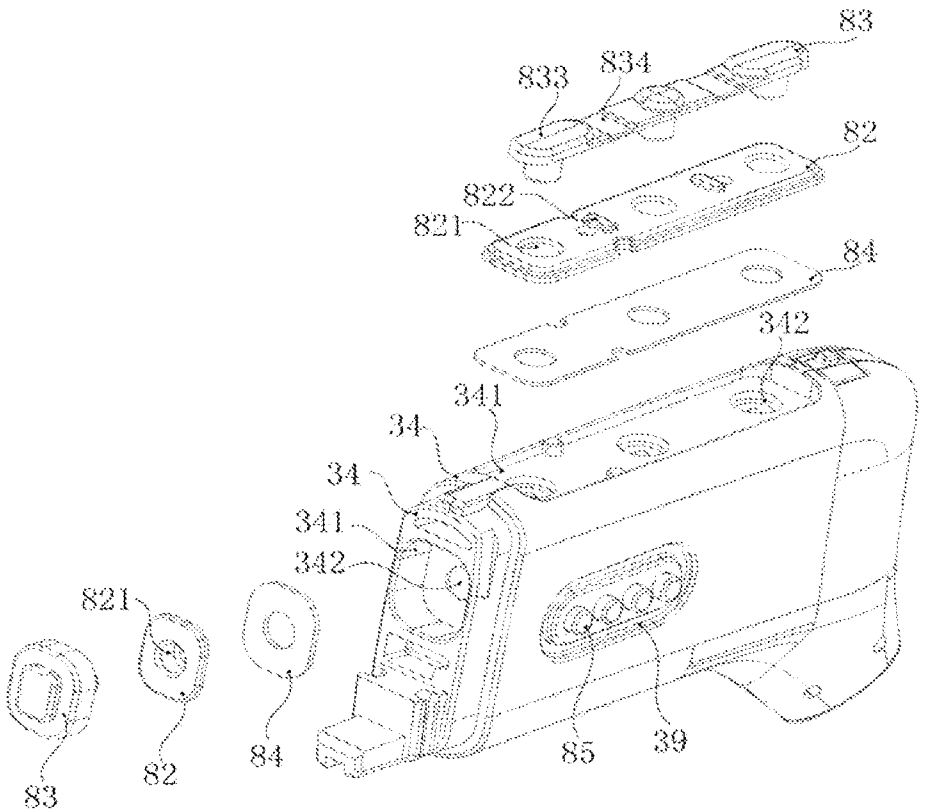


图16

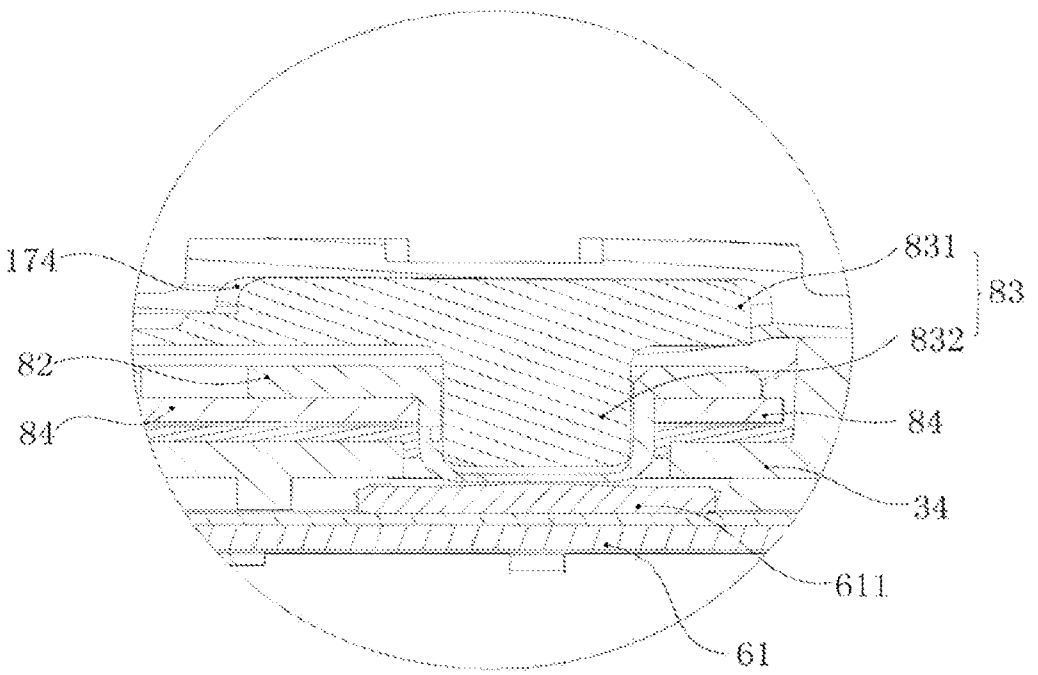


图17

IPR2025-00843; Mojawa
Ex. 1002 - Page 835

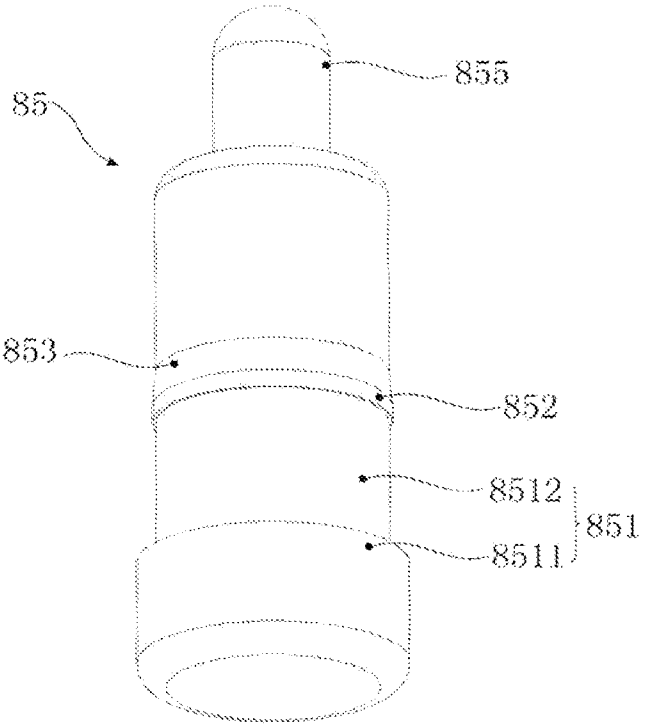


图18

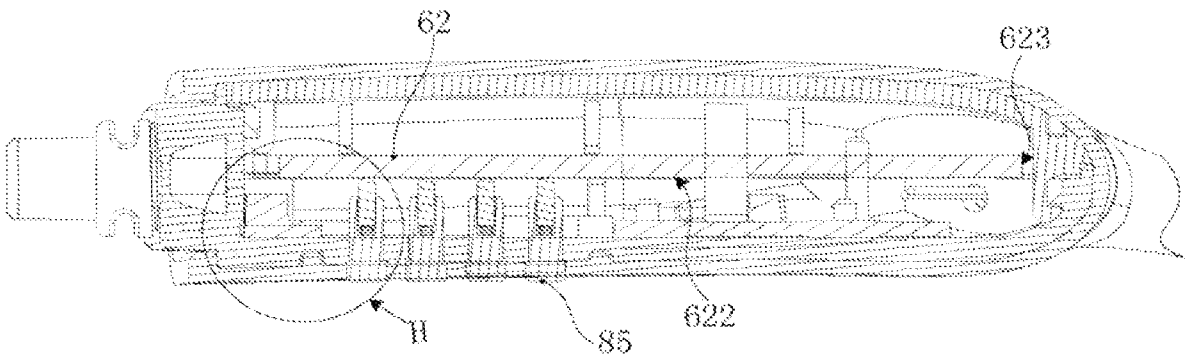


图19

IPR2025-00843; Mojawa
Ex. 1002 - Page 836

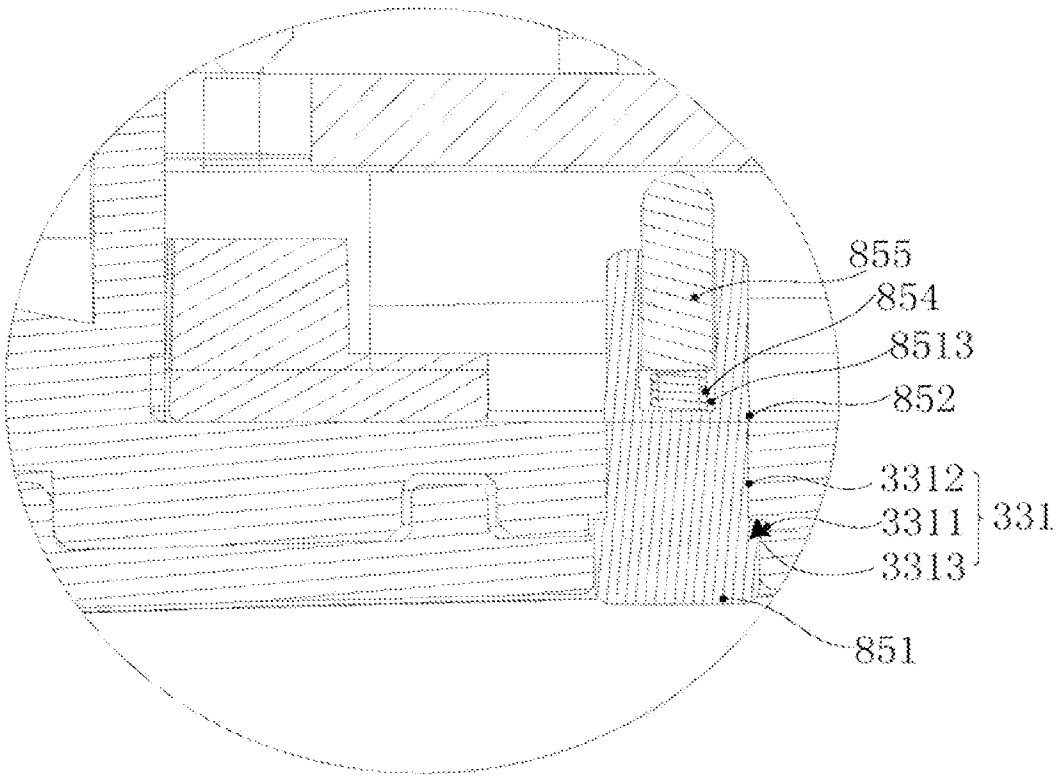


图20

IPR2025-00843; Mojawa
Ex. 1002 - Page 837

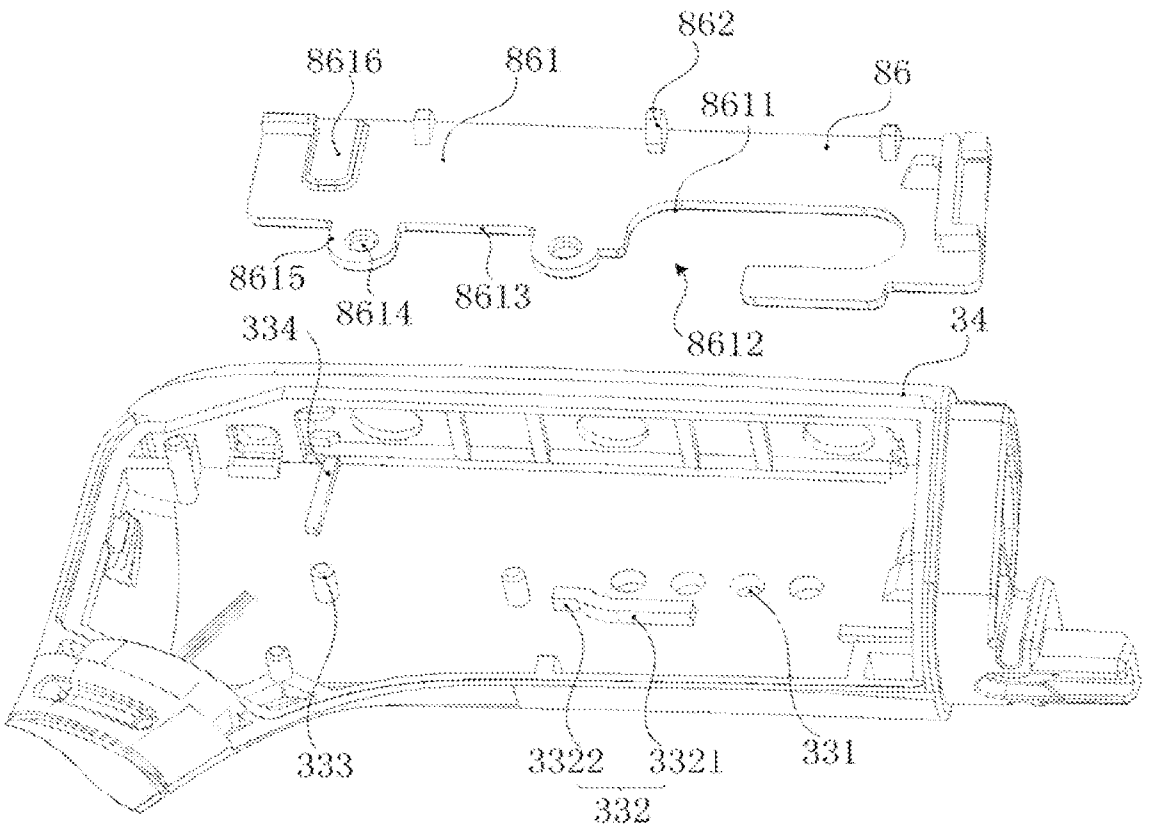


图21

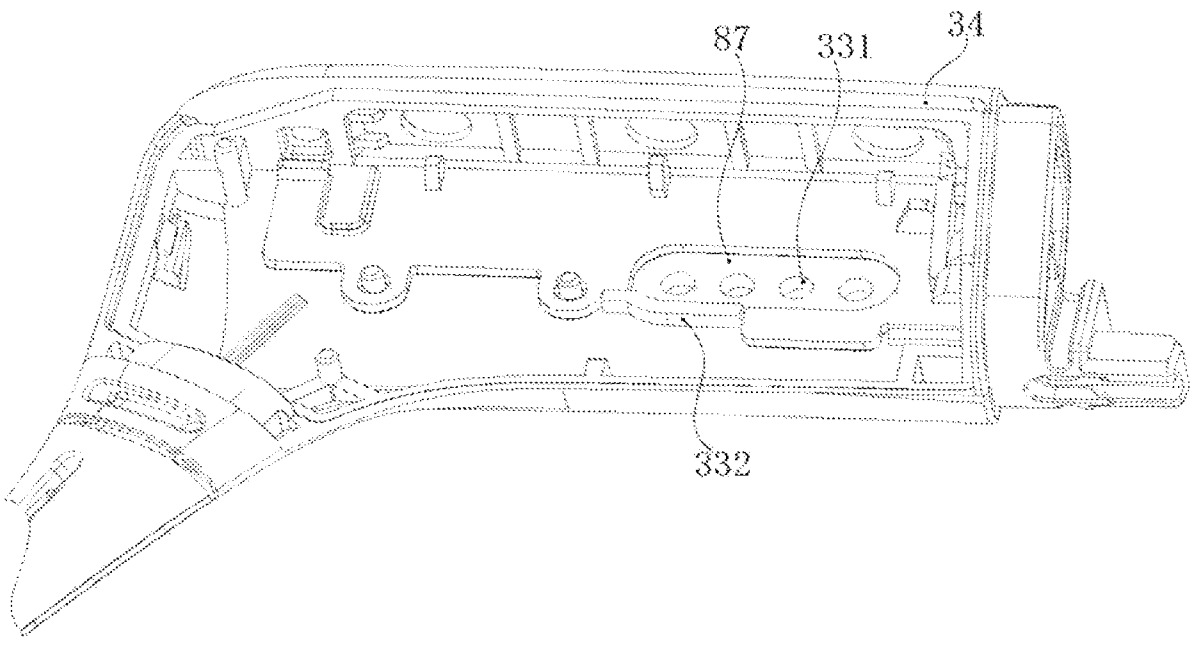


图22

IPR2025-00843; Mojawa
Ex. 1002 - Page 838

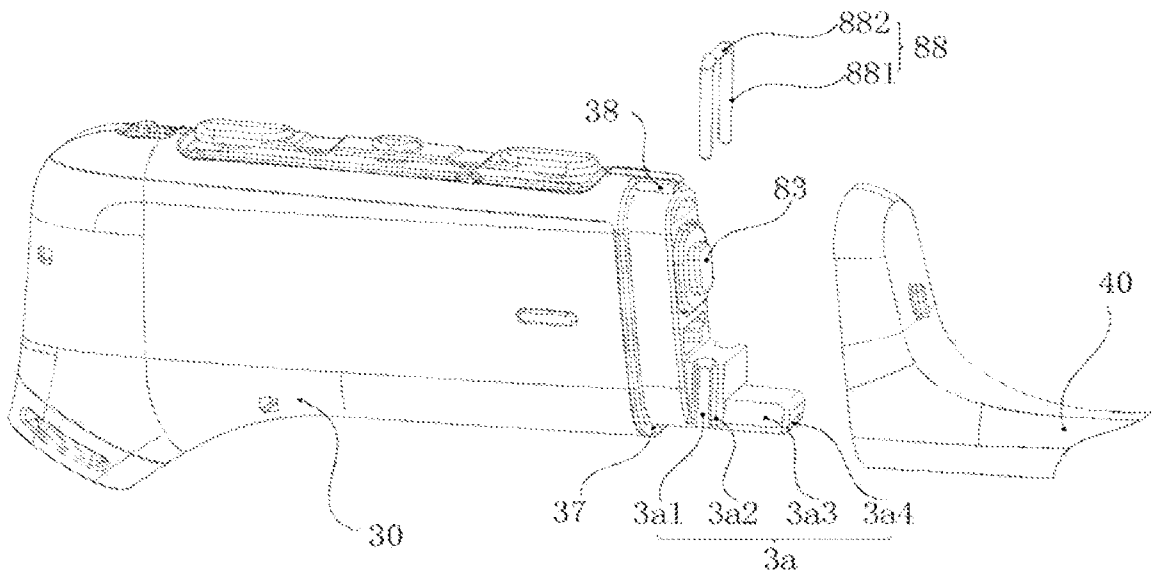


图23

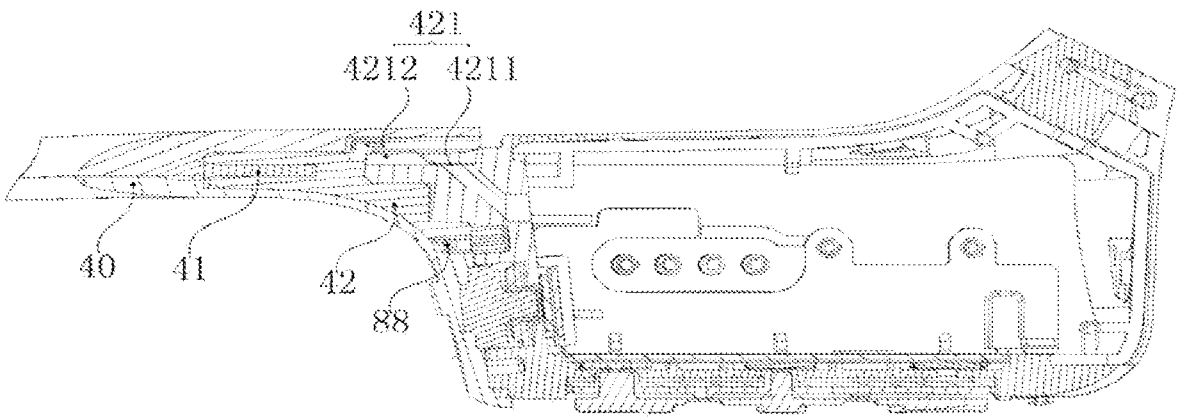


图24

IPR2025-00843; Mojawa
Ex. 1002 - Page 839

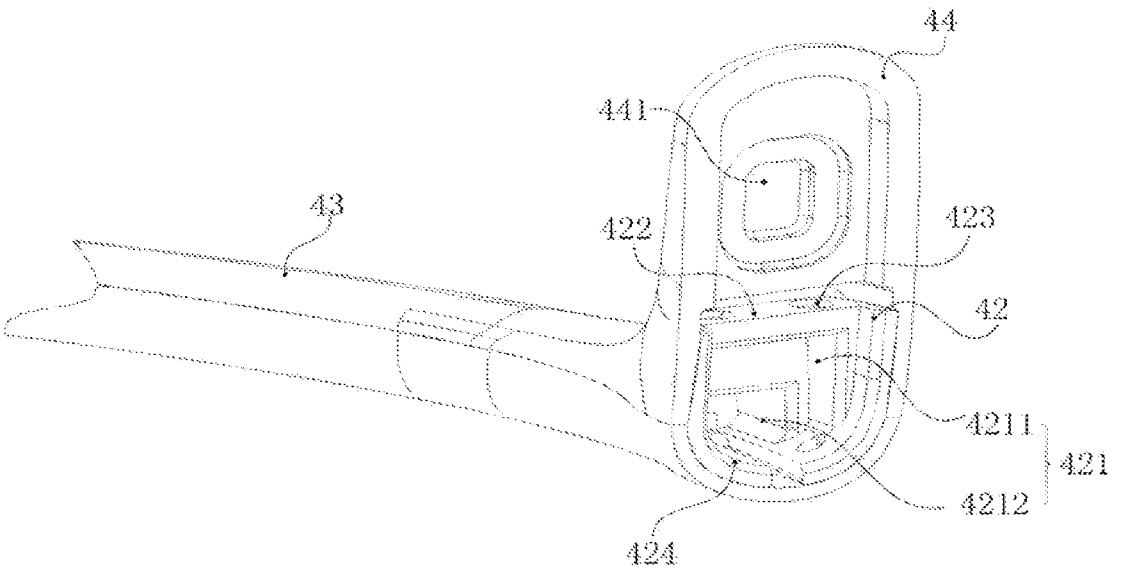


图25

IPR2025-00843; Mojawa
Ex. 1002 - Page 840

(19)中华人民共和国国家知识产权局

(12)发明专利申请

(10)申请公布号 CN 109788386 A
(43)申请公布日 2019.05.21

(21)申请号 201910009927.4

(22)申请日 2019.01.05

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(51)Int.Cl.
H04R 1/10(2006.01)
H04R 31/00(2006.01)

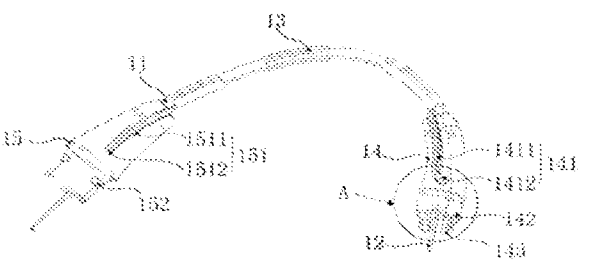
权利要求书2页 说明书19页 附图14页

(54)发明名称

骨传导扬声装置及其耳挂的制造方法

(57)摘要

本申请公开了一种骨传导扬声装置及其耳挂的制造方法，该骨传导扬声装置包括耳挂，耳挂包括弹性金属丝、导线及固定套管、第一接插端和第二接插端以及保护套管；其中，固定套管将导线固定于弹性金属丝上，第一接插端和第二接插端分别设置于弹性金属丝的两端，保护套管以注塑形成于弹性金属丝、导线、固定套管、第一接插端和第二接插端的外围。通过上述方式，本申请能够简化骨传导扬声装置的制作及装配工序，并使得骨传导扬声装置的耳挂中的保护套管固定得更加牢靠、稳定。



CN 109788386 A

1.一种骨传导扬声装置，其特征在于，所述骨传导扬声装置包括耳挂，所述耳挂包括：

弹性金属丝；

导线及固定套管，所述固定套管将所述导线固定于所述弹性金属丝上；

第一接插端和第二接插端，分别设置于所述弹性金属丝的两端；

保护套管，以注塑形成于所述弹性金属丝、所述导线、所述固定套管、所述第一接插端和第二接插端的外围。

2.根据权利要求1所述的骨传导扬声装置，其特征在于，所述第一接插端和第二接插端分别以注塑方式形成于所述弹性金属丝的两端，所述第一接插端和第二接插端上分别设置有第一走线通道和第二走线通道，所述导线沿所述第一走线通道和第二走线通道延伸。

3.根据权利要求1所述的骨传导扬声装置，其特征在于，所述导线以穿线方式穿入所述第一走线通道和所述第二走线通道。

4.根据权利要求2所述的骨传导扬声装置，其特征在于，所述第一走线通道包括第一走线槽和连通所述第一走线槽和所述第一接插端的外端面的第一走线孔，所述导线沿所述第一走线槽和所述第一走线孔延伸并外露于所述第一接插端的外端面；所述第二走线通道包括第二走线槽和连通所述第二走线槽和所述第一接插端的外端面的第二走线孔，所述导线沿所述第二走线槽和所述第二走线孔延伸并外露于所述第二接插端的外端面。

5.根据权利要求1所述的骨传导扬声装置，其特征在于，所述固定套管为至少两个，并沿所述弹性金属丝间隔设置。

6.根据权利要求1所述的骨传导扬声装置，其特征在于，所述骨传导扬声装置进一步包括：

机芯壳体，用于容纳耳机芯，并与所述第一接插端接插固定；

电路壳体，用于容纳控制电路或电池，并与所述第二接插端接插固定。

7.根据权利要求6所述的骨传导扬声装置，其特征在于，所述机芯壳体设置有与所述机芯壳体的外端面连通的第一接插孔，所述第一接插孔的内侧壁上设置有止挡块，所述第一接插端包括：

插入部，至少部分插入于所述第一接插孔内并抵接于所述止挡块的外侧面上；

两个弹性卡勾，设置于所述插入部朝向所述机芯壳体内部的一侧，两个弹性卡勾能够在外部推力和所述止挡块的作用下彼此并拢，并在经过所述止挡块后弹性回复成卡置于所述止挡块的内侧面上，进而实现所述机芯壳体与所述第一接插端的接插固定。

8.根据权利要求7所述的骨传导扬声装置，其特征在于，所述插入部部分插入于所述第一接插孔内，且在所述插入部的外露部分呈阶梯状设置，进而形成与所述机芯壳体的外端面间隔设置的环形台面，所述保护套管进一步延伸至所述环形台面朝向所述机芯壳体的外端面的一侧，并在所述机芯壳体与所述第一接插端接插固定时与所述机芯壳体弹性抵接，进而实现密封。

9.根据权利要求6所述的骨传导扬声装置，其特征在于，所述电路壳体设置有第二接插孔，所述第二接插端至少部分插入至所述第二接插孔内，其中在所述第二接插端的相对两侧分别设置有与所述第二接插端相对于所述第二接插孔的插入方向垂直设置的开槽，所述电路壳体的第一侧壁上设置有与两个所述开槽位置对应的两个通孔，所述骨传导扬声装置进一步包括固定件，所述固定件包括两条平行设置的插脚和用于连接所述插脚的连接部，

IPR2025-00843; Mojawa
Ex. 1002 - Page 842

其中所述插脚从所述电路壳体的外侧经所述通孔插入至所述开槽，进而实现所述电路壳体与所述第二接插端的接插固定。

10.根据权利要求6所述的骨传导扬声装置，其特征在于，所述耳挂进一步包括与所述第二接插端外围的所述保护套管一体成型的壳体护套，所述壳体护套以套装方式包覆于所述电路壳体的外围。

11.一种骨传导扬声装置的耳挂的制造方法，其特征在于，所述制造方法包括：

将固定套管套设于弹性金属丝上，其中在所述弹性金属丝的两端预留出注塑位；

在所述弹性金属丝的两端的注塑位上分别注塑第一接插端和第二接插端，其中所述第一接插端和第二接插端分别设置有第一走线通道和第二走线通道；

将导线设置成沿所述第一走线通道和第二走线通道延伸，其中，所述导线位于所述第一走线通道和所述第二走线通道之间的部分固定于所述弹性金属丝上；

在所述弹性金属丝、所述导线、所述固定套管、所述第一接插端和第二接插端的外围注塑形成保护套管。

12.根据权利要求11所述的制造方法，其特征在于，将固定套管套设于弹性金属丝上的步骤，进一步包括：

利用所述固定套管将所述导线固定于所述弹性金属丝上。

13.根据权利要求11所述的制造方法，其特征在于，将导线设置成沿所述第一走线通道和第二走线通道延伸，其中，所述导线位于所述第一走线通道和所述第二走线通道之间的部分由所述固定套管固定在所述弹性金属丝上的步骤进一步包括：

将导线穿设于所述固定套管的内部，以利用所述固定套管将所述导线固定于所述弹性金属丝上，并进一步将所述导线设置成沿所述第一走线通道和第二走线通道延伸。

14.根据权利要求11所述的制造方法，其特征在于，所述在所述弹性金属丝、所述导线、所述保护套管、所述第一接插端和第二接插端的外围注塑形成保护套管的步骤进一步包括：

以注塑方式形成与所述第二接插端外围的所述保护套管一体成型的壳体护套，其中所述壳体护套以套装方式包覆于与所述第二接插端接插固定的电路壳体的外围。

IPR2025-00843; Mojawa
Ex. 1002 - Page 843

骨传导扬声装置及其耳挂的制造方法

技术领域

[0001] 本申请涉及骨传导技术领域，特别是涉及一种骨传导扬声装置及其耳挂的制造方法。

背景技术

[0002] 骨传导是一种声音传导方式，骨传导扬声装置利用骨传导技术接收声音，由于其能够开放双耳、不伤害鼓膜等优点而受到广大消费者的青睐。

[0003] 骨传导扬声装置包括耳挂，在耳挂的生产过程中，可以将设置在外围保护套管可与内部结构分别成型，并进而将成型后的保护套管套设在内部结构的外围。然而这种方式往往使得耳挂的生产及装配的工序繁琐，且耳挂与内部结构之间可能会出现固定不牢靠的情况，从而降低骨传导扬声装置的质量。

发明内容

[0004] 本申请主要解决的技术问题是提供一种骨传导扬声装置及其耳挂的制造方法，能够简化骨传导扬声装置的制作及装配工序，并使得骨传导扬声装置的耳挂中的保护套管固定得更加牢靠、稳定。

[0005] 为解决上述技术问题，本申请采用的一个技术方案是：提供一种骨传导扬声装置，所述骨传导扬声装置包括耳挂，所述耳挂包括：弹性金属丝；导线及固定套管，所述固定套管将所述导线固定于所述弹性金属丝上；第一接插端和第二接插端，分别设置于所述弹性金属丝的两端；保护套管，以注塑形成于所述弹性金属丝、所述导线、所述固定套管、所述第一接插端和第二接插端的外围。

[0006] 为解决上述技术问题，本申请采用的另一个技术方案是：提供一种骨传导扬声装置的耳挂的制造方法，所述制造方法包括：将固定套管套设于弹性金属丝上，其中在所述弹性金属丝的两端预留出注塑位；在所述弹性金属丝的两端的注塑位上分别注塑第一接插端和第二接插端，其中所述第一接插端和第二接插端分别设置有第一走线通道和第二走线通道；将导线设置成沿所述第一走线通道和第二走线通道延伸，其中，所述导线位于所述第一走线通道和所述第二走线通道之间的部分固定于所述弹性金属丝上；在所述弹性金属丝、所述导线、所述固定套管、所述第一接插端和第二接插端的外围注塑形成保护套管。

[0007] 本申请的有益效果是：区别于现有技术的情况，本申请骨传导扬声装置中，保护套管可注塑形成于弹性金属丝、导线、固定套管、第一接插端和第二接插端的外围，从而将保护套管分别与弹性金属丝、导线、固定套管、第一接插端和第二接插端固定连接，而无需将保护套管单独注塑形成后再进一步套装在弹性金属丝以及第一接插端、第二接插端的外围，从而能够简化制作及装配工序，且通过这种方式，能够使保护套管的固定更加牢靠、稳定。

IPR2025-00843; Mojawa
Ex. 1002 - Page 844

附图说明

[0008] 为了更清楚地说明本申请实施例中的技术方案，下面将对实施例描述中所需要使用的附图作简单地介绍，显而易见地，下面描述中的附图仅仅是本申请的一些实施例，对于本领域普通技术人员来讲，在不付出创造性劳动的前提下，还可以根据这些附图获得其他的附图。其中：

[0009] 图1是本申请骨传导扬声装置一实施方式的爆炸结构示意图；

[0010] 图2是本申请骨传导扬声装置一实施方式中耳挂的部分结构示意图；

[0011] 图3是图2中A部分的局部放大图；

[0012] 图4是本申请骨传导扬声装置一实施方式的局部截面图；

[0013] 图5是图4中B部分的局部放大图；

[0014] 图6是本申请骨传导扬声装置一实施方式的局部结构截面图；

[0015] 图7是图6中C部分的局部放大图；

[0016] 图8是本申请骨传导扬声装置一实施方式的机芯壳体的部分结构示意图；

[0017] 图9是图8中D部分的局部放大图；

[0018] 图10是本申请骨传导扬声装置一实施方式的机芯壳体的局部截面图；

[0019] 图11是本申请骨传导扬声装置一实施方式中电路壳体与耳挂的部分爆炸图；

[0020] 图12是本申请骨传导扬声装置一实施方式的部分结构的局部截面图；

[0021] 图13是图1中E部分的局部放大图；

[0022] 图14是本申请骨传导扬声装置一实施方式中电路壳体的截面图；

[0023] 图15是图14中F部分的局部放大图；

[0024] 图16是本申请骨传导扬声装置一实施方式中电路壳体与按键结构的爆炸图；

[0025] 图17是图6中G部分的局部放大图；

[0026] 图18是本申请骨传导扬声装置一实施方式中导电柱的结构示意图；

[0027] 图19是本申请骨传导扬声装置一实施方式中电路壳体、导电柱及主控电路板的截面图；

[0028] 图20是图19中H部分的局部放大图；

[0029] 图21是本申请骨传导扬声装置一实施方式中电路壳体与辅助片的局部结构爆炸图；

[0030] 图22是本申请骨传导扬声装置一实施方式中电路壳体与辅助片的局部结构示意图；

[0031] 图23是本申请骨传导扬声装置一实施方式中电路壳体与后挂的局部结构爆炸图；

[0032] 图24是本申请骨传导扬声装置一实施方式中电路壳体与后挂的局部结构截面图；

[0033] 图25是本申请骨传导扬声装置一实施方式中后挂的局部结构示意图。

具体实施方式

[0034] 下面将结合本申请实施例中的附图，对本申请实施例中的技术方案进行清楚、完整地描述，显然，所描述的实施例仅仅是本申请一部分实施例，而不是全部实施例。基于本申请中的实施例，本领域普通技术人员在没有做出创造性的劳动前提下所获得的所有其他实施例，都属于本申请保护的范围。

IPR2025-00843; Mojawa
Ex. 1002 - Page 845

[0035] 请一并参阅图1至图25，图1至图25绘示了本申请骨传导扬声装置。本申请中的骨传导扬声装置可以为基于骨传导的耳机、MP3或者其它具有扬声功能的装置。具体地，骨传导扬声装置可包括：耳挂10、机芯壳体20、电路壳体30、后挂40，以及耳机芯50、控制电路60、电池70。其中，机芯壳体20与电路壳体30分别设置于耳挂10的两端，后挂40则进一步设置于电路壳体30远离耳挂10的一端。其中，机芯壳体20的数量为两个，分别用于容纳耳机芯50，电路壳体30的数量也为两个，分别用来容纳控制电路60和电池70，后挂40的两端分别连接对应的电路壳体30。

[0036] 其中，耳挂10是指在用户佩戴骨传导扬声装置时，用于环绕并支撑于用户的耳根部位，进而将机芯壳体20及耳机芯50悬挂并固定于用户耳朵预定位置的结构。

[0037] 具体地，耳挂10包括弹性金属丝11、导线12、固定套管13以及设置于弹性金属丝11两端的接插端14和接插端15，还进一步包括保护套管16以及与保护套管16一体成型的壳体护套17。

[0038] 其中，弹性金属丝11主要用于使耳挂10保持为与用户耳朵匹配的形状，并具有一定的弹性，从而能够在用户佩戴时根据用户的耳型以及头型产生一定的弹性形变以适配不同耳型以及头型的用户。本实施方式中，弹性金属丝11可以由记忆合金制成，具有良好的变形恢复能力，从而即便是耳挂10受到外力作用产生形变，在外力去除时，仍然能够恢复至原来的形状以能够继续为用户所使用，从而延长骨传导扬声装置的使用寿命。当然，在其它实施方式当中，弹性金属丝11也可以由非记忆合金制成。

[0039] 导线12可用于与耳机芯50以及控制电路60、电池70等进行电连接，以为耳机芯50的工作进行电量供应以及数据传输。

[0040] 固定套管13用于将导线12固定于弹性金属丝11上。具体地，固定套管13的数量可以为一个或者多个，具体可根据实际需求而定。本实施方式中，固定套管13为至少两个，至少两个固定套管13可沿弹性金属丝11以及导线12的走向而间隔设置，并通过包裹设置在导线12以及弹性金属丝11的外围而将导线12固定于弹性金属丝11上。

[0041] 接插端14和接插端15可由硬质材料，如塑胶等制成。本实施方式中，在制作该接插端14和接插端15时，可以分别以注塑的方式将二者形成于弹性金属丝11的两端。在其它实施方式中，也可以先对接插端14和接插端15分别进行注塑，并在注塑时分别预留与弹性金属丝11端部的连接孔，从而在注塑完成后，通过连接孔而将该接插端14和接插端15分别插接在弹性金属丝11的对应的端部，或者并通过粘接的方式进行固定均可。

[0042] 需要指出的是，本实施方式中，接插端14和接插端15可以不直接注塑形成在导线12的外围，而是在注塑时避开导线12。具体地，可以在注塑接插端14和接插端15时，对位于弹性金属丝11两端的导线12进行固定，以远离接插端14和接插端15的位置，并进一步在接插端14和接插端15上分别设置第一走线通道141和第二走线通道151，以在注塑完成后，将导线12沿第一走线通道141和第二走线通道151延伸设置。具体地，在形成第一走线通道141和第二走线通道151后，可将导线12以穿线的方式穿入该第一走线通道141和第二走线通道151。

[0043] 当然，在其它实施方式中，也可以根据实际情况，将接插端14和接插端15直接注塑在导线12的外围，此处不做具体限定。

[0044] 具体地，在一实施方式中，第一走线通道141可包括第一走线槽1411和连通第一走

IPR2025-00843; Mojawa
Ex. 1002 - Page 846

线槽1411的第一走线孔1412。其中，第一走线槽1411连通接插端14的侧壁面设置，第一走线孔1412的一端与第一走线槽1411的一端连通，另一端与接插端14的外端面连通。接插端14处的导线12沿第一走线槽1411和第一走线孔1412延伸并外露于接插端14的外端面，以进一步与其它结构连接。

[0045] 相应地，第二走线通道151可包括第二走线槽1511和连通第二走线槽1511的第二走线孔1512。其中，第二走线槽1511连通接插端15的侧壁面设置，第二走线孔1512的一端与第二走线槽1511的一端连通，另一端与接插端15的外端面连通。接插端15处的导线12沿第二走线槽1511和第二走线孔1512延伸并外露于接插端15的外端面，以进一步与其它结构连接。

[0046] 其中，接插端14的外端面是指接插端14远离接插端15的一端的端面；相应地，接插端15的外端面是指接插端15远离接插端14的一端的端面。

[0047] 进一步地，保护套管16可注塑形成于弹性金属丝11、导线12、固定套管13、接插端14和接插端15的外围，从而将保护套管16分别与弹性金属丝11、导线12、固定套管13、接插端14和接插端15固定连接，而无需将保护套管16单独注塑形成后再进一步套装在弹性金属丝11以及接插端14、接插端15的外围，从而能够简化制作及装配工序，且通过这种方式，能够使得保护套管16的固定更加牢靠、稳定。

[0048] 进一步地，在成型保护套管16时，同时与该保护套管16一体成型有设置于靠近接插端15一侧的壳体护套17。

[0049] 其中，壳体护套17可与保护套管16一体成型而成为一整体，电路壳体30可通过与接插端15的接插固定而连接设置在耳挂10的一端，壳体护套17则可进一步以套装的方式包覆于在电路壳体30的外围。

[0050] 其中，保护套管16和壳体护套17可以由具有一定弹性的软质材料制成，例如软质的硅胶、橡胶等。

[0051] 具体地，在制造骨传导扬声装置的耳挂10时，可通过如下步骤实现：

[0052] 步骤S101：利用固定套管13将导线12固定于弹性金属丝11上，其中在弹性金属丝11的两端预留出注塑位；

[0053] 具体地，可以先将弹性金属丝11与导线12按照预设的方式，如并排放置在一起，然后，将固定套管13进一步套设在导线12与弹性金属丝11的外围，从而将导线12固定在弹性金属丝11上。

[0054] 其中，由于弹性金属丝11的两端还需要注塑接插端14和接插端15，因此，在固定时，弹性金属丝11的两端不能被固定套管13完全包裹，而需预留出对应的注塑位，以供接插端14和接插端15注塑占用。

[0055] 步骤S102：在弹性金属丝11的两端的注塑位上分别注塑接插端14和接插端15，其中接插端14和接插端15分别设置有第一走线通道141和第二走线通道151；

[0056] 步骤S103：将导线12设置成沿第一走线通道141和第二走线通道151延伸；

[0057] 具体地，此处可在接插端14和接插端15成型完成后，进一步通过手动或者通过机器将导线12的两端分别穿入第一走线通道141和第二走线通道151。其中，导线12位于第一走线通道141和第二走线通道151之间的部分由固定套管13固定于弹性金属丝11上。

[0058] 步骤S104：在弹性金属丝11、导线12、固定套管13、接插端14和接插端15的外围注

IPR2025-00843; Mojawa
Ex. 1002 - Page 847

塑形成保护套管16。

[0059] 在一实施方式中，在执行步骤S104时，进一步以注塑的方式形成与接插端15外围的保护套管16一体成型的壳体护套17。

[0060] 需要指出的是，在其它实施方式中，也可以在安装固定套管13时先不设置导线12，而在接插端14和接插端15注塑之后，再进一步设置导线12，具体步骤如下：

[0061] 步骤S201：将固定套管13套设于弹性金属丝11上，其中在弹性金属丝11的两端预留出注塑位；

[0062] 步骤S202：在弹性金属丝11的两端的注塑位上分别注塑接插端14和接插端15，其中接插端14和接插端15分别设置有第一走线通道141和第二走线通道151；

[0063] 步骤S203：将导线12穿设于固定套管13的内部，以利用固定套管13将导线12固定于弹性金属丝11上，并进一步将导线12设置成沿第一走线通道141和第二走线通道151延伸。

[0064] 需要指出的是，通过这种方式，能够避免在对接插端14和接插端15注塑时受到导线12的干扰，从而有利于成型的顺利进行。

[0065] 其中，本实施方式，以及上述实施方式中方法所涉及到的弹性金属丝11、导线12、固定套管13、接插端14、接插端15与保护套管16的结构、作用以及形成方式等均与上述实施方式中的相同，相关详细内容请参见上述实施方式，此处不再赘述。

[0066] 在一实施方式中，机芯壳体20可用于容纳耳机芯50，并与接插端14接插固定。其中，耳机芯50和机芯壳体20的数量均为两个，分别对应用户的左耳和右耳。

[0067] 具体地，机芯壳体20可以与接插端14通过插接、卡接等方式连接，以将机芯壳体20与耳挂10固定在一起。也就是说，本实施方式中，耳挂10与机芯壳体20可先分别成型，然后再进一步装配在一起，而不是将二者一体直接成型。

[0068] 通过这种方式，可以采用各自对应的模具对耳挂10和机芯壳体20分别成型，而无需采用同一个较大尺寸的模具将二者一体成型，从而可减小模具的尺寸，以降低模具的加工难度，以及成型难度；另外，由于耳挂10和机芯壳体20分别采用不同的模具加工，在生产制造过程中，在需要对耳挂10或机芯壳体20中的某一个的形状或者构造进行调整时，仅调整该结构对应的模具即可，而无需对另外一个结构的模具进行调整，从而能够降低生产成本。

[0069] 当然，在其它实施方式当中，也可以根据情况而使耳挂10与机芯壳体20通过一体成型得到。

[0070] 在一实施方式中，机芯壳体20设置有与机芯壳体20的外端面21连通的接插孔22，接插孔22的内侧壁上设置有止挡块23。

[0071] 其中，机芯壳体20的外端面21是指机芯壳体20朝向耳挂10的端面。接插孔22用于为耳挂10的接插端14插入机芯壳体20提供容置空间，以便进一步实现接插端14与机芯壳体20的接插固定。

[0072] 止挡块23可以由接插孔22的内侧壁沿垂直于该内侧壁的方向凸出形成。具体地，止挡块23可以为多个间隔设置的块状凸起，或者也可以为沿接插孔22内侧壁的环状凸起，此处不做具体限定。

[0073] 其中，接插端14包括插入部142和两个弹性卡勾143。

IPR2025-00843; Mojawa
Ex. 1002 - Page 848

[0074] 具体地，插入部142至少部分插入于接插孔22内并抵接于止挡块23的外侧面231上。其中，插入部142的外侧壁的形状与接插孔22的内侧壁的形状匹配，以使得插入部142至少部分插入于接插孔22内时，使得插入部142的外侧壁与接插孔22的内侧壁抵接。

[0075] 止挡块23的外侧面231是指止挡块23朝向耳挂10设置的一侧面。插入部142可进一步包括一朝向机芯壳体20的端面1421，该端面1421可与止挡块23的外侧面231匹配，从而在插入部142至少部分插入于接插孔22内时，插入部142的端面1421与止挡块23的外侧面231抵接。

[0076] 具体地，机芯壳体20的接插孔22的沿垂直于接插端14相对于机芯壳体20的插入方向上的截面形状可为椭圆环形或近椭圆环形，对应地，插入部142的横截面可以为与接插孔22匹配的近椭圆形，当然，二者的形状还可以为其它，具体可根据实际需求进行设置。

[0077] 进一步地，两个弹性卡勾143可沿垂直于插入方向并排并间隔且对称设置于插入部142朝向机芯壳体20内部的一侧。其中，每个弹性卡勾143可分别包括梁部1431和勾部1432，梁部1431与插入部142朝向机芯壳体20的一侧连接，勾部1432设置在梁部1431远离插入部142的一端，并沿垂直于插入方向延伸。进一步地，每个勾部1432设置有连接平行于插入方向的侧面与远离插入部142的端面的过渡斜面14321。

[0078] 在耳挂10与机芯壳体20的安装过程当中，接插端14由接插孔22逐渐进入机芯壳体20内部，在到达止挡块23的位置时，两个弹性卡勾143的勾部1432会受到止挡块23的阻挡，在外部推力的作用下，止挡块23逐渐挤压勾部1432的过渡斜面14321而使得两个弹性卡勾143发生弹性形变而彼此并拢，在过渡斜面14321通过止挡块23而到达止挡块23靠近机芯壳体20内部的一侧时，弹性卡勾143因失去止挡块23的阻挡而弹性回复，并卡置于止挡块23朝向机芯壳体20内部的内侧面上，从而将止挡块23卡置于接插端14的插入部142和勾部1432之间，进而实现机芯壳体20与接插端14的接插固定。

[0079] 其中，在一实施方式中，在机芯壳体20与接插端14接插固定后，插入部142部分插入于接插孔22内，且在插入部142的外露部分呈阶梯状设置，进而形成与机芯壳体20的外端面21间隔设置的环形台面1422。

[0080] 需要指出的是，插入部142的外露部分是指插入部142外露于机芯壳体20的部分，具体地，可以是指外露于机芯壳体20且靠近机芯壳体20外端面的部分。

[0081] 其中，环形台面1422可以与机芯壳体20的外端面21相对设置，且二者之间的间隔可以是指沿接插方向间隔以及沿垂直于接插方向的间隔。

[0082] 进一步地，保护套管16延伸至环形台面1422朝向机芯壳体20的外端面21的一侧，并在机芯壳体20的接插孔22与接插端14接插固定时，填充于环形台面1422与机芯壳体20的外端面21之间的间隔内，并与机芯壳体20弹性抵接，从而使得外部液体难以从接插端14与机芯壳体20之间的接合处进入机芯壳体20内部，进而实现接插端14与接插孔22之间的密封，以保护机芯壳体20内部的耳机芯50等，从而能够提高对骨传导扬声装置的防水效果。

[0083] 具体地，在一实施方式当中，保护套管16在环形台面1422朝向机芯壳体20的外端面的21一侧形成一环形抵接面161。其中，该环形抵接面161为保护套管16朝向机芯壳体20一侧的端面。

[0084] 进一步地，保护套管16还包括位于该环形抵接面161内部且相对于环形抵接面161凸出设置的环形凸台162。具体地，该环形凸台162具体形成于环形抵接面161朝向接插端14

IPR2025-00843; Mojawa
Ex. 1002 - Page 849

的一侧，并相对于该环形抵接面161沿朝向机芯壳体20的方向凸出设置，进一步地，该环形凸台162还可直接形成于环形台面1422的外围，并覆盖该环形台面1422。

[0085] 进一步地，机芯壳体20包括用于连接机芯壳体20的外端面21和接插孔22的内侧壁的连接斜面24。其中，该连接斜面24具体为机芯壳体20的外端面21与接插孔22的内侧壁之间的过渡面，该连接斜面24与机芯壳体20的外端面21和接插孔22的内侧壁均不在同一平面上。其中，该连接斜面24可以为平面，或者也可以根据实际需求而设置成曲面，或者其它形状，此处不做具体限定。

[0086] 具体地，在机芯壳体20与接插端14接插固定时，环形抵接面161和环形凸台162分别与机芯壳体20的外端面和连接斜面24弹性抵接。

[0087] 需要指出的是，由于机芯壳体20的外端面21和连接斜面24不在同一平面上，从而使得保护套管16与机芯壳体20之间的弹性抵接处不位于同一平面上，从而使得外部液体难以由保护套管16与机芯壳体20之间进入机芯壳体20以进一步进入耳机芯50，从而能够提高骨传导扬声装置的防水效果，以对内部功能结构起到保护作用，进而延长骨传导扬声装置的使用寿命。

[0088] 其中，在一实施方式中，插入部142在环形台面1422朝向机芯壳体20的外端面21的一侧进一步形成有与环形台面1422邻接的环形凹槽1423，其中，环形凸台162可形成于环形凹槽1423内。

[0089] 本实施方式中，环形凹槽1423可形成于环形台面1422朝向机芯壳体20的一侧。在一个应用场景中，环形台面1422为环形凹槽1423的朝向机芯壳体20一侧的侧壁面，此时，环形凸台162沿该侧壁面形成于环形凹槽1423内。

[0090] 在一实施方式中，耳挂10的导线12的位于机芯壳体20的外部的一端可穿过第二走线通道151而进一步连接电路壳体30所容纳的控制电路60、电池70等机芯壳体20外部的外部电路，另一端则沿第一走线通道141而露出于接插端14的外端面，并进一步随插入部142而通过接插孔22而进入机芯壳体20内部。

[0091] 在一实施方式中，机芯壳体20可包括主壳体25以及隔板组件26，其中，隔板组件26位于主壳体25内部，并与主壳体25连接，进而将主壳体25的内部空间27分隔成第一容置空间271和靠近接插孔22一侧的第二容置空间272。

[0092] 具体地，主壳体25包括周侧壁251以及与周侧壁251的一端面连接的底端壁252，周侧壁251与底端壁252共同围绕形成一主壳体25的内部空间27。

[0093] 隔板组件26位于主壳体25的靠近接插孔22的一侧，并包括侧隔板261以及底隔板262。其中，侧隔板261可沿垂直于底端壁252的方向设置，且侧隔板261的两端均与周侧壁251连接，从而对主壳体25的内部空间27进行分隔。底隔板262可与底端壁252平行或者接近平行且间隔设置，并进一步分别与周侧壁251和侧隔板261连接，从而将主壳体25所形成的内部空间27一分为二而形成由侧隔板261、底隔板262和远离接插孔22的周侧壁251、底端壁252共同围成的第一容置空间271，以及由底隔板262与侧隔板261和靠近接插孔22的周侧壁251共同围成的第二容置空间272。其中，第二容置空间272可小于第一容置空间271。

[0094] 当然，隔板组件26也可以通过其它的设置方式对主壳体25的内部空间27进行划分，此处不做具体限定。

[0095] 进一步地，耳机芯50包括功能组件51，该功能组件51设置于第一容置空间271内，

IPR2025-00843; Mojawa
Ex. 1002 - Page 850

可用于振动发声。骨传导扬声装置可进一步包括一端与功能组件51连接的导线80，该导线80的另一端可由第一容置空间271而延伸至第二容置空间272内。

[0096] 具体地，侧隔板261可在远离底端壁252的顶部边缘设置走线槽2611，该走线槽2611可连通第一容置空间271和第二容置空间272。进一步地，导线12的远离功能组件的一端经由该走线槽延伸至第二容置空间272内。

[0097] 另外，耳挂10的导线12的远离电路壳体30的一端随插入部142进入机芯壳体20内部后，可进一步延伸入第二容置空间272内，并在第二容置空间272内与导线80电连接，以形成从第一容置空间271经由第二容置空间272而连接至外部电路的导线通路，从而通过该导线通路将功能组件51与位于机芯壳体20外部的外部电路电连接。

[0098] 具体地，底隔板262上可设置有走线孔2621，该走线孔2621将接插孔22与第二容置空间272连通，从而使得由接插孔22进入机芯壳体20的导线12能够经由该走线孔2621而延伸至第二容置空间272。

[0099] 其中，导线12与导线80在第二容置空间272内连接后，盘绕设置于第二容置空间272内。具体可通过焊接的方式将导线12与导线80连接于一起，进而将功能组件51与外部电路电连接，以通过外部电路为功能组件51的正常工作提供电量或者为耳机芯50传输数据。

[0100] 需要指出的是，在对骨传导扬声装置装配时，导线往往会长于实际需求，以便于装配。然而耳机芯50处多余的导线若不能够进行合理的放置，则容易在功能组件51工作时产生振动而发出异响，从而降低骨传导扬声装置的声音质量，从而影响用户的听音感受。本实施方式中，在机芯壳体20的主壳体25所形成的内部空间27当中分离出第二容置空间272以用于容置多余的导线12和导线80，从而避免或者减少多余的导线对因振动而对骨传导扬声装置所发出的声音的影响，以提高声音质量。

[0101] 在一实施方式中，隔板组件26进一步包括内隔板263，内隔板263进一步将第二容置空间272分隔成两个子容置空间2721。具体地，该内隔板263垂直于主壳体25的底端壁252设置，分别与侧隔板261和周侧壁251连接，并进一步延伸至走线孔2621处，从而在将第二容置空间272分隔为两个子容置空间2721的同时，还进一步将走线孔2621划分为两个，两个走线孔2621可分别与对应的子容置空间2721连通。

[0102] 本实施方式中，导线12和导线80可分别为两根，其中两根导线12分别沿对应的走线孔2621而分开延伸至各自的子容置空间2721内，而两根导线80则仍一起通过走线槽2611而进入第二容置空间272，并在进入第二容置空间272后分开，并分别在对应的子容置空间2721内与对应的导线12焊接于一起，并进一步盘绕设置于对应的子容置空间2721内。

[0103] 进一步地，在一实施方式中，第二容置空间272可进一步由密封胶进行填充。通过这种方式，能够将第二容置空间272内所容置的导线12和导线80进一步固定，以进一步降低由于导线振动而对声音质量造成的不良影响，从而提高骨传导扬声装置的声音质量，同时能够对导线12与导线80之间的焊接点起到保护作用，另外，将第二容置空间272密封设置还能够达到防水防尘的目的。

[0104] 在一实施方式中，电路壳体30与接插端15接插固定，从而将电路壳体30固定在耳挂10远离机芯壳体20的一端。其中，在用户佩戴使用时，容纳电池70的电路壳体30和容纳控制电路60的电路壳体30可分别对应用户的左侧和右侧，二者在与对应的接插端15的接插方式上可以不同。

IPR2025-00843; Mojawa
Ex. 1002 - Page 851

[0105] 具体地，电路壳体30可以与接插端15通过插接、卡接等方式连接。也就是说，本实施方式中，耳挂10与电路壳体30可先分别独立成型，然后并在成型完成后再进一步装配在一起，而不是直接将二者一体成型。

[0106] 通过这种方式，可以采用各自对应的模具对耳挂10和电路壳体30分别成型，而无需采用同一个较大尺寸的模具将二者一体成型，从而可减小成型模具的尺寸，以降低模具的加工难度，以及成型难度；另外，由于耳挂10和电路壳体30分别采用不同的模具加工，在生产制造过程中，在需要对耳挂10或电路壳体30中的某一个的形状或者构造进行调整时，仅调整该结构对应的模具即可，而无需对另外一个结构的模具进行调整，从而能够降低生产成本。

[0107] 进一步地，在一实施方式中，电路壳体30设置有接插孔31，该接插孔31的内表面的形状可与接插端15的至少部分外表面的形状匹配，从而使得接插端15能够至少部分插入至接插孔31内。

[0108] 进一步地，在接插端15的相对两侧分别设置有与接插端15相对于接插孔31的插入方向垂直设置的开槽152。具体地，两个开槽152对称且间隔设置于接插端15的相对两侧，且均在沿插入方向的垂直方向上连通接插端15的侧壁。

[0109] 相应地，电路壳体30的第一侧壁30a上设置有与两个开槽152位置对应的贯穿该第一侧壁30a的两个通孔32。

[0110] 其中，电路壳体30可以呈扁平状设置，例如，电路壳体30于第二接插孔31处的横截面可以为椭圆形，或者能够形成扁平状设置的其它形状。本实施方式中，电路壳体30的面积较大的两个相对设置的侧壁为主侧壁33，连接两个主侧壁33的面积较小的且相对设置的两对侧壁为辅侧壁34。本实施方式中，电路壳体30的第一侧壁30a既可以为该电路壳体30的主侧壁33也可以为电路壳体30的辅侧壁34，具体可以根据实际需求进行设定。

[0111] 当然，在其它实施方式中，电路壳体30于接插孔31处的横截面还可以为圆形等其它形状，具体可根据实际需求进行设置。

[0112] 进一步地，骨传导扬声装置还可以包括固定件81，固定件81包括两条平行设置的插脚811和用于连接插脚811的连接部812。具体地，连接部812可垂直连接设置于两条插脚811的朝向同一方向的一端，从而形成U型的固定件81。

[0113] 其中，两个插脚811远离连接部812的一端从电路壳体30的外侧经通孔32插入至开槽152，而将连接部812阻挡于电路壳体30的外侧，进而实现电路壳体30与接插端15的接插固定。

[0114] 进一步地，在一实施方式中，电路壳体30的第一侧壁30a上进一步形成有用于连接两个通孔32的条状凹槽35，在利用固定件81接插固定时，连接部812能够进一步部分或者全部沉设于条状凹槽35内。从而一方面能够使得骨传导扬声装置整体更加统一，进而使得套装在电路壳体30外围的壳体护套17上无需专门成型设置与连接部812对应的凹槽，简化壳体护套17的模具；另一方面，还能够在一定程度上减小骨传导扬声装置整体所占用的空间。

[0115] 其中，在一个应用场景中，可以在将连接部812部分或者全部沉设于条状凹槽35内后，进一步在条状凹槽35内施胶，通过这种方式，一方面能够将固定件81固定在电路壳体30上，从而使得接插端15与接插孔31之间的接插更加稳固；另一方面，在连接部812沉设于条状凹槽35后，进一步通过施胶将凹槽35填平，以与电路壳体30的第一侧壁30a保持一致，从

IPR2025-00843; Mojawa
Ex. 1002 - Page 852

而在套设壳体护套17后，使得该凹槽35与周边结构之间更加平整连贯。

[0116] 其中，在一实施方式中，与电路壳体30的第一侧壁30a相对的电路壳体30的第二侧壁30b上进一步设置有与通孔32相对的通孔36，插脚811进一步经开槽152插入至通孔36内。

[0117] 具体地，电路壳体30的第一侧壁30a和电路壳体30的第二侧壁30b均可为电路壳体30的主侧壁33或者辅侧壁34。在本实施方式中，电路壳体30的第一侧壁30a和第二侧壁30b分别为电路壳体30的两个相对设置的主侧壁33。也就是说，两个通孔32以及两个通孔36分别设置于电路壳体30的面积较大的侧壁上，进而固定件81的两个插脚811之间可以设置较大的间隔，以增大固定件81的跨度，从而能够提高接插端15与接插孔31之间接插的稳定性。

[0118] 本实施方式中，插脚811经通孔32插入至开槽152内，并进一步经开槽152插入至通孔36内，也就是说插脚811能够将电路壳体30的两相对主侧壁33以及接插端15完全贯穿并固定于一起，从而能够使得接插端15与电路壳体30之间接插更加牢固。

[0119] 进一步地，如上述实施方式中所述，在保护套管16成型时，同时与该保护套管16一体成型有设置于靠近接插端15一侧的壳体护套17。

[0120] 其中，该壳体护套17与电路壳体30分别成型，并使得该壳体护套17的内侧壁的形状与电路壳体30的外侧壁匹配，进而在二者分别成型完成之后，将壳体护套17以套装的方式包覆于电路壳体30的外围。

[0121] 需要指出的是，由于在壳体护套17成型时的环境温度较高，而高温环境可能会对电路壳体30所容纳的控制电路60或电池70造成一定的损伤，因此，在成型阶段，将电路壳体30和壳体护套17分别成型，然后再套装在一起，从而能够避免壳体护套17在成型时，高温对控制电路60或电池70所带来的损伤，从而降低成型对控制电路60或电池70所带来的不利影响。

[0122] 进一步地，壳体护套17可以为一端开口的袋状结构，以使得电路壳体30经由壳体护套17的开口端进入壳体护套17的内部。

[0123] 本实施方式中，壳体护套17在与保护套管16一体成型而形成之后，可以通过从开口端对壳体护套17进行翻卷而将其从模具上取下；在对壳体护套17进行外观检查以及丝印等表面处理时，可进一步将壳体护套17通过开口而套设在预设结构上进行操作，并在操作完成后，进一步通过从开口处对壳体护套17进行翻卷而将其从该预设结构上取下；在检查及处理等操作完成后，可进一步通过开口而将壳体护套17套装在电路壳体30的外围。上述操作中，在将壳体护套17取下并不限定于上述翻卷的方式，还可通过充气等方式，此处不做具体限定。

[0124] 具体地，壳体护套17的开口端为壳体护套17背离保护套管16的一端，从而该电路壳体30从壳体护套17远离保护套管16的一端进入壳体护套17的内部，以为该壳体护套17所包覆。

[0125] 在一实施方式中，壳体护套17的开口端设置有向内凸出的环状凸缘171。进一步地，电路壳体30远离耳挂10的端部呈阶梯状设置，进而形成环形台面37。当壳体护套17包覆于电路壳体30的外围时，环状凸缘171抵接于环形台面37上。

[0126] 具体地，环状凸缘171由壳体护套17的开口端的内壁面朝向壳体护套17内部凸出一定的厚度形成，并包括一朝向耳挂10的凸缘面172。

[0127] 其中，环形台面37与凸缘面172相对，并朝向电路壳体30背离耳挂10的方向。

IPR2025-00843; Mojawa
Ex. 1002 - Page 853

[0128] 该环状凸缘171的凸缘面172的高度不大于环形台面37的高度，从而使得在环状凸缘171的凸缘面172与环形台面37相抵接时，壳体护套17的内壁面能够与电路壳体30的侧壁面充分抵接，从而使得壳体护套17能够紧密包覆于电路壳体30的外围。

[0129] 进一步地，在一实施方式中，在环状凸缘171与环形台面37上的接合区域内可进一步施加有密封胶。具体地，在对壳体护套17进行套装时，可以在环形台面37上涂覆密封胶，从而将壳体护套17与电路壳体30进行密封连接。

[0130] 其中，在一实施方式中，电路壳体30上还设置有定位块38，该定位块38设置于环形台面37上，并沿电路壳体30背离耳挂10的方向延伸。具体地，该定位块38可设置于电路壳体30的辅侧壁34上，且该定位块38在辅侧壁34上凸出的厚度与环形台面37的高度一致。其中，定位块38的数量可以根据需求设置一个或者多个。

[0131] 相应地，壳体护套17的环状凸缘171处设置有与定位块38对应的定位槽173，从而在壳体护套17包覆于电路壳体30的外围时，该定位槽173覆盖在至少部分定位块38上。

[0132] 通过这种方式，在对壳体护套17进行套装时，可以根据定位块38和定位槽173的位置对壳体护套17进行定位，以方便操作人员快速、准确得安装。当然，在其它实施方式中，也可以根据实际需求不设置定位块。

[0133] 在一实施方式中，电路壳体30包括彼此扣合的两个子壳体，分别为第一子壳体301和第二子壳体302。具体地，两个子壳体可以沿电路壳体30的中线而对称扣合，或者也可以根据实际需求通过其他方式进行扣合。另外，用于容纳控制电路60的电路壳体30的两个子壳体的扣合方式可以与用于容纳电池70的电路壳体30的两个子壳体的扣合方式可以相同，也可以不同。

[0134] 在一个应用场景中，电路壳体30的环形台面37可形成于第一子壳体301上，两个子壳体在环形台面37朝向耳挂10的一侧接合，从而使得壳体护套17能够对两个子壳体的接合缝进行全覆盖，从而能够在一定程度上对电路壳体30的内部空间进行密封，以提高骨传导扬声装置的防水效果。

[0135] 在另一应用场景中，电路壳体30的环形台面37还可以由两个子壳体共同形成，从而使得二者至少部分部位在环形台面37背离耳挂10的一侧结合。此时，壳体护套17不能够覆盖两个子壳体的位于环形台面37背离耳挂10一侧的接合缝。本应用场景中，可以进一步通过其它方式对该部分的接合缝进行覆盖。

[0136] 进一步地，在一实施方式中，两个子壳体彼此对接的接合面为互相契合的阶梯形状。

[0137] 具体地，第一子壳体301的朝向第二子壳体302的端面为阶梯状的第一阶梯面3011，第二子壳体302的朝向第一子壳体301的端面为阶梯状的第二阶梯面3021。第一阶梯面3011和第二阶梯面3021的形状及尺寸均一致，从而能够互相配合抵接在一起。

[0138] 通过这种方式，电路壳体30的两个子壳体互相抵接的结合面成阶梯状而不在同一平面上，从而能够阻挡电路壳体30外部的液体由电路壳体30的外围进入电路壳体30的内部，进而进一步提高骨传导扬声装置的防水效果，以对电路壳体30内部的控制电路60或者电池70等进行保护。

[0139] 进一步地，在第二子壳体302的第二阶梯面3021上设置有朝向第一子壳体30a的安装卡勾3022，对应地，第一子壳体301的内部设置有与该安装卡勾3022匹配的安装勾槽

IPR2025-00843; Mojawa
Ex. 1002 - Page 854

3012。在对第一子壳体301和第二子壳体302进行安装时，安装卡勾3022能够在外部推力越过安装勾槽3012的外侧壁而进入该安装勾槽3012，并使得安装卡勾3022的勾部勾接安装勾槽3012的内侧壁，从而实现第一子壳体301与第二子壳体302的扣合。

[0140] 在一实施方式中，骨传导扬声装置进一步设置有按键机构。

[0141] 具体地，电路壳体30的辅侧壁34的外表面上设置有第一凹陷区341，该第一凹陷区341内进一步设置有按键孔342，该按键孔342连通辅侧壁34的外表面和内表面。

[0142] 其中，电路壳体30的辅侧壁34可以包括，在用户佩戴该骨传导扬声装置时，朝向用户头部后侧的辅侧壁34，也可以包括在用户佩戴时，朝向用户头部下侧的辅侧壁34。

[0143] 第一凹陷区341的数量可以为一个或者多个，且每个第一凹陷区341内可以设置一个或者多个按键孔342，具体可以根据实际需求设置，此处不做具体限定。

[0144] 本实施方式中，骨传导扬声装置还进一步包括弹性衬垫82、按键83，控制电路60包括按键电路板61。

[0145] 其中，弹性衬垫82设置于第一凹陷区341，具体固定于第一凹陷区341对应的辅侧壁34的外表面上，以覆盖于按键孔342的外部从而避免外部液体通过按键孔342进入到电路壳体30的内部，以起到密封防水的作用。

[0146] 进一步地，该弹性衬垫82上设置有与按键孔342对应的第二凹陷区821，该第二凹陷区821延伸至按键孔342的内部。

[0147] 具体地，该弹性衬垫82可以由软性材质制成，例如软性的硅胶、橡胶等。且该弹性衬垫82较薄，直接与辅侧壁34的外表面粘接时，难以粘接牢靠。

[0148] 因此，在一实施方式中，可进一步在弹性衬垫82与电路壳体30之间设置刚性衬垫84，该钢性衬垫84与弹性衬垫82彼此贴靠固定，具体可以通过贴合、粘接、注塑等的方式实现，并进一步将钢性衬垫84与辅侧壁34进行粘接，具体可以通过采用双面胶进行粘接，以在钢性衬垫84与辅侧壁34之间形成一粘胶层，从而使得弹性衬垫82能够牢靠地固定在辅侧壁34的外表面。而且，由于弹性衬垫82质软且薄，因此在用户按压按键的过程当中难以保持平整状态，而通过与钢性衬垫84的贴靠固定，能够使弹性衬垫82保持平整。

[0149] 进一步地，钢性衬垫84上设置有允许第二凹陷区821通过的通孔841，从而使得弹性衬垫82的第二凹陷区821能够进一步通过通孔841而延伸至按键孔342的内部。

[0150] 具体地，钢性衬垫84可以由不锈钢制成，或者其它钢性材料，如塑胶等硬质材料。并可通过一体成型而与弹性衬垫82贴靠在一起。

[0151] 另外，按键83包括按键本体831，以及设置在按键本体831一侧凸出设置的按键触头832。其中，按键本体831设置于弹性衬垫82远离电路壳体30的一侧，且按键触头832延伸至第二凹陷区821内，以随第二凹陷区821而延伸至按键孔342内部。

[0152] 进一步地，由于本实施方式中骨传导扬声装置较为轻薄，按键83的按压行程较短，若采用软质的按键则会降低用户按压手感而带来不好的体验。本实施方式中，按键83可由硬质的塑胶材料制成，以使得用户按压时能够具有良好的手感。

[0153] 进一步地，按键电路板61设置于电路壳体30的内部，其上设置有与按键孔342对应的按键开关611。从而在用户按压按键时，按键触头832接触并触发按键开关611，以进一步实现相应的功能。

[0154] 本实施方式中，通过在弹性衬垫82上设置第二凹陷区821，一方面，第二凹陷区821

IPR2025-00843; Mojawa
Ex. 1002 - Page 855

的设置能够覆盖整个按键孔342，从而能够同时提高防水效果；另一方面，在自然状态下，按键触头832便能够通过第二凹陷区821而延伸入按键孔342内部，从而能够缩短按键按压的行程，以减小按键结构所占用的空间，进而使骨传导扬声装置既能够有好的防水性能，又占用较少的空间。

[0155] 在一实施方式中，按键83可包括按键单体833，按键单体833的数量可以为一个或者多个。

[0156] 在一个应用场景中，按键83可包括至少两个彼此间隔设置的按键单体833以及用于连接按键单体833的连接部834。其中，多个按键单体833以及连接部834可一体成型。对应地，每个按键单体833对应设置有一个按键触头832，并进而对应一个按键孔342以及一个按键开关611。

[0157] 也就是说，本实施方式中，对应于一个第一凹陷区341可以设置多个按键单体833，用户可通过按压不同的按键单体833而触发不同的按键开关611，并进而实现多种功能。

[0158] 进一步地，弹性衬垫82上可设置用于支撑连接部834的弹性凸块822。由于按键83包括连接设置的多个按键单体833，弹性凸块822的设置使得用户在按压其中一个按键单体833时，能够使得该按键单体833受到单独的按压，而避免通过联动而将其它的按键单体833一并按压的情况发生，从而能够准确得触发对应的按键开关611。需要指出的，该弹性凸块822并非是必要的，例如也可以是不具有弹性的凸出结构，或者也可以不设置凸出结构，具体可根据实际情况进行设置。

[0159] 在一实施方式中，壳体护套17的内壁上设置有与按键对应的凹槽174，从而能够以套装方式包覆于电路壳体30和按键的外围。

[0160] 在一实施方式中，骨传导扬声装置还进一步包括有至少一个导电柱85，容纳于电路壳体30内部的控制电路60还包括主控电路板62，该导电柱85可用于连接电路壳体30内部的主控电路板62以及电路壳体30外部的充电电路和/或数据传输线路等，以对骨传导扬声装置进行充电和/或数据传输等。

[0161] 相应地，电路壳体30的主侧壁33上设置至少一个安装孔331，导电柱85可插置于对应的安装孔331内。其中，导电柱85和安装孔331可一一对应，本实施方式中，导电柱85和安装孔331的数量均为四个，四个导电柱85分别插置于对应的安装孔331内，并排呈一条直线而均匀间隔设置。其中，位于外侧的两个导电柱85可作为充电接口，而位于中间的两个导电柱85可作为数据传输接口。当然，导电柱85以及安装孔331也可以按照其它的排布方式进行设置，此处不做具体限定。

[0162] 其中，导电柱85可包括插置于安装孔331内的柱状本体851。其中柱状本体851的外周面上设置有定位凸台852，该定位凸台852可用于与主侧壁33的内表面卡接，进而将导电柱85固定于安装孔331。

[0163] 具体地，定位凸台852可以绕柱状本体851的周向呈环形设置，进一步地，在环形的定位凸台852朝向电路壳体30内部的一侧设置有连接柱状本体851外周面以及定位凸台852的延伸斜面853。在安装导电柱85时，将该导电柱85由电路壳体30的外部，沿延伸斜面853而逐渐插入安装孔331而进入电路壳体30的内部，并进而通过定位凸台852，在定位凸台852完全通过安装孔331之后，该定位凸台852朝向电路壳体30外部的台面与主侧壁33的内表面卡接，进而将导电柱85固定于安装孔331内。

IPR2025-00843; Mojawa
Ex. 1002 - Page 856

[0164] 上述方式中，定位凸台852的设置使得在装配过程中，导电柱85能够从电路壳体30的主侧壁33的外表面插入安装孔331后，并可通过按压的方式即可将定位凸台852按压入安装孔331内，从而与电路壳体30的主侧壁33的内表面卡接固定，而无需从电路壳体30的内部进行安装，从而使得骨传导扬声装置的装配更加便捷，提高生产装配效率.进一步地，延伸斜面853的设置使得在装配过程中，定位凸台852能够更加顺利地通过安装孔331。定位凸台852的设置则能够使得导电柱85进入安装孔331内时与主侧壁33的内表面卡接而不易从导电孔内划出，从而能够将导电柱85牢靠地固定于安装孔331内。

[0165] 具体地，在一实施方式中，柱状本体851沿柱状本体851相对于安装孔331的插入方向划分为第一柱状本体8511和第二柱状本体8512，二者可由导电的金属材质，如铜、银或者合金等一体成型而为一整体结构。其中，在垂直于导电柱85插入安装孔331的插入方向上，第一柱状本体8511的横截面可大于第二柱状本体8512的横截面。其中，定位凸台852可设置于第二柱状本体8512上。

[0166] 相应地，安装孔331沿插入方向划分为横截面与第一柱状本体851和第二柱状本体851对应的第一孔段3311和第二孔段3312，进而在第一孔段3311和第二孔段3312的连接处形成一环形台面3313，其中，该环形台面3313与主侧壁33的外表面连通。

[0167] 进一步地，当柱状本体851插置于安装孔331内时，第一柱状本体8511朝向第二柱状本体8512的一侧支撑于环形台面3313上，同时，位于第二柱状本体8512外周面上的定位凸台852朝向第一柱状本体8511的一侧卡接于主侧壁33的内表面上，进而将导电柱85从安装孔331周围的主侧壁33的内外两侧面同时卡接，从而将导电柱85固定于安装孔331内。

[0168] 在一实施方式中，柱状本体851沿轴向设置有容置腔8513，容置腔8513的开口端于第二柱状本体8512朝向电路壳体30内部的端面上。具体地，该容置腔8513可沿平行于插入方向而贯通至第二柱状本体8512的位于电路壳体30内部一侧的部分，并在到达定位凸台852之前终止。当然，在其它实施方式当中，可以根据需求设置容置腔8513的具体位置，此处不做限定。

[0169] 进一步地，导电柱85包括设置于容置腔8513内的弹簧854以及导电触头855，导电触头855的一端可于容置腔8513内部与弹簧854抵接，另一端从容置腔8513的开口端外露于电路壳体30的内部。其中，导电触头855的材质可与柱状本体851的材质相同，弹簧854可以通过一定的手段如粘接、焊接等方式与第二柱状本体851以及导电触头855连接，或者还可以直接放置于容置腔8513内，并通过柱状本体851与电路壳体30的主侧壁33的卡接以及导电触头855与主控电路板62的抵接而弹性夹持于容置腔8513内部。

[0170] 进一步地，电路壳体30内部的主控电路板62上设置有与导电柱85位置对应的触点621，具体如图7所示。具体地，主控电路板62包括面积较大的主表面622以及连接主表面622的面积较小的侧表面623，其中，主控电路板62的主表面622可平行或者近似平行于电路壳体30的主侧壁33，其中，触点621对应设置于主控电路板62的主表面622上。

[0171] 其中，导电柱85插入安装孔331的插入方向与导电柱85的轴向平行，并垂直于主侧壁33，进而垂直于主控电路板62的主表面622。在将导电柱85安装于安装孔331内后，弹簧854受到导电触头855以及柱状本体851的夹持而产生弹性形变，以将导电触头855弹性压持于对应的触点621上，从而实现导电柱85与主控电路板62的电连接。

[0172] 在一实施方式中，骨传导扬声装置还进一步包括一位于电路壳体30内部的辅助片

IPR2025-00843; Mojawa
Ex. 1002 - Page 857

86。

[0173] 该辅助片86包括一板体861，该板体861上设置有镂空区8611，该板体861可通过热熔或者热压、粘接等方式设置于主侧壁33的内表面上，并使得设置于主侧壁33上的安装孔331位于镂空区8611内部。具体地，板体861的板面可平行贴靠于主侧壁33的内表面上。

[0174] 其中，该辅助片86具有一定的厚度，在其设置于主侧壁33的内表面上后，与该辅助片86的镂空区8611的内侧壁与主侧壁33共同构成一位于插置于安装孔331内的导电柱85外围的胶槽87。

[0175] 进一步地，可在胶槽87内施加密封胶，从而从电路壳体30的内部对安装孔331进行密封，以提高电路壳体30的密闭性，进而提高骨传导扬声装置的防水性能。

[0176] 其中，该辅助片86的材质可与电路壳体30的材质相同，并与电路壳体30分别成型。需要指出的是，在电路壳体30成型阶段，安装孔331附近往往还具有其它结构，例如需要成型按键孔342等，这些结构在成型时所对应的模具可能需要从电路壳体30的内部退出，而此时若直接在电路壳体30内部一体成型对应于安装孔331的胶槽87，则胶槽87的凸起可能会干涉这些结构的模具的顺利退出，从而为生产带来不便。本实施方式中，辅助片86与电路壳体30分别为独立的结构，在二者分别成型后，可通过将辅助片86安装于电路壳体30的内部而与电路壳体30的主侧壁33共同构成胶槽87，从而在电路壳体30的成型阶段不会阻挡部分结构的模具从电路壳体30的内部退出，从而有利于生产的顺利进行。

[0177] 在一实施方式中，在对电路壳体30进行成型时，模具的退出仅占用胶槽87所占据的空间的部分空间，从而，可以在不影响退模的情况下，在主侧壁33的内表面上一体成型胶槽87的一部分，而胶槽87的另一部分仍可由辅助片86辅助构成。

[0178] 具体地，主侧壁33的内表面上一体成型有第一条状凸肋332，该第一条状凸肋332所在的位置不影响电路壳体30的模具退模。辅助片86的镂空区8611设置有一缺口8612。其中，第一条状凸肋332与该缺口8612对应。在电路壳体30和辅助片86分别成型之后，可将该辅助片86于主侧壁33的内表面，以使得第一条状凸肋332至少部分嵌合于缺口8612处，进而利用第一条状凸肋332和辅助片86配合使得胶槽87呈闭合设置。

[0179] 本实施方式中，由于第一条状凸肋332不会对模具的退出产生阻挡，因此，胶槽87的侧壁可由一体成型于主侧壁33内表面的第一条状凸肋332与辅助片86共同构成。

[0180] 进一步地，在一实施方式中，第一条状凸肋332还进一步延伸成与板体861的侧边缘8613抵接，进而对板体861进行定位。

[0181] 具体地，该第一条状凸肋332包括凸肋主体3321和定位臂3322，其中，凸肋主体3321用于与镂空区8611的缺口8612匹配并与其嵌合，从而共同形成胶槽87的侧壁；而定位臂3322则由凸肋主体3321的一端进一步延伸而成，并延伸至板体861的一侧边缘8613处与该侧边缘8613抵接，从而对该板体861于该侧边缘8613处进行定位。

[0182] 其中，第一条状凸肋332在主侧壁33的内表面上凸出的高度可大于辅助片86的厚度，当然，也可以小于或者等于，只要能够与辅助片86共同构成胶槽87，以及能够对辅助片86的板体861起到定位作用即可，此处不做具体限定。

[0183] 在一实施方式中，板体861上进一步设置有定位孔8614，其中，定位孔8614贯通板体861的主板面设置。进一步地，主侧壁33的内表面上一体成型有与定位孔8614对应的定位柱333，在将辅助片86设置在主侧壁33的内表面后，该定位柱333插置于定位孔8614内，从而

IPR2025-00843; Mojawa
Ex. 1002 - Page 858

进一步对辅助片进行定位。

[0184] 其中，定位孔8614和定位柱333的数量一致，本实施方式中，二者的数量均为两个。

[0185] 在一个应用场景中，板体861的侧边缘8613形成有至少两个凸耳8615，两个定位孔8614可分别设置于对应的凸耳8615上。

[0186] 进一步地，主侧壁33的内表面上一体成型有一第二条状凸肋334，该第二条状凸肋334可沿朝向辅侧壁34的方向延伸设置，并可与第一条状凸肋332的定位臂3322的延伸方向互相垂直。

[0187] 对应地，板体861上还设置有与第二条状凸肋334对应的条状定位槽8616，该定位槽8616沿远离该主侧壁33的方向凹陷设置，且其一端与板体861的侧边缘8613连接并可与该侧边缘8613垂直设置。

[0188] 在一个应用场景中，定位槽8616可以仅由板体861的贴合主侧壁33的表面凹陷形成，定位槽8616的深度小于板体861的厚度，此时，板体861的与凹陷的表面相背设置的面不受定位槽8616的影响；在另一个应用场景中，定位槽8616的深度大于板体861的深度，从而使得在板体861的靠近主侧壁33的表面凹陷时，另一相对表面朝向凹陷的方向凸出，从而配合形成定位槽8616。

[0189] 具体地，在将辅助片86设置在主侧壁33的内表面后，第二条状凸肋334嵌入于条状定位槽8616内，以进一步对板体861进行定位。

[0190] 在一实施方式中，按键电路板61垂直于主控电路板62而与电路壳体30的辅侧壁34平行间隔设置。具体地，如上所述，按键机构所对应的辅侧壁34可包括两种，一种是在用户佩戴该骨传导扬声装置时，朝向用户头部后侧的辅侧壁34，另一种是在用户佩戴时朝向用户头部下侧的辅侧壁34。本实施方式中，按键电路板61可以为两个，并分别与对应的两种辅侧壁34平行间隔设置。

[0191] 其中，按键电路板61可设置于辅助片86的板体861的朝向辅侧壁34的一侧。进一步地，辅助片86包括相对于板体861凸出设置的压持脚862。具体地，压持脚862沿垂直于板体861的主表面的方向凸出设置于板体861的朝向辅侧壁34的侧边缘处，且压持脚862的数量可以为一个或者多个。本实施方式中，压持脚862可通过其朝向辅侧壁34的侧面而将按键电路板61压持于辅侧壁34的内表面上，从而对按键电路板61起到固定的作用。

[0192] 在一实施方式中，主控电路板62与主侧壁33间隔设置，而辅助片86的板体861的主表面与主侧壁33平行而进一步与主控电路板62间隔设置。

[0193] 其中，压持脚862具体由板体861沿背离辅助片86所靠近的电路壳体30的主侧壁33且朝向主控电路板62的方向凸出，并延伸至主控电路板62的板面处以对主控电路板62起到压持作用，从而使得主控电路板62支撑于至少部分压持脚862上。

[0194] 在一实施方式中，壳体护套17上设置有与所述导电柱85对应的外露孔175，在将壳体护套17套装在电路壳体30外围后，导电柱85位于电路壳体30外部的一端进一步通过该外露孔175外露，进而与骨传导扬声装置外部的电路连接，以使得该骨传导扬声装置通过导电柱进行电量供应或者数据传输。

[0195] 进一步地，电路壳体30的外表面凹陷设置有环绕多个安装孔331的胶槽39。具体地，胶槽39可为椭圆环形，多个安装孔331分别设置于椭圆环形的胶槽39所环绕的电路壳体30上。

IPR2025-00843; Mojawa
Ex. 1002 - Page 859

[0196] 本实施方式中，该胶槽39内施加有密封胶，进而壳体护套17与电路壳体30装配完成后，壳体护套17能够通过该密封胶在安装孔331的外围与电路壳体30密封连接，从而避免外部液体通过外露孔175而进入壳体护套17内部时，壳体护套17在电路壳体30外围产生滑动，且能够进一步从电路壳体30的外部对安装孔331进行密封，以进一步提高电路壳体30的密闭性，进而进一步提高骨传导扬声装置的防水性能。

[0197] 在一实施方式中，电路壳体30在远离耳挂10的一端进一步设置有接插端3a，后挂40包括弹性金属丝41以及设置于弹性金属丝41的两端的接插端42，其中接插端3a与接插端42彼此接插固定。

[0198] 其中，由于骨传导扬声装置的耳机芯50分别为左右两个，对应的机芯壳体20、耳挂10以及电路壳体30也设置为左右两个，后挂40通过分别与两个电路壳体30接插固定的方式将位于两侧的机芯壳体20、耳挂10以及电路壳体30连接在一起，并在用户佩戴时悬挂设置于用户头部后侧。

[0199] 具体地，弹性金属丝41的材质与性能等可以与弹性金属丝11相同，相关详细内容请参见前述对弹性金属丝11的相关描述，此处不再赘述。

[0200] 接插端42可以通过注塑的方式形成在弹性金属丝41的两端。具体地，接插端42可以由塑胶等材料制成。

[0201] 在一实施方式中，接插端42设置有接插孔421，该接插端3a至少部分插入至接插孔421内，本实施方式中，接插端3a可具体设置在环形台面37背离耳挂10的一侧。接插端3a与接插孔421之间的接插方式和接插端15与接插孔31之间的接插方式可以相同，也可以不同。

[0202] 其中，在接插端3a的相对两侧分别设置有与接插端3a相对于接插孔421的插入方向垂直设置的开槽3a1。两个开槽3a1可间隔且对称设置于接插端3a的两侧。进一步地，该两个开槽3a1可均在垂直于插入方向上与接插端3a的对应的侧壁连通。

[0203] 相应地，接插端42的第一侧壁422上设置有与两个开槽3a1位置对应的通孔423。其中，接插端42包括用于定义接插孔421的环绕设置的侧壁，接插端42的第一侧壁422可以是在接插端3a与接插端42接插固定时，接插端42的能够与开槽3a1的延伸方向相交的侧壁。

[0204] 其中，骨传导扬声装置进一步包括固定件88，固定件88包括两条平行设置的插脚881和用于连接插脚881的连接部882。本实施方式中，两条插脚881平行设置，连接部882可垂直连接设置于两条插脚881的同一侧，从而形成与固定件81形状相似的U型的固定件88。

[0205] 需要指出的是，固定件88可与固定件81的形状相似，但是具体的尺寸参数可以适应于周边结构而不同，本实施方式中，插脚881的长度大于插脚811的长度，连接部812长度小于连接部882的长度等，此处不做具体限定。

[0206] 进一步地，插脚881可从接插端42的外侧经通孔423插入至开槽3a1，而将连接部882阻挡于接插端3a的外侧，进而实现接插端42与接插端3a的接插固定。

[0207] 通过上述方式，骨传导扬声装置的固定件88包括两条平行设置的插脚881和用于连接插脚881的连接部882，以使得固定件88在一定跨度上对接插端3a和接插端42进行接插固定，从而使得电路壳体30与后挂40之间的固定更加稳定、牢靠；而且固定件88结构简单，插入和取出方便，从而使得接插端3a与接插端42之间的接插固定为可拆卸，且能够使得骨传导扬声装置的装配更加方便。

[0208] 进一步地，在一实施方式中，接插端42的与第一侧壁422相对的第二侧壁424上进

IPR2025-00843; Mojawa
Ex. 1002 - Page 860

一步设置有与通孔423相对的通孔425，插脚881进一步经开槽3a1插入至通孔425内。

[0209] 在本实施方式中，插脚881经通孔423插入至开槽3a1内，并进一步经开槽3a1插入至通孔425内，也就是说插脚881能够将后挂40的接插端42的相对两侧壁以及接插端3a完全贯穿并连接于一起，从而能够使得电路壳体30与后挂40之间接插更加牢固。

[0210] 具体地，在一实施方式中，接插端3a沿接插端3a相对于接插孔421的插入方向进一步划分为第一接插段3a2和第二接插段3a3。

[0211] 其中，接插端3a可设置在电路壳体30的端部的靠近一辅侧壁34一侧，该辅侧壁34具体可以是与上述实施方式中的定位块38所在的辅侧壁34相对的另一辅侧壁34。

[0212] 进一步地，第一接插段3a2和第二接插段3a3可在靠近定位块38的一侧沿接插端3a相对于接插孔421的插入方向而呈阶梯状设置，从而使得在垂直于插入方向的截面方向上，第一接插段3a2的截面大于第二接插段3a3的截面。

[0213] 相应地，接插孔421沿接插端3a相对于接插孔421的插入方向进一步划分为形状分别与第一接插段3a2和第二接插段3a3相匹配的第一孔段4211和第二孔段4212，从而使得在接插端3a插入至接插孔421内时，第一接插段3a2和第二接插段3a3分别插置于第一孔段4211和第二孔段内4212。

[0214] 进一步地，开槽3a1可设置于第一接插段3a2上，具体地，开槽3a1可沿接插端3a到定位块38的方向，即电路壳体30的两个辅侧壁34相对的方向而延伸设置，从而贯通第一接插段3a2的与电路壳体30的主侧壁33垂直的两侧壁，且进一步沿垂直插入方向贯穿第一接插段3a2的平行于电路壳体30的主侧壁33的两侧壁。

[0215] 其中，接插端42上设置的通孔423可与开槽3a1的朝向定位块38的一侧对应，而通孔425则可与开槽3a1的远离定位块38的一侧对应。

[0216] 进一步地，在一实施方式中，第一接插段3a2和第二接插段3a3的顶侧彼此共面设置。其中，第一接插段3a2和第二接插段3a3的顶侧是指在用户正常佩戴骨传导扬声装置时，第一接插段3a2和第二接插段3a3的朝向头部顶侧的一侧，也即与第一接插段3a2和第二接插段3a3所形成的阶梯状相背的一侧。

[0217] 进一步地，第一接插段3a2和第二接插段3a3的顶侧共面且形成有用于容纳导线的走线槽3a4。该走线槽3a4可沿接插端3a与接插孔421的接插方向延伸，可用于容纳经过后挂40而连通控制电路60和电池70的导线。

[0218] 本实施方式中，可先将接插端3a插置于接插孔421内，然后从第一接插段3a2的朝向定位块38的一侧插入开槽3a1。具体地，本实施方式中，接插端3a设置于电路壳体30的朝向后挂40的端面的远离定位块38的一侧，因此，在接插端3a朝向定位块38的一侧还具有一定的空间，从而在对电路壳体30以及后挂40进行插接安装时，可以将固定件88从接插端3a2的底侧，即第一接插段3a2朝向定位块38的一侧由通孔423插入至开槽3a1并进而插入至通孔425内，以实现电路壳体30与后挂40的插接固定。通过这种方式，能够将固定件88完全隐藏于电路壳体30与后挂40所形成的内部空间当中而不外露，从而无需占用额外的空间。

[0219] 进一步地，在一实施方式中，后挂40还包括注塑于弹性金属丝41以及接插端42外围的第二保护套管43以及与第二保护套管43一体成型的端部保护盖44。

[0220] 其中，第二保护套管43以及端部保护盖44的材质均可以与保护套管16及壳体护套17的材质相同，例如均可以为具有一定弹性的软质材料，例如软质的硅胶、橡胶等。

IPR2025-00843; Mojawa
Ex. 1002 - Page 861

[0221] 端部保护盖44具体可形成于弹性金属丝41的两端，可以与位于弹性金属丝41的两端的接插端42一体成型于该接插端42的外围。

[0222] 需要指出的是，壳体护套17仅由电路壳体30的朝向耳挂10的一端包裹至电路壳体30的环形台面37处，因此，电路壳体30的环形台面37的朝向后挂40的部分则外露于壳体护套17的外围。进一步地，本实施方式中，端部保护盖44以及接插端42共同形成的内侧壁的形状与该电路壳体30所外露的端部的形状匹配，以进一步覆盖于该外露的电路壳体30的端部的外围，且该端部保护盖44的朝向电路壳体30的端面与壳体护套17的朝向后挂40的端面弹性抵接，以进一步提供密封。

[0223] 进一步地，在一实施方式中，壳体护套17所外露的电路壳体30的端部还设置有按键孔342，对应地，按键孔342内设置有按键83，端部保护盖44覆盖该按键83，并设置有用于容纳按键83的按键容置槽441。

[0224] 具体地，该按键孔342可间隔设置于接插端3a朝向定位块38的一侧，且按键孔342的数量可以为一个或者多个，具体可根据电路壳体30内部的控制电路60的具体结构以及电路壳体30本身的结构来确定，此处不做具体限定。

[0225] 以上所述仅为本申请的实施方式，并非因此限制本申请的专利范围，凡是利用本申请说明书及附图内容所作的等效结构或等效流程变换，或直接或间接运用在其他相关的技术领域，均同理包括在本申请的专利保护范围内。

IPR2025-00843; Mojawa
Ex. 1002 - Page 862

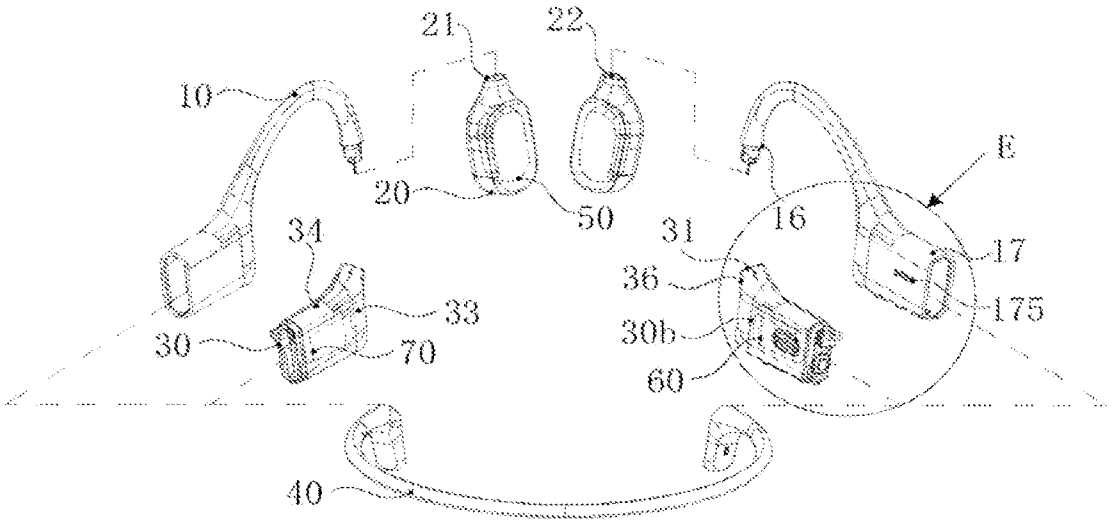


图1

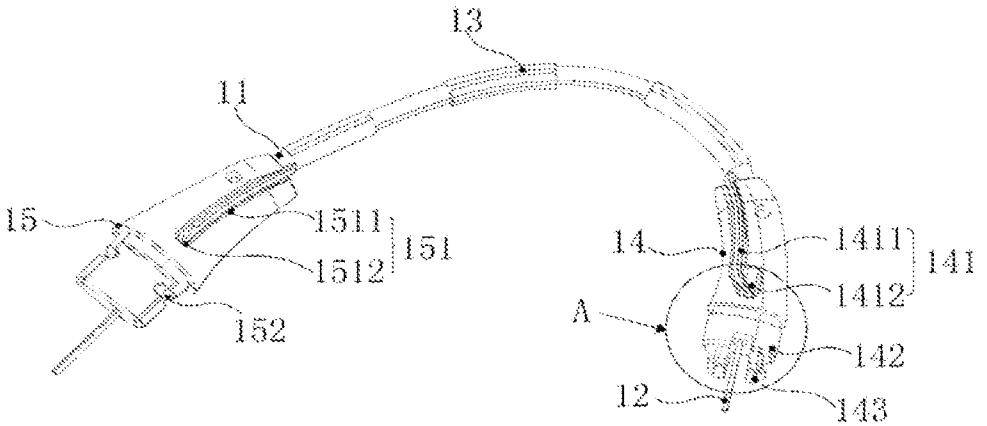


图2

IPR2025-00843; Mojawa
Ex. 1002 - Page 863

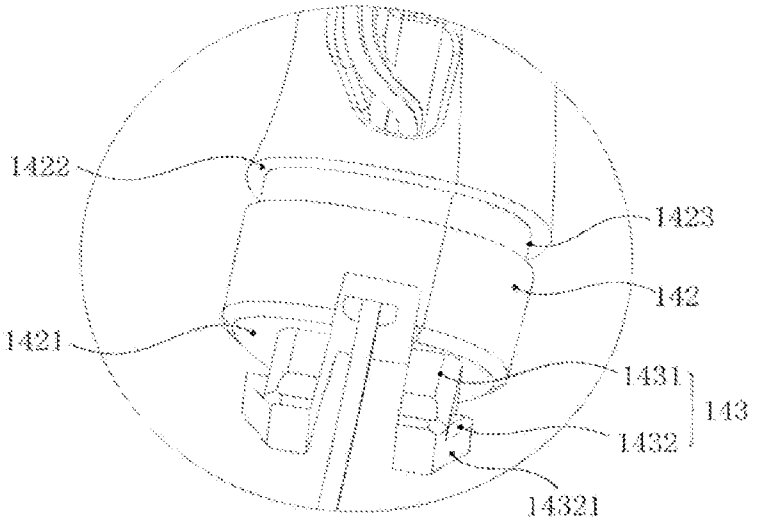


图3

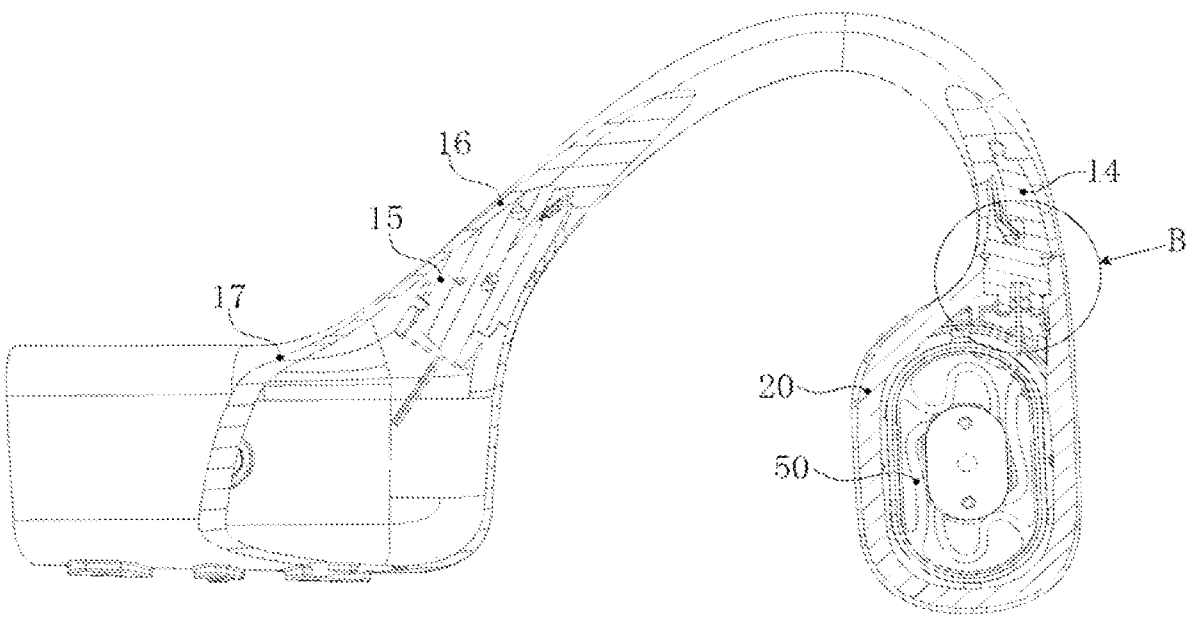


图4

IPR2025-00843; Mojawa
Ex. 1002 - Page 864

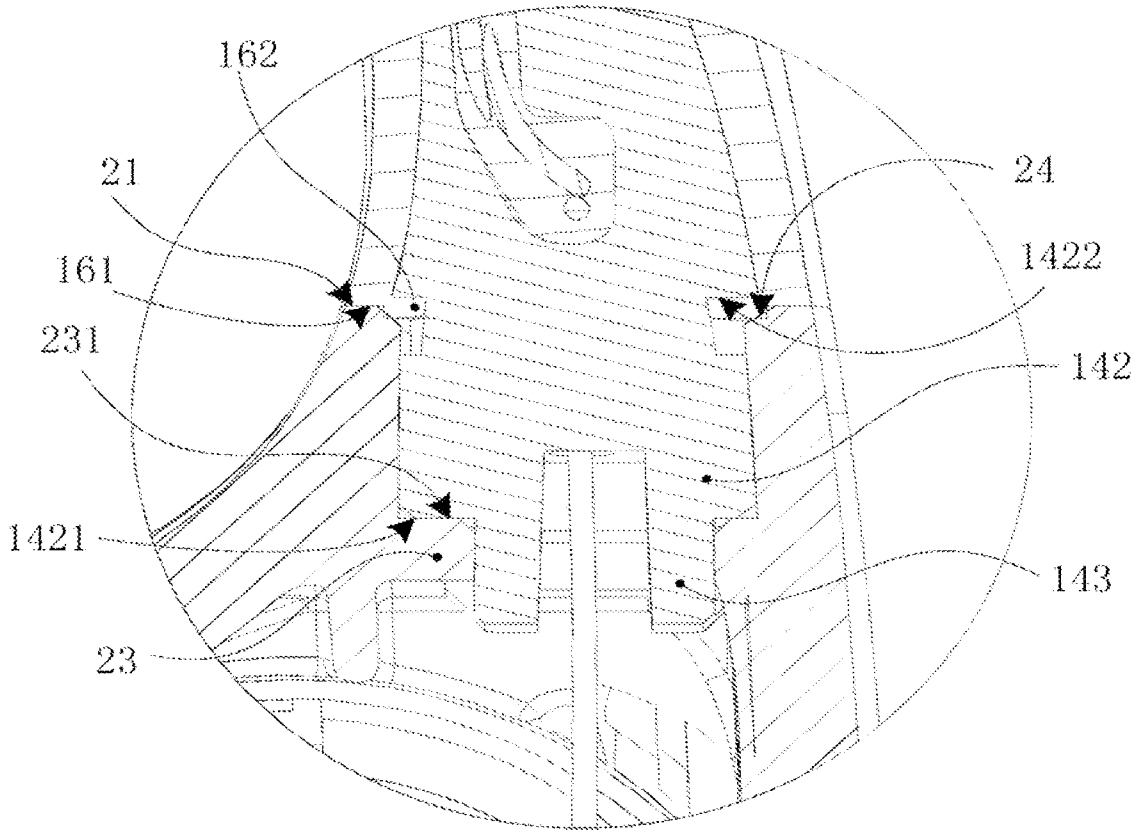


图5

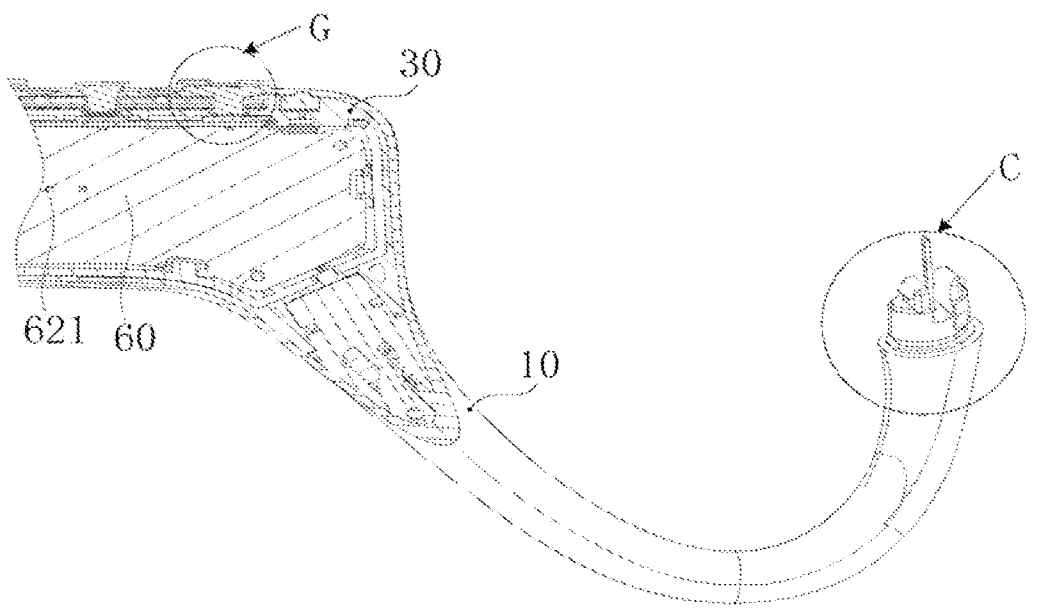


图6

IPR2025-00843; Mojawa
Ex. 1002 - Page 865

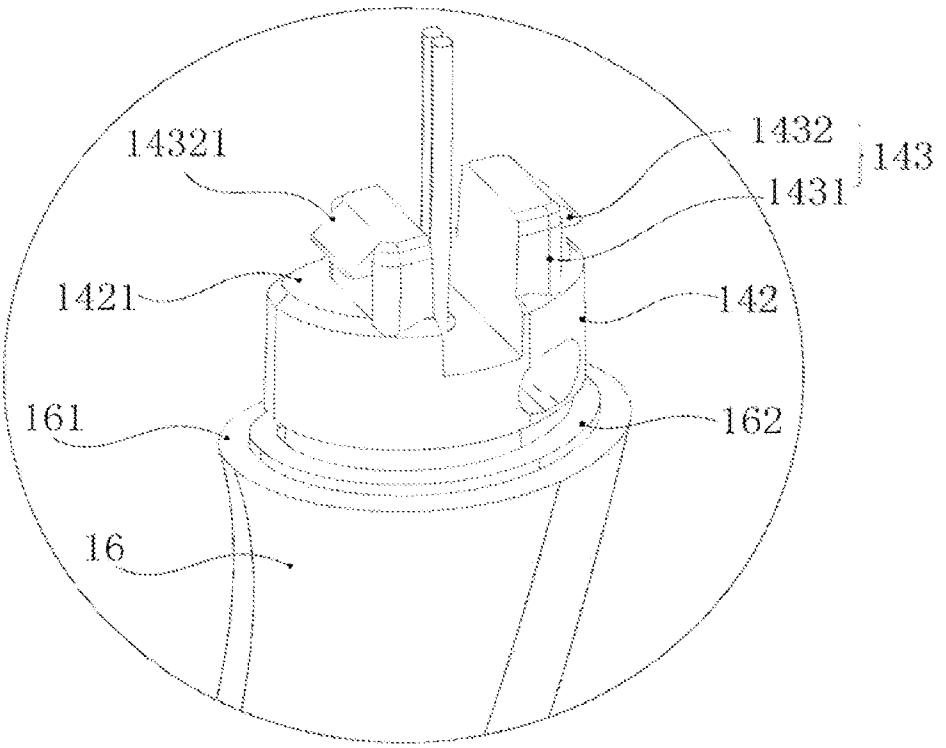


图7

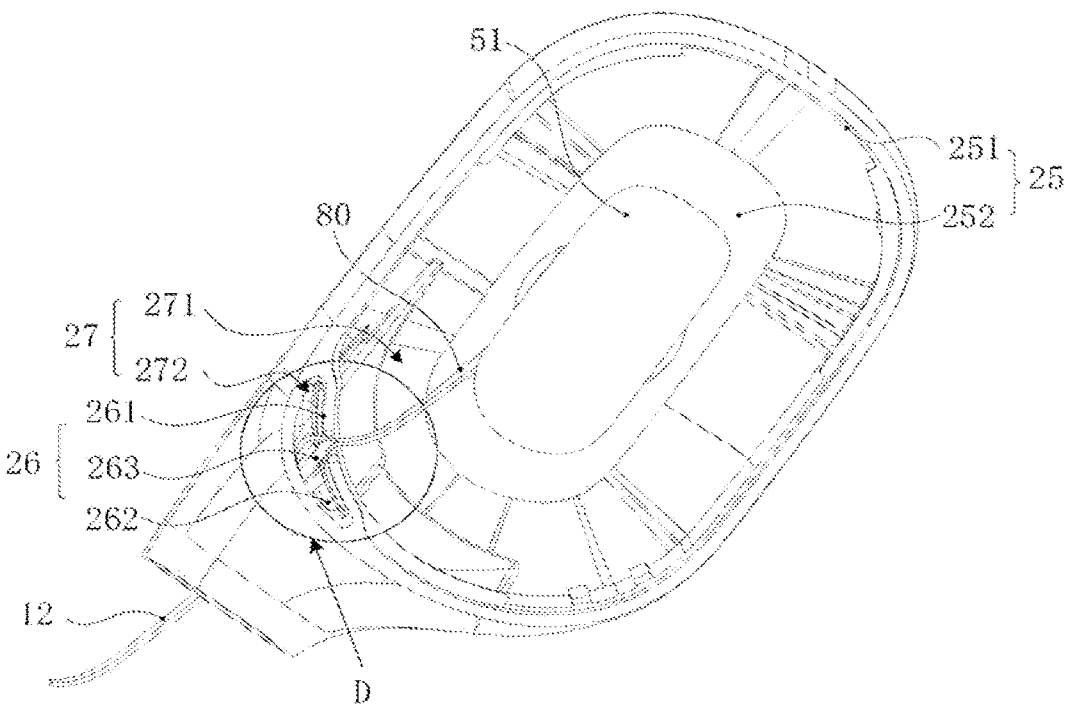


图8

IPR2025-00843; Mojawa
Ex. 1002 - Page 866

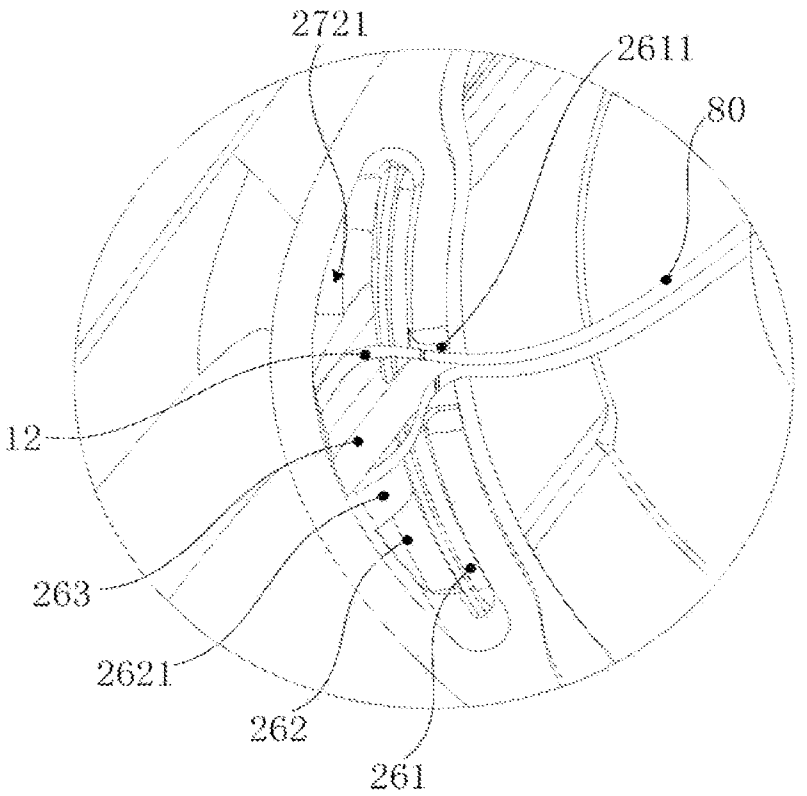


图9

IPR2025-00843; Mojawa
Ex. 1002 - Page 867

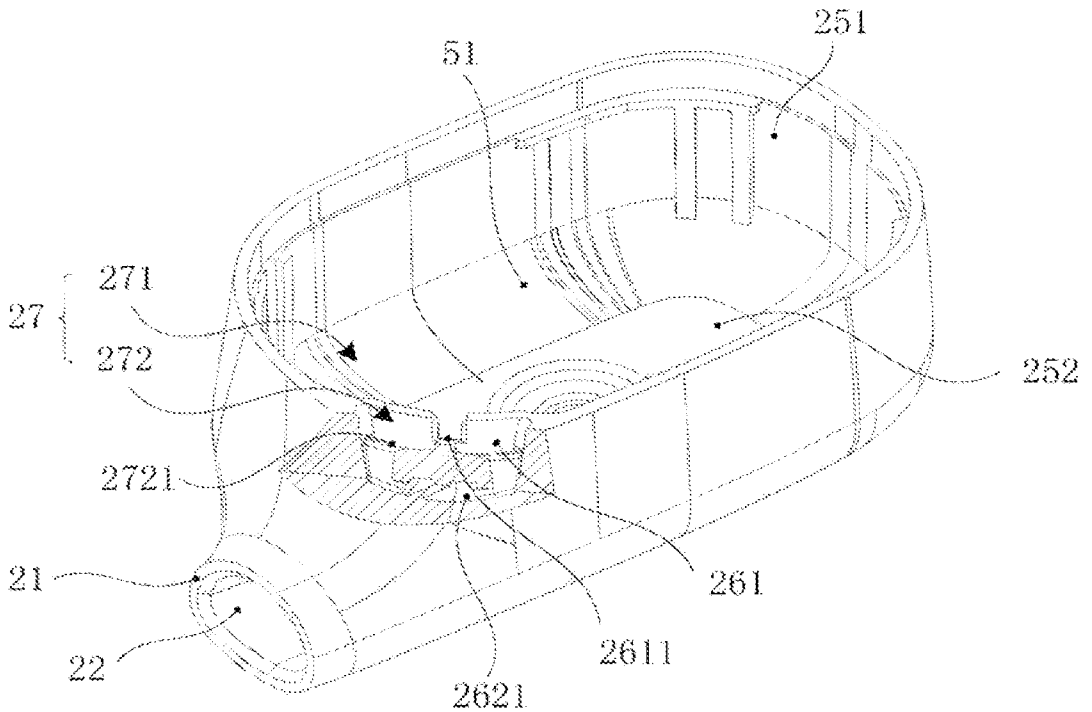


图10

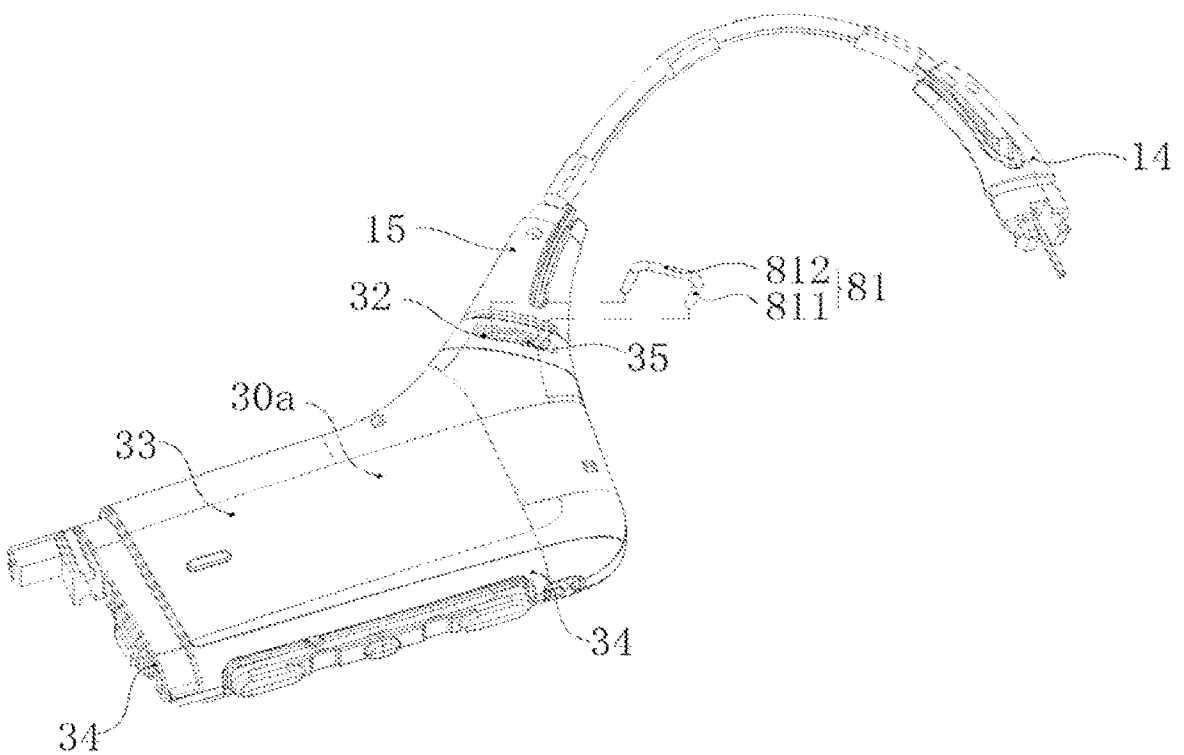


图11

IPR2025-00843; Mojawa
Ex. 1002 - Page 868

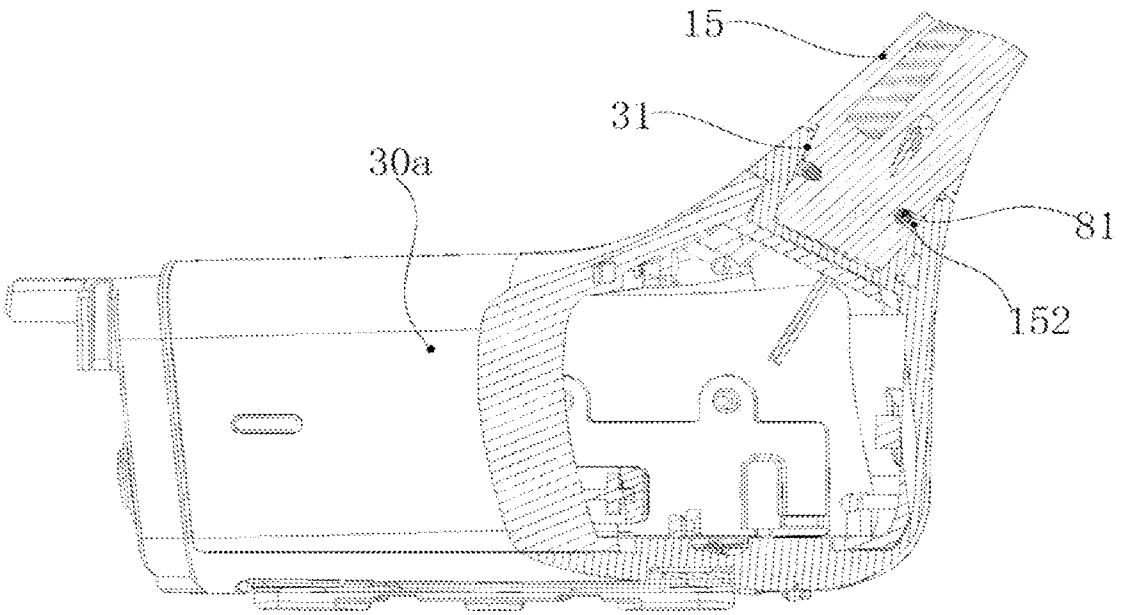


图12

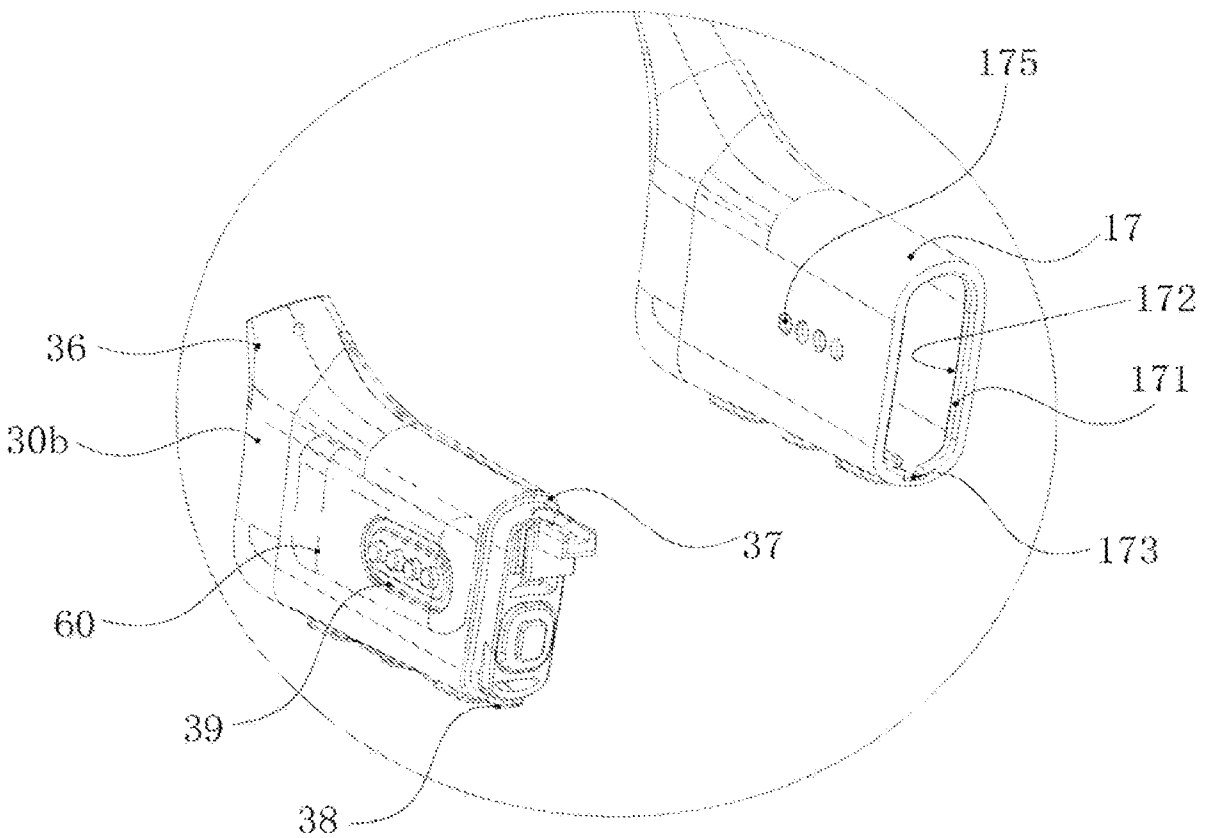


图13

IPR2025-00843; Mojawa
Ex. 1002 - Page 869

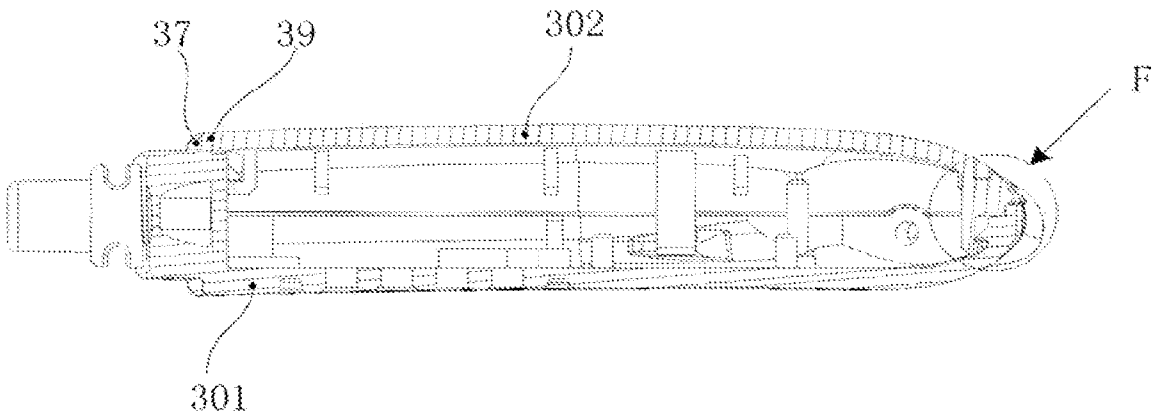


图14

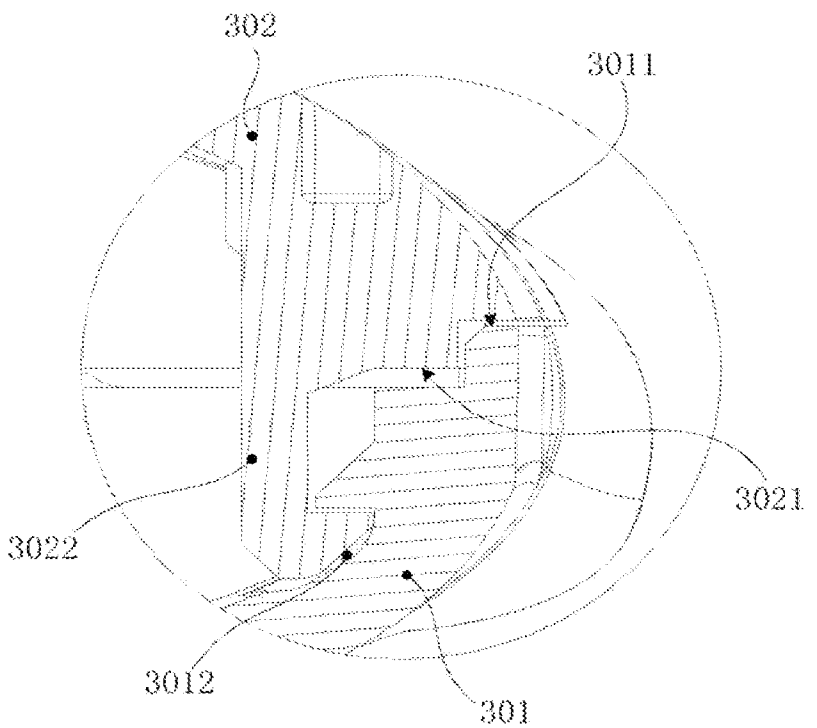


图15

IPR2025-00843; Mojawa
Ex. 1002 - Page 870

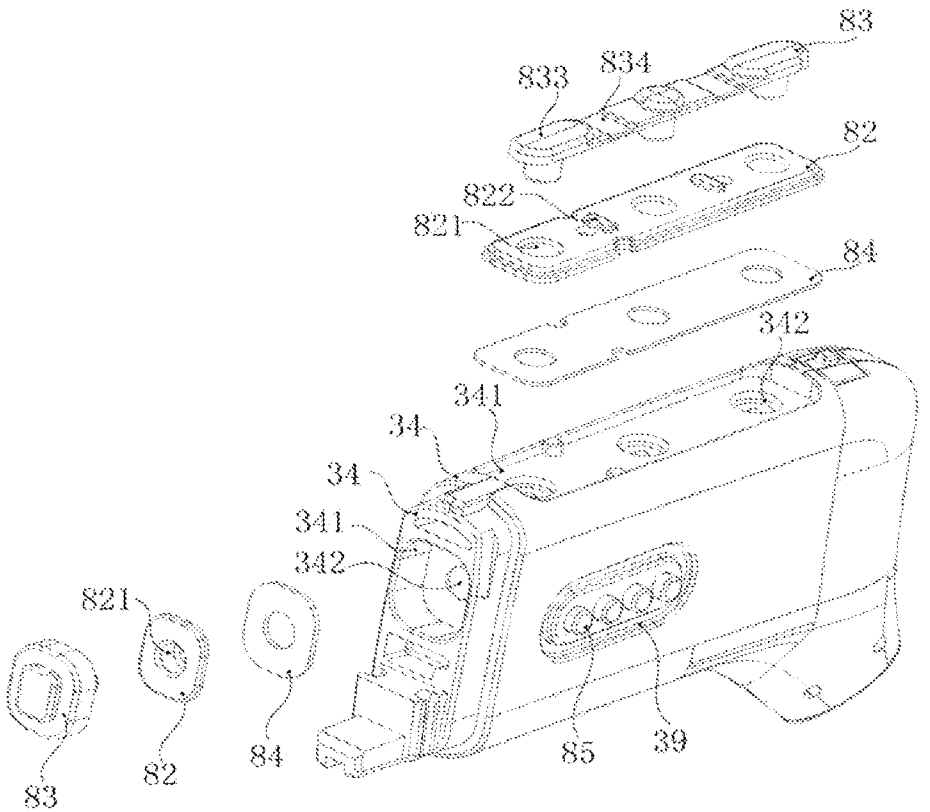


图16

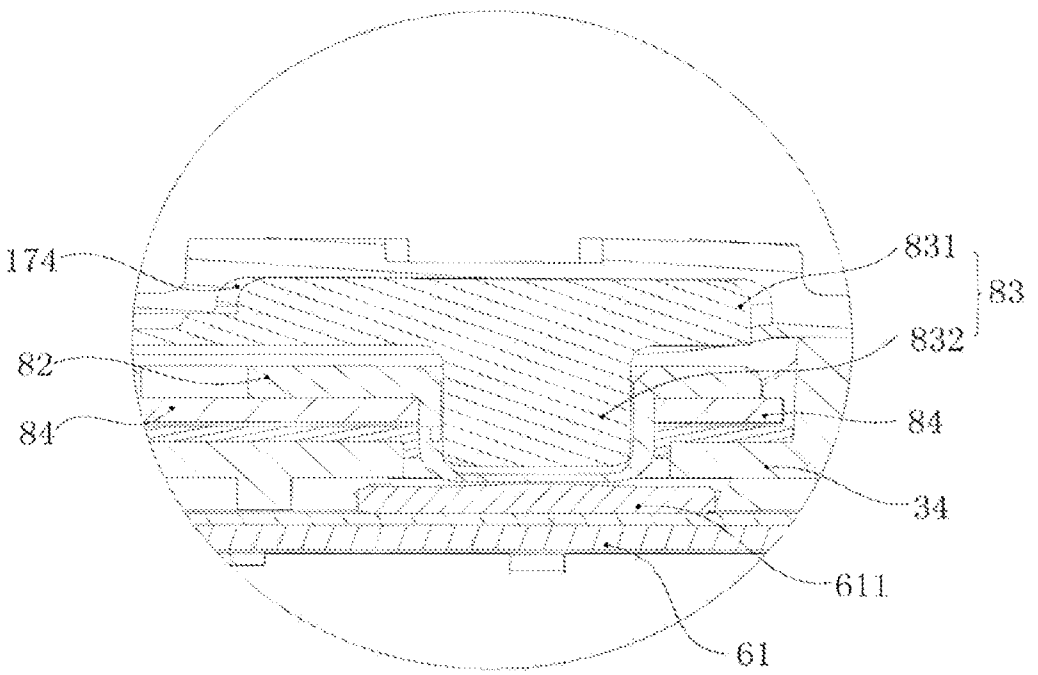


图17

IPR2025-00843; Mojawa
Ex. 1002 - Page 871

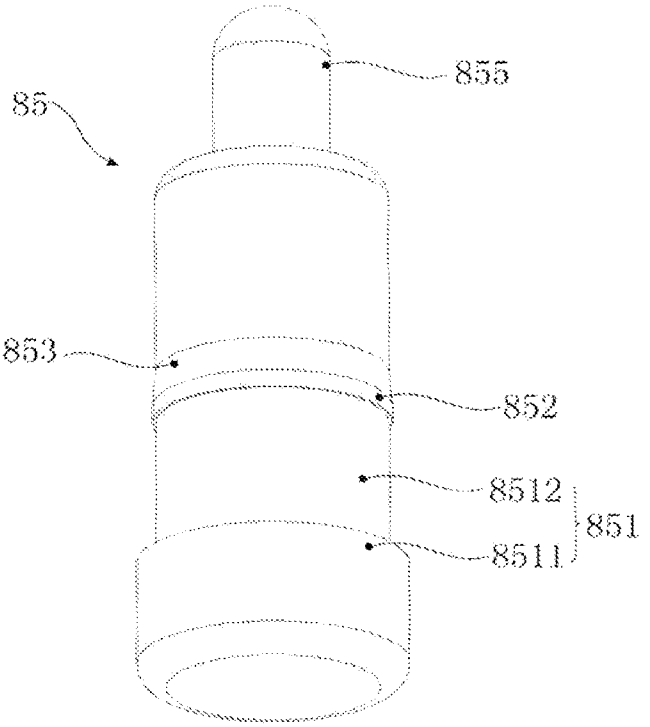


图18

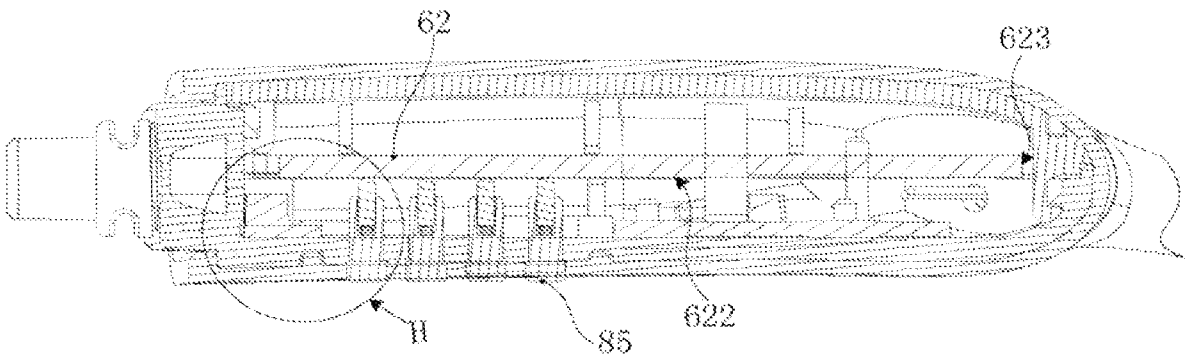


图19

IPR2025-00843; Mojawa
Ex. 1002 - Page 872

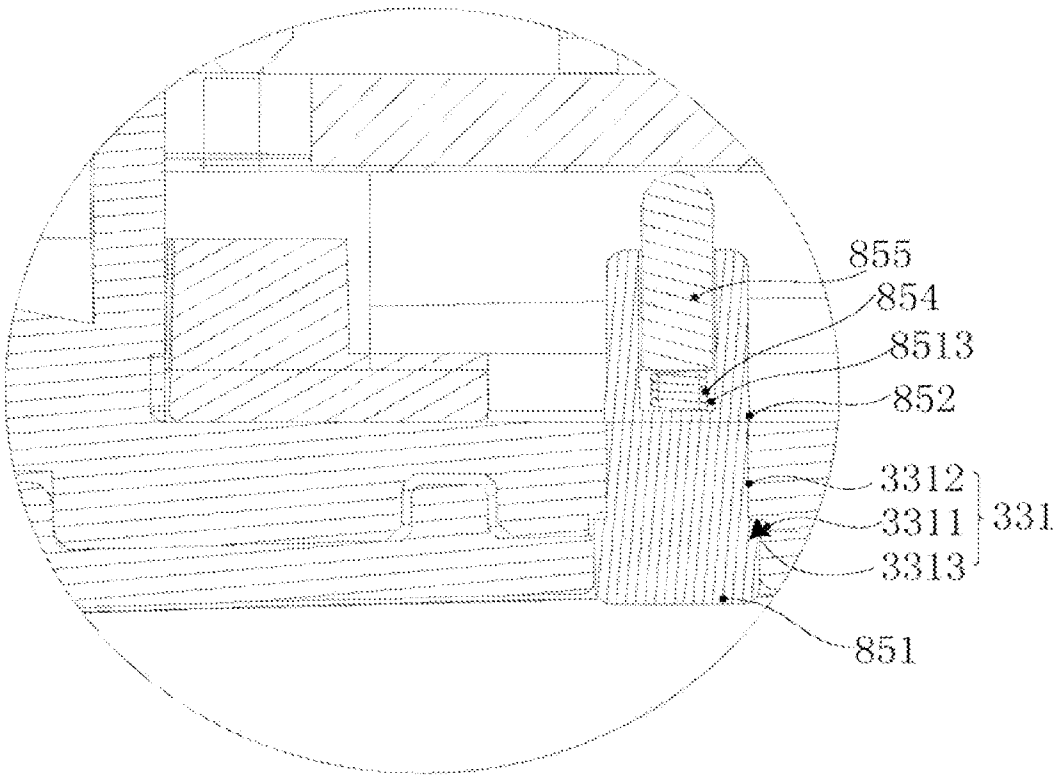


图20

IPR2025-00843; Mojawa
Ex. 1002 - Page 873

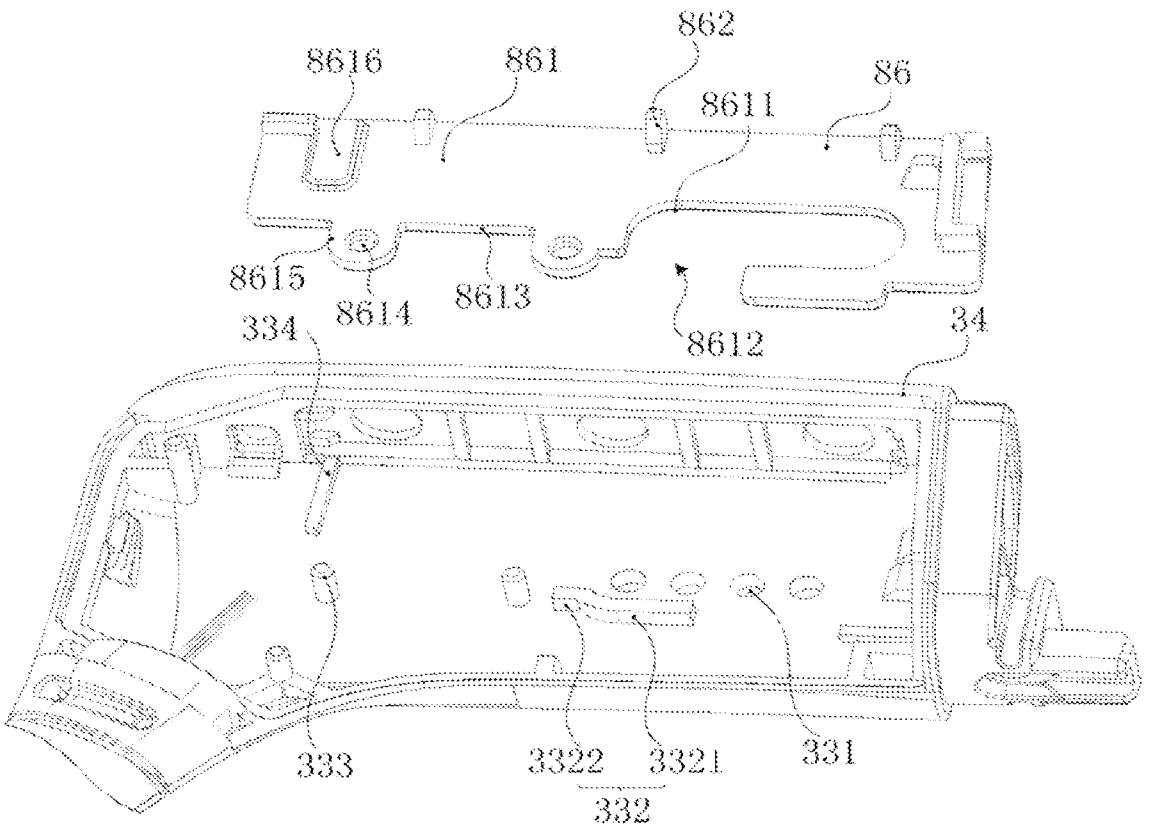


图21

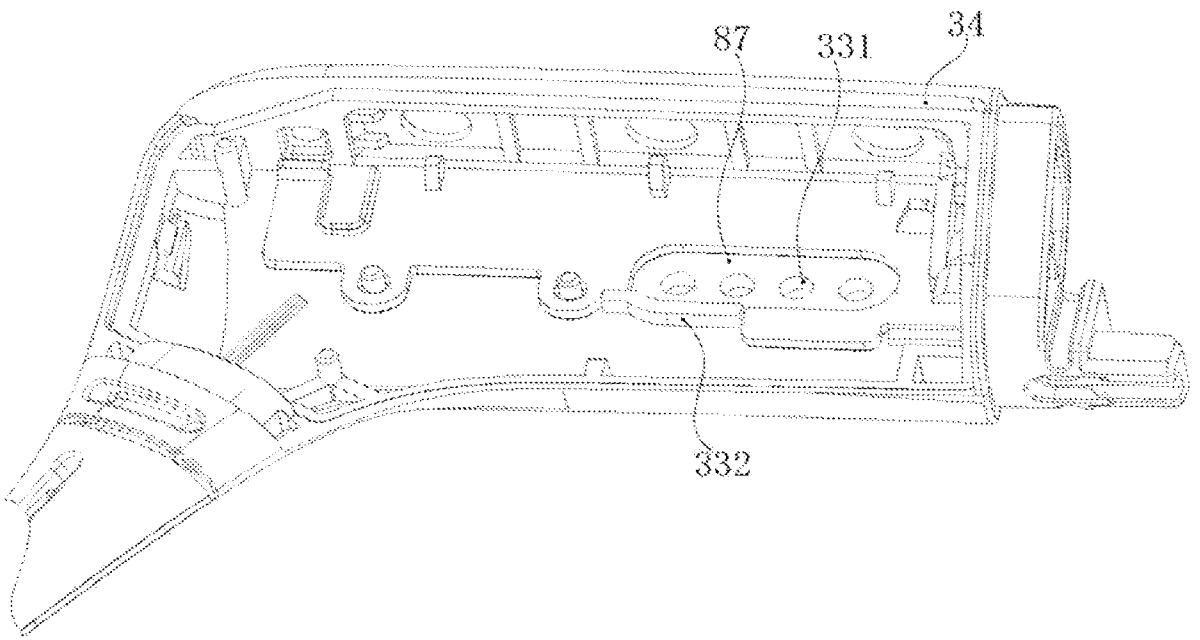


图22

IPR2025-00843; Mojawa
Ex. 1002 - Page 874

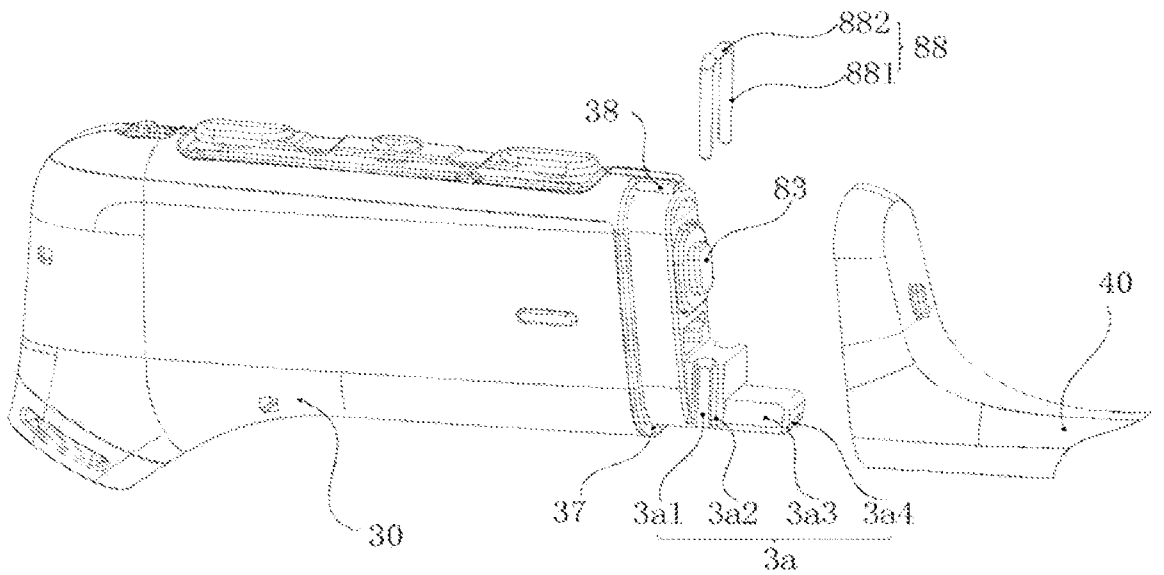


图23

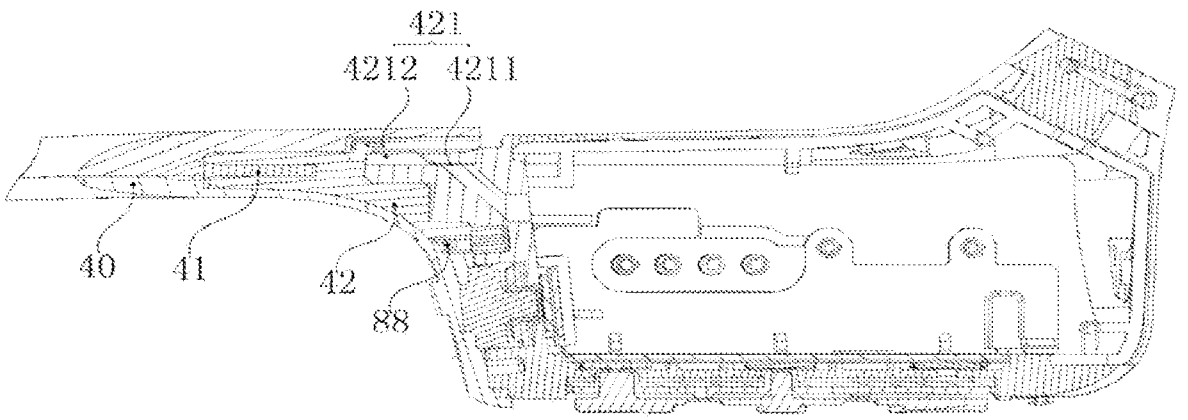


图24

IPR2025-00843; Mojawa
Ex. 1002 - Page 875

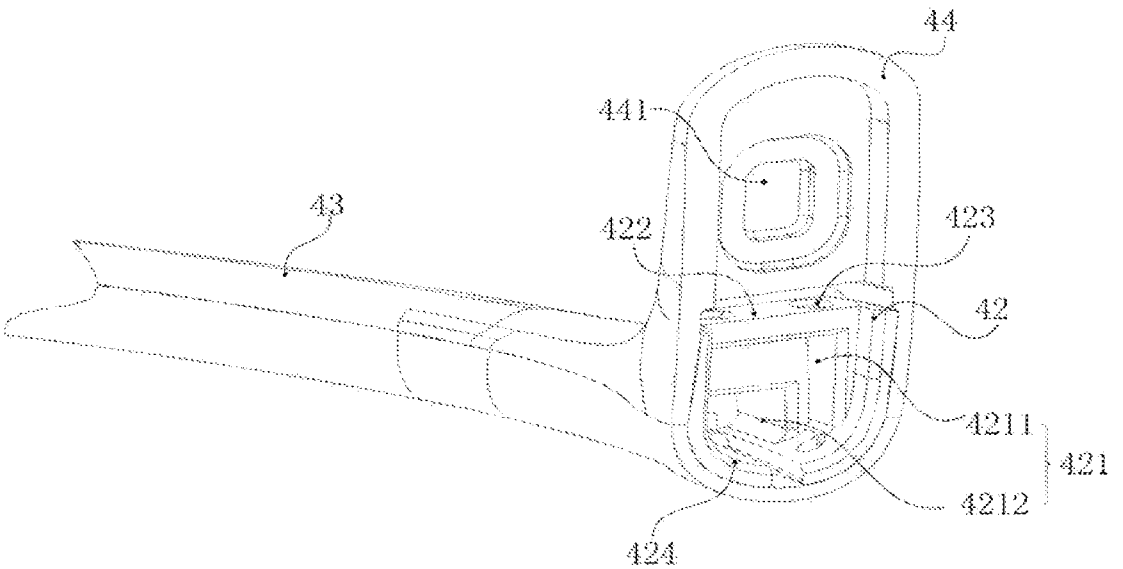


图25

IPR2025-00843; Mojawa
Ex. 1002 - Page 876

Bluetooth earphone

Abstract

The utility model discloses a Bluetooth earphone, comprising an earphone wire one end of which is connected to an earplug, a sheet-shaped arc assembly which is also used as a hair clasp and an soft sheath wrapping the arc assembly. The arc assembly is provided with a Bluetooth module and a battery providing power to the Bluetooth module; the other end of the earphone wire is connected to the sound frequency output end of the Bluetooth module; the arc assembly is provided with a through hole for fixing the earplug; the soft sheath is provided with an earplug hole corresponding to the through hole; the inner side of the soft sheath is provided with a disassembling opening along the arc direction of the arc assembly; and the outside of the soft sheath is provided with an earphone wire outlet. The Bluetooth earphone provided by the utility model easily changes the soft sheath, resists shock and contains and fixes the earplug and the earphone wire, and prevents the earphone wire which is connected to the earplug from being pulled apart.

CN203827497U

China

Other languages: Chinese

Inventor: 马强, 何成强

Worldwide applications

2014 CN

Application CN201420234639.1U events

2014-05-09	Application filed by 马强
2014-05-09	Priority to CN201420234639.1U
2014-09-10	Application granted
2014-09-10	Publication of CN203827497U

Info: Cited by (2), Legal events, Similar documents, Priority and Related Applications

External links: Espacenet, Global Dossier, Discuss

Description

Bluetooth earphone

Technical field

The utility model relates to wireless communication technology field, relates in particular to a kind of bluetooth earphone.

Background technology

Existing existing bluetooth earphone is mainly divided into supra-aural, wear-type, and neck is worn formula.Common supra-aural or stand-by time are very short, and impact is used, or heavy, and wearing for a long time can injury ear.And the relative tonequality of headphone can be got well, soundproof effect is good, and standby and service time are long, but heavy, not portable, also inconvenient long-time use.Neck is worn formula bluetooth earphone, and standby and service time are relatively long, and gravity is shared by neck, for ear decompression, wears for a long time and does not also injure ear, even be also convenient for carrying and use in motion state, but can not wear.

Utility model content

Claims (9)

Hide Dependent

1. a bluetooth earphone, it is characterized in that, comprise that one end is connected with the earphone cord of earplug, double as the sheet arc assembly of hair band and the soft sheath of the described arc assembly of parcel, described arc assembly is provided with bluetooth module and the battery for bluetooth module power supply, the other end of described earphone cord is connected with the audio output of described bluetooth module, described arc assembly is provided with the through hole that can fix earplug, described soft sheath is provided with the earplug hole corresponding with described through hole, described soft sheath inner side is provided with dismounting mouthful along the circular arc direction of arc assembly, the outside of described soft sheath is provided with earphone cord outlet.

2. bluetooth earphone according to claim 1, is characterized in that, described earplug hole is cross.

3. bluetooth earphone according to claim 1, is characterized in that, the outside of described

Based on this, neck is worn and can work as the bluetooth earphone that hair band uses to be necessary to propose a kind of new can wearing.

The utility model is to realize like this, a kind of bluetooth earphone, comprise that one end is connected with the earphone cord of earplug, double as the sheet arc assembly of hair band and the soft sheath of the described arc assembly of parcel, described arc assembly is provided with bluetooth module and the battery for bluetooth module power supply, the other end of described earphone cord is connected with the audio output of described bluetooth module, described arc assembly is provided with the through hole that can fix earplug, described soft sheath is provided with the earplug hole corresponding with described through hole, described soft sheath inner side is provided with dismounting mouthful along the circular arc direction of arc assembly, the outside of described soft sheath is provided with earphone cord outlet.

In the technical program, soft sheath inner side is provided with dismounting mouthful along the circular arc direction of arc assembly, can be convenient for changing soft sheath, and soft sheath can protect earphone can not to be broken; The top that can doubiely make the sheet arc assembly of hair band is provided with the through hole that can fix earplug, and on soft sheath, there is corresponding with it earplug hole, earplug can be placed in through hole, can receive fixing earplug, pulls apart the earphone cord that connects earplug while preventing from not using earplug.

Further, described earplug hole is cross.More easily fix earplug, make earplug be difficult for dropping out the through hole from fixing earplug.

Further, the outside of described soft sheath is provided with earphone wire casing, and one end of this earphone wire casing is connected with the earplug hole of described soft sheath, and the other end is connected with the earphone cord outlet of described soft sheath.Earphone cord can be accommodated in earphone wire casing, thereby while preventing from wearing earphone, earphone cord is suspended to earplug is pulled from can fix the through hole of earplug.

Further, described earphone wire casing is provided with earphone cord buckle.Fixed earphone line better, prevents that earphone cord from dropping out from wire casing.

Further, described soft sheath is detachable silica gel sheath or detachable cloth cover or detachable leather sheath.Pliability and the ductility of silica gel are fine, can change more easily silica gel sheath, and soft silica gel cover is for translucent, and LED lamp that can be bright while being provided with use on bluetooth earphone, can not need to arrange LED lamp opening and also can see that bluetooth earphone is no in use state.

soft sheath is provided with earphone wire casing, and one end of this earphone wire casing is connected with the earplug hole of described soft sheath, and the other end is connected with the earphone cord outlet of described soft sheath.

4. bluetooth earphone according to claim 3, is characterized in that, described earphone wire casing is provided with earphone cord buckle.

5. bluetooth earphone according to claim 1, is characterized in that, described soft sheath is detachable silica gel sheath or detachable cloth cover or detachable leather sheath.

6. bluetooth earphone according to claim 1, is characterized in that, described battery and described bluetooth module are arranged at respectively the both sides of arc assembly, and the capacity of described battery is 500mAh-700mAh.

7. bluetooth earphone according to claim 1, is characterized in that, described battery is rechargeable battery, is provided with charge port with the described arc assembly end of described bluetooth module homonymy, and the corresponding described charge port of described soft sheath is provided with opening.

8. bluetooth earphone according to claim 1, is characterized in that, described arc assembly is provided with Bluetooth switch button, and on described soft sheath, corresponding described Bluetooth switch button is provided with and presses projection.

9. bluetooth earphone according to claim 1, is characterized in that, the inner side at described arc assembly two ends is provided with dentation strip gab, and loudspeaker are connected with bluetooth module by connecting firmware, and described connection firmware can slide along described dentation strip gab.

Further, described battery and described bluetooth module are arranged at respectively the both sides of arc assembly, and the capacity of described battery is 500mAh-700mAh.Battery and bluetooth module are arranged at respectively the both sides of arc assembly, and the battery of more volume can be set, and more jumbo battery also just can be set.

Further, described battery is rechargeable battery, is provided with charge port with the described arc assembly end of described bluetooth mainboard homonymy, and the corresponding described charge port of described soft sheath is provided with opening, conveniently charges the battery.

Further, described arc assembly is provided with Bluetooth switch button, and on described soft sheath, corresponding described Bluetooth switch bution is provided with and presses projection, can person easy to use touch key position with hand in the time wearing earphone, switch bluetooth.

Further, the inner side at described arc assembly two ends is provided with dentation strip gab, and loudspeaker are connected with bluetooth module by connecting firmware, and described connection firmware can slide along described dentation strip gab, and adjustable horn position adapts to the different crowd of head size.

The beneficial effects of the utility model are:

(1) bluetooth earphone can be worn on neck or as hair band, increase comfortableness when bluetooth earphone uses, and more attractive in appearance and practical;

(2) soft sheath inner side is provided with dismounting mouthful along the circular arc direction of arc assembly, can easily change soft sheath, and soft sheath can protect earphone can not to be broken;

(3) top that can doubleiy make the sheet arc assembly of hair band is provided with the through hole that can fix earplug, and on soft sheath, there is corresponding with it earplug hole, earplug can be placed in through hole, can receive fixing earplug, pulls apart the earphone cord that connects earplug while preventing from not using earplug;

(4) bluetooth earphone can be used as circumaural earphone use, and in noisy environment or in self-space of needs, the occupation mode of ear-shield type can effectively completely cut off external noise, strengthens acoustical quality.

Brief description of the drawings

Fig. 1 is the schematic diagram of the arc assembly of bluetooth earphone described in the utility model embodiment 1;

Fig. 2 is the structural representation of bluetooth earphone described in the utility model embodiment 1;

Fig. 3 is the utility model embodiment 1 middle ear consent schematic diagram;

Fig. 4 is the schematic diagram of the structure arc assembly of bluetooth earphone described in the utility model embodiment 3;

Fig. 5 is the schematic diagram of the connecting elements of bluetooth earphone described in the utility model embodiment 3;

Fig. 6 is the schematic diagram of the loudspeaker of bluetooth earphone described in the utility model embodiment 3;

Fig. 7 is the cross sectional representation at soft silica gel cover top in the utility model embodiment 1,2 and 3;

Description of reference numerals:

1-battery, 2-Bluetooth switch button, 3-PCBA mainboard, 4-FPC connecting line, 5-LED lamp, 6-can fix the through hole of earplug, the outlet of 7-earphone cord, and 8-dismantles mouth, 9-earphone cord, 10-earphone wire casing, 11-earplug hole, 12-loudspeaker, 13-presses projection, and 14-connects firmware, 15-dentation strip gab.

Embodiment

Below in conjunction with accompanying drawing, embodiment of the present utility model is elaborated.

Embodiment 1:

As shown in Figure 1, Figure 2, shown in Fig. 3 and Fig. 7, a kind of bluetooth earphone, it comprises being worn on neck or as the arc assembly of hair band and the soft silica gel cover of parcel arc assembly.On arc assembly, be provided with battery 1, Bluetooth switch button 2, PCBA mainboard 3, FPC connecting line 4, LED lamp 5 and can fix the through hole 6 of earplug.

As shown in Fig. 1,2,3 and 7, soft silica gel puts and is provided with earphone cord outlet 7, dismounting mouth 8, earphone wire casing 10, earplug hole 11 and presses projection 13.Pliability and the ductility of silica gel are fine, can change more easily, and soft silica gel cover are for translucent, on bluetooth earphone, be provided with can be bright while use LED lamp 4, do not need to arrange LED lamp 4 openings and can see that bluetooth earphone is no in use state yet.

As Fig. 1, 2, shown in 3 and 7, earplug is connected with arc assembly by earphone cord 9, one end of earphone wire casing 10 is connected with the earplug hole 11 of soft silica gel cover, the other end is connected with the earphone cord outlet 7 of soft silica gel cover, arc assembly is packed in soft silica gel cover along the dismounting mouth 8 of the circular arc direction of arc assembly by being arranged on soft silica gel cover inner side, earphone cord 9 exports 7 from earphone cord and involves, earphone cord 9 is fixed in the earphone wire

casing 10 of winding headphone line 9, earphone wire casing 10 is provided with earphone cord buckle, fixed earphone line 9 better, earplug is placed in the through hole 6 that can fix earplug by earplug hole 11.

As shown in Fig. 1,2,3 and 7, earplug hole 11 is cross, more attractive in appearance and more easily fix earplug, and earplug can not dropped out from hole.Soft silica gel put corresponding Bluetooth switch button 2 be provided with press projection 13, can conveniently find Bluetooth switch button 2, switch bluetooth.

In the present embodiment 1, battery 1 is rechargeable battery, and the capacity of battery 1 is 700 mAh, once after charging in the sustainable uninterrupted use of bluetooth connection status more than 60 hours, be provided with charge port with the arc assembly end of PCBA mainboard 3 homonymies, soft silica gel overlaps corresponding charge port and is provided with opening, conveniently charges to battery 1.The bluetooth earphone that the utility model embodiment 1 is provided uses or is directly worn on neck as hair band, when use, earplug is taken out from can fix the through hole 6 of earplug, earphone cord 9 pulls out from the earphone wire casing 10 of winding headphone line 9, earplug is inserted in ear, after finishing using, then earphone cord 9 is received in earphone wire casing 10, earplug inserts and is placed in the hole 6 of earplug.

Embodiment 2:

Soft silica gel cover in embodiment 1 is replaced to leather sheath or cloth cover, and the capacity of battery is adjusted to 500 mAh, and all the other are with embodiment 1.

Embodiment 3:

As shown in Fig. 4,5,6 and 7, earplug in embodiment 1 is replaced to loudspeaker 12, the inner side at arc assembly two ends is provided with dentation strip gab 15, loudspeaker 12 are connected with bluetooth module by connecting firmware 14, connecting firmware can slide along dentation strip gab 15, adjustable horn 12 positions, adapt to the different crowd of head size, to facilitate the earphone user who does not like using built-in earplug.

The above embodiment has only expressed embodiment of the present utility model, and it describes comparatively concrete and detailed, but can not therefore be interpreted as the restriction to the utility model the scope of the claims.It should be pointed out that for the person of ordinary skill of the art, without departing from the concept of the premise utility, can also make some distortion and improvement, these all belong to protection range of the present utility model.

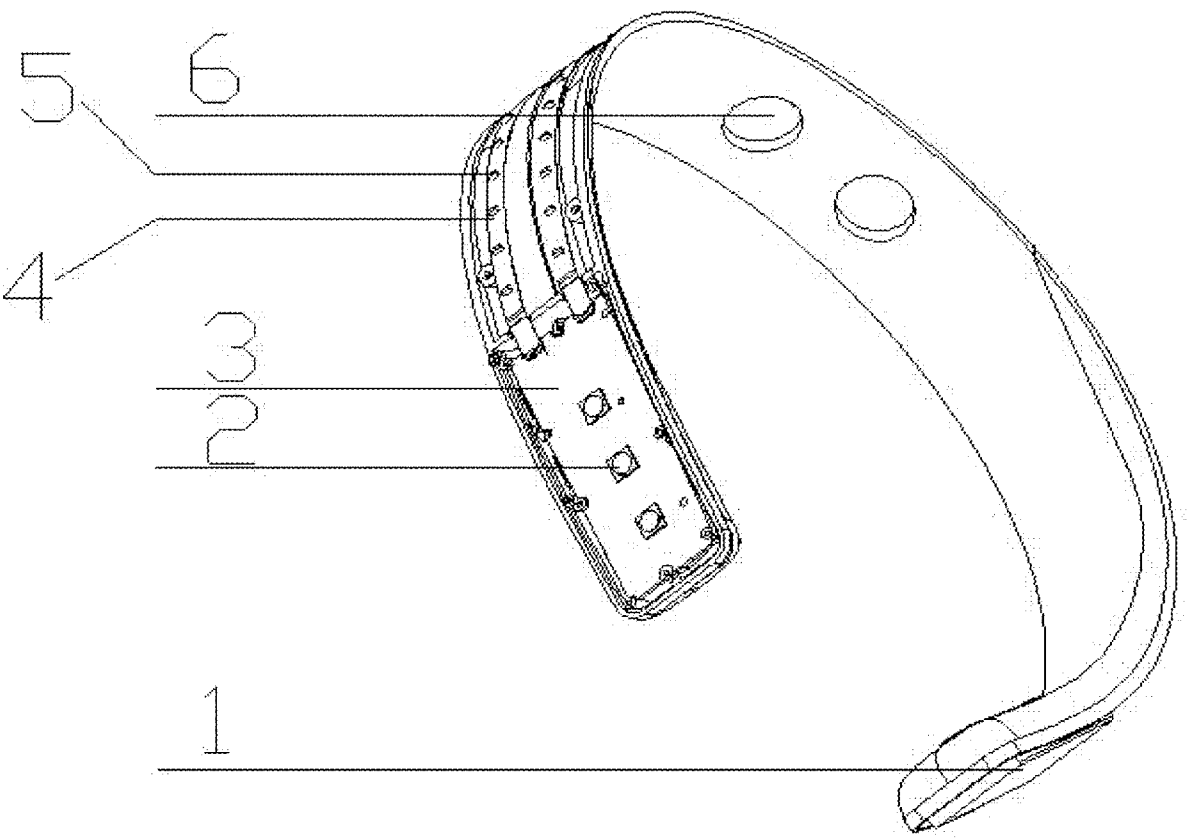


图 1

IPR2025-00843; Mojawa
Ex. 1002 - Page 882

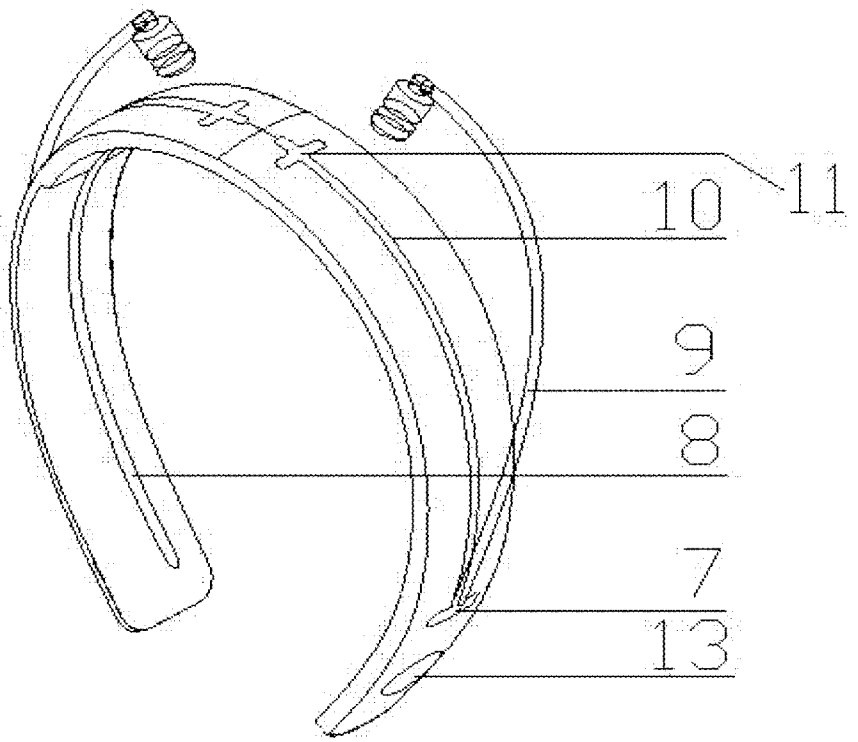


图 2

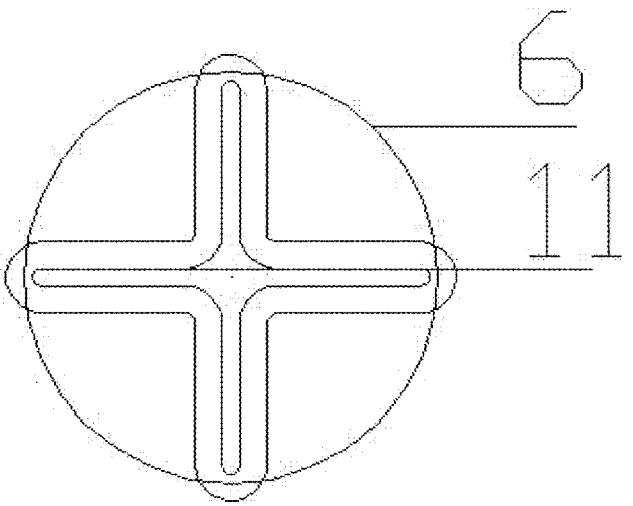


图 3

IPR2025-00843; Mojawa
Ex. 1002 - Page 883

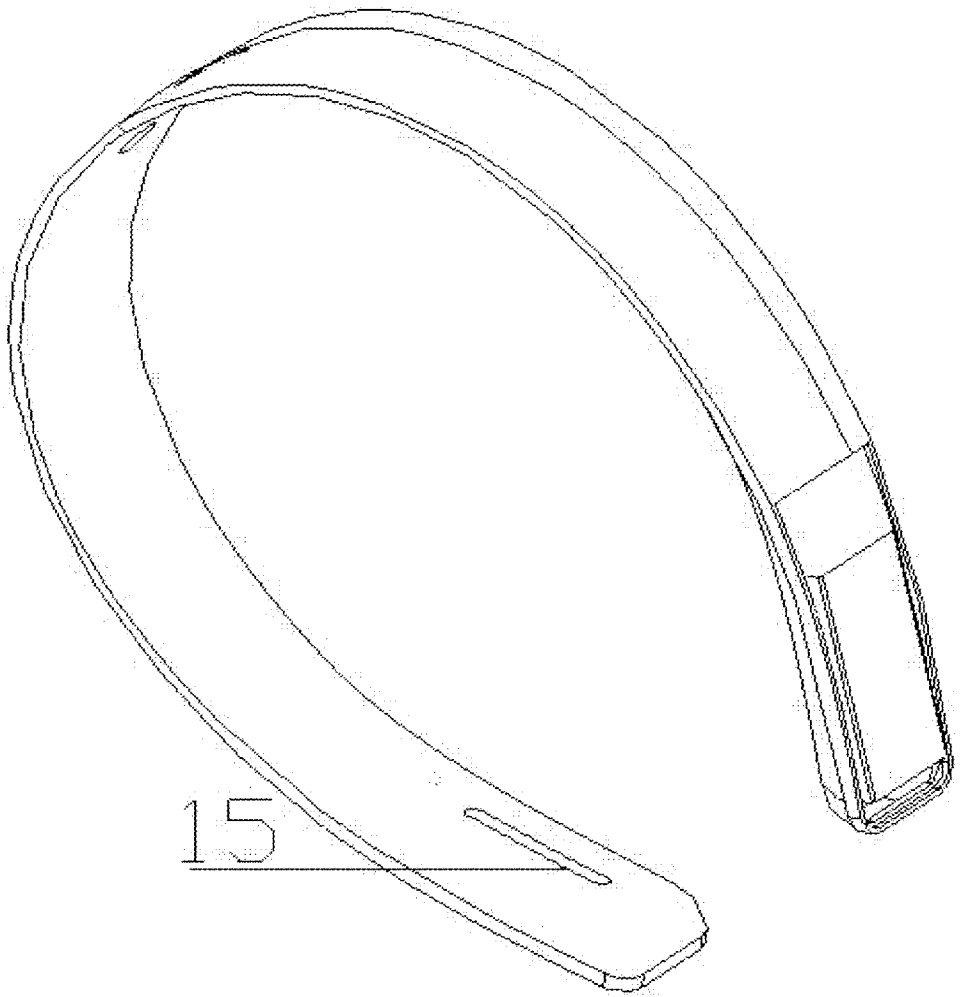


图 4

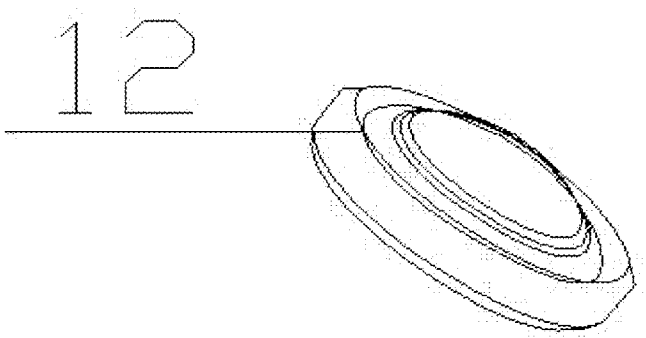


图 5

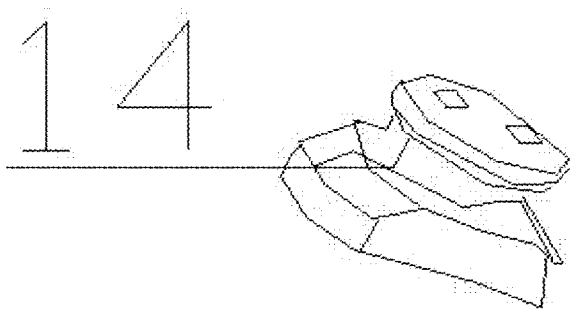


图 6

IPR2025-00843; Mojawa
Ex. 1002 - Page 884

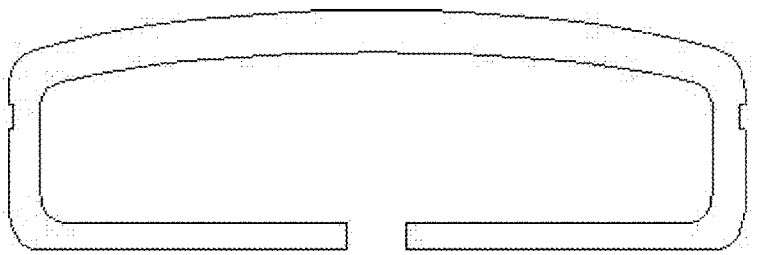


图 7

IPR2025-00843; Mojawa
Ex. 1002 - Page 885

(19)中华人民共和国国家知识产权局

(12)实用新型专利

(10)授权公告号 CN 203827497 U
(45)授权公告日 2014.09.10

(21)申请号 201420234639.1

(22)申请日 2014.05.09

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(72)发明人 马强 何成丽

(51)Int.Cl.
H04R 1/10(2006.01)

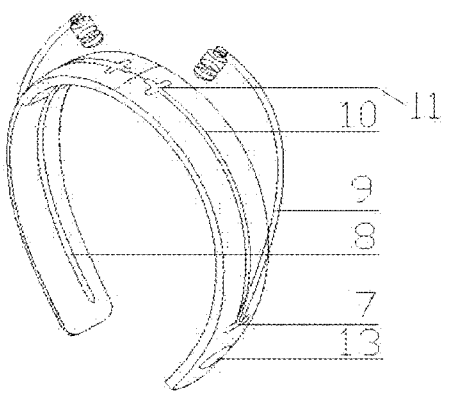
权利要求书1页 说明书3页 附图4页

(54)实用新型名称

蓝牙耳机

(57)摘要

本实用新型公开了一种蓝牙耳机，包括一端连接有耳塞的耳机线、兼作发箍的片状弧形组件和包裹所述弧形组件的软质护套，所述弧形组件上设有蓝牙模块和为蓝牙模块供电的电池，所述耳机线的另一端与所述蓝牙模块的音频输出端连接，所述弧形组件上设有可固定耳塞的通孔，所述软质护套设有与所述通孔对应的耳塞孔，所述软质护套内侧沿弧形组件的圆弧方向设有拆卸口，所述软质护套的外侧设有耳机线出口。本实用新型提供的蓝牙耳机可以轻松更换软质护套、耐摔并且可收纳固定耳塞以及耳机线，防止不使用耳塞时扯断连接耳塞的耳机线。



CN 203827497 U

1. 一种蓝牙耳机，其特征在于，包括一端连接有耳塞的耳机线、兼作发箍的片状弧形组件和包裹所述弧形组件的软质护套，所述弧形组件上设有蓝牙模块和为蓝牙模块供电的电池，所述耳机线的另一端与所述蓝牙模块的音频输出端连接，所述弧形组件上设有可固定耳塞的通孔，所述软质护套设有与所述通孔对应的耳塞孔，所述软质护套内侧沿弧形组件的圆弧方向设有拆卸口，所述软质护套的外侧设有耳机线出口。

2. 根据权利要求 1 所述的蓝牙耳机，其特征在于，所述耳塞孔为十字形。

3. 根据权利要求 1 所述的蓝牙耳机，其特征在于，所述软质护套的外侧设有耳机线槽，该耳机线槽的一端与所述软质护套的耳塞孔相连，另一端与所述软质护套的耳机线出口相连。

4. 根据权利要求 3 所述的蓝牙耳机，其特征在于，所述耳机线槽设有耳机线卡扣。

5. 根据权利要求 1 所述的蓝牙耳机，其特征在于，所述软质护套为可拆卸式硅胶套或可拆卸式布套或可拆卸式皮套。

6. 根据权利要求 1 所述的蓝牙耳机，其特征在于，所述电池和所述蓝牙模块分别设置于弧形组件的两侧，所述电池的容量为 500mAh-700mAh。

7. 根据权利要求 1 所述的蓝牙耳机，其特征在于，所述电池为可充电电池，与所述蓝牙模块同侧的所述弧形组件端部设有充电口，所述软质护套对应所述充电口设有开口。

8. 根据权利要求 1 所述的蓝牙耳机，其特征在于，所述弧形组件上设有蓝牙开关按钮，所述软质护套上对应所述蓝牙开关按钮设有按压凸起。

9. 根据权利要求 1 所述的蓝牙耳机，其特征在于，所述弧形组件两端的内侧设置有齿状条形开口，喇叭通过连接固件与蓝牙模块连接，所述连接固件可沿着所述齿状条形开口滑动。

IPR2025-00843; Mojawa
Ex. 1002 - Page 887

蓝牙耳机

技术领域

[0001] 本实用新型涉及无线通信技术领域，尤其涉及一种蓝牙耳机。

背景技术

[0002] 现有的现有蓝牙耳机主要分为耳挂式，头戴式，颈戴式。普通耳挂式要么待机时间很短，影响使用，要么笨重，长时间佩戴会伤害耳朵。而头戴式耳机相对音质会好，隔音效果好，待机和使用时间长，但是笨重，不便携，也不方便长时间使用。颈戴式蓝牙耳机，待机和使用时间相对较长，而重力由颈部分担，为耳朵减压，长时间佩戴也不伤害耳朵，即使在运动状态也方便携带和使用，但是不能头戴。

实用新型内容

[0003] 基于此，有必要提出一种新的既能头戴颈戴又能当发箍使用的蓝牙耳机。

[0004] 本实用新型是这样实现的，一种蓝牙耳机，包括一端连接有耳塞的耳机线、兼作发箍的片状弧形组件和包裹所述弧形组件的软质护套，所述弧形组件上设有蓝牙模块和为蓝牙模块供电的电池，所述耳机线的另一端与所述蓝牙模块的音频输出端连接，所述弧形组件上设有可固定耳塞的通孔，所述软质护套设有与所述通孔对应的耳塞孔，所述软质护套内侧沿弧形组件的圆弧方向设有拆卸口，所述软质护套的外侧设有耳机线出口。

[0005] 本技术方案中，软质护套内侧沿弧形组件的圆弧方向设有拆卸口，可以方便更换软质护套，并且软质护套能够保护耳机不会被摔坏；能够兼做发箍的片状弧形组件的顶部设有可固定耳塞的通孔，并且软质护套上有与之对应的耳塞孔，耳塞可放置在通孔内，能够收纳固定耳塞，防止不使用耳塞时扯断连接耳塞的耳机线。

[0006] 进一步地，所述耳塞孔为十字形。更容易固定耳塞，使耳塞不易从可固定耳塞的通孔中掉出。

[0007] 进一步地，所述软质护套的外侧设有耳机线槽，该耳机线槽的一端与所述软质护套的耳塞孔相连，另一端与所述软质护套的耳机线出口相连。耳机线能够收纳在耳机线槽中，防止佩戴耳机时耳机线被挂到从而把耳塞从可固定耳塞的通孔中扯出。

[0008] 进一步地，所述耳机线槽设有耳机线卡扣。能够更好地固定耳机线，防止耳机线从线槽中掉出。

[0009] 进一步地，所述软质护套为可拆卸式硅胶套或可拆卸式布套或可拆卸式皮套。硅胶的柔韧性和延展性很好，能够更方便的更换硅胶套，并且软硅胶套为半透明，蓝牙耳机上设置有使用时能够亮的 LED 灯，可以不需设置 LED 灯开口也能够看到蓝牙耳机否处于使用状态。

[0010] 进一步地，所述电池和所述蓝牙模块分别设置于弧形组件的两侧，所述电池的容量为 500mAh-700mAh。电池和蓝牙模块分别设置于弧形组件的两侧，能够设置更大体积的电池，也就能够设置更大容量的电池。

[0011] 进一步地，所述电池为可充电电池，与所述蓝牙主板同侧的所述弧形组件端部设

IPR2025-00843; Mojawa
Ex. 1002 - Page 888

有充电口，所述软质护套对应所述充电口设有开口，方便给电池充电。

[0012] 进一步地，所述弧形组件上设有蓝牙开关按钮，所述软质护套上对应所述蓝牙开关按钮设有按压凸起，能够方便使用者在佩戴耳机时用手触摸到按键位置，开关蓝牙。

[0013] 进一步地，所述弧形组件两端的内侧设置有齿状条形开口，喇叭通过连接固件与蓝牙模块连接，所述连接固件可沿着所述齿状条形开口滑动，可调节喇叭位置，适应头部大小不同的人群。

[0014] 本实用新型的有益效果是：

[0015] （1）蓝牙耳机能够佩戴在颈部或用作发箍，增加了蓝牙耳机使用时的舒适性，且更为美观以及实用；

[0016] （2）软质护套内侧沿弧形组件的圆弧方向设有拆卸口，可以轻松更换软质护套，并且软质护套能够保护耳机不会被摔坏；

[0017] （3）能够兼做发箍的片状弧形组件的顶部设有可固定耳塞的通孔，并且软质护套上有与之对应的耳塞孔，耳塞可放置在通孔内，能够收纳固定耳塞，防止不使用耳塞时扯断连接耳塞的耳机线；

[0018] （4）蓝牙耳机可作为耳罩式耳机使用，在嘈杂的环境中或者在需要一个自我空间的时候，耳罩式的使用方式可以有效隔绝外部噪音，增强音质效果。

附图说明

[0019] 图 1 是本实用新型实施例 1 所述蓝牙耳机的弧形组件的示意图；

[0020] 图 2 是本实用新型实施例 1 所述蓝牙耳机的结构示意图；

[0021] 图 3 是本实用新型实施例 1 中耳塞孔示意图；

[0022] 图 4 是本实用新型实施例 3 所述蓝牙耳机的结构弧形组件的示意图；

[0023] 图 5 是本实用新型实施例 3 所述蓝牙耳机的连接构件的示意图；

[0024] 图 6 是本实用新型实施例 3 所述蓝牙耳机的喇叭的示意图；

[0025] 图 7 是本实用新型实施例 1、2 和 3 中软硅胶套顶部的横截面示意图；

[0026] 附图标记说明：

[0027] 1- 电池，2- 蓝牙开关按钮，3-PCBA 主板，4-FPC 连接线，5-LED 灯，6- 可固定耳塞的通孔，7- 耳机线出口，8- 拆卸口，9- 耳机线，10- 耳机线槽，11- 耳塞孔，12- 喇叭，13- 按压凸起，14- 连接固件，15- 齿状条形开口。

具体实施方式

[0028] 下面结合附图对本实用新型的实施例进行详细说明。

[0029] 实施例 1：

[0030] 如图 1、图 2、图 3 和图 7 所示，一种蓝牙耳机，它包括用以佩戴在颈部或用作发箍的弧形组件和包裹弧形组件的软硅胶套。弧形组件上设置有电池 1、蓝牙开关按钮 2、PCBA 主板 3、FPC 连接线 4、LED 灯 5 和可固定耳塞的通孔 6。

[0031] 如图 1、2、3 和 7 所示，软硅胶套上设置有耳机线出口 7、拆卸口 8、耳机线槽 10、耳塞孔 11 和按压凸起 13。硅胶的柔韧性和延展性很好，能够更方便的更换，并且软硅胶套为半透明，蓝牙耳机上设置有使用时能够亮的 LED 灯 4，不需设置 LED 灯 4 开口也能够看到蓝

IPR2025-00843; Mojawa
Ex. 1002 - Page 889

牙耳机否处于使用状态。

[0032] 如图 1、2、3 和 7 所示，耳塞通过耳机线 9 与弧形组件相连，耳机线槽 10 的一端与软硅胶套的耳塞孔 11 相连，另一端与软硅胶套的耳机线出口 7 相连，将弧形组件通过设置在软硅胶套内侧沿弧形组件的圆弧方向的拆卸口 8 装入软硅胶套中，耳机线 9 从耳机线出口 7 处牵出，把耳机线 9 固定在收纳耳机线 9 的耳机线槽 10 中，耳机线槽 10 设置有耳机线卡扣，能够更好地固定耳机线 9，把耳塞通过耳塞孔 11 放置到能固定耳塞的通孔 6 中。

[0033] 如图 1、2、3 和 7 所示，耳塞孔 11 为十字形，更美观以及更容易固定耳塞，使耳塞不会从孔洞中掉出。软硅胶套上上对应蓝牙开关按钮 2 设有按压凸起 13，能够方便找到蓝牙开关按钮 2，开关蓝牙。

[0034] 本实施例 1 中，电池 1 为可充电电池，且电池 1 的容量为 700 mAh，一次充电后在蓝牙连接状态可持续不间断使用 60 小时以上，与 PCBA 主板 3 同侧的弧形组件端部设有充电口，软硅胶套对应充电口设有开口，方便给电池 1 充电。将本实用新型实施例 1 提供的蓝牙耳机当做发箍使用或者直接戴在脖子上，使用时，将耳塞从可固定耳塞的通孔 6 中取出，耳机线 9 从收纳耳机线 9 的耳机线槽 10 中拉出，将耳塞插入耳中即可，使用完毕后，再将耳机线 9 收纳到耳机线槽 10 中，耳塞插入放置到耳塞的孔洞 6 中。

[0035] 实施例 2：

[0036] 将实施例 1 中的软硅胶套替换成皮套或布套，电池的容量调整成 500 mAh，其余同实施例 1。

[0037] 实施例 3：

[0038] 如图 4、5、6 和 7 所示，将实施例 1 中的耳塞替换成喇叭 12，弧形组件两端的内侧设置有齿状条形开口 15，喇叭 12 通过连接固件 14 与蓝牙模块连接，连接固件可沿着齿状条形开口 15 滑动，可调节喇叭 12 位置，适应头部大小不同的人群，以方便不喜欢使用入耳式耳塞的耳机使用者。

[0039] 以上所述实施例仅表达了本实用新型的具体实施方式，其描述较为具体和详细，但并不能因此而理解为对本实用新型专利范围的限制。应当指出的是，对于本领域的普通技术人员来说，在不脱离本实用新型构思的前提下，还可以做出若干变形和改进，这些都属于本实用新型的保护范围。

IPR2025-00843; Mojawa
Ex. 1002 - Page 890

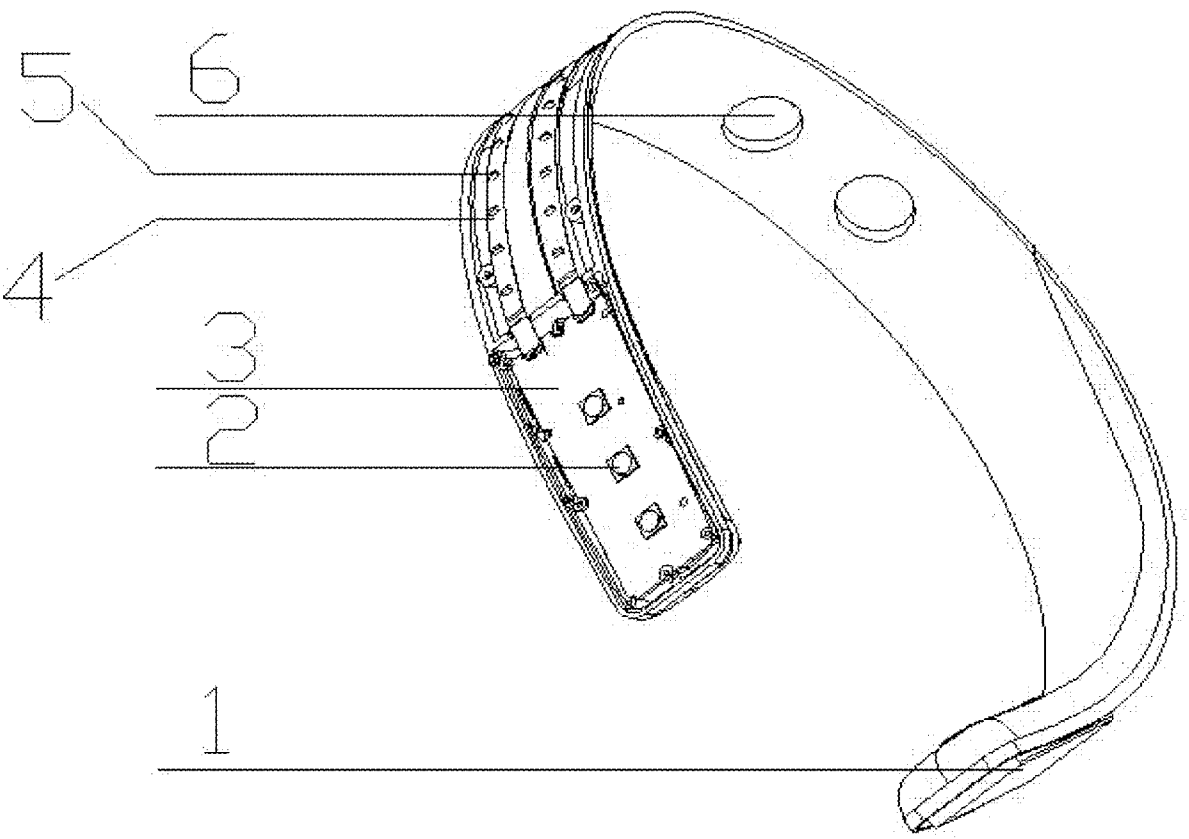


图 1

IPR2025-00843; Mojawa
Ex. 1002 - Page 891

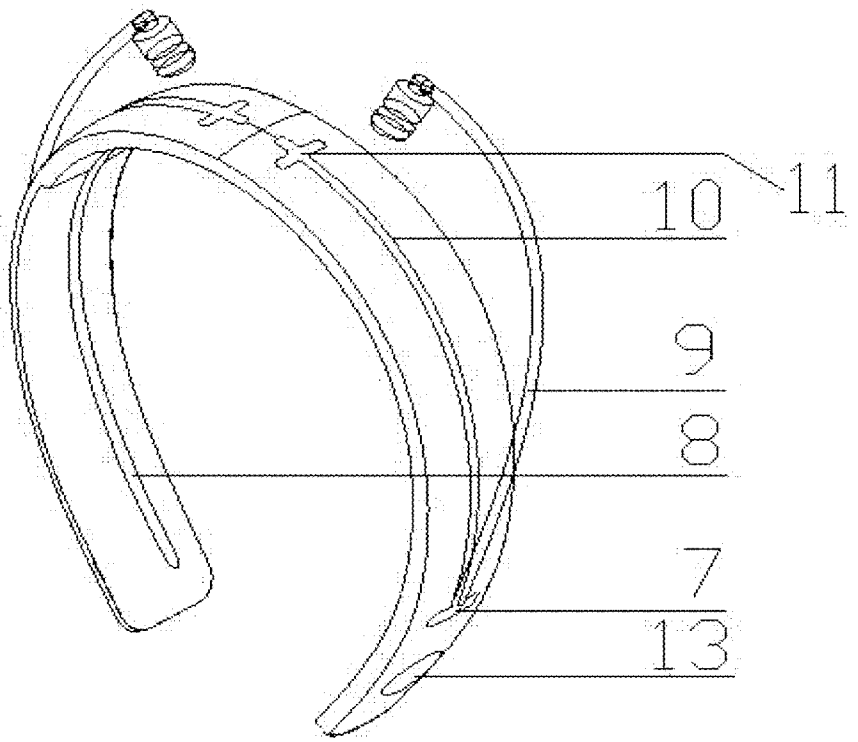


图 2

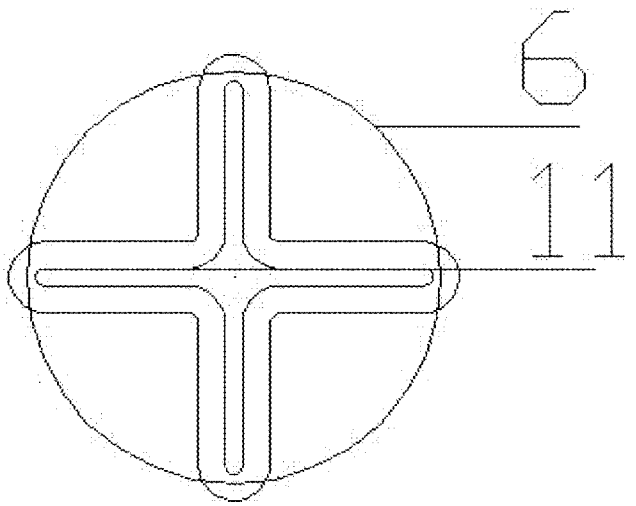


图 3

IPR2025-00843; Mojawa
Ex. 1002 - Page 892

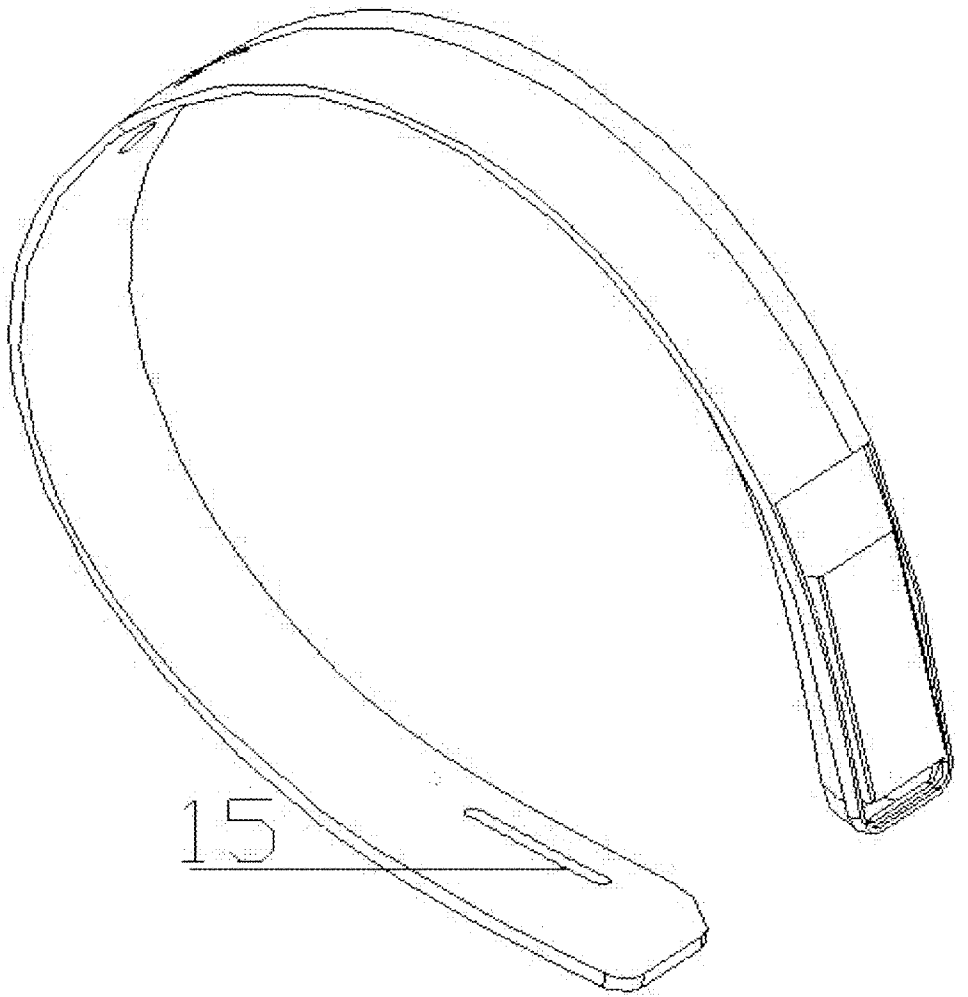


图 4

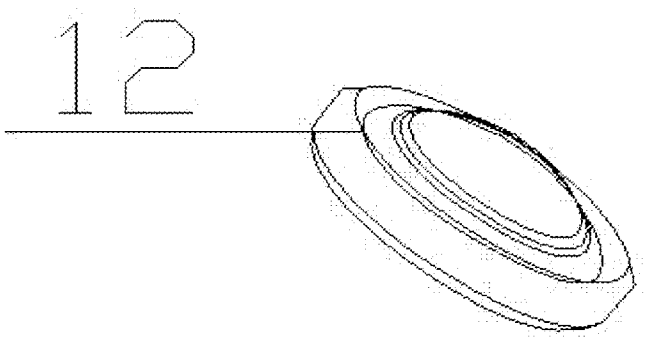


图 5

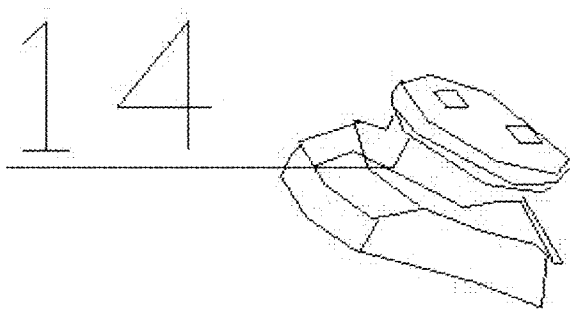


图 6

IPR2025-00843; Mojawa
Ex. 1002 - Page 893

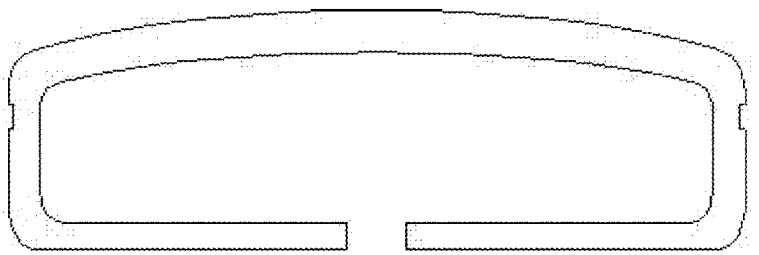


图 7

IPR2025-00843; Mojawa
Ex. 1002 - Page 894

A kind of wear-type bone conduction earphone

Abstract

The utility model discloses a kind of wear-type bone conduction earphone, comprise two osteoacusis loudspeaking components and coupling assembling, coupling assembling comprises connector and sleeve pipe, and connector is the strip that memory metal is made, and its two ends are fixedly connected with two osteoacusis loudspeaking components respectively; Connector is arranged in sleeve pipe; Sleeve pipe is that flexible material is made, and its two ends are connected with two osteoacusis loudspeaking components respectively.By the connector that memory metal is made, the position relationship between two wear-type bone conduction earphones can be changed, thus whole wear-type bone conduction earphone can be bent, reduce volume when it is packed up, so that deposit; Utilize the flexibility of sleeve pipe to make it can bend with connector, and hardness is less than connector, connector can be avoided directly to contact with user's head and cause discomfort, thus ensure to wear comfort level; Can reduce the diameter of connector simultaneously, reduce memory metal material consumption, thus cost is manufactured in reduction.

CN204465795U

China

Other languages: Chinese

Inventor: 刘文邦

Worldwide applications

2014 CN

Application CN201420778147.9U events

2014-12-10	Application filed by 深圳市骏思科技有限公司
2014-12-10	Priority to CN201420778147.9U
2015-07-08	Application granted
2015-07-08	Publication of CN204465795U

Info: Cited by (5), Legal events, Similar documents, Priority and Related Applications

External links: Espacenet, Global Dossier, Discuss

Description

A kind of wear-type bone conduction earphone

Technical field

The utility model relates to earphone field, particularly relates to a kind of wear-type bone conduction earphone.

Background technology

Wear-type bone conduction earphone of the prior art, its shape immobilizes in use procedure, and when packing up, volume is comparatively large, is not easy to deposit, thus makes troubles to user.

Utility model content

The purpose of this utility model is to provide a kind of wear-type bone conduction earphone, and its structure is simple, can reduce volume when packing up, conveniently deposit, and ensures to wear comfort level.

In order to solve the problems of the technologies described above, the utility model provides a kind of wear-type bone conduction earphone, it is characterized in that, comprise two osteoacusis loudspeaking components and

Claims (10)

Hide Dependent

1. a wear-type bone conduction earphone, it is characterized in that, comprise two osteoacusis loudspeaking components and coupling assembling, described coupling assembling comprises connector and sleeve pipe, described connector is the strip that memory metal is made, its two ends are fixedly connected with osteoacusis loudspeaking component described in two respectively, and described connector is arranged in described sleeve pipe; Described sleeve pipe is that flexible material is made, and its two ends are connected with osteoacusis loudspeaking component described in two respectively.

2. wear-type bone conduction earphone according to claim 1, is characterized in that, described coupling assembling is two, and described in two, coupling assembling be arranged in parallel.

3. wear-type bone conduction earphone according to claim 2, is characterized in that, described wear-type bone conduction earphone

coupling assembling, described coupling assembling comprises connector and sleeve pipe, described connector is the strip that memory metal is made, and its two ends are fixedly connected with osteoacusis loudspeaking component described in two respectively, and described connector is arranged in described sleeve pipe; Described sleeve pipe is that flexible material is made, and its two ends are connected with osteoacusis loudspeaking component described in two respectively.

Wherein, described coupling assembling is two, and described in two, coupling assembling be arranged in parallel.

Wherein, described wear-type bone conduction earphone also comprises contiguous block, and described contiguous block is fixedly connected with sleeve pipe described in two, and described contiguous block is positioned at the middle part in described casing length direction.

Wherein, described contiguous block is provided with two through hole, and sleeve pipe described in two is arranged in through hole described in two respectively.

Wherein, described contiguous block is that the flexible material that hardness is less than described connector is made.

Wherein, the cross section of described connector is circular.

Wherein, the end of described connector has been bent to form Embedded Division, and described osteoacusis loudspeaking component is provided with the embedded groove matched with described Embedded Division, and described Embedded Division is installed in described embedded groove.

Wherein, described osteoacusis loudspeaking component comprises the first housing and the second housing, and described embedded groove is arranged on described first housing, and described second housing is fixedly connected on described first housing, and is pressed in described embedded groove by described Embedded Division.

Wherein, described osteoacusis loudspeaking component also comprises electronic module, and described electronic module is housed between described first housing and the second housing.

Wherein, described wear-type bone conduction earphone also comprises wire, and the two ends of described wire are electrically connected on osteoacusis loudspeaking component described in two respectively, and described wire is located in described sleeve pipe.

The wear-type bone conduction earphone that the utility model provides, the connector made by memory metal, can change the position relationship between two wear-type

also comprises contiguous block, and described contiguous block is fixedly connected with sleeve pipe described in two, and described contiguous block is positioned at the middle part in described casing length direction.

4. wear-type bone conduction earphone according to claim 3, is characterized in that, described contiguous block is provided with two through hole, and sleeve pipe described in two is arranged in through hole described in two respectively.

5. wear-type bone conduction earphone according to claim 3, is characterized in that, described contiguous block is that the flexible material that hardness is less than described connector is made.

6. wear-type bone conduction earphone according to claim 1, is characterized in that, the cross section of described connector is circular.

7. wear-type bone conduction earphone according to claim 1, it is characterized in that, the end of described connector has been bent to form Embedded Division, and described osteoacusis loudspeaking component is provided with the embedded groove matched with described Embedded Division, and described Embedded Division is installed in described embedded groove.

8. wear-type bone conduction earphone according to claim 7, it is characterized in that, described osteoacusis loudspeaking component comprises the first housing and the second housing, described embedded groove is arranged on described first housing, described second housing is fixedly connected on described first housing, and is pressed in described embedded groove by described Embedded Division.

9. wear-type bone conduction earphone according to claim 8, is characterized in that, described osteoacusis loudspeaking component also comprises electronic module, and described electronic module is housed between described first housing and the second housing.

10. wear-type bone conduction earphone according to claim 1, is characterized in that, described wear-type bone conduction earphone also comprises wire, and the two ends of described wire are electrically connected on osteoacusis loudspeaking component described in two respectively, and described wire is located in described sleeve pipe.

bone conduction earphones, thus whole wear-type bone conduction earphone can be bent and reduced volume, so that deposit; Utilize the flexibility of sleeve pipe to make it can bend with connector, and hardness is less than connector; connector can be avoided directly to contact with user's head and cause discomfort, thus ensure to wear comfort level; Can reduce the diameter of connector simultaneously, reduce memory metal material consumption, thus cost is manufactured in reduction.

Accompanying drawing explanation

In order to be illustrated more clearly in the technical solution of the utility model, be briefly described to the accompanying drawing used required in execution mode below, apparently, accompanying drawing in the following describes is only execution modes more of the present utility model, for those of ordinary skill in the art, under the prerequisite not paying creative work, other accompanying drawing can also be obtained according to these accompanying drawings.

Fig. 1 is the schematic diagram of the wear-type bone conduction earphone that the utility model execution mode provides;

Fig. 2 is the vertical view of wear-type bone conduction earphone in Fig. 1;

Fig. 3 is the decomposing schematic representation of wear-type bone conduction earphone in Fig. 1.

Embodiment

Below in conjunction with the accompanying drawing in the utility model execution mode, the technical scheme in the utility model execution mode is clearly and completely described.

See also Fig. 1 to Fig. 3, a kind of wear-type bone conduction earphone that the utility model execution mode provides, comprise coupling assembling 1 and two osteoacusis loudspeaking components 2, coupling assembling 1 is for connecting two osteoacusis loudspeaking components 2.Two osteoacusis loudspeaking components 2 are respectively used to export L channel and R channel.

Coupling assembling 1 comprises connector 11 and sleeve pipe 12.The strip that connector 11 is made for memory metal, its two ends are fixedly connected with osteoacusis loudspeaking component 2 described in two respectively, the connector 11 made by memory metal, the position relationship between two wear-type bone conduction earphones can be changed, thus whole wear-type bone conduction earphone can be bent and reduced volume, so that deposit.Connector 11 is arranged in sleeve pipe 12, and sleeve pipe 12 is made for flexible material, and its two ends are connected with two osteoacusis loudspeaking components 2 respectively.Utilize the flexibility of sleeve pipe 12 to make it can bend with connector 11, its

hardness is less than connector 11, connector 11 can be avoided directly to contact with user's head and cause discomfort, thus ensures to wear comfort level; Can reduce the diameter of connector 11 simultaneously, reduce memory metal material consumption, thus cost is manufactured in reduction.Sleeve pipe 12 can adopt plastic tube, rubber tube or other materials.

In the present embodiment, coupling assembling 1 is two, and two coupling assemblings 1 be arranged in parallel, to ensure the structural strength of wear-type bone conduction earphone entirety.Certainly in other embodiments, coupling assembling 1 may also be only one, or is three, or other numbers.

Wear-type bone conduction earphone also comprises contiguous block 3, contiguous block 3 is fixedly connected with two sleeve pipes 12, and contiguous block 3 is positioned at the middle part of sleeve pipe 12 length direction, utilizes the relative position that contiguous block 3 can ensure between two coupling assemblings 1, avoid two coupling assemblings 1 intersect and bring inconvenience to use.

Contiguous block 3 is provided with two through hole 30, and two sleeve pipes 12 are arranged in two through hole 30 respectively, utilize through hole 30, can facilitate the assembly connection between contiguous block 3 and sleeve pipe 12.Herein, in other implementations, contiguous block 3 also realizes the connection between contiguous block 3 and sleeve pipe 12 by the mode such as screw, clamping.

As preferably, the flexible material that contiguous block 3 can be less than connector 11 for hardness is made, and contiguous block 3 is relatively soft, and it can be resisted against the top of user's head, to improve the comfortableness that user wears.Contiguous block 3 can adopt the materials such as rubber to make.

The cross section of connector 11 is circular, so that the multi-angle of connector 11 bends, facilitates the assembly connection with sleeve pipe 12 simultaneously.Certainly, in other embodiments, connector 11 also can be cross section be other shapes such as square sheet.

The end of connector 11 has been bent to form Embedded Division 111, and osteoacusis loudspeaking component 2 is provided with the embedded groove 211 matched with Embedded Division 111, and Embedded Division 111 is installed in embedded groove 211.The Embedded Division 111 of utilization bending and coordinating of embedded groove 211, can strengthen the bonding strength between connector 11 and osteoacusis loudspeaking component 2, prevent connector 11 from deviating from from osteoacusis loudspeaking component 2.More specifically, in the present embodiment, osteoacusis loudspeaking component 2 comprises the first housing 21 and the second housing 22, embedded groove 211 is arranged on

the first housing 21, second housing 22 is fixedly connected on the first housing 21, and Embedded Division 111 is pressed in embedded groove 211, utilize coordinating of the first housing 21 and the second housing 22, the end of connector 11 can be firmly fixed between.

Osteoacusis loudspeaking component 2 also comprises electronic module 23, and electronic module 23 is housed between the first housing 21 and the second housing 22.When assembling formation osteoacusis loudspeaking component 2, can easily by connector 11 and osteoacusis loudspeaking component 2 assembly connection.In the present embodiment, electronic module 23 comprises the wireless transport module for accepting audio signal, by mode wireless reception signals such as infrared, bluetooths, thus can save the earphone cord of whole earphone, easy to use.

Wear-type bone conduction earphone also comprises wire 4, the two ends of wire 4 are electrically connected on two osteoacusis loudspeaking components 2 respectively, wire 4 is located in sleeve pipe 12, utilize wire 4 can realize the signal of telecommunication between two osteoacusis loudspeaking components 2 to connect, only audio interface can be set by module in an osteoacusis loudspeaking component 2 wherein.Certainly, also electrical signal transfer is realized by other modes such as wireless transmission between two osteoacusis loudspeaking components 2.In the present embodiment, wire 4 and one of them connector 11 are located in same sleeve pipe 12 jointly.Connector 11 can be combined closely with the inwall of sleeve pipe 12 and be embedded in sleeve pipe 12, also can be the inwall matched in clearance of connector 11 and sleeve pipe 12, therebetween gap may be used for wearing wire, or connector 11 and wire 4 are together in embedded implantation sleeve pipe 12.

The above is preferred implementation of the present utility model; it should be pointed out that for those skilled in the art, under the prerequisite not departing from the utility model principle, can also make some improvements and modifications, these improvements and modifications are also considered as protection range of the present utility model.

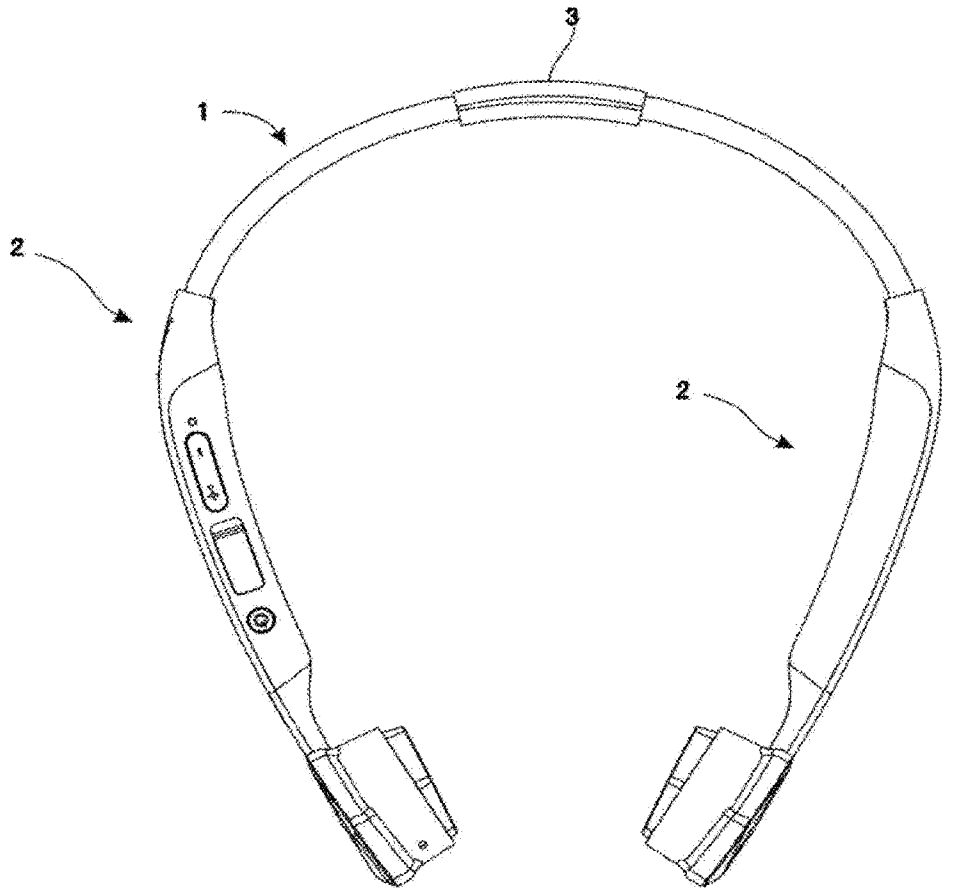


图 1

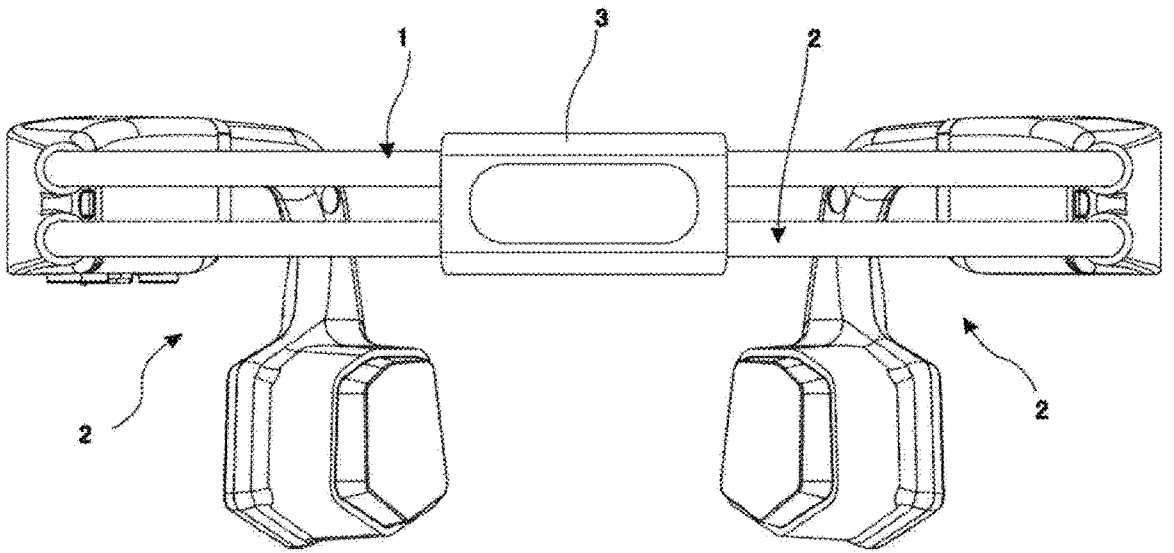


图 2

IPR2025-00843; Mojawa
Ex. 1002 - Page 900

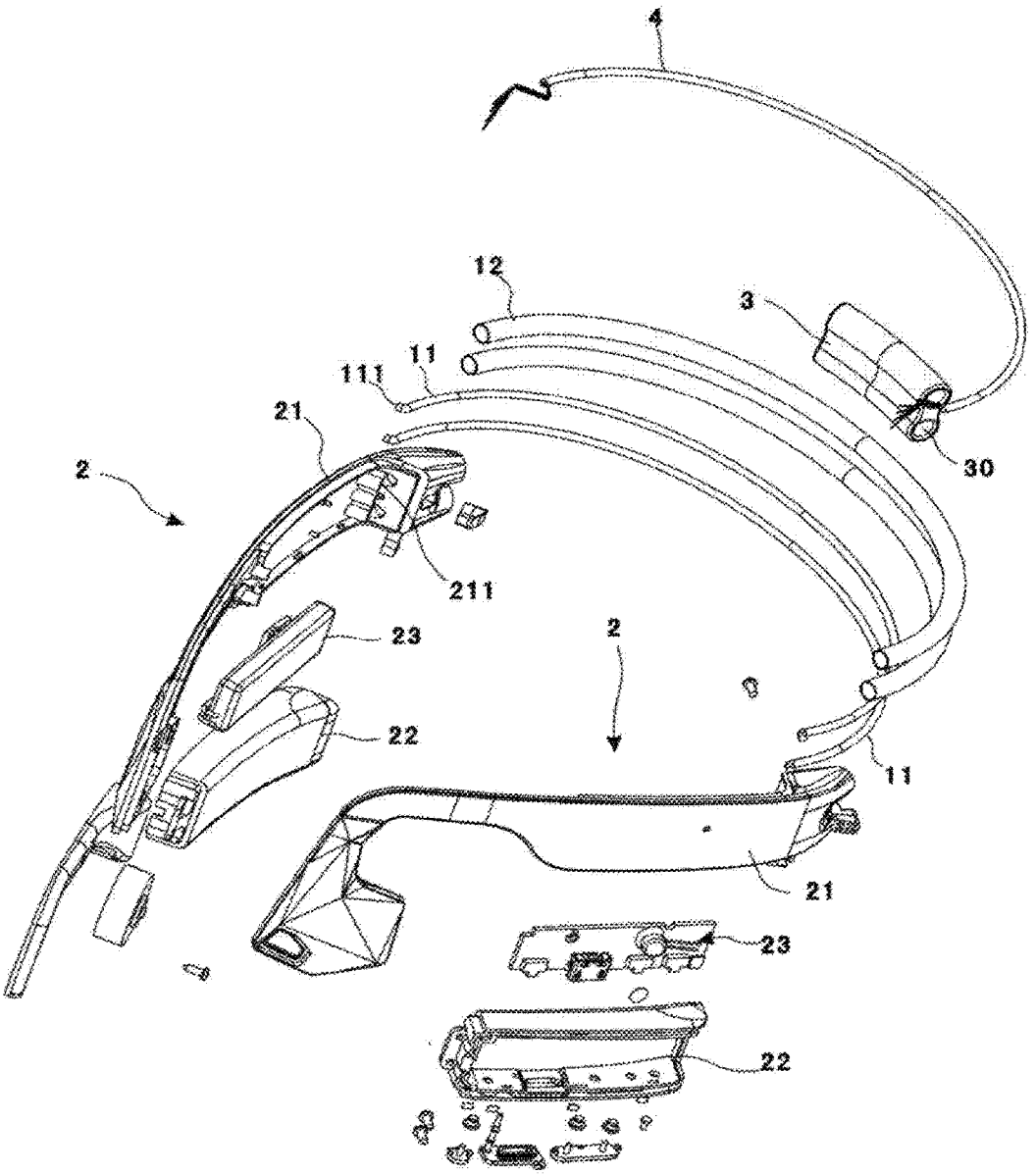


图 3

IPR2025-00843; Mojawa
Ex. 1002 - Page 901

(19)中华人民共和国国家知识产权局

(12)实用新型专利

(10)授权公告号 CN 204465795 U
(45)授权公告日 2015.07.08

(21)申请号 201420778147.9

(22)申请日 2014.12.10

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(51)Int.Cl.
H04R 1/10(2006.01)

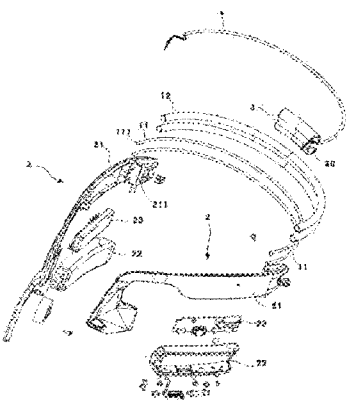
权利要求书1页 说明书3页 附图2页

(54)实用新型名称

一种头戴式骨传导耳机

(57)摘要

本实用新型公开了一种头戴式骨传导耳机，包括两个骨传导扬声组件及连接组件，连接组件包括连接件及套管，连接件为记忆金属制成的长条形，其两端分别与两骨传导扬声组件固定连接；连接件穿设于套管中；套管为柔性材料制成，其两端分别与两骨传导扬声组件连接。通过记忆金属制成的连接件，可以改变两头戴式骨传导耳机之间的位置关系，从而使得整个头戴式骨传导耳机可以弯曲，减小其收起时的体积，以便于存放；利用套管的柔性使其可以随连接件进行弯曲，且硬度小于连接件，可以避免连接件与使用者头部直接接触造成不适，从而保证头戴舒适度；同时可以减小连接件的直径，减少记忆金属材料用量，从而降低生产制作成本。



CN 204465795 U

1. 一种头戴式骨传导耳机，其特征在于，包括两个骨传导扬声组件及连接组件，所述连接组件包括连接件及套管，所述连接件为记忆金属制成的长条形，其两端分别与两所述骨传导扬声组件固定连接，所述连接件穿设于所述套管中；所述套管为柔性材料制成，其两端分别与两所述骨传导扬声组件连接。

2. 根据权利要求 1 所述的头戴式骨传导耳机，其特征在于，所述连接组件为两个，两所述连接组件平行设置。

3. 根据权利要求 2 所述的头戴式骨传导耳机，其特征在于，所述头戴式骨传导耳机还包括连接块，所述连接块与两所述套管固定连接，且所述连接块位于所述套管长度方向的中部。

4. 根据权利要求 3 所述的头戴式骨传导耳机，其特征在于，所述连接块上设有两通孔，两所述套管分别穿设于两所述通孔。

5. 根据权利要求 3 所述的头戴式骨传导耳机，其特征在于，所述连接块为硬度小于所述连接件的软性材料制成。

6. 根据权利要求 1 所述的头戴式骨传导耳机，其特征在于，所述连接件的横截面为圆形。

7. 根据权利要求 1 所述的头戴式骨传导耳机，其特征在于，所述连接件的端部弯折形成有嵌入部，所述骨传导扬声组件上设有与所述嵌入部相配合的嵌入槽，所述嵌入部安装于所述嵌入槽中。

8. 根据权利要求 7 所述的头戴式骨传导耳机，其特征在于，所述骨传导扬声组件包括第一壳体与第二壳体，所述嵌入槽设置在所述第一壳体上，所述第二壳体固定连接于所述第一壳体，并将所述嵌入部压紧在所述嵌入槽中。

9. 根据权利要求 8 所述的头戴式骨传导耳机，其特征在于，所述骨传导扬声组件还包括电子模块，所述电子模块收容在所述第一壳体与第二壳体之间。

10. 根据权利要求 1 所述的头戴式骨传导耳机，其特征在于，所述头戴式骨传导耳机还包括导线，所述导线的两端分别电连接于两所述骨传导扬声组件，所述导线穿设在所述套管内。

IPR2025-00843; Mojawa
Ex. 1002 - Page 903

一种头戴式骨传导耳机

技术领域

[0001] 本实用新型涉及耳机领域，尤其涉及一种头戴式骨传导耳机。

背景技术

[0002] 现有技术中的头戴式骨传导耳机，其形状在使用过程固定不变，收起时体积较大，不便于存放，从而给使用者带来不便。

实用新型内容

[0003] 本实用新型的目的在于提供一种头戴式骨传导耳机，其结构简单，能够缩小收起时的体积，方便存放，且保证头戴舒适度。

[0004] 为了解决上述技术问题，本实用新型提供了一种头戴式骨传导耳机，其特征在于，包括两个骨传导扬声组件及连接组件，所述连接组件包括连接件及套管，所述连接件为记忆金属制成的长条形，其两端分别与两所述骨传导扬声组件固定连接，所述连接件穿设于所述套管中；所述套管为柔性材料制成，其两端分别与两所述骨传导扬声组件连接。

[0005] 其中，所述连接组件为两个，两所述连接组件平行设置。

[0006] 其中，所述头戴式骨传导耳机还包括连接块，所述连接块与两所述套管固定连接，且所述连接块位于所述套管长度方向的中部。

[0007] 其中，所述连接块上设有两通孔，两所述套管分别穿设于两所述通孔。

[0008] 其中，所述连接块为硬度小于所述连接件的软性材料制成。

[0009] 其中，所述连接件的横截面为圆形。

[0010] 其中，所述连接件的端部弯折形成有嵌入部，所述骨传导扬声组件上设有与所述嵌入部相配合的嵌入槽，所述嵌入部安装于所述嵌入槽中。

[0011] 其中，所述骨传导扬声组件包括第一壳体与第二壳体，所述嵌入槽设置在所述第一壳体上，所述第二壳体固定连接于所述第一壳体，并将所述嵌入部压紧在所述嵌入槽中。

[0012] 其中，所述骨传导扬声组件还包括电子模块，所述电子模块收容在所述第一壳体与第二壳体之间。

[0013] 其中，所述头戴式骨传导耳机还包括导线，所述导线的两端分别电连接于两所述骨传导扬声组件，所述导线穿设在所述套管内。

[0014] 本实用新型提供的头戴式骨传导耳机，通过记忆金属制成的连接件，可以改变两头戴式骨传导耳机之间的位置关系，从而使得整个头戴式骨传导耳机可以弯曲而缩小体积，以便于存放；利用套管的柔性使其可以随连接件进行弯曲，且硬度小于连接件，可以避免连接件与使用者头部直接接触造成不适，从而保证头戴舒适度；同时可以减小连接件的直径，减少记忆金属材料用量，从而降低生产制作成本。

附图说明

[0015] 为了更清楚地说明本实用新型的技术方案，下面将对实施方式中所需要使用的附

IPR2025-00843; Mojawa
Ex. 1002 - Page 904

图作简单地介绍，显而易见地，下面描述中的附图仅仅是本实用新型的一些实施方式，对于本领域普通技术人员来讲，在不付出创造性劳动的前提下，还可以根据这些附图获得其他的附图。

[0016] 图 1 是本实用新型实施方式提供的头戴式骨传导耳机的示意图；

[0017] 图 2 是图 1 中头戴式骨传导耳机的俯视图；

[0018] 图 3 是图 1 中头戴式骨传导耳机的分解示意图。

具体实施方式

[0019] 下面将结合本实用新型实施方式中的附图，对本实用新型实施方式中的技术方案进行清楚、完整地描述。

[0020] 请一并参阅图 1 至图 3，本实用新型实施方式提供的一种头戴式骨传导耳机，包括连接组件 1 及两个骨传导扬声组件 2，连接组件 1 用于将两个骨传导扬声组件 2 连接。两骨传导扬声组件 2 分别用于输出左声道与右声道。

[0021] 连接组件 1 包括连接件 11 及套管 12。连接件 11 为记忆金属制成的长条形，其两端分别与两所述骨传导扬声组件 2 固定连接，通过记忆金属制成的连接件 11，可以改变两头戴式骨传导耳机之间的位置关系，从而使得整个头戴式骨传导耳机可以弯曲而缩小体积，以便于存放。连接件 11 穿设于套管 12 中，套管 12 为柔性材料制成，其两端分别与两骨传导扬声组件 2 连接。利用套管 12 的柔性使其可以随连接件 11 进行弯曲，其硬度小于连接件 11，可以避免连接件 11 与使用者头部直接接触造成不适，从而保证头戴舒适度；同时可以减小连接件 11 的直径，减少记忆金属材料用量，从而降低生产制作成本。套管 12 可以采用塑料管、橡胶管或其他材质。

[0022] 本实施例中，连接组件 1 为两个，两连接组件 1 平行设置，以保证头戴式骨传导耳机整体的结构强度。当然在其他实施方式中，连接组件 1 也可以仅为一个，或者为三个，或者其他数目。

[0023] 头戴式骨传导耳机还包括连接块 3，连接块 3 与两套管 12 固定连接，且连接块 3 位于套管 12 长度方向的中部，利用连接块 3 可以保证两连接组件 1 之间的相对位置，避免两连接组件 1 交叉而对使用造成不便。

[0024] 连接块 3 上设有两通孔 30，两套管 12 分别穿设于两通孔 30，利用通孔 30，可以方便连接块 3 与套管 12 之间的装配连接。此处，在其他的实施方式中，连接块 3 亦可通过螺钉、卡接等方式实现连接块 3 与套管 12 之间的连接。

[0025] 作为优选，连接块 3 可以为硬度小于连接件 11 的软性材料制成，连接块 3 相对较软，其可以抵靠在使用者头部的顶部，以提高使用者佩戴的舒适性。连接块 3 可以采用橡胶等材质制成。

[0026] 连接件 11 的横截面为圆形，以便于连接件 11 的多角度弯曲，同时方便与套管 12 的装配连接。当然，在其他实施方式中，连接件 11 也可以是横截面为方形的片状等其他形状。

[0027] 连接件 11 的端部弯折形成有嵌入部 111，骨传导扬声组件 2 上设有与嵌入部 111 相配合的嵌入槽 211，嵌入部 111 安装于嵌入槽 211 中。利用弯折的嵌入部 111 与嵌入槽 211 的配合，可以增强连接件 11 与骨传导扬声组件 2 之间的连接强度，防止连接件 11 从骨

IPR2025-00843; Mojawa
Ex. 1002 - Page 905

传导扬声组件 2 中脱出。更具体地，本实施例中，骨传导扬声组件 2 包括第一壳体 21 与第二壳体 22，嵌入槽 211 设置在第一壳体 21 上，第二壳体 22 固定连接于第一壳体 21，并将嵌入部 111 压紧在嵌入槽 211 中，利用第一壳体 21 与第二壳体 22 的配合，可将连接件 11 的端部牢固地固定在二者之间。

[0028] 骨传导扬声组件 2 还包括电子模块 23，电子模块 23 收容在第一壳体 21 与第二壳体 22 之间。在装配形成骨传导扬声组件 2 时，即可方便地将连接件 11 与骨传导扬声组件 2 装配连接。本实施例中，电子模块 23 包括用于接受音频信号的无线传输模块，通过红外、蓝牙等方式无线接受信号，从而可以省去整个耳机的耳机线，方便使用。

[0029] 头戴式骨传导耳机还包括导线 4，导线 4 的两端分别电连接于两骨传导扬声组件 2，导线 4 穿设在套管 12 内，利用导线 4 可以实现两骨传导扬声组件 2 之间的电信号连接，可以仅在其中一个骨传导扬声组件 2 中设置音频接受模块。当然，两骨传导扬声组件 2 之间亦可通过无线传输等其他方式实现电信号传递。本实施例中，导线 4 与其中一个连接件 11 共同穿设在同一套管 12 中。连接件 11 可以与套管 12 的内壁紧密结合而嵌入在套管 12 中，也可以是连接件 11 与套管 12 的内壁间隙配合，二者之间的间隙可以用于穿设导线，或者，连接件 11 与导线 4 一同嵌入式植入套管 12 中。

[0030] 以上所述是本实用新型的优选实施方式，应当指出，对于本技术领域的普通技术人员来说，在不脱离本实用新型原理的前提下，还可以做出若干改进和润饰，这些改进和润饰也视为本实用新型的保护范围。

IPR2025-00843; Mojawa
Ex. 1002 - Page 906

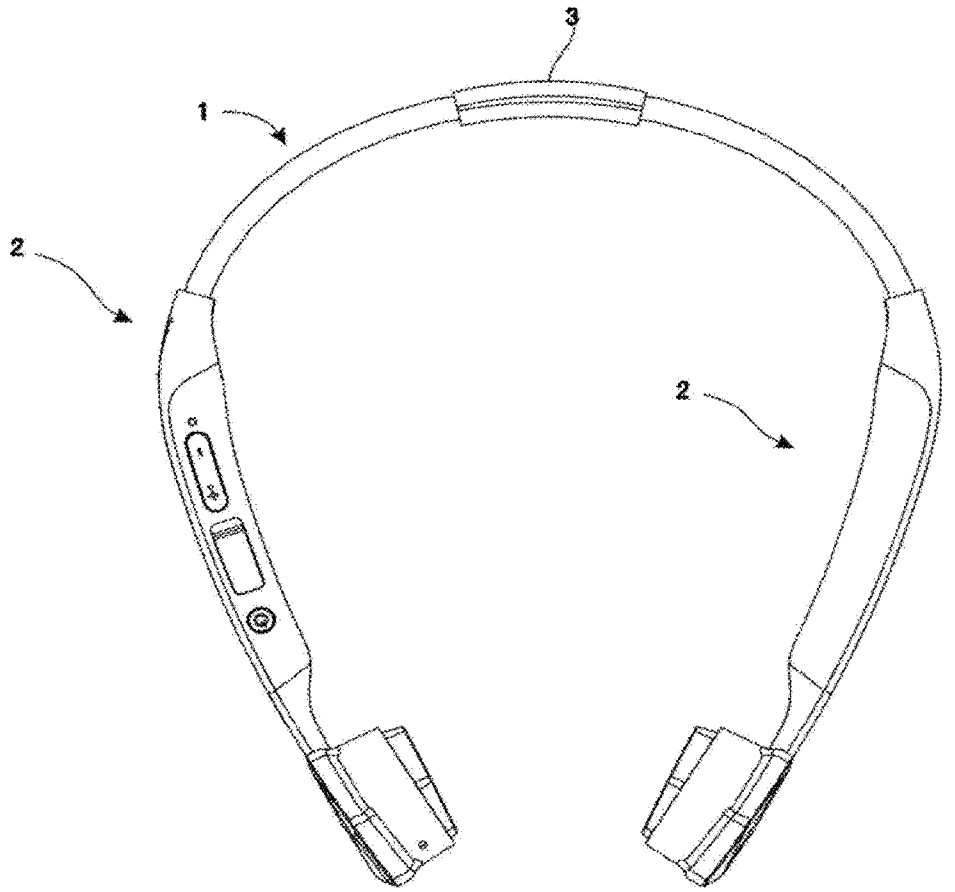


图 1

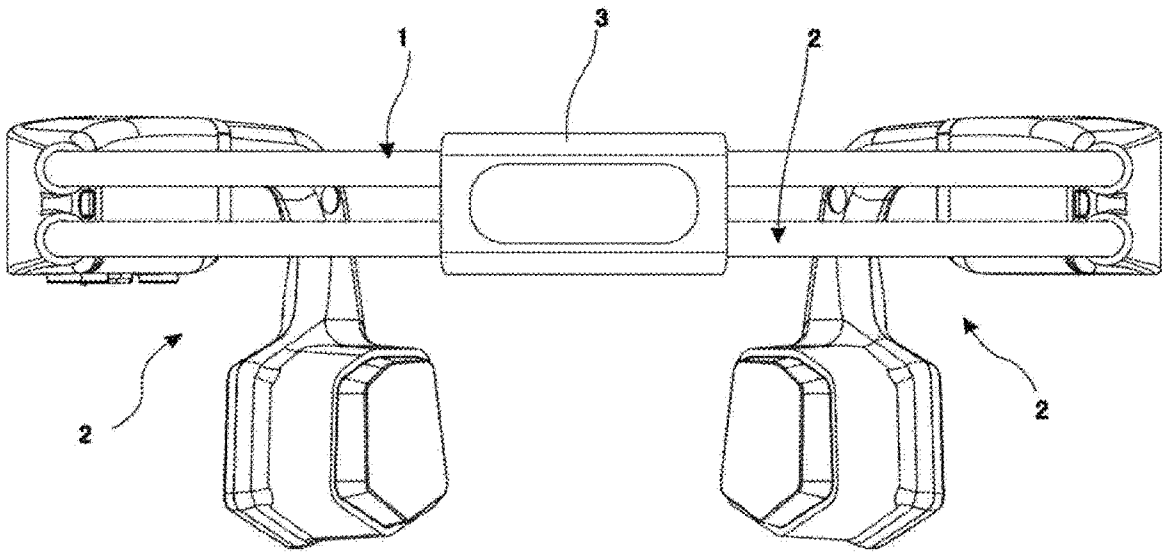


图 2

IPR2025-00843; Mojawa
Ex. 1002 - Page 907

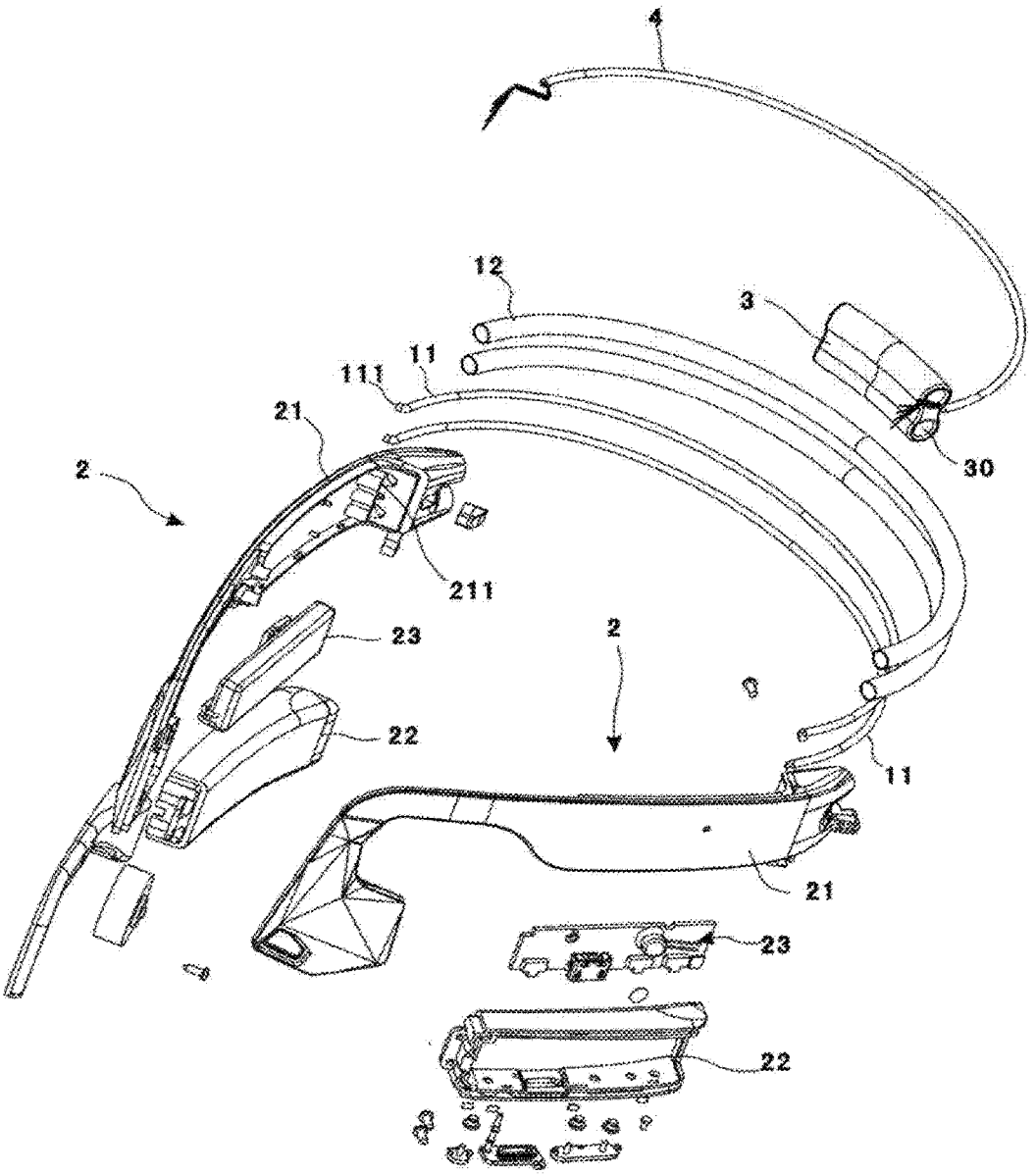


图 3

IPR2025-00843; Mojawa
Ex. 1002 - Page 908

A kind of audiphone

Abstract

The utility model provides a kind of audiphone, including：Housing, battery module and electronic system, the housing includes the first housing and the second housing that can be mutually permanently connected, the electronic system is arranged in first shell body, the battery module is arranged in second shell body, formed and be detachably connected between the electronic system and battery module of audiphone, the two forms electrical connection by way of contact, have the characteristics that it is compact-sized, be easily installed and dismantle.

CN207010974U

China

Other languages: Chinese

Inventor: 歐天生, 李伯陽, 余仕湘

Worldwide applications

2017 CN

Application CN201720949173.7U events

2017-08-01	Application filed by 厦门新声科技有限公司
2017-08-01	Priority to CN201720949173.7U
2018-02-13	Application granted
2018-02-13	Publication of CN207010974U

Info: Cited by (2), Legal events, Similar documents, Priority and Related Applications

External links: Espacenet, Global Dossier, Discuss

Description

A kind of audiphone

Technical field

It the utility model is related to field of hearing aids, and in particular to what a kind of compact-sized, inner part was easily installed and dismantled Audiphone.

Background technology

Audiphone (Hearing Aid) is the accessory that person hard of hearing uses, for supplying lacking caused by hearing impairment Fall into.And then improve instrument, unit and instrument with his conference communicative competence etc..Audiphone is from wearing position and profile Angle can be divided into ear-level hearing aid, duct-type audiphone, complete duct-type audiphone etc. again.

Ear-level hearing aid body is larger, typically carries out offer power supply using battery (such as lithium battery), and battery with The circuit board of electronic system is integrated with audiphone and realizes that this will result in by wire with the electrical connection of charging contact Battery is not easy autonomous assembly or

Claims (9)

Hide Dependent

1. a kind of audiphone, including：Housing, battery module and electronic system, it is characterised in that：The housing includes can be mutual The first housing and the second housing being fixedly connected, the electronic system are arranged in first shell body, the power supply of the electronic system Positive input terminal, power supply negative input end and signal output part extend to form the first contact, the second contact to the first surface of shell respectively With the 3rd contact；

The battery module comprises at least battery, and the battery module is arranged in second shell body, second housing It is above also exposed to have positive pole charging contact, negative pole charging contact and signal output contact, the positive pole charging contact, negative pole charging The anode electrode end with battery, negative electricity are extremely formed and electrically connected respectively for contact, and first housing and second shell body phase are mutual After being fixedly connected, the anode electrode end of the battery,

disassembly, and wire is cumbersome, and easily being fractureed at solder joint leads to not normal use.

Utility model content

Therefore, the utility model provides the audiphone that a kind of compact-sized, inner part is easily installed and dismantled.

To reach above-mentioned purpose, a kind of audiphone provided by the utility model, including：Housing, battery module and electronics System, the housing include the first housing and the second housing that can be mutually permanently connected, and the electronic system is arranged on first shell In vivo, the power supply positive input terminal of the electronic system, power supply negative input end pole signal output part prolong to the first surface of shell respectively Stretch to form the first contact, the second contact and the 3rd contact ;

The battery module comprises at least battery, and the battery module is arranged in second shell body, and described second It is also exposed on housing to have positive pole charging contact, negative pole charging contact and signal output contact, the positive pole charging contact, negative pole The anode electrode end with battery, negative electricity extremely form electrical contact, first housing and the second housing to charging contact respectively After being mutually permanently connected, the anode electrode end of the battery, negative electricity extremely form electricity with the first contact, the second contact respectively Connection, and then power supply is provided for electronic system, the signal output contact forms with the 3rd contact of the first housing and electrically connected.

A kind of preferred scheme of the present utility model, the battery module also include the battery with one first storage tank Housing, the accumulator housing are provided with the 4th contact, the 5th contact and the 6th contact, the 4th contact, the extension of the 5th contact To the internal face of the first storage tank, the battery is fixed in the first storage tank of accumulator housing, its anode electrode end, is born Pole electrode tip is formed and electrically connected, and pass through the 4th contact, the 5th contact and first shell respectively with the 4th contact, the 5th contact respectively First contact of body and the second contact form electrical connection, the signal output contact pass through the 6th contact and the first housing the 3rd Contact forms electrical connection.

Another preferred scheme of the present utility model, the positive pole charging contact, negative pole charging contact and signal output Contact is arranged on accumulator housing, and second housing is provided with a window, and the positive pole charging contact, negative pole charging are touched Point and signal output contact are exposed in the window.

negative electricity are extremely formed and are electrically connected with the first contact, the second contact respectively Connect, and then power supply is provided for electronic system, the signal output contact forms with the 3rd contact of the first housing and electrically connected.

2. audiphone according to claim 1, it is characterised in that ：The battery module also includes having one first to house The accumulator housing of groove, the accumulator housing are provided with the 4th contact, the 5th contact and the 6th contact, the 4th contact, Five contacts and the 6th contact are respectively provided with to the internal face of the first storage tank, and the battery is fixed on the first appearance of accumulator housing To put in groove, its anode electrode end, negative electricity are extremely formed and electrically connected with the 4th contact, the 5th contact respectively, and respectively by the Four contacts, the 5th contact form with the first contact of the first housing and the second contact and electrically connected, and the signal output contact passes through 6th contact forms with the 3rd contact of the first housing and electrically connected.

3. audiphone according to claim 2, it is characterised in that ：The positive pole charging contact, negative pole charging contact and Signal output contact is arranged on accumulator housing, and second housing is provided with a window, the positive pole charging contact, bears Pole charging contact and signal output contact are exposed in the window.

4. audiphone according to any one of claims 1 to 3, it is characterised in that ：It is accommodating that second housing is provided with second Groove, the inner wall depression of second storage tank are provided with the first neck, and the battery module is provided with the first clamping joint, the storage Battery module is socketed in second storage tank and forms fixed clamping by the clamping engagement of the first clamping joint and the first neck.

5. audiphone according to claim 1, it is characterised in that ：On first housing or the second housing formed with one with The 3rd storage tank that the profile of second housing or the first housing matches, second housing or the first housing are socketed in the 3rd In storage tank and then make the two formation fixedly sleeved.

Another preferred scheme of the present utility model, second housing are provided with the second storage tank, and described second is accommodating The inner wall depression of groove is provided with the first neck, and the battery module is provided with the first clamping joint, and the battery module is socketed in Fixed clamping is formed in second storage tank and by the clamping engagement of the first clamping joint and the first neck.

Another preferred scheme of the present utility model, formed with one and second housing on first housing or the second housing Or first housing the 3rd storage tank that matches of profile, second housing or the first housing are socketed in the 3rd storage tank And then make the two formation fixedly sleeved.

Another preferred scheme of the present utility model, the inwall of the 3rd storage tank on first housing or the second housing Depression is provided with the second neck, and the second housing or the first surface of shell projection is provided with the second clamping joint, second housing or First housing is socketed in the 3rd storage tank and forms fixed clamping by the clamping engagement of the second clamping joint and the second neck.

Another preferred scheme of the present utility model, the electronic system comprise at least：Microphone module, processing module, Called module and electronic switch, the input of the output end connection processing module of the microphone module, the processing module Output end connects the input of called module, the positive and negative input of power supply of the microphone module, processing module and called module The first contact and the second contact are electrically connected, the electronic switch is serially connected in microphone module respectively and the electricity of called module returns Lu Zhong, the control output end connection electronic switch of processing module, the signal output part of the processing module electrically connect the 3rd contact.

Another preferred scheme of the present utility model, in addition to volume adjusting module, the output of the volume adjusting module The input of end connection processing module.

Another preferred scheme of the present utility model, in addition to shift knob module, the output of the shift knob module The input of end connection processing module.

By technical scheme provided by the utility model, have the advantages that：

Formed and be detachably connected between the electronic system and battery of audiphone, the two is formed by way of contact Electrical connection, have the characteristics that it is compact-sized, be easily installed and dismantle.

Brief description of the drawings

6. audiphone according to claim 5, it is characterised in that：The 3rd on first housing or the second housing is accommodating The inner wall depression of groove is provided with the second neck, and second housing or the first surface of shell be raised to be provided with the second clamping joint, and described the Two housings or the first housing are socketed in the 3rd storage tank and formed by the clamping engagement of the second clamping joint and the second neck Fixed clamping.

7. audiphone according to claim 1, it is characterised in that：The electronic system comprises at least：Microphone module, place Manage module, called module and electronic switch, the input of the output end connection processing module of the microphone module, the processing The output end of module connects the input of called module, and the power supply of the microphone module, processing module and called module is positive and negative Input is electrically connected the first contact and the second contact, and the electronic switch is serially connected in microphone module and called module respectively Electrical circuit in, the control output end of processing module connection electronic switch, the signal output part electrical connection of the processing module the Three contacts.

8. audiphone according to claim 7, it is characterised in that：Also include volume adjusting module, the volume adjusting mould The input of the output end connection processing module of block.

9. audiphone according to claim 7, it is characterised in that：Also include shift knob module, the shift knob mould The input of the output end connection processing module of block.

Fig. 1 show the dimensional structure diagram of audiphone in embodiment ;

Fig. 2 show the decomposed schematic diagram one of audiphone in embodiment ;

Fig. 3 show the decomposed schematic diagram two of audiphone in embodiment ;

Fig. 4 show the decomposed schematic diagram three of audiphone in embodiment ;

Fig. 5 show the decomposing schematic representation of the part-structure of audiphone in embodiment ;

Fig. 6 show the part-structure schematic diagram of audiphone in another embodiment ;

Fig. 7 show the counter structure schematic diagram of audiphone and cradle in embodiment.

Embodiment

To further illustrate each embodiment, the utility model is provided with accompanying drawing.These accompanying drawings are in the utility model discloses A part for appearance, it can coordinate the associated description of specification to explain the running of embodiment original mainly to illustrate embodiment Reason.Cooperation refers to these contents, and those of ordinary skill in the art will be understood that other possible embodiments and this practicality are new The advantages of type.Component in figure is not necessarily to scale, and similar element numbers are conventionally used to indicate similar component.

The utility model is further illustrated in conjunction with the drawings and specific embodiments.

Embodiment one

Referring to figs. 1 to shown in Fig. 5, a kind of audiphone 1 provided by the utility model, including : Housing, battery module, electricity Subsystem (not shown) and three bullion conducting strips 40, the housing include the first housing 10 and the second housing 20, institute State electronic system to be arranged in the first housing 10, power supply positive input terminal, the power supply negative input end pole signal of the electronic system are defeated Go out end to extend to form the first contact 11, the second contact 12 and the 3rd contact 13 to the surface of the first housing 10 respectively.

The battery module includes : Accumulator housing 32 and battery 31 with one first storage tank 321, the storage Battery container 32 is provided with the 4th contact 14, the 5th contact 15 and the 6th contact 16, the 4th contact 14, the 5th contact 15 and Six contacts 16 are the screw contact that can be spun, and the 4th contact 14, the 5th contact 15 and the 6th contact 16 are arranged at The internal face of one storage tank 321, three bullion conducting strips 40 are arranged in the first storage tank

321, three bullions One end of conducting strip 40 forms with the 4th contact 14, the 5th contact 15 and the 6th contact 16 electrically connect respectively, the extension of its other end Positive pole charging contact 41, negative pole charging are sequentially formed to the offside for being provided with the 4th contact 14, the 5th contact 15 and the 6th contact 16 Contact 42 and signal output contact 43.The clamping of battery 31 is arranged in the first storage tank 321 of accumulator housing 32, its anode electrode end, negative electricity are extremely formed and electrically connected, and then filled respectively with positive pole with the 4th contact 14, the 5th contact 15 respectively Electric contact 41, negative pole charging contact 42 form electrical connection.

In the present embodiment, by the setting of battery module, by the charge circuit of battery 31 and the compact knot of discharge loop Close, it has the characteristics that compact-sized, easy for installation.In other embodiments, positive pole charging contact 41, negative pole charging contact 42 And signal output contact 43 can be electrically connected by being embedded to the wire in accumulator housing 32 and corresponding contact realization respectively Connect.This is routine techniques, is no longer described in detail.

Second housing 20 is provided with the second storage tank (not shown), and the inner wall depression of second storage tank is provided with the One neck (not shown), the accumulator housing 32 of the battery module are provided with the first clamping joint 322, the battery module It is socketed in second storage tank and fixed clamping is formed by the clamping engagement of the first clamping joint 322 and the first neck.Meanwhile Second housing, 20 corresponding positive pole charging contact 41, negative pole charging contact 42 and the position of signal output contact 43 are provided with a window 22, the positive pole charging contact 41, negative pole charging contact 42 and signal output contact 43 are exposed in the window 22, and then It is exposed to the second housing 20.

First housing 10 formed with one and second housing 20 the 3rd storage tank 101 that matches of profile, the 3rd holds The inner wall depression for putting groove 101 is provided with the second neck 102, and the rat of the second housing 20 is provided with the second clamping joint 21, described Second housing 20 is socketed in the 3rd storage tank 101 and by the clamping engagement shape of the second clamping joint 21 and the second neck 102 Into fixed clamping.In other embodiments, can be without passing through the second clamping joint and second if actual size can accomplish just to coordinate The cooperation of neck, directly it can be achieved to fix by being socketed to coordinate.Furthermore the 3rd storage tank can also be arranged on the second housing On, as long as the size of the first housing and the second housing simply replace, will not be described in detail herein.

After the housing 20 of first housing 10 and second is mutually permanently connected, the 4th contact 14, the 5th contact 15 respectively with First contact 11, the second contact 12 form electrical connection, and then the anode electrode end of the battery 31, negative electricity is extremely distinguished Formed and electrically connected with the first contact 11, the second contact 12, so as to provide power supply for electronic system.The signal output contact 43 is logical Cross the 6th contact 16 to electrically connect with the 3rd contact 13 formation of the first housing 10, realize the output of signal of communication.

In the present embodiment, the electronic system includes : It is microphone module (not shown), processing module (not shown), called Module (not shown), volume adjusting module 103, shift knob module 104 and electronic switch, the output end of the microphone module The input of connection processing module, the input of the called module of output end connection of the processing module, the microphone module, The positive and negative input of the power supply of processing module and called module is electrically connected the first contact 11 and the second contact 12, the electronics Switch is serially connected in microphone module respectively and in the electrical circuit of called module, the control output end of processing module connects electronic cutting Close, the signal output part of the processing module electrically connects the 3rd contact 13.The output end junction of the volume adjusting module 103 The input of reason module realizes the regulation of volume.The input of the output end connection processing module of the shift knob module 104 Realize being turned on and off for the outside control audiphone.As above the component of the modules of electronic system, related circuit Connected mode and specific operation principle are prior art, are that those skilled in the art grasp and practice already In product.It will not be described in detail herein.

Embodiment two

Shown in reference picture 6, the audiphone that the present embodiment provides is roughly the same with the structure in embodiment one, unique different It is that in the present embodiment, the 4th contact 14, the 5th contact 15 and the 6th contact 16 are respectively by three bullion conducting strips 40 1 Body extends to be formed, more easy in fit on, it also avoid existing power-off risk between metallic conduction piece and contact.

Shown in reference picture 7, a kind of cradle 2 that charging is engaged with above-mentioned audiphone 1 of the present embodiment offer, the charging Seat 2 is provided with one the 4th storage tank 80, and the bottom of the 4th storage tank 80 is provided with three conductive poles, respectively the first conductive pole 81, Second conductive pole 82 and the 3rd conductive pole 83, the first conductive pole 81 and the second conductive pole 82 are

electrically connected in the cradle 2 The positive and negative output end of power supply of power management module (not shown), the signal input part of the 3rd conductive pole 83 and power management module Form electrical connection.Audiphone 1 is plugged to the 4th storage tank 80 of cradle 2, and the first conductive pole 81 and the second conductive pole 82 divide Do not formed and electrically connected with the positive pole charging contact 41 and negative pole charging contact 42 of audiphone 1, the 3rd conductive pole 83 and audiphone 1 Signal output contact 43 forms electrical connection.Working signal is transferred to by the electronic system of audiphone 1 by signal output contact 43 The power management module of cradle 2, judges whether audiphone 1 powers off, if audiphone 1 has powered off, power management module control Make the battery that the cradle 2 is audiphone 1 to be charged, if audiphone 1 does not power off, without charging.

In the present embodiment, the concrete structure and operation principle of cradle 2 are prior art, are technologies in the art Personnel grasp and carry out implementing production already, will not be described in detail herein.

Formed by technical scheme provided by the utility model, between the electronic system and battery of audiphone and detachably connected Connect, the two forms electrical connection by way of contact, have the characteristics that it is compact-sized, be easily installed and dismantle.

Although specifically showing and describing the utility model with reference to preferred embodiment, those skilled in the art should This is understood, is not departing from the spirit and scope of the present utility model that appended claims are limited, in form and details On the utility model can be made a variety of changes, be the scope of protection of the utility model.

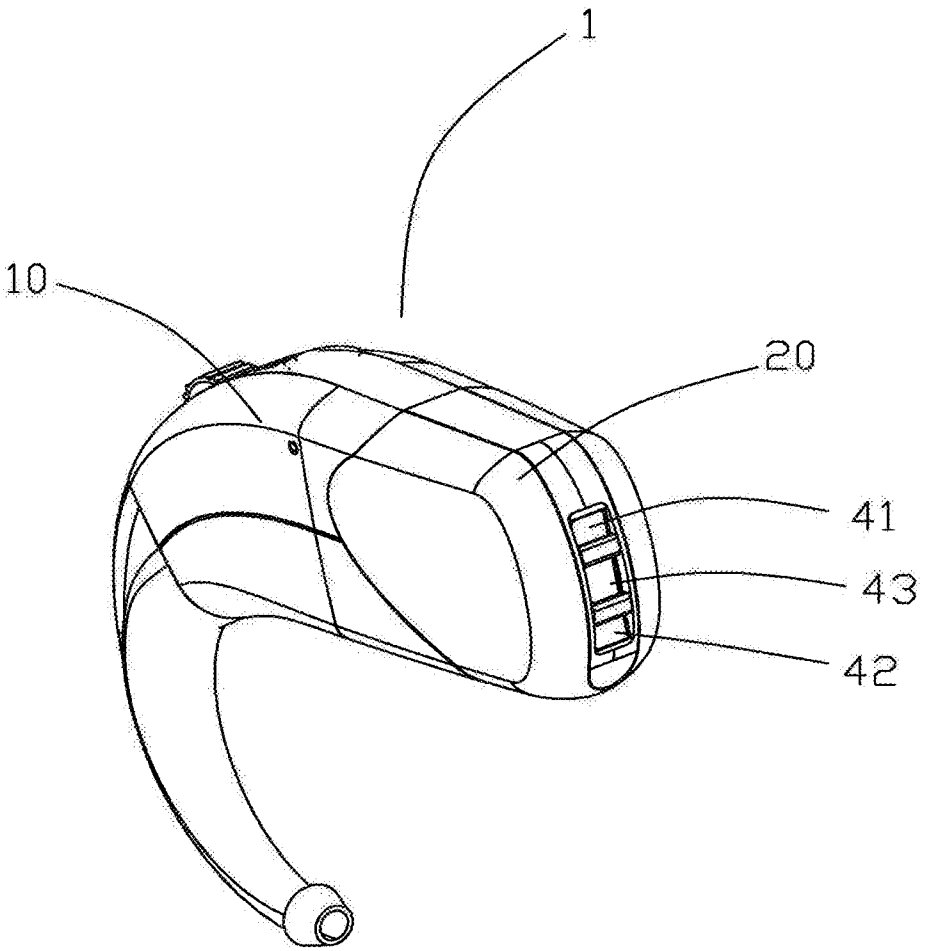


图1

IPR2025-00843; Mojawa
Ex. 1002 - Page 916

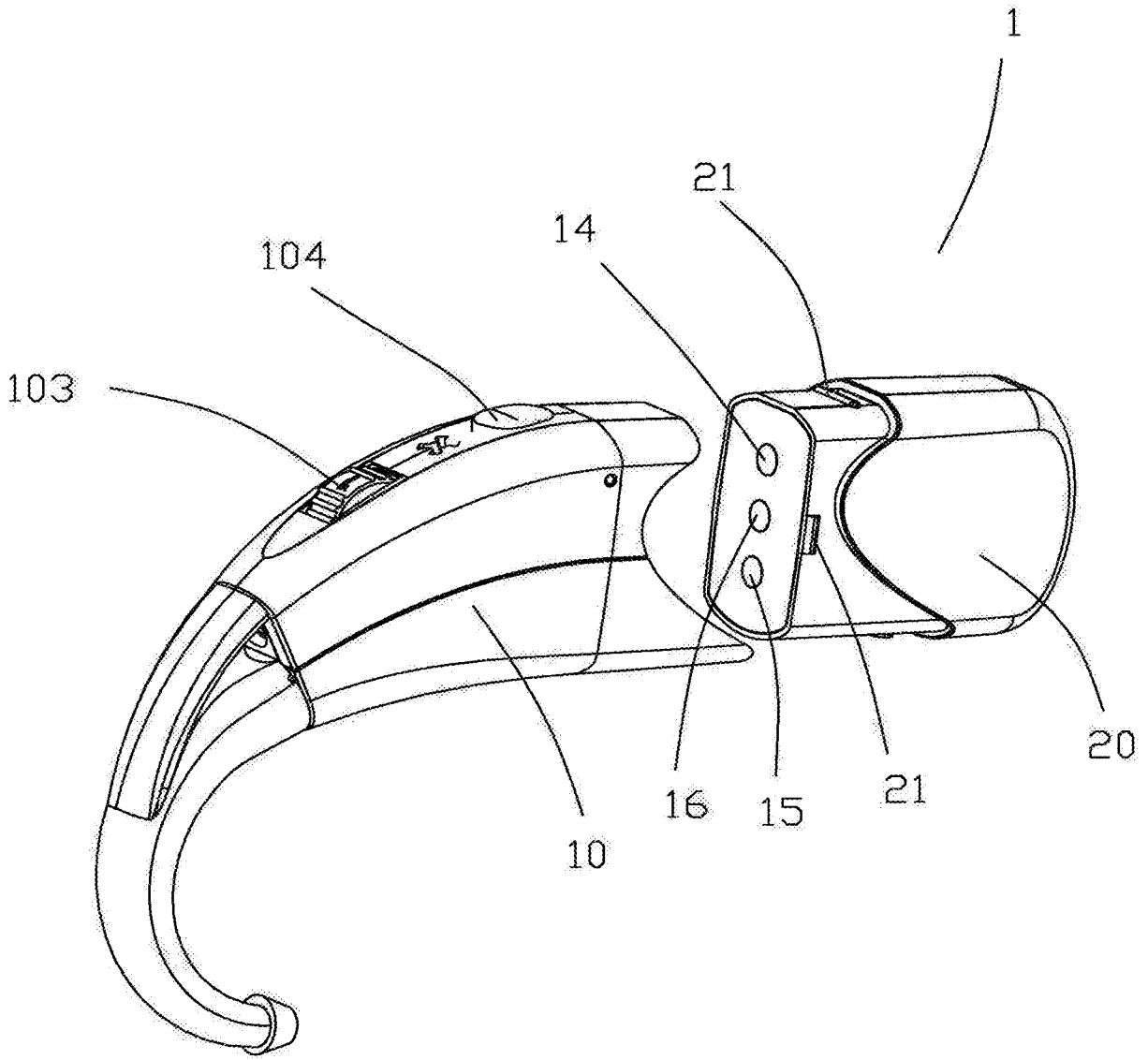


图2

IPR2025-00843; Mojawa
Ex. 1002 - Page 917

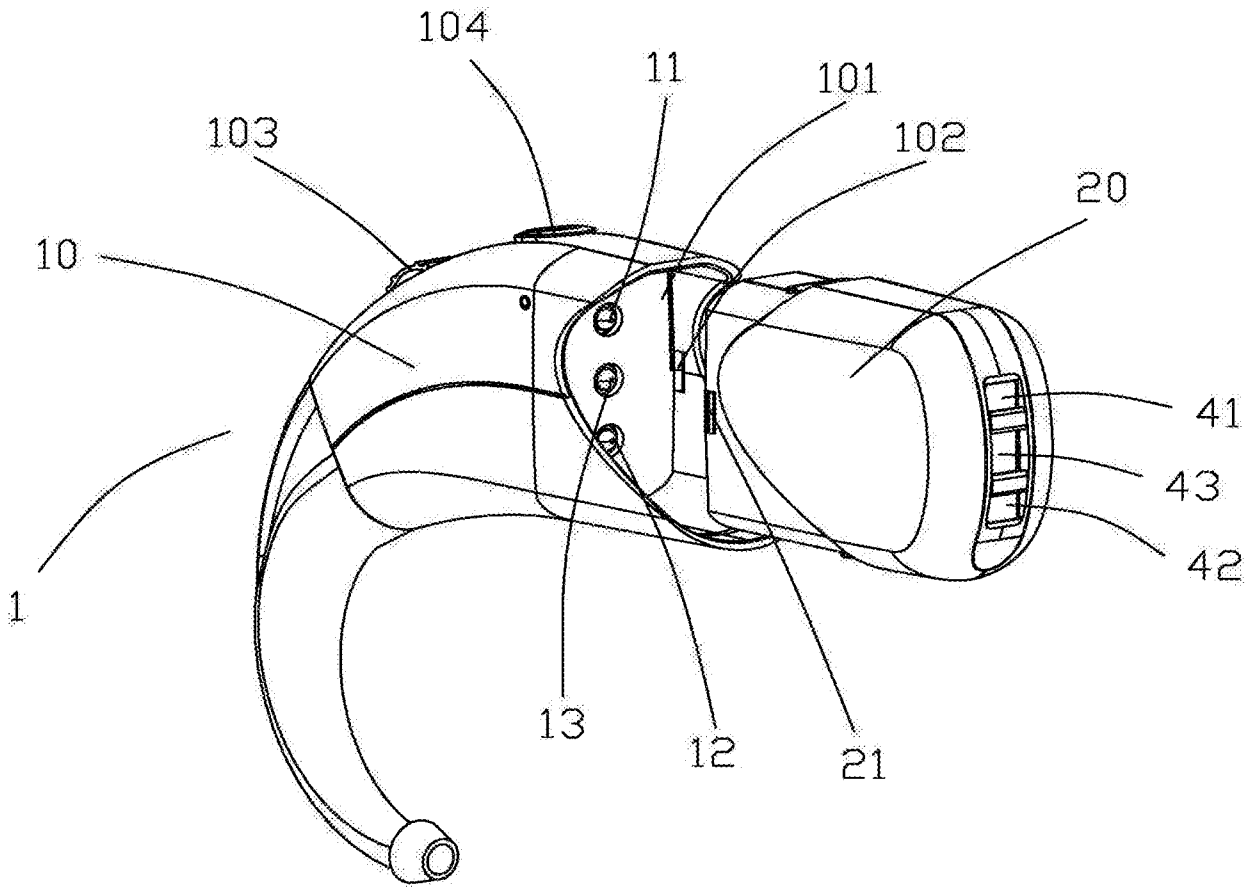


图3

IPR2025-00843; Mojawa
Ex. 1002 - Page 918

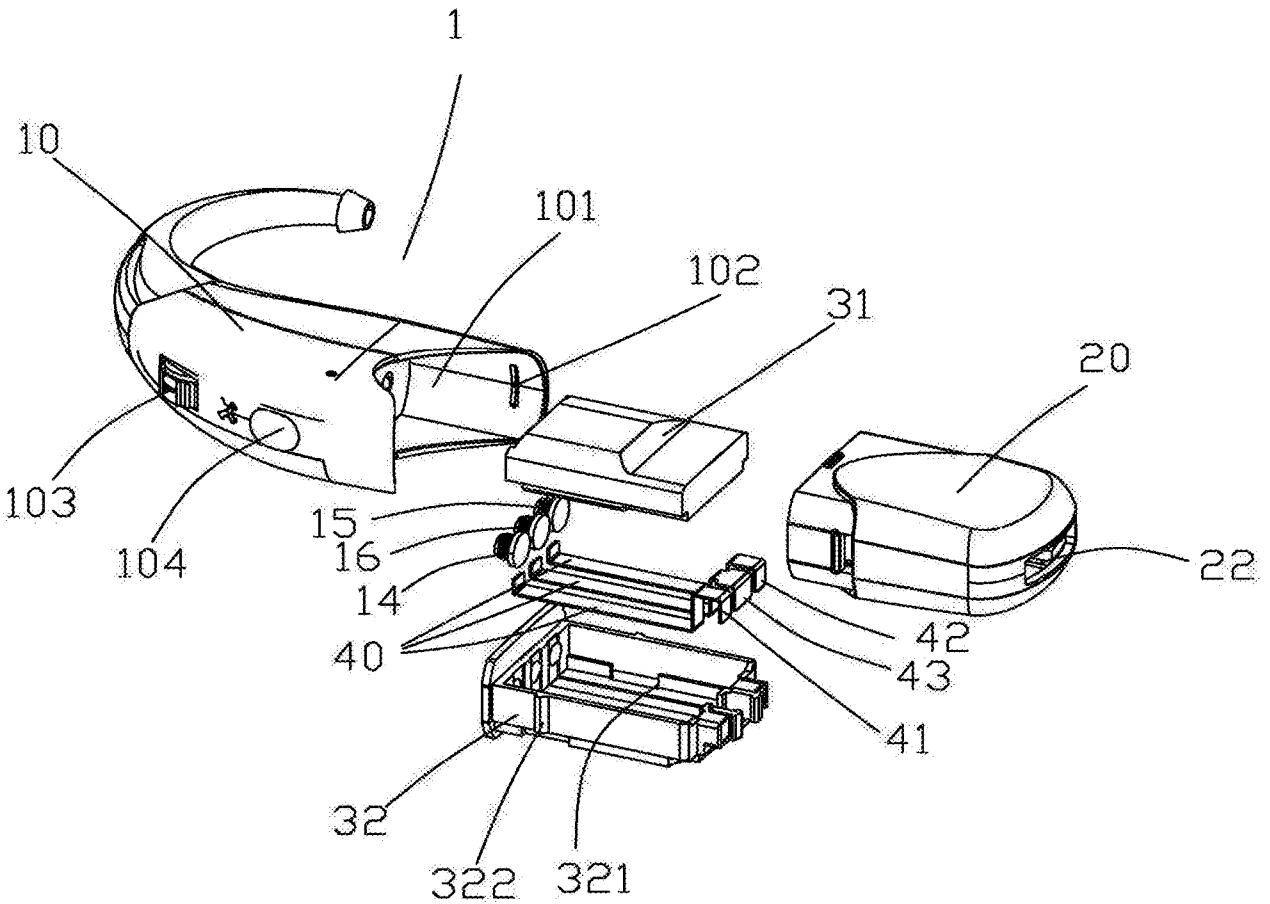


图4

IPR2025-00843; Mojawa
Ex. 1002 - Page 919

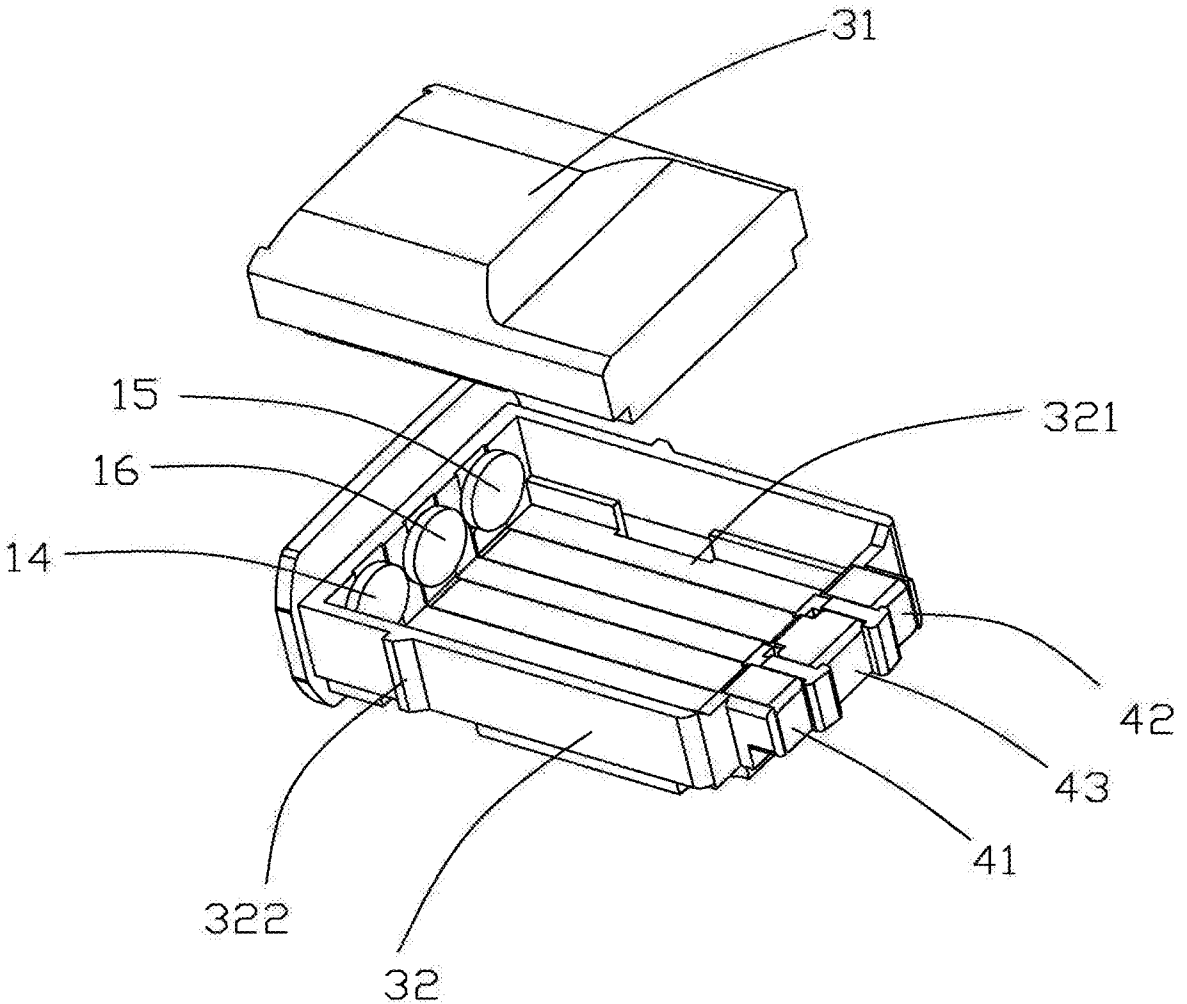


图5

IPR2025-00843; Mojawa
Ex. 1002 - Page 920

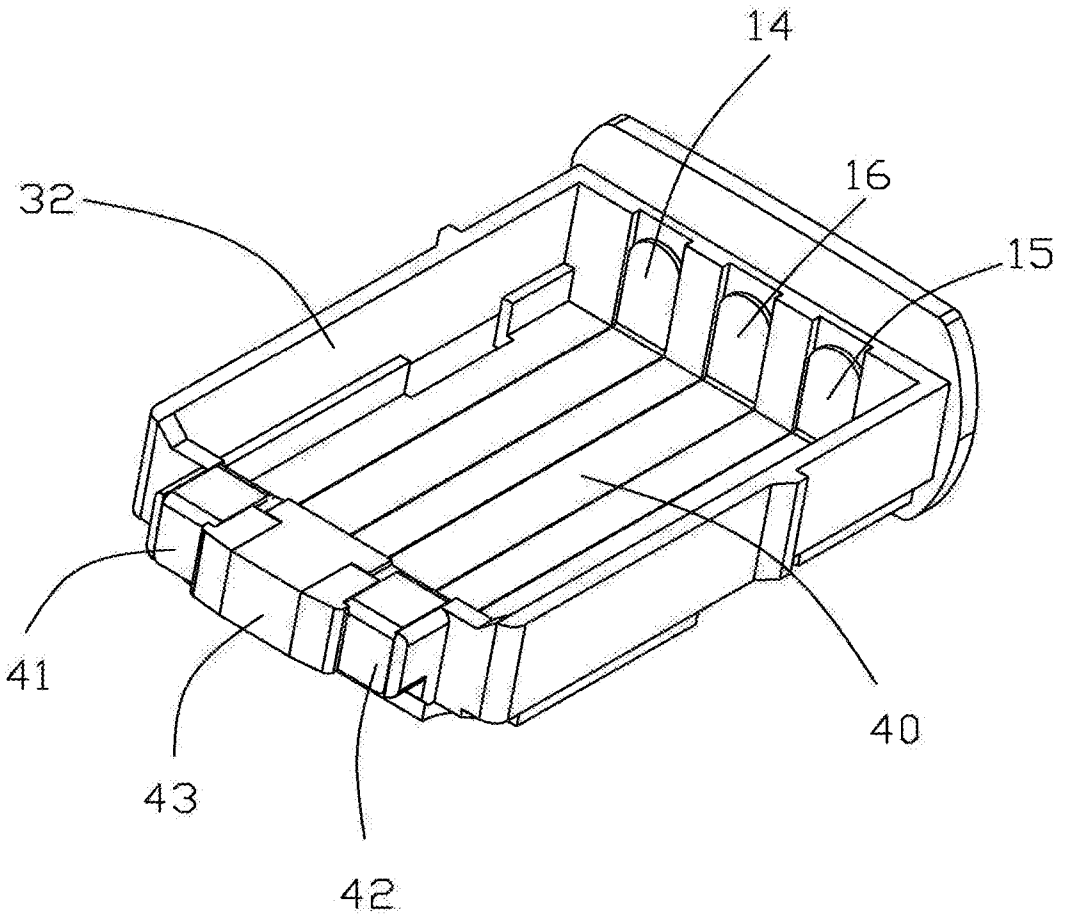


图6

IPR2025-00843; Mojawa
Ex. 1002 - Page 921

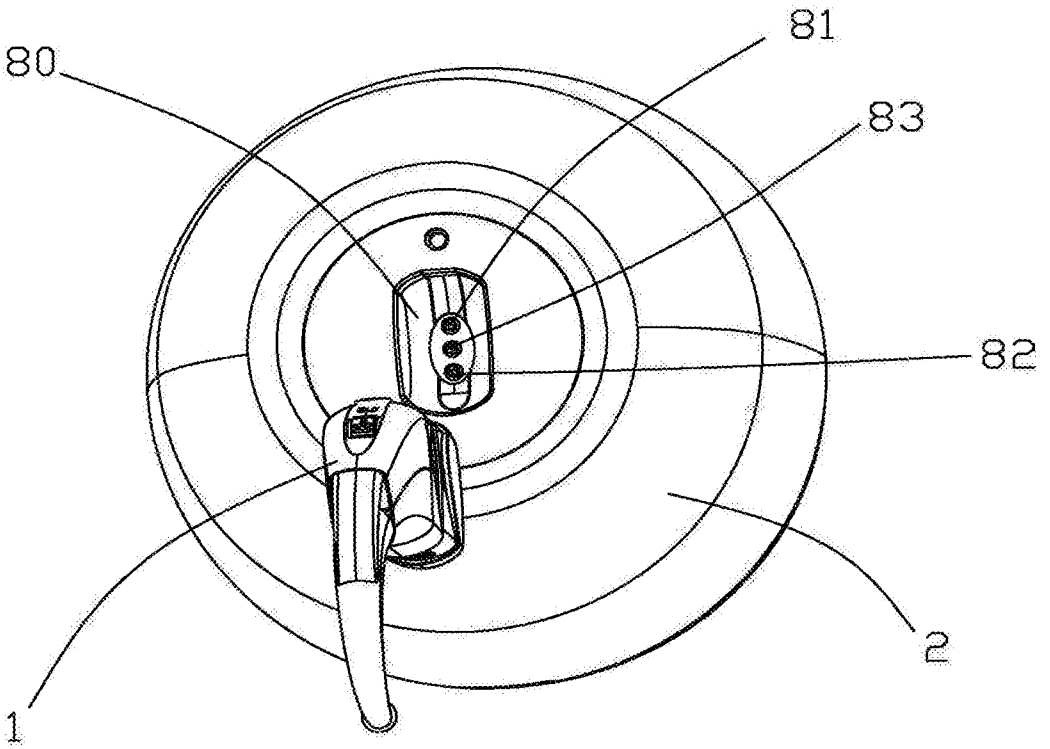


图7

IPR2025-00843; Mojawa
Ex. 1002 - Page 922

(19)中华人民共和国国家知识产权局

(12)实用新型专利

(10)授权公告号 CN 207010974 U
(45)授权公告日 2018.02.13

(21)申请号 201720949173.7

(22)申请日 2017.08.01

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(51)Int.Cl.
H04R 25/00(2006.01)

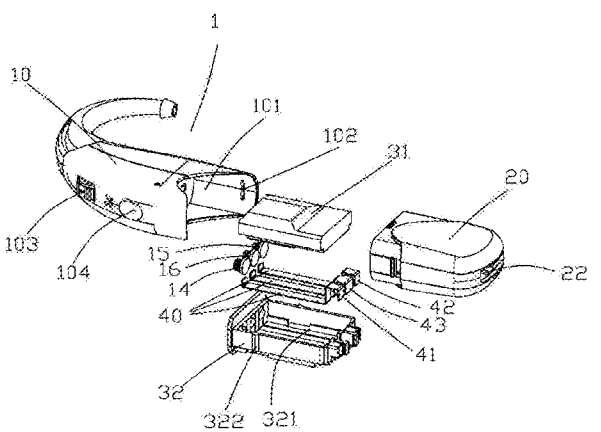
权利要求书1页 说明书4页 附图7页

(54)实用新型名称

一种助听器

(57)摘要

本实用新型提供一种助听器，包括：壳体、蓄电池模块及电子系统，所述壳体包括可相互固定连接的第一壳体和第二壳体，所述电子系统设置在第一壳体内，所述蓄电池模块设置在第二壳体内，助听器的电子系统与蓄电池模块之间形成可拆卸连接，二者通过触点接触的方式形成电连接，具有结构紧凑、易于安装和拆卸等特点。



CN 207010974 U

1.一种助听器，包括：壳体、蓄电池模块及电子系统，其特征在于：所述壳体包括可相互固定连接的第一壳体和第二壳体，所述电子系统设置在第一壳体内，所述电子系统的电源正输入端、电源负输入端及信号输出端分别向第一壳体表面延伸形成第一触点、第二触点和第三触点；

所述蓄电池模块至少包括蓄电池，所述蓄电池模块设置在第二壳体内，所述第二壳体上还裸露有正极充电触点、负极充电触点以及信号输出触点，所述正极充电触点、负极充电触点分别与蓄电池的正极电极端、负极电极端形成电连接，所述第一壳体和第二壳体相互固定连接后，所述蓄电池的正极电极端、负极电极端分别与第一触点、第二触点形成电连接，进而为电子系统提供电源，所述信号输出触点与第一壳体的第三触点形成电连接。

2.根据权利要求1所述的助听器，其特征在于：所述蓄电池模块还包括具有一第一容置槽的蓄电池壳体，所述蓄电池壳体设有第四触点、第五触点和第六触点，所述第四触点、第五触点和第六触点均设置至第一容置槽的内壁面，所述蓄电池固定在蓄电池壳体的第一容置槽内，其正极电极端、负极电极端分别与第四触点、第五触点形成电连接，并分别通过第四触点、第五触点与第一壳体的第一触点和第二触点形成电连接，所述信号输出触点通过第六触点与第一壳体的第三触点形成电连接。

3.根据权利要求2所述的助听器，其特征在于：所述正极充电触点、负极充电触点以及信号输出触点均设置在蓄电池壳体上，所述第二壳体上设有一窗口，所述正极充电触点、负极充电触点以及信号输出触点均裸露在该窗口内。

4.根据权利要求1至3任一所述的助听器，其特征在于：所述第二壳体上设有第二容置槽，所述第二容置槽的内壁凹陷设有第一卡槽，所述蓄电池模块上设有第一卡接头，所述蓄电池模块套接在该第二容置槽内并通过第一卡接头与第一卡槽的卡接配合形成固定卡接。

5.根据权利要求1所述的助听器，其特征在于：所述第一壳体或第二壳体上形成有一与第二壳体或第一壳体的外形相匹配的第三容置槽，所述第二壳体或第一壳体套接在该第三容置槽内进而使二者形成固定套接。

6.根据权利要求5所述的助听器，其特征在于：所述第一壳体或第二壳体上的第三容置槽的内壁凹陷设有第二卡槽，所述第二壳体或第一壳体表面凸起设有第二卡接头，所述第二壳体或第一壳体套接在该第三容置槽内并通过第二卡接头与第二卡槽的卡接配合形成固定卡接。

7.根据权利要求1所述的助听器，其特征在于：所述电子系统至少包括：麦克风模块、处理模块、受话模块及电子开关，所述麦克风模块的输出端连接处理模块的输入端，所述处理模块的输出端连接受话模块的输入端，所述麦克风模块、处理模块及受话模块的电源正、负输入端分别电连接第一触点和第二触点，所述电子开关分别串接在麦克风模块与受话模块的电回路中，处理模块的控制输出端连接电子开关，所述处理模块的信号输出端电连接第三触点。

8.根据权利要求7所述的助听器，其特征在于：还包括音量调节模块，所述音量调节模块的输出端连接处理模块的输入端。

9.根据权利要求7所述的助听器，其特征在于：还包括开关按钮模块，所述开关按钮模块的输出端连接处理模块的输入端。

IPR2025-00843; Mojawa
Ex. 1002 - Page 924

一种助听器

技术领域

[0001] 本实用新型涉及助听器领域，具体涉及一种结构紧凑、内部件易于安装和拆卸的助听器。

背景技术

[0002] 助听器(Hearing Aid)是听力障碍者使用的辅具，用来补足听力损伤所造成的缺陷。进而提高与他人会话交际能力的工具、设备、装置和仪器等。助听器从佩戴位置及外形的角度又可分为耳背式助听器，耳道式助听器，完全耳道式助听器等。

[0003] 耳背式助听器机体较大，一般采用蓄电池(如锂电池)进行提供电源，而蓄电池与助听器内集成有电子系统的电路板以及与充电触点的电连接均通过导线实现，这就会造成蓄电池不易自主装配和拆卸，而且导线繁琐，容易在焊点处折断导致无法正常使用。

实用新型内容

[0004] 为此，本实用新型提供一种结构紧凑、内部件易于安装和拆卸的助听器。

[0005] 为达到上述目的，本实用新型提供的一种助听器，包括：壳体、蓄电池模块及电子系统，所述壳体包括可相互固定连接的第一壳体和第二壳体，所述电子系统设置在第一壳体内，所述电子系统的电源正输入端、电源负输入端极信号输出端分别向第一壳体表面延伸形成第一触点、第二触点和第三触点；

[0006] 所述蓄电池模块至少包括蓄电池，所述蓄电池模块设置在第二壳体内，所述第二壳体上还裸露有正极充电触点、负极充电触点以及信号输出触点，所述正极充电触点、负极充电触点分别与蓄电池的正极电极端、负极电极端形成电接触，所述第一壳体和第二壳体相互固定连接后，所述蓄电池的正极电极端、负极电极端分别与第一触点、第二触点形成电连接，进而为电子系统提供电源，所述信号输出触点与第一壳体的第三触点形成电连接。

[0007] 本实用新型的一种优选方案，所述蓄电池模块还包括具有一第一容置槽的蓄电池壳体，所述蓄电池壳体设有第四触点、第五触点和第六触点，所述第四触点、第五触点延伸至第一容置槽的内壁面，所述蓄电池固定在蓄电池壳体的第一容置槽内，其正极电极端、负极电极端分别与第四触点、第五触点形成电连接，并分别通过第四触点、第五触点与第一壳体的第一触点和第二触点形成电连接，所述信号输出触点通过第六触点与第一壳体的第三触点形成电连接。

[0008] 本实用新型的另一种优选方案，所述正极充电触点、负极充电触点以及信号输出触点均设置在蓄电池壳体上，所述第二壳体上设有一窗口，所述正极充电触点、负极充电触点以及信号输出触点均裸露在该窗口内。

[0009] 本实用新型的另一种优选方案，所述第二壳体上设有第二容置槽，所述第二容置槽的内壁凹陷设有第一卡槽，所述蓄电池模块上设有第一卡接头，所述蓄电池模块套接在该第二容置槽内并通过第一卡接头与第一卡槽的卡接配合形成固定卡接。

[0010] 本实用新型的另一种优选方案，所述第一壳体或第二壳体上形成有一与第二壳体

IPR2025-00843; Mojawa
Ex. 1002 - Page 925

或第一壳体的外形相匹配的第三容置槽，所述第二壳体或第一壳体套接在该第三容置槽内进而使二者形成固定套接。

[0011] 本实用新型的另一种优选方案，所述第一壳体或第二壳体上的第三容置槽的内壁凹陷设有第二卡槽，所述第二壳体或第一壳体表面凸起设有第二卡接头，所述第二壳体或第一壳体套接在该第三容置槽内并通过第二卡接头与第二卡槽的卡接配合形成固定卡接。

[0012] 本实用新型的另一种优选方案，所述电子系统至少包括：麦克风模块、处理模块、受话模块及电子开关，所述麦克风模块的输出端连接处理模块的输入端，所述处理模块的输出端连接受话模块的输入端，所述麦克风模块、处理模块及受话模块的电源正、负输入端分别电连接第一触点和第二触点，所述电子开关分别串接在麦克风模块与受话模块的电回路中，处理模块的控制输出端连接电子开关，所述处理模块的信号输出端电连接第三触点。

[0013] 本实用新型的另一种优选方案，还包括音量调节模块，所述音量调节模块的输出端连接处理模块的输入端。

[0014] 本实用新型的另一种优选方案，还包括开关按钮模块，所述开关按钮模块的输出端连接处理模块的输入端。

[0015] 通过本实用新型提供的技术方案，具有如下有益效果：

[0016] 助听器的电子系统与蓄电池之间形成可拆卸连接，二者通过触点接触的方式形成电连接，具有结构紧凑、易于安装和拆卸等特点。

附图说明

[0017] 图1所示为实施例中助听器的立体结构示意图；

[0018] 图2所示为实施例中助听器的部分分解示意图一；

[0019] 图3所示为实施例中助听器的部分分解示意图二；

[0020] 图4所示为实施例中助听器的部分分解示意图三；

[0021] 图5所示为实施例中助听器的部分结构的分解示意图；

[0022] 图6所示为另一实施例中助听器的部分结构示意图；

[0023] 图7所示为实施例中助听器与充电座的对应结构示意图。

具体实施方式

[0024] 为进一步说明各实施例，本实用新型提供有附图。这些附图为本实用新型揭露内容的一部分，其主要用以说明实施例，并可配合说明书的相关描述来解释实施例的运作原理。配合参考这些内容，本领域普通技术人员应能理解其他可能的实施方式以及本实用新型的优点。图中的组件并未按比例绘制，而类似的组件符号通常用来表示类似的组件。

[0025] 现结合附图和具体实施方式对本实用新型进一步说明。

[0026] 实施例一

[0027] 参照图1至图5所示，本实用新型提供的一种助听器1，包括：壳体、蓄电池模块、电子系统(未示出)以及三个条形金属导电片40，所述壳体包括第一壳体10和第二壳体20，所述电子系统设置在第一壳体10内，所述电子系统的电源正输入端、电源负输入端极信号输出端分别向第一壳体10表面延伸形成第一触点11、第二触点12和第三触点13。

[0028] 所述蓄电池模块包括：具有一第一容置槽321的蓄电池壳体32和蓄电池31，所述蓄

IPR2025-00843; Mojawa
Ex. 1002 - Page 926

电池壳体32设有第四触点14、第五触点15和第六触点16，所述第四触点14、第五触点15和第六触点16均为可旋接的螺钉触点，所述第四触点14、第五触点15和第六触点16均设置在第一容置槽321的内壁面，三个条形金属导电片40均设置在第一容置槽321内，三个条形金属导电片40的一端分别与第四触点14、第五触点15和第六触点16形成电连接，其另一端延伸至设有第四触点14、第五触点15和第六触点16的对侧依次形成正极充电触点41、负极充电触点42以及信号输出触点43。所述蓄电池31卡接设置在蓄电池壳体32的第一容置槽321内，其正极电极端、负极电极端分别与第四触点14、第五触点15形成电连接，进而分别与正极充电触点41、负极充电触点42形成电连接。

[0029] 本实施例中，通过蓄电池模块的设置，将蓄电池31的充电回路和放电回路紧凑结合，其具有结构紧凑、安装方便等特点。在其他实施例中，正极充电触点41、负极充电触点42以及信号输出触点43可分别通过嵌设至蓄电池壳体32内的导线与相对应的触点实现电连接。此为常规技术，不再详述。

[0030] 所述第二壳体20上设有第二容置槽(未示出)，所述第二容置槽的内壁凹陷设有第一卡槽(未示出)，所述蓄电池模块的蓄电池壳体32上设有第一卡接头322，所述蓄电池模块套接在该第二容置槽内并通过第一卡接头322与第一卡槽的卡接配合形成固定卡接。同时，第二壳体20对应正极充电触点41、负极充电触点42以及信号输出触点43的位置设有一窗口22，所述正极充电触点41、负极充电触点42以及信号输出触点43均裸露在该窗口22内，进而裸露于第二壳体20。

[0031] 所述第一壳体10形成有一与第二壳体20的外形相匹配的第三容置槽101，第三容置槽101的内壁凹陷设有第二卡槽102，所述第二壳体20表面凸起设有第二卡接头21，所述第二壳体20套接在该第三容置槽101内并通过第二卡接头21与第二卡槽102的卡接配合形成固定卡接。在其他实施例中，若实际尺寸可做到刚好配合，可无需通过第二卡接头与第二卡槽的配合，直接通过套接配合即可实现固定。再者，第三容置槽也可以设置在第二壳体上，只要第一壳体和第二壳体的尺寸进行简单的替换即可，在此不再详述。

[0032] 所述第一壳体10和第二壳体20相互固定连接后，第四触点14、第五触点15分别与第一触点11、第二触点12形成电连接，进而使所述蓄电池31的正极电极端、负极电极端分别与第一触点11、第二触点12形成电连接，从而为电子系统提供电源。所述信号输出触点43通过第六触点16与第一壳体10的第三触点13形成电连接，实现通信信号的输出。

[0033] 本实施例中，所述电子系统包括：麦克风模块(未示出)、处理模块(未示出)、受话模块(未示出)、音量调节模块103、开关按钮模块104及电子开关，所述麦克风模块的输出端连接处理模块的输入端，所述处理模块的输出端连接受话模块的输入端，所述麦克风模块、处理模块及受话模块的电源正、负输入端分别电连接第一触点11和第二触点12，所述电子开关分别串接在麦克风模块与受话模块的电回路中，处理模块的控制输出端连接电子开关，所述处理模块的信号输出端电连接第三触点13。所述音量调节模块103的输出端连接处理模块的输入端实现音量的调节。所述开关按钮模块104的输出端连接处理模块的输入端实现外部控制该助听器的开启或关闭。如上电子系统的各个模块的元器件、相关的电路的连接方式和具体的工作原理均为现有技术，是本领域内的技术人员早已掌握并已实际运用于产品中的。在此不再详述。

[0034] 实施例二

IPR2025-00843; Mojawa
Ex. 1002 - Page 927

[0035] 参照图6所示，本实施例提供的助听器与实施例一中的结构大致相同，唯一不同的是，本实施例中，第四触点14、第五触点15和第六触点16均分别由三个条形金属导电片40一体延伸形成，在装配上更为简便，也避免了金属导电片与触点之间存在的断电风险。

[0036] 参照图7所示，本实施例提供的一种与上述助听器1相配合充电的充电座2，该充电座2上设有一第四容置槽80，该第四容置槽80底部设有三根导电柱，分别为第一导电柱81、第二导电柱82和第三导电柱83，第一导电柱81和第二导电柱82分别电连接该充电座2内的电源管理模块(未示出)的电源正、负输出端，第三导电柱83与电源管理模块的信号输入端形成电连接。助听器1插设至充电座2的第四容置槽80内，第一导电柱81和第二导电柱82分别与助听器1的正极充电触点41和负极充电触点42形成电连接，第三导电柱83与助听器1的信号输出触点43形成电连接。助听器1的电子系统将工作信号通过信号输出触点43传输给充电座2的电源管理模块，判定助听器1是否断电，若助听器1已经断电，则电源管理模块控制该充电座2为助听器1的蓄电池进行充电，若助听器1未断电，则不进行充电。

[0037] 本实施例中，充电座2的具体结构以及工作原理均为现有技术，是本领域内的技术人员早已掌握并进行实施生产的，在此不再详述。

[0038] 通过本实用新型提供的技术方案，助听器的电子系统与蓄电池之间形成可拆卸连接，二者通过触点接触的方式形成电连接，具有结构紧凑、易于安装和拆卸等特点。

[0039] 尽管结合优选实施方案具体展示和介绍了本实用新型，但所属领域的技术人员应该明白，在不脱离所附权利要求书所限定的本实用新型的精神和范围内，在形式上和细节上可以对本实用新型做出各种变化，均为本实用新型的保护范围。

IPR2025-00843; Mojawa
Ex. 1002 - Page 928

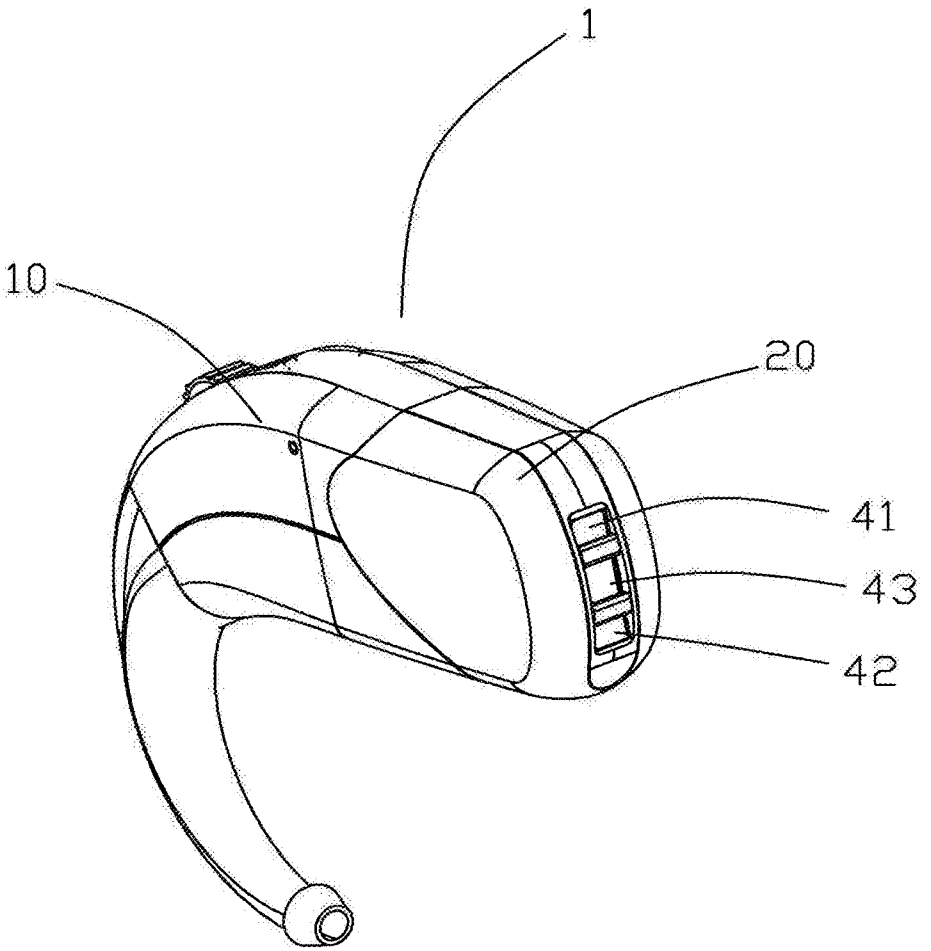


图1

IPR2025-00843; Mojawa
Ex. 1002 - Page 929

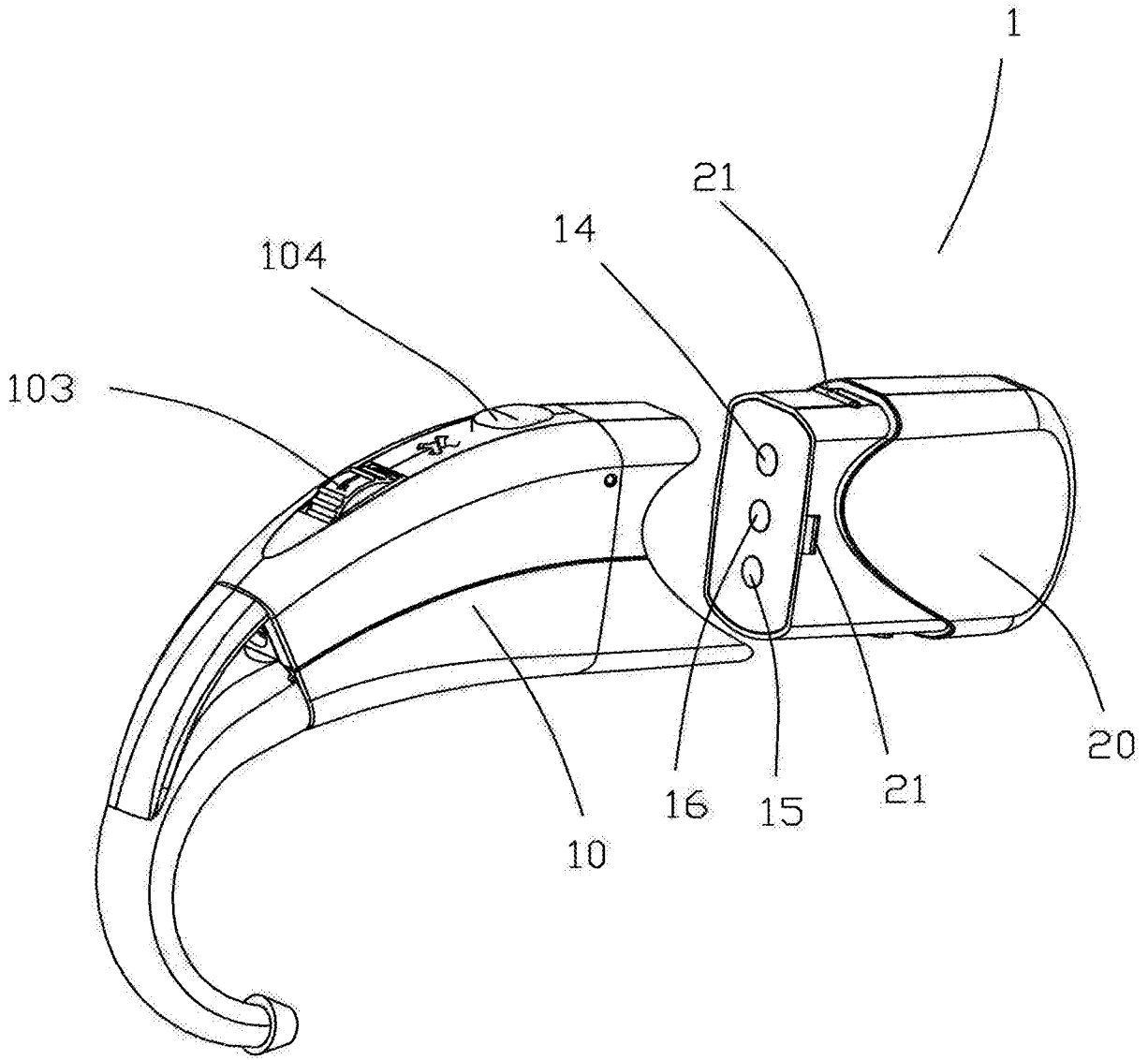


图2

IPR2025-00843; Mojawa
Ex. 1002 - Page 930

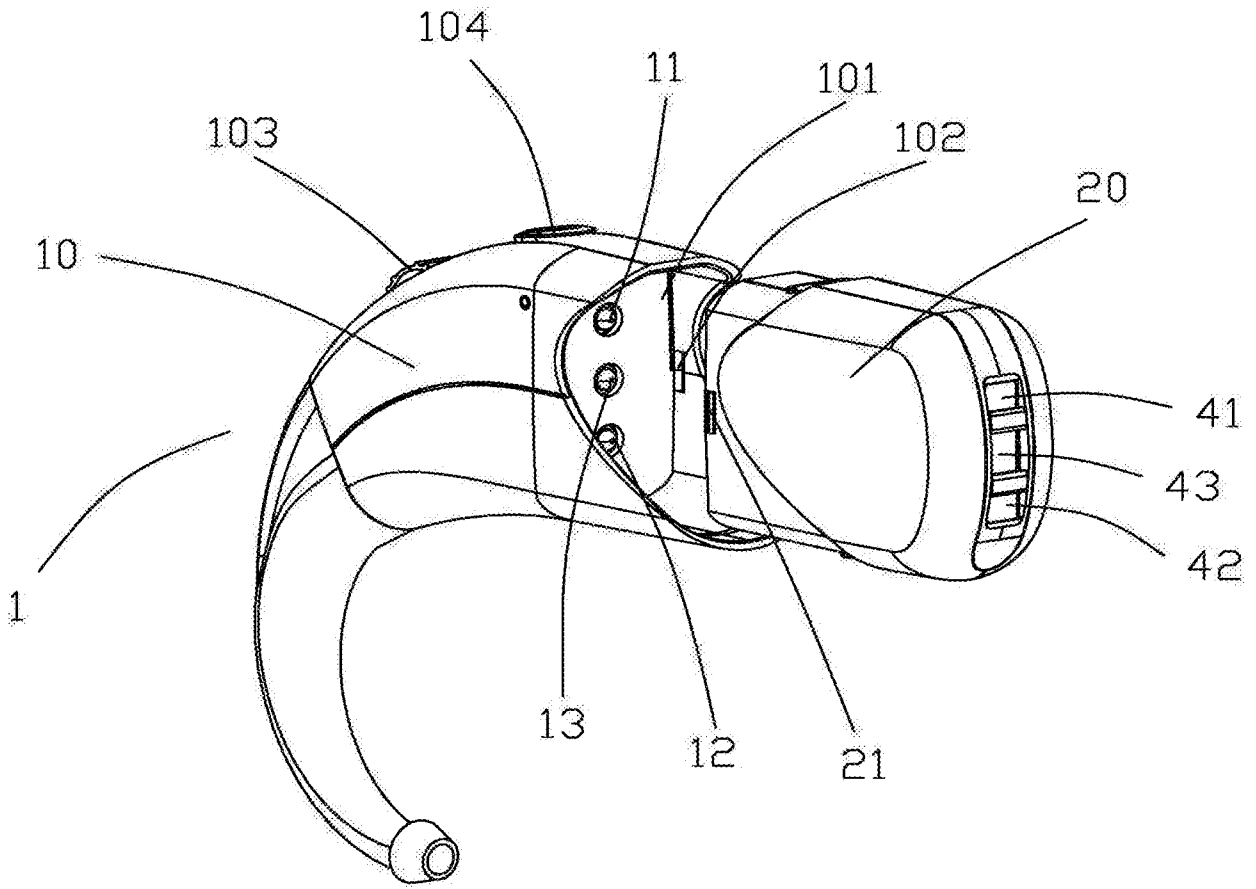


图3

IPR2025-00843; Mojawa
Ex. 1002 - Page 931

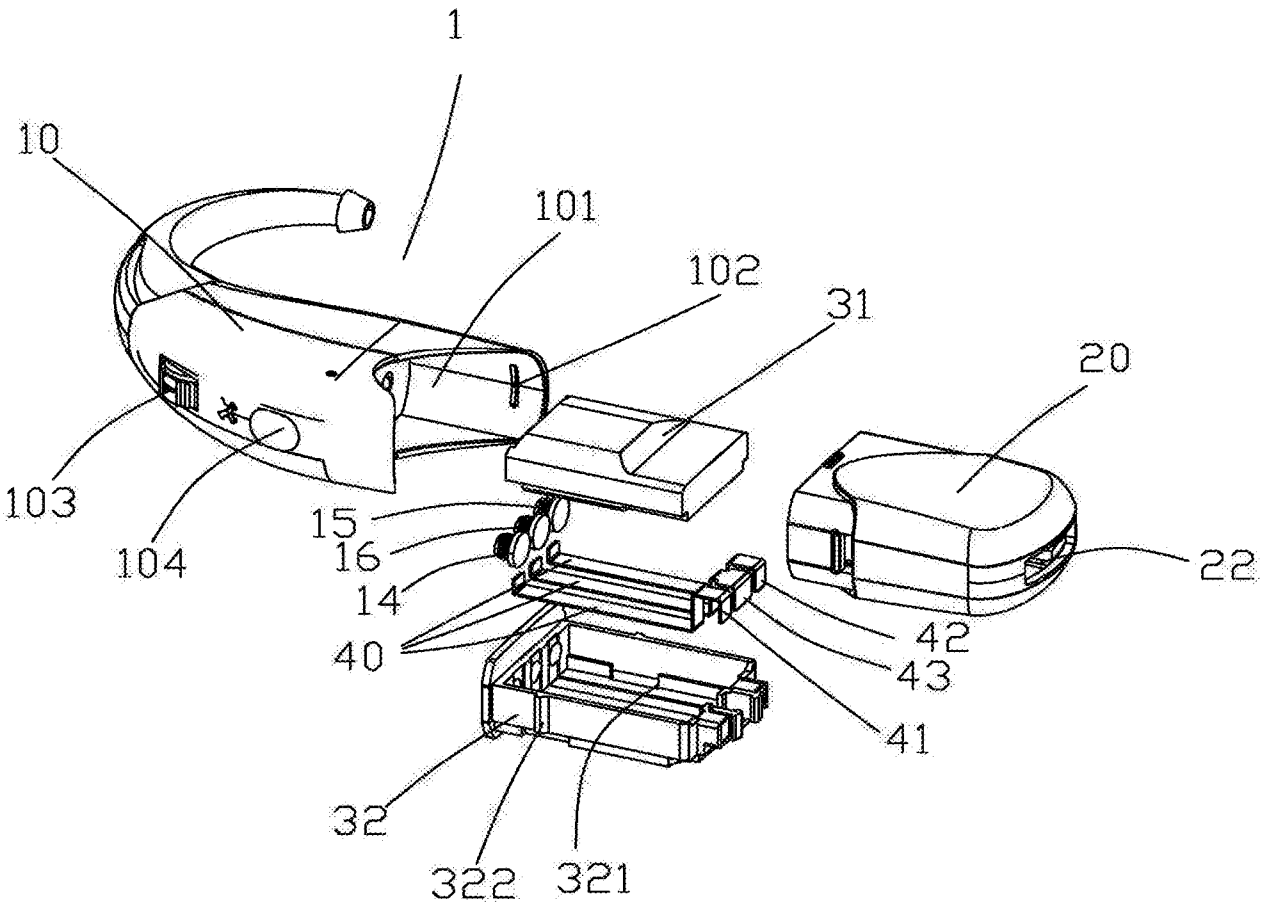


图4

IPR2025-00843; Mojawa
Ex. 1002 - Page 932

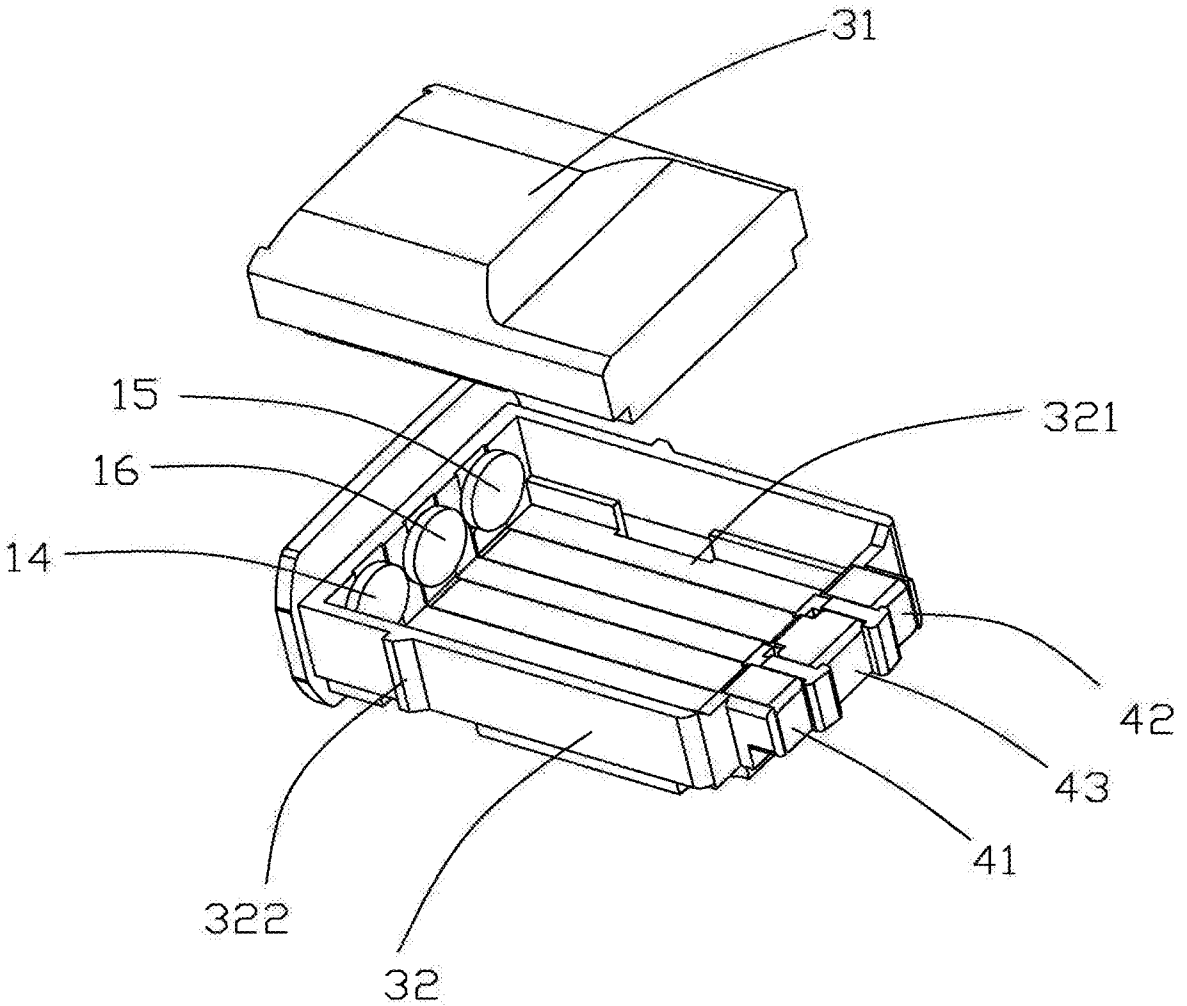


图5

IPR2025-00843; Mojawa
Ex. 1002 - Page 933

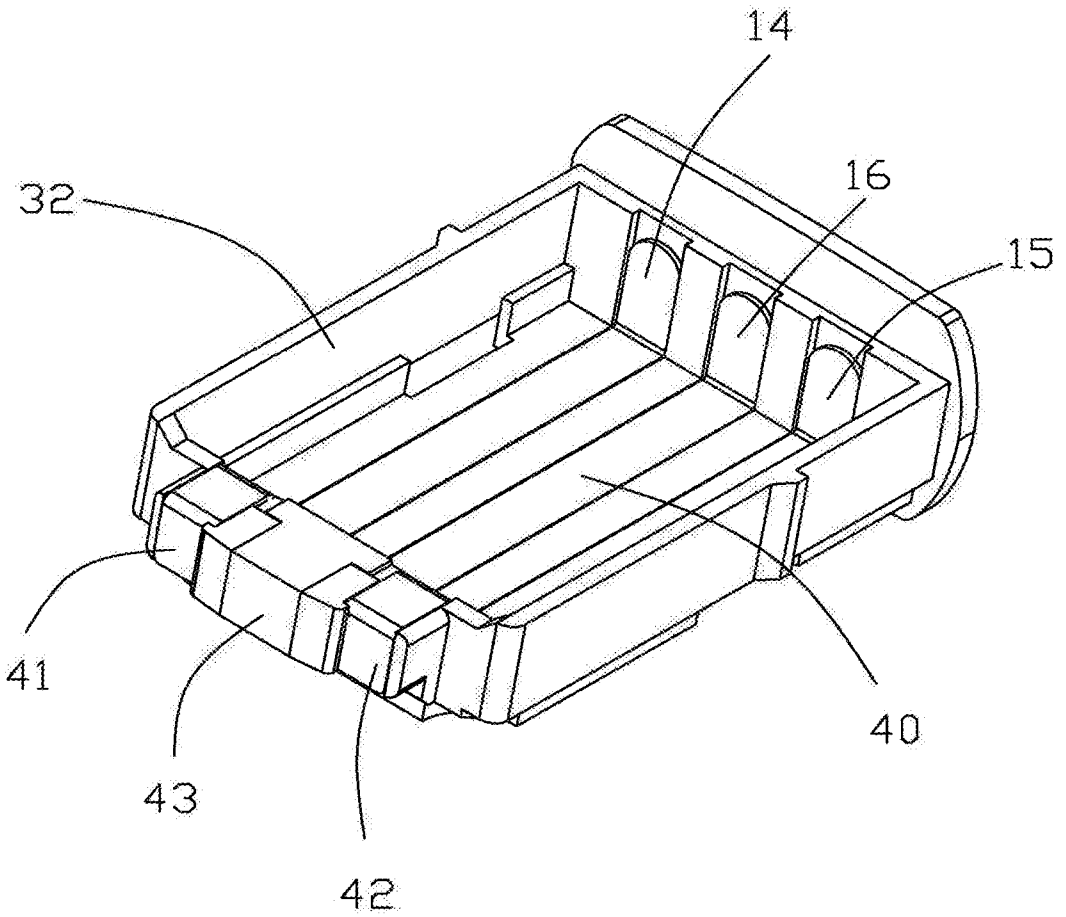


图6

IPR2025-00843; Mojawa
Ex. 1002 - Page 934

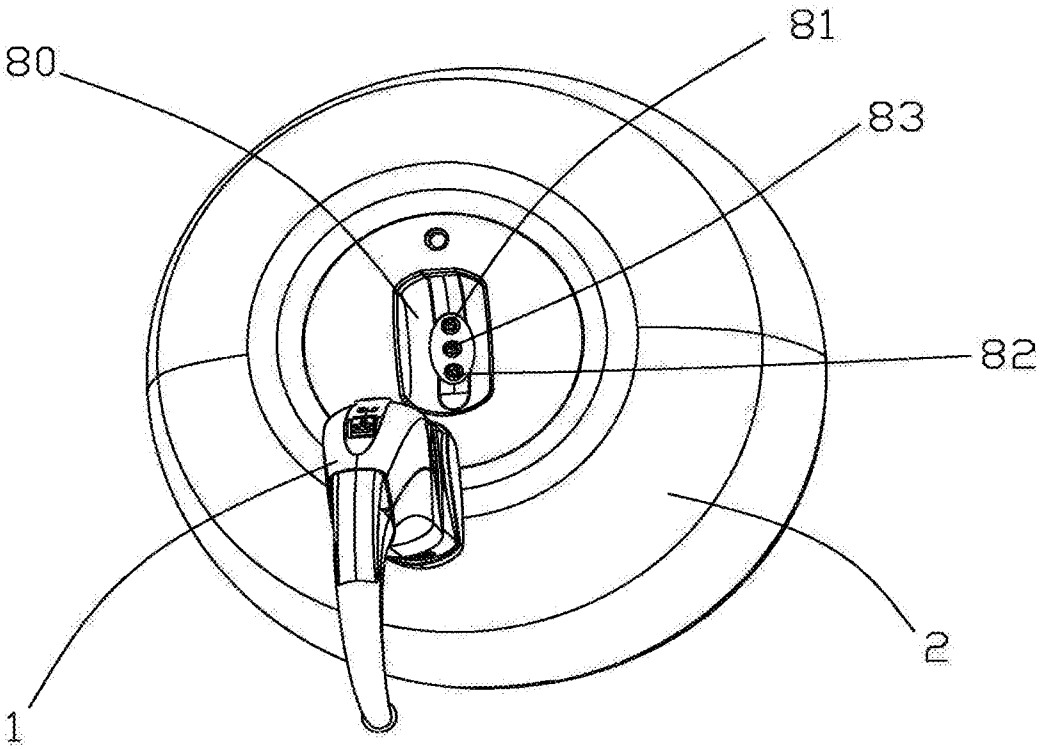


图7

IPR2025-00843; Mojawa
Ex. 1002 - Page 935

A kind of bone conduction earphone

Abstract

The utility model embodiment, which provides a kind of bone conduction earphone, includes ear-hang component, the ear-hang component includes the first housing, second housing, 3rd housing and control circuit component, 3rd housing and the first housing coordinate, to form the first accommodation space for being used for housing control circuit component, button perforate and the storage tank connected with button perforate are provided with 3rd housing, control circuit component includes circuit board, the switch being fixed on circuit board, waterproof liner and button, wherein button is arranged in button perforate and exposed through button perforate, waterproof liner includes liner plate main body and the 3rd resilient coating being coated on injection molding manner in liner plate main body, waterproof liner is arranged in storage tank and the 3rd resilient coating abuts with the sidewall elastomer of storage tank, button and switch are respectively arranged at the both sides of waterproof liner and abutted respectively with waterproof liner.By the above-mentioned means, the utility model can effectively lift the water resistance of bone conduction earphone.

CN207039848U

China

Other languages: Chinese

Inventor: 李永坚, 张浩锋, 游芬, 齐心

Worldwide applications

2017 CN

Application CN201721042039.5U events

2017-08-18	Application filed by 深圳市新音科技有限公司
2017-08-18	Priority to CN201721042039.5U
2018-02-23	Application granted
2018-02-23	Publication of CN207039848U

Info: Cited by (4), Legal events, Similar documents, Priority and Related Applications

External links: Espacenet, Global Dossier, Discuss

Description

A kind of bone conduction earphone

Technical field

Earphone field is the utility model is related to, more particularly to a kind of bone conduction earphone.

Background technology

Osteocacusis is a kind of sound conduction mode, i.e., sound is converted into the mechanical oscillation of different frequency, passes through the cranium of people Bone, osseous labyrinth, inner ear lymph transmission, spiral organ, auditory nerve, auditory center transmit sound wave.Bone conduction earphone is passed using bone Waveguide technology is called, is close to bone, and sound wave directly reaches auditory nerve by bone.Therefore ears can be opened, does not injure eardrum, Therefore liked by consumers in general.Bone conduction earphone generally needs to have certain water resistance, especially in circuit The key area of plate is with greater need for possessing good water resistance, key area water proofing property of the existing bone conduction earphone in circuit board Can be poor, it is

Claims (10)

Hide Dependent

1. a kind of bone conduction earphone, it is characterised in that the bone conduction earphone includes ear-hang component, and the ear-hang component includes the One housing, the second housing, connection member, the 3rd housing and the control circuit group for connecting first housing and the second housing Part, the 3rd housing coordinate with first housing, are used for the first accommodating sky for housing the control circuit component to be formed Between, button perforate and the storage tank connected with the button perforate, the control circuit component are provided with the 3rd housing including circuit board, the switch being fixed on the circuit board, waterproof liner and button, wherein the button be arranged at it is described by In key perforate and exposed through the button perforate, the waterproof liner is included liner plate main body and is coated on injection molding manner described The 3rd resilient coating in liner plate main body, the waterproof liner is arranged in the storage tank and the 3rd resilient coating and institute State storage tank sidewall elastomer abut, the button and it is described switch be

unfavorable for the protection of circuit board and bone conduction earphone.

Utility model content

The utility model can effectively improve osteoacusis ear mainly solving the technical problems that provide a kind of bone conduction earphone The water resistance of machine.

In order to solve the above technical problems, the utility model embodiment, which provides a kind of bone conduction earphone, includes ear-hang component, institute Stating ear-hang component includes connection member, the 3rd housing of the first housing, the second housing, connection first housing and the second housing And control circuit component, the 3rd housing coordinate with first housing, it is used to house the control circuit group to be formed First accommodation space of part, button perforate and the storage tank connected with the button perforate, institute are provided with the 3rd housing Stating control circuit component includes circuit board, the switch being fixed on the circuit board, waterproof liner and button, wherein described press Key is arranged in the button perforate and exposed through the button perforate, and the waterproof liner includes liner plate main body and with injection Mode is coated on the 3rd resilient coating in the liner plate main body, and the waterproof liner is arranged in the storage tank and described the Three resilient coatings abut with the sidewall elastomer of the storage tank, and the button and the switch are respectively arranged at the waterproof liner Both sides and abutted respectively with the waterproof liner.

Compared with prior art, the beneficial effects of the utility model are : The waterproof liner main body of the utility model embodiment On the 3rd resilient coating is coated with injection molding manner so that the 3rd resilient coating is not easy to come off from waterproof liner main body, energy Enough make the compactness between the 3rd resilient coating and waterproof liner main body more preferable, improve existing bone conduction earphone water proofing property Energy, ensure the validity of waterproof.

Brief description of the drawings

Fig. 1 is the structural representation of the utility model bone conduction earphone embodiment middle ear hanging component ;

Fig. 2 is that bone conduction earphone overall structure disassembles schematic diagram in the utility model bone conduction earphone embodiment ;

Fig. 3 is another structural representation of the utility model bone conduction earphone embodiment middle ear hanging component ;

Fig. 4 is the cross section structure schematic diagram of A-A in Fig. 3 ;

respectively arranged at the waterproof liner both sides and respectively with The waterproof liner abuts.

2. bone conduction earphone according to claim 1, it is characterised in that the ear-hang component further comprises the 4th shell Body, the 4th housing coordinate with second housing, to form the second accommodation space for being used for housing bone-conduction speaker, institute The 4th housing is stated to set in prism-shaped, wherein sound hole is drawn in the bar shaped that is at least provided with one side in the 4th housing, wherein The bottom surface that the length direction and the 4th housing of sound hole are drawn in the bar shaped be arranged in parallel, and the bar shaped draws the length of sound hole not Less than 2/3rds of the width of the side where it.

3. bone conduction earphone according to claim 1, it is characterised in that the connection member connects institute respectively including both ends State the first elastic metallic yarn of the first housing and second housing and be coated on first elastic metallic yarn first Resilient coating.

4. bone conduction earphone according to claim 3, it is characterised in that the inside of first resilient coating is further set The lead channels for connecting first housing and second housing are equipped with, the ear-hang component further comprises from described First housing extends to the first wire group of second housing through the lead channels, and the radial dimension of the lead channels is set Being set to allows the first wire group to be moved along the lead channels ; And/or the first son is provided with the first shell body and is housed Space, the second sub- accommodation space is provided with the 3rd housing, and when the 3rd housing and first housing coordinate First accommodation space is collectively forming with the described first sub-accommodation space, wherein the volume of the second sub- accommodation space is more than The first sub- accommodation space.

5. bone conduction earphone according to claim 3, it is characterised in that first housing and the second housing are respectively with note Modeling mode is fixedly connected with the both ends of first elastic metallic yarn, and first resilient coating is fixed with injection molding manner and is coated on On on first elastic metallic yarn and at least part outer surface of first housing and second housing.

Fig. 5 is that bone conduction earphone part-structure disassembles schematic diagram in the utility model bone conduction earphone embodiment ;

Fig. 6 is the cross section structure schematic diagram of C-C in Fig. 5 ;

Fig. 7 is circuit diagram in the utility model bone conduction earphone embodiment ;

Fig. 8 is the structural representation of the 4th housing in the utility model bone conduction earphone embodiment ;

Fig. 9 is that bone conduction earphone Plug Division is illustrated with patching pore structure amplification in the utility model bone conduction earphone embodiment Figure ;

Figure 10 is Plug Division and jointing holes cross section structure schematic diagram in the utility model bone conduction earphone embodiment ;

Figure 11 is jointing holes structural representation in the utility model bone conduction earphone embodiment ;

Figure 12 is Plug Division structural representation in the utility model bone conduction earphone embodiment ;

Figure 13 is Fig. 9 B-B cross section structure schematic diagram ;

Figure 14 is that bone conduction earphone another part structure disassembles schematic diagram in the utility model bone conduction earphone embodiment ;

Figure 15 is Figure 14 part-structure schematic cross-section ;

Figure 16 is control circuit component structure diagram in the utility model bone conduction earphone embodiment ;

Figure 17 is another structural representation of control circuit component in the utility model bone conduction earphone embodiment.

Embodiment

Refering to Fig. 1 and Fig. 2, the utility model bone conduction earphone embodiment includes ear-hang component 11, and ear-hang component 11 includes First housing 111, the second housing 112 and the connection member 113 of the first housing 111 of connection and the second housing 112, wherein connecting Part 113 connects the first elastic metallic yarn 1131 of the first housing 111 and the second housing 112 including both ends and is coated on respectively The first resilient coating 1132 on first elastic metallic yarn 1131.

Typically, bone conduction earphone also includes the elements such as bone-conduction speaker, battery, control circuit, such as osteoacusis is raised one's voice Device is used to export sound to user by vibration in a manner of osteoacusis.Battery is used to give bone

6. bone conduction earphone according to claim 5, it is characterised in that described formed with through hole on second housing First resilient coating covers the through hole, and further above the through hole and the side away from second housing formed with Button holding part, the ear-hang component further comprise button and switch module, hold wherein the button is arranged at the button Put in portion, the switch module is arranged at the side of remote first resilient coating of second housing, and is pressed with described First resilient coating below key abuts.

7. bone conduction earphone according to claim 1, the quantity of the ear-hang component is two, and the bone conduction earphone enters One step includes rear hanging component, and the rear hanging component includes the second elastic metallic yarn, is coated on second elastic metallic yarn Second resilient coating and the Plug Division for being arranged at the second elastic metallic yarn both ends, the Plug Division respectively with it is described two First housing of ear-hang component patches cooperation, and is fixedly connected.

8. bone conduction earphone according to claim 7, it is characterised in that the end set of first housing has for permitting Perhaps the vertical direction of the jointing holes of Plug Division insertion and the direction of insertion in the Plug Division connect the jointing holes with Outside perforate, to allow into the jointing holes to apply from the outside through the perforate glue or installation stopper, to cause Plug Division is stated to be fixed in the presence of the glue or stopper in the jointing holes.

9. bone conduction earphone according to claim 8, it is characterised in that fluting is provided with the side wall of the Plug Division, The fluting is exposed through the perforate, and for receiving the glue or stopper.

10. bone conduction earphone according to claim 9, it is characterised in that the Plug Division includes and the described second elasticity The first of wire connection patches section and patches section with described first and be connected and away from second elastic metallic yarn setting Second patches section, and direction of insertion of the jointing holes along the Plug Division is divided into patches the first of section for receiving described first Hole section and for receiving the described second the second hole section for patching section, wherein first hole section is sized to allow for described Two patch section moves

conduction earphone each power elements.Control Circuit processed is used to control bone conduction earphone function such as realizing regulation volume, switching on and shutting down, play audio and bluetooth communication.

Ear-hang component 11 is generally used for user and is hung on its ear when wearing bone conduction earphone, can so make osteoacusis ear Machine is more firmly worn on the ear of user.Ear-hang component 11 needs to have good resistance to compression and non-deformability, so as to User is not easy to damage or cause its deformation by bone conduction earphone when in use.

In the present embodiment, connection member 113 can directly contact ear and support bone conduction earphone by people's the ear portion, even Relay part 113 includes the first elastic metallic yarn 1131 and the first resilient coating being coated on the first elastic metallic yarn 1131 1132, the first housing 111 and the second housing 112 are connected by the first elastic metallic yarn 1131, can effectively strengthen osteoacusis ear The bending performance and structural stability of machine, ear-hang component 11 is set effectively to carry out elastic recovery when being bent and extensive Shape is restored, is unlikely to deform.In addition traditional bone conductors earphone can be improved using the first elastic metallic yarn 1131 and uses plastics conduct The problems such as fragile caused by the material of ear-hang component.Optionally, connection member 113 can include more first elasticity gold Belong to silk 1131, such as more the first tiny elastic metallic yarns 1131 can be set further to improve the curved of ear-hang component 11 Folding reliability, such as 3 first elastic metallic yarns 1131 of setting, the diameter 0.3mm of every first elastic metallic yarn 1131, now The material of 3 first elastic metallic yarns can with it is identical can also part it is identical or all different, every first elasticity gold certainly Belong to silk 1131 diameter can also identical, part it is identical or all different.

In the present embodiment, optionally, the first elastic metallic yarn 1131 can be metal simple-substance, or including more The alloy material of kind metal material, such as spring steel, aluminium alloy, magnesium alloy, titanium alloy, nickel alloy, Ti-Ni alloy, magnesium lithium close Gold, chrome-molybdenum steel etc. or the composite including metal material and nonmetallic materials.Optionally, the first elastic metallic Silk 1131 is titanium alloy wire, or is at least made up of titanium alloy material, such as a diameter of 0.8-1.5mm titanium alloy wire, optional For 1.0-1.25mm.

In the present embodiment, the first resilient coating of outer cladding 1132 of the first elastic metallic yarn 1131, the first resilient coating 1132 directly contact with ear, because the elastic reaction of the first resilient coating 1132 enables to user cosily to wear bone Conduct earphone.In addition, the first resilient coating 1132 can freely along the direction of insertion in first hole section, and make it that described first patches section and described first Tight fit between hole section.

more effectively coat the first elasticity gold due to the presence of its elastic reaction Belong to silk 1131, remain to effectively coat the first elastic metallic yarn 1131 even in after repeatedly bending, ensure bone conduction earphone knot The validity of structure.Optionally, the first resilient coating 1132 is layer of silica gel, certainly in other embodiments, the first resilient coating 1132 can also be emulsion layer either rubber layer or other flexible plastic layers, or be the composite comprising silica gel Layer.

Optionally, the first housing 111 and the second housing 112 are respectively with injection molding manner and the first elastic metallic yarn 1131 Both ends are fixedly connected, and the first resilient coating 1132 is fixed with injection molding manner and is coated on the first elastic metallic yarn 1131.Optionally It is that the first housing 111 and the second housing 112 are plastic casing, and the first elastic metallic yarn is fixed in a manner of injection molding 1131 both ends, and the first resilient coating 1132 are integrally formed on the first elastic metallic yarn 1131 of cladding, so that the Connection between one housing 111, the second housing 112 and the first elastic metallic yarn 1131 is more firm, and causes bone conduction earphone One body-sensing is stronger with texture, makes the more compact structure of bone conduction earphone lighter.In the present embodiment, injection molding manner can be note The one kind being moulded into type, thermoplastic shaping, compression molding etc., but not limited to this.

Refering to Fig. 3 and Fig. 4, optionally, the first resilient coating 1132 by different colours two sub- resilient coatings 1132a, 1132b are put together, and two of which elastic coating 1132a, 1132b split seam are located at connection member 113 respectively Be oppositely arranged two sides 113a, 113b on, wherein split is sewn on the throwing for example on lateral surface 113a on same side Shadow offsets one from another.Such as when carrying out injection molding, two bullets using at least two molds to the first resilient coating 1132 Property coating 1132a, 1132b are molded respectively, the two kinds of colors that thus can form different ratio be, for example, light gray with it is dark-grey The combination of color or other colors, and split seam is located on two sides 113a, 113b that connection member 113 is oppositely arranged, and Projection offsets one from another on same side so that the visual effect of bone conduction earphone more preferably, further as staggering coats the first bullet Property wire 1131 cause covered effect it is more preferable.Certain first resilient coating 1132 elastic can also be covered by two of same color Layer is put together.By injection molding twice, formation two is elastic on two sides 113a, 113b of connection member 113 respectively Coating 1132a, 1132b, due to the presence of injection pressure when can improve single injection-molded or be injected separately shaping up and down Easily causing element such as the first elastic metallic yarn 1131 in the first resilient coating 1132 to produce

displacement reduces connection member 113 Forming Quality.Certainly, in other embodiments, the first resilient coating 1132 can directly form a coating, or be formed The more than two elastic coating of quantity.

In the present embodiment, the two sides of connection member 113 include being oppositely arranged medial surface 113b and lateral surface 113a, are Refer to the ear-hang component 11 when wearing and be hung on human ear, connection member 113 towards the side of head part be medial surface 113b, towards human ear Side be lateral surface 113a.

With continued reference to Fig. 3 and Fig. 4, optionally, two sub- resilient coating 1132a, 1132b split seam are respectively positioned at company On the medial surface 113b and lateral surface 113a of relay part 113, and the split seam on the lateral surface 113a of connection member 113 The projection compared to the split seam on the medial surface 113b of connection member 113 is projected closer to connection member 113 and human ear Contact position.It can thus be appreciated that a split seam is located at the position of lateral surface 113a close contact human ear, and another is spelled Elastic coating 1132a that joint close is located at medial surface 113b almost to show same color on lateral surface 113a or 1132b, such as lateral surface 113a almost show light gray so that the body-sensing of bone conduction earphone one is stronger, more attractive in appearance.

Optionally, split seam is arranged so that two sub- resilient coating 1132a, 1132b in same side such as 113a Or the area on 113b is different from each other.In other embodiments, split seam may be arranged so that two sub-resilient coatings The area of 1132a, 1132b on same side is identical or is substantially the same.

Refering to Fig. 2 to Fig. 4, optionally, the color for being arranged so that two sub- resilient coating 1132a, 1132b is stitched in split Relatively shallower elastic coating 1132a footprint areas on lateral surface 113a are relatively large.That is, the elastic of light colour is covered Layer 1132a is more located at lateral surface 113a, and the elastic coating 1132b of dark colour is more located at medial surface 113b, so So that the surface of connector 113 has more harmony, strengthen the aesthetic properties of bone conduction earphone while structural behaviour is ensured.

With continued reference to Fig. 1, optionally, the both ends of the first elastic metallic yarn 1131 set in flat and are respectively embedded into One housing 111 and the second housing 112.Namely formed and be fixed in a manner of injection in the first housing 111 and the second housing 112 First elastic metallic yarn 1131 is in the both ends that flat is set, and can so increase the first elastic metallic yarn 1131 and the first housing 111st, the contact area of the second housing 112 so that the first elastic metallic yarn 1131 and the first housing 111, the second housing 112 are more steady Surely interfix.Optionally, it

should be in flat that the first elastic metallic yarn 1131 is more than connection in the width at the both ends of flat setting The width of the coupling part at the flat both ends set, so plays a spacing effect after shaping, prevents the first elasticity gold Category silk 1131 is pulled out or come off from the first housing 111, the second housing 112.Optionally, first elastic metallic yarn 1131 Both ends are set in shape of threads.In shaping, partial shell can be taken shape in screw thread, to play fixed effect.Certainly, first The both ends of elastic metallic yarn 1131 can be set in flat and shape of threads respectively.In other embodiments, the first elasticity gold Category silk 1131 both ends can partly be located at indent to form depressed part, the first housing 111 and the second housing 112 in shaping In depressed part, to play fixation.

Refering to Fig. 1 and Fig. 2, optionally, the first resilient coating 1132 further coats the first housing 111 and the second housing 112 at least part outer surface, such as whole outer surfaces.I.e. the first resilient coating 1132 coats first in a manner of injection molding Elastic metallic yarn 1131, at least part outer surface of the first housing 111, at least part outer surface of the second housing 112, so make It is stronger to obtain texture and the body-sensing of bone conduction earphone, and the presence of the first resilient coating 1132, can further containment vessel The element of body and enclosure interior so that bone conduction earphone is more resistant to abrasion.

Refering to Fig. 5 and Fig. 6, optionally, formed with through hole 1121 on the second housing 112.I.e. through hole 1121 runs through second The medial surface and lateral surface of housing 112 First resilient coating 1132 cover through hole 1121 and further above through hole 1121 and Side away from the second housing 112 (i.e. the medial surface away from the second housing 112) is formed with button holding part 1121a.Button holds The portion 1121a of putting is to be covered through hole 1121 in injection moulding process by the first resilient coating 1132 and formed, in button holding part 1121a Because the presence of the first resilient coating 1132 is can to completely cut off moisture content, dust etc. to enter 112 in second shell body.Ear-hang component 11 enters One step includes button 118 and switch module 119, and wherein button 118 is arranged in button holding part 1121a.Switch module 119 is set Be placed in the second housing 112 away from the first resilient coating 1132 side, i.e. the second housing 112 medial surface, and with button 118 First resilient coating 1132 of lower section abuts.Optionally, a boss 1121b, button are provided with button holding part 1121a 118 are fixed in a manner of for example pasting on boss 1121b.In the present embodiment, because the first resilient coating 1132 is with injection Mode, which is fixed, to be coated on second shell body 112, and covers through hole 1121, has more preferable waterproof effect.Optionally, boss 1121b is integrally formed when the first resilient coating 1132 covers through hole 1121 and formed by the first resilient coating 1132.

In the present embodiment, the switch module 119 on the second housing 112 is mainly used for controlling the function of bone conduction earphone Switch, such as broadcasting and the pause of music, voice are answered with hanging up, connecting wireless signal to be connected mobile device such as bluetooth Communication, or the selection etc. of bone conduction earphone mode of operation, not limited to this.

Refering to Fig. 1, Fig. 2, Fig. 4 and Fig. 7, optionally, the inside of the first resilient coating 1132 is further provided with being used for The lead channels 1134 of the first housing 111 and the second housing 112 are connected, ear-hang component 11 further comprises from the first housing 111 The first wire group 1133 of the second housing 112 is extended to through lead channels 1134, the radial dimension of lead channels 1134 is arranged to The first wire group 1133 is allowed to be moved along lead channels 1134.

By setting lead channels 1134, such as first the one end of the first wire group 1133 can be connected when assembling in the later stage Element such as bone-conduction speaker in (such as in a manner of onboard) second housing 112, then the first wire group 1133 is another Hold through lead channels 1134 with connect the first housing 111 in element such as battery component 13, control circuit component 14 or Switching circuit board 15 etc., packaging technology can be so reduced, and existing bone conduction earphone can be improved in the first resilient coating 1132 that wiring is embedded to caused by the first wire group 1133 in injection molding is difficult and the problems such as be unfavorable for later period maintenance.When So, the one end of the first wire group 1133 first can also be connected into (such as in a manner of onboard) first housing 111 when assembling in the later stage Interior element such as battery component 13, control circuit component 14 or switching circuit board 15, then the first wire group 1133 is another Hold through lead channels 1134 to connect the element in the second housing 112 such as bone-conduction speaker.

In the present embodiment, 1134 specific molding mode of lead channels for example including providing one first elasticity gold first Belong to the first housing 111 of the connection of silk 1131 and the component of the second housing 112, further in the second housing 112 and the first housing 111 Between additional metal silk (not shown) is removably set, further in the first elastic metallic yarn 1131, additional gold Belong to silk and the partial outer face of the first housing 111 and the second housing 112 and first resilient coating 1132 is formed with injection molding manner, into Additional metal silk is extracted after type to form lead channels 1134.In other embodiments, such as the first resilient coating 1132 is molded During shaping, be embedded to easily melting property material, in the first 1132 injection molding of resilient coating, this easily melting property material melts and flow out, shape into lead channels 1134.In another example lead channels 1134

can be after the shaping of the first resilient coating 1132, by way of threading a needle Passage is formed, then expands passage by way of hot melt and forms lead channels 1134.

With continued reference to Fig. 1 and Fig. 4, in the present embodiment, optionally, lead channels 1134 are arranged at the first elastic metallic The downside of silk 1131, with when in use compared to contact of first elastic metallic yarn 1131 closer to connection member 113 with human ear Position.In the present embodiment, the first lead channels 1134 are independently arranged with the first elastic metallic yarn 1131 interval.In other implementations In example, the first lead channels 1134 can merge setting with the first elastic metallic yarn 1131, i.e., the first wire group 1133 is first The first elastic metallic yarn 1131 is can contact in lead channels 1134.In the present embodiment, lead channels 1134 are arranged at the first bullet The downside of property wire 1131, with when in use compared to the first elastic metallic yarn 1131 closer to connection member 113 and human ear Contact position, due to the presence of lead channels 1134, can make it that the first resilient coating 1132 close to human ear is more elastic It is softer, wear more comfortable.In other embodiments, certain first lead channels 1134 can also be arranged on the first elasticity The upside of wire 1131, the first elastic metallic yarn 1131 is closer to human ear when in use.

Refering to Fig. 1, Fig. 2 and Fig. 8, optionally, ear-hang component 11 includes the 3rd housing 114 and the 4th housing 115.Wherein 3rd housing 114 coordinates with the first housing 111, to form the first appearance for being used for housing battery component 13 or control circuit component 14 116 between being empty.4th housing 115 coordinates with the second housing 112, is used for the second accommodating sky for housing bone-conduction speaker to be formed Between 117.Optionally, the 4th housing 115 and the 3rd housing 114 are plastic casing.

Optionally, the second housing 112 is connected with the 4th housing 115 by the first snap component (not marking), the first card Seaming element includes the first holding section and the first buckling parts, and the first holding section is arranged on the 4th housing 115, and the first buckling parts is set It is placed on the second housing 112, when the second housing 112 and the 4th housing 115 coordinate, the first holding section card on the 4th housing 115 Enter the first buckling parts of the second housing 112, the second housing 112 is fixed together with the 4th housing 115.Optionally, Two housings 112 are attached with the 4th housing 115 by least one set of first snap component such as 4 group of first snap component.When Right second housing 112 can also be bonded with the 4th housing 115 by glue, or be made simultaneously with glue by the first engaging component It is connected with being fixed, or by fasteners such as screws.

Optionally, the 3rd housing 114 is connected with the first housing 111 by the second snap component (not marking), the second card Buckle assembly includes the second holding section and the second buckling parts, and the second holding section is arranged on the 3rd housing 114, and the second buckling parts is set Put on the first housing 111, when the first housing 111 and the 3rd housing 114 coordinate, the second holding section card of the 3rd housing 114 Enter the second buckling parts of the first housing 111, the first housing 111 is fixed together with the 3rd housing 114.

In the present embodiment, the 3rd housing 114 of ear-hang component 11 coordinates with the first housing 111, is used to house to be formed First accommodation space 116 of battery component 13 or control circuit component 14, the 4th housing 115 coordinates with the second housing 112, with shape Into the second accommodation space 117 for housing bone-conduction speaker, the first wire group 1133 can move through lead channels 1134 are used to electrically connect bone-conduction speaker and battery component 13 or control circuit component 14.In the present embodiment, battery component 13 for example including battery and battery management circuit, and battery is that bone conduction earphone miscellaneous part is supplied by battery management circuit Electricity, such as battery management circuit include charging circuit, current foldback circuit, over-discharge protection circuit, overvoltage crowbar etc..Such as Battery is rechargeable battery, for example, lithium battery.Refering to Fig. 7, optionally, bone conduction earphone, which still further comprises, for example transfers Circuit board 15, it is arranged in the first accommodation space 116, battery component 14 is divided into multiple wiring solder joints by switching circuit board 15, With two bone-conduction speakers, control circuit component 14, microphone and the switch module of corresponding connection bone conduction earphone 119 etc., said elements associated tracks are connected with above-mentioned wiring solder joint and turned on by Fig. 7 modes, are easy to wiring and assembling.Such as electricity Pond component 14 connects switching circuit board 15 by two wiring solder joints of both positive and negative polarity, and switching circuit board 15 separates 10 wiring welderings Point, to connect the miscellaneous part of bone conduction earphone.

Refering to Fig. 1 and Fig. 2, optionally, the first sub-accommodation space 116a, the 3rd housing are provided with the first housing 111 The second sub-accommodation space 116b is provided with 114, and it is accommodating with the first son when the 3rd housing 114 and the first housing 111 coordinate Space 116a is collectively forming the first accommodation space 116, such as is fixedly connected by the first snap component.Wherein second son holds The volume for being empty a 116b is more than the first sub-accommodation space 116a.Such as second sub-

accommodation space 116b volume be first son hold It is empty 2-5 times of a 116a, for example, 3-4 times, for example, 3.2 times, or for example, 2.5 times.

In assembled battery component 13 or control circuit component 14, such as first by battery component 13 or control circuit component 14 are placed in the first sub-accommodation space 116a, for example, battery by glue material or sticking double faced adhesive tape in the first sub- accommodation space In 116a, or control circuit component 14 is fixed in the first sub- accommodation space 116a by snap-in structure so that battery component 13 or control circuit component 14 it is most of exposed, be easy to the techniques such as assembling and wiring, then the 3rd housing 114 is passed through into the second card Buckle assembly covers with the first housing 111, and the first sub- sub- accommodation space 116b of accommodation space 116a and second form the first accommodating sky Between 116, so improving traditional bone conductors earphone needs to assemble battery or control board and be contained in and ear-hang one In the housing of shaping and further battery control circuit plate exterior section is affixed on using silica gel strip to carry out coating caused assembling The problem of complex procedures, simplify structure and assembling procedure.

Refering to Fig. 2 and Fig. 8, optionally, the 4th housing 115 is set in prism-shaped, wherein in the 4th housing 115 at least Bar shaped is provided with one side and draws sound hole 1151, the length direction of sound hole 1151 and the bottom surface of the 4th housing 115 are drawn in wherein bar shaped It is parallel or be arranged substantially in parallel, and bar shaped draw sound hole 1151 length be not less than side where it width three/ Two.In the present embodiment, bar shaped draws the relatively parallel bottom surface 115e of sound hole and refers to that the 4th housing 115 is towards human body face when wearing Plane defined in the edge of opening of the one side in portion.

Typically, bone-conduction speaker peritropous environment of meeting during vibration transmits sound, in addition to wearer, ring Other people in border can also hear that the sound of loudspeaker, such as the vibration of bone-conduction speaker cause the second accommodation space 117 The vibration of interior air and the vibration for causing the grade of the 4th housing 115, so as to occur leaking sound phenomenon, the sound of bone conduction earphone can be influenceed Matter.It is to propagate to the sound wave guiding in the second accommodation space 117 outside space to draw sound hole 1151, with leakage speech ripple with atmosphere Propagation interferes, and so as to reduce the amplitude of Lou speech ripple, reduces leakage sound.

With continued reference to Fig. 8, in order to further improve leakage sound phenomenon, the present embodiment passes through at least the one of the 4th housing 115 Side sets bar shaped to draw sound hole

1151, and is appropriately arranged with its size and direction improves the leakage sound that traditional bone conductors earphone belt comes and showed As still than it is more serious the problem of.Further, bar shaped is drawn the length direction of sound hole 1151 and parallel with the bottom surface of the 4th housing 115 set Put, can not only ensure attractive in appearance, and the uniformity of the intensity of acoustic wave through directed parallel, so as to ensure interference effect.In this reality Apply in example, bar shaped draw sound hole 1151 length be not less than side where it width 2/3rds, can effectively guide the Sound wave in two accommodation spaces 117.Be chosen as, bar shaped draw sound hole 1151 length be its where side width four/ Three.Certainly, in other embodiments, wherein being at least set side by side with least two articles of bar shapeds on one side in the 4th housing 115 Draw sound hole 1151, such as setting two parallel bar shapeds to draw sound hole 1151 at least on one side, and with the bottom of the 4th housing 115 Face 115e is parallel.

Optionally, the 4th housing 115 bone conduction earphone using when side 115d close to human ear on be not provided with bar shaped Draw sound hole 1151.Certainly, in other embodiments, can also the 4th housing 115 when bone conduction earphone uses close to human ear Side 115d on set draw sound hole, can be that point type draws sound hole, or sound hole 1151 is drawn in bar shaped.

With continued reference to Fig. 2 and Fig. 8, optionally, the 4th housing 115 is set in quadrangular shape, wherein in the 4th housing 115 Bar shaped, which is provided with, on two sides 115a, 115c being disposed adjacent with connection member 113 draws sound hole 1151, further remaining two in individual side 115b, 115d bone conduction earphone using when the side 115b away from human ear equally set bar shaped to draw sound hole 1151, and in remaining two sides 115b, 115d bone conduction earphone using when side 115b close to human ear on do not set Put bar shaped and draw sound hole 1151.Namely set three bar shapeds to draw sound hole 1151 on three sides 115a, 115b, 115c, passed in bone Guide lug machine using when be not provided with bar shaped close to the side 115d of human ear and draw sound hole 1151, so can further reduce Lou sound and show As ensureing the tonequality of bone conduction earphone.

In the present embodiment, the 4th housing 115 is set in quadrangular shape, such as including four-prism and class quadrangular Shape.Such as specifically, two sides 115a, 115c being disposed adjacent with connection member 113 of the 4th housing 115 any one side The length in face is all higher than the length of remaining two sides 115b, 115d any one side, further, the 4th housing 115 It is unequal or equal with two sides 115a, 115c that connection member 113 is disposed adjacent length.In other embodiment In, the 4th housing 115 is set in quadrangular shape, and the length of its four sides can be equal.

In the present embodiment, optionally, two sides being disposed adjacent with connection member 113 of the 4th housing 115 Angle between 115a, 115c is 90 ° -150 °, is chosen as 100 ° -130 °, is chosen as 110 ° -120 °.

Optionally, it is further provided with covering the water proof and dust proof filter screen that sound hole 1151 is drawn in bar shaped, example in the 4th housing 115 Such as waterproof ventilated membrane (not shown).Water proof and dust proof filter screen is set, can prevent the dust outside bone conduction earphone and waterproof bone from passing The water inlet of guide lug machine enters damage bone-conduction speaker.

In the present embodiment, a microphone aperture (not shown) is respectively arranged with the second housing 112 and the 4th housing 115, Specifically, the first microphone aperture be arranged on the not direct remaining two sides 115b being connected with connection member 113 of the 4th housing 115, 115d junction, second microphone hole are arranged on the lateral surface of the second housing 112 and close to the 4th housing 115 and connection members 113 junction.By setting two microphones in the microphone aperture of two stagger settings, phonetic entry matter can be strengthened Amount, and effective Noise Reduction is played, thus improve the definition of phonetic entry.

Refering to Fig. 2 and Fig. 9, in the present embodiment, the quantity of ear-hang component 11 is two, and bone conduction earphone further wraps Include rear hanging component 12.Hanging component 12 includes the second elastic metallic yarn 121, second be coated on the second elastic metallic yarn 121 afterwards Resilient coating 122 and the Plug Division 123 for being arranged at the both ends of the second elastic metallic yarn 121.Plug Division 123 respectively with two ear-hangs First housing 111 of component 11 patches cooperation, and is fixedly connected.Optionally, Plug Division 123 is fixed on second with injection molding manner The both ends of elastic metallic yarn 121, Plug Division 123 can be so set more securely to be fixed on the both ends of the second elastic metallic yarn 121. Optionally, the second elastic metallic yarn 121 can be metal simple-substance, or include the alloy material of various metals material, Such as spring steel, aluminium alloy, magnesium alloy, titanium alloy, nickel alloy, Ti-Ni alloy, magnesium lithium alloy, chrome-molybdenum steel etc. or bag Include metal material and the composite of nonmetallic materials.In the present embodiment, the second elastic metallic yarn 121 is titanium alloy wire, or Person is at least made up of titanium alloy material.In the present embodiment, the second resilient coating 122 is layer of silica gel.In other embodiment mode In, the second resilient coating 122 can also be rubber layer or emulsion layer, or the composite layer including silica gel.

Carry out patching cooperation by the Plug Division 123 of rear hanging component 12 and the first housing 111 of

two ear-hang components 11, change It has been apt to the problems such as earphone size that existing bone conduction earphone is brought using the fixed form such as screw is larger, so as to simplify structure, Mitigate the weight of bone conduction earphone, facilitate later stage wiring and cost can be reduced.

Refering to Fig. 9 and Figure 10, optionally, the end set of the first housing 111 has what is inserted for allowing Plug Division 123 Jointing holes 1111 and the vertical direction connection jointing holes 1111 of direction of insertion in Plug Division 123 and the perforate 1112 of outside, To allow into jointing holes 1111 to apply from the outside through perforate 1112 glue or installation stopper (not shown), to cause Plug Division 123 are fixed in the presence of glue or stopper in jointing holes 1111.In this embodiment, perforate 1112 is positioned at the described first son In accommodation space 116a.In other embodiments, the end set of the first housing 111 has what is inserted for allowing Plug Division 123 Jointing holes 1111, there is a recess on Plug Division 123, there is a resilient projection in jointing holes 1111, Plug Division 123 is inserted and patched During hole 1111, resilient projection is caught in recess, and Plug Division 123 and jointing holes 1111 are coordinated into fixation.Such as Plug Division 123 is inserted During jointing holes 1111, resilient projection is first extruded, after be caught in the presence of elastic restoring force in recess.Optionally, patch The depth that portion 123 inserts jointing holes 1111 is 6-11mm, is chosen as 8-10mm.

With continued reference to Fig. 9 and Figure 10, optionally, fluting 1231 is provided with the side wall of Plug Division 123.The warp of fluting 1231 Perforate 1112 is exposed or part is exposed, and for receiving glue or stopper.Optionally, Plug Division 123 is at least one It is provided with side wall on fluting 1231, such as two side walls and is provided with fluting 1231.In other embodiments, can make simultaneously With glue and stopper, such as first fixed using stopper, then apply glue and further fix.In the present embodiment, stopper E.g. chock or pin or the fixture insertion fluting 1231 with certain elasticity is interference fitted.

Refering to Fig. 2, Fig. 9 and Figure 10, optionally, Plug Division 123 includes first be connected with the second elastic metallic yarn 121 Patch section 123a and patch section 123a with first and be connected and second patch section away from what the second elastic metallic yarn 121 was set 123b.Direction of insertion of the jointing holes 1111 along Plug Division 123 is divided into for receiving the first the first hole section for patching section 123a 1111a and the second hole section 1111b that section 123b is patched for reception second.Wherein the first hole section 1111a is sized to permit Perhaps second patch section 123b and moved freely along direction of insertion in the first hole section 1111a, and cause first to patch section 123a and the Tight fit between one hole section 1111a.Section and both ends hole section are

patched by two sections to be respectively cooperating with fixing, and can cause Plug Division 123 are more securely fixed in the first housing 111, strengthen the structural stability of bone conduction earphone.

With continued reference to Fig. 9 and Figure 10, optionally, fluting 1231 is further disposed at the second side wall for patching section 123b. Perforate 1112 connects the second hole section 1111b of jointing holes 1111.In the present embodiment, a section 123b is patched in Plug Division 123 second The first hole section 1111a and the second hole section 1111b is passed sequentially through, so that first patches section 123a and the first hole section 1111a close-fittings Close, second patch section 123b fluting 1231 it is exposed through perforate 1112, for receiving glue or stopper.Connect by first Insert section 123a and the first hole section 1111a tight fit and the second jointing holes 1111 and the second hole section 1111b further cooperation It is fixed, effectively rear extension can be fixedly connected with ear-hang.In other embodiments, fluting 1231 can be arranged on first and patch In section 123a side wall.Perforate 1112 connects the second hole section 1111b of jointing holes 1111.

Optionally, the second hole section 1111b be dimensioned so that second patch section 123b and the second hole section 1111b it Between tight fit.Thus by the first tight fit, the second jointing holes 1111 and the second hole for patching section 123a and the first hole section 1111a Section 1111b tight fit and the glue of application or stopper are fixed, and effectively further hang by after and are fixed with ear-hang Connection, and structure can be simplified, make bone conduction earphone lighting.Certainly, in other embodiments, first section 123a and are patched Tight fit between one hole section 1111a, and second to patch section 123b and the second hole section 1111b can be other kinds of secure fit Such as it is clasped.

Refering to Figure 11, optionally, first patches the shape of section 123a both sides and the first hole section 1111a contact surfaces contacted It is different.First patches section 123a both sides shape difference, and accordingly the first hole section 1111a patches what section 123a was contacted with first 1111a1,1111a2 are also different for two sides.For example, the curved setting in the first hole section 1111a two sides, medial surface 1111a2 Radius of curvature be more than lateral surface 1111a1 radius of curvature, namely medial surface 1111a2 radian change is relatively slow, and outer Side 1111a1 radian change is relatively large, and first patches section corresponding setting in 123a two sides.Certainly, in other embodiment In, the first hole section 1111a curved setting in two sides, medial surface 1111a2 radius of curvature is less than lateral surface 1111a1's Radius of curvature, namely medial surface 1111a2 radian change are relatively large, and the change of lateral surface 1111a1 radian is relatively small. First hole section 1111a two sides are medial surface 1111a2 close to human body head when

wearing, and are outer away from human body head Side 1111a1.First patches the shape difference of section 123a both sides and the first hole section 1111a contact surfaces contacted so that first connects Insert section 123a and be unable to anti-plug, and two Plug Divisions 123 are hung from mixed insertion after also causing, play effective fool proof effect, facilitate group Dress.

Refering to Fig. 9 and Figure 10, optionally, first, which patches section 123a and second, patches section 123b bottom surface and stepped sets Put and patch section 123a first and the second junction for patching section 123b is provided with the first wedge-shaped changeover portion 123c, and the first hole Section 1111a and the second hole section 1111b junction is provided with the second wedge-shaped changeover portion corresponding with the first wedge-shaped changeover portion 123c 1111c。

In the present embodiment, first section 123a is patched and the second bottom surface for patching section 123b refers to when wearing close to human ear The one side of root.Top surface is then the one side away from people's the ear portion.

In the present embodiment, first patch section 123a thickness and be greater than the second thickness for patching section 123b and i.e. stepped set Put, there is thickness difference in both junctions, and set the first wedge-shaped changeover portion 123c, it is corresponding in the first hole section 1111a and Second hole section 1111b junction sets the second wedge-shaped changeover portion 1111c being adapted with the first wedge-shaped changeover portion 123c, the One patches section 123a and second when patching a section 123b and being sequentially inserted into the first hole section 1111a and the second hole section 1111b, the first wedge-shaped mistake Cross section 123c and the second wedge-shaped changeover portion 1111c to abut against, second can be facilitated to patch section 123b and first and patch section 123a's Insertion, and play a part of buffering transition, spacing and further fixation.

Refering to Fig. 9, Figure 12 and Figure 13, optionally, rear hanging component 12 further comprises being wrapped by the second resilient coating 122 The the second wire group 124 covered, wherein the both ends of the second wire group 124 are exposed from the second resilient coating 122, the top of Plug Division 123 Face is provided with the groove 1232 of sunkening cord of the exposed parts for accommodating the second wire group 124.In the present embodiment, the second wire group 124, for connecting the element in two ear-hang components 11 such as connecting battery and control circuit component 14.Setting is sunken cord groove 1232, the second wire group 124 on the one hand effectively can be arranged and fixed, on the other hand can reduce volume.In other embodiment In, groove 1232 of sunkening cord can also be not provided with, and by other means enter the second

wire group 124 such as glue or double faced adhesive tape Row is fixed, or the top surface of Plug Division 123 is provided with the projection (not shown) that two rows are set up in parallel, and can be held between two row's projections Receive the second wire group 124.

Refering to Fig. 2, optionally, bone conduction earphone further comprises battery component 13 and control circuit component 14, wherein Battery component 13 is arranged at the first accommodation space 116 of one of two ear-hang components 11, and control circuit component 14 is arranged at In first accommodation space 116 of the other of two ear-hang components 11.

Refering to Figure 14 and Figure 15, optionally, the 3rd housing of the ear-hang component 11 for accommodating control circuit component 14 Button perforate 1141 and the storage tank 1142 connected with button perforate 1141 are provided with 114, control circuit component 14 includes electricity Road plate 141, the switch 142 being fixed on circuit board 141, waterproof liner 143 and button 144, wherein button 144 be arranged at by in key perforate 1141 and exposed through button perforate 1141, waterproof liner 143 includes liner plate main body 143a and with injection molding manner bag The 3rd resilient coating 143b overlayed on liner plate main body 143a, waterproof liner 143 is arranged in storage tank 1142 and the 3rd elasticity Coating 143b abuts with the sidewall elastomer of storage tank 1142, and button 144 and switch 142 are respectively arranged at the two of waterproof liner 143 Side and abutted respectively with waterproof liner 143.In this embodiment, the 3rd resilient coating 143b coats liner plate main body 143a one side And liner plate main body 143a edge, at least covered section edge, can also coat whole edges certainly.In other embodiment In, the 3rd resilient coating 143b can coat liner plate main body 143a completely, that is, coat liner plate main body 143a two sides.

In the present embodiment, the switch 142 on circuit board 141 be mainly used for switching on and shutting down, volume adjusting or other cut Change function etc..

With continued reference to Figure 14 and Figure 15, the 3rd resilient coating 143b is coated with injection molding manner in the main body of waterproof liner 143, So that the 3rd resilient coating 143b is not easy to come off from the main body of waterproof liner 143, and the 3rd resilient coating 143b and proof liner Compactness between plate main body 143a is more preferable, improves existing bone conduction earphone water resistance, ensures the validity of waterproof.At this In embodiment, liner plate main body 143a can be plastics, and the 3rd resilient coating 143b can be silica gel, latex, rubber or be conjunction into thing.

Optionally, waterproof liner 143 is provided with the locating slot for accommodating switch 142 close to the side of switch 142 1431.

In the present embodiment, the method for assembly control circuit component 14 for example first by button 144, waterproof liner 143 according to It is secondary to be placed on the 3rd housing 114, and button 144 set it is exposed through button perforate 1141, then circuit board 141 pass through switch 142 And the locating slot 1431 of waterproof liner 143 abuts with waterproof liner 143.By setting locating slot 1431, the essence of switch 142 can be made Location iit accurately is carried out with button 144, so as to pass through effectively Operation switch 142 of button 144.

Refering to Figure 16 and Figure 17, optionally, control circuit component 14 further comprises the day being arranged on circuit board 141 Line 145, antenna 145 include antenna body 145a spaced with circuit board 141 and are connected antenna body 145a and circuit The grounding parts 145b and current feed department 145c of plate 141, wherein when being looked up perpendicular to the side of circuit board 141, antenna body 145a is bent from grounding parts 145b to the side of circuit board 141 to be extended.In the present embodiment, antenna body 145a is to circuit board 141 side bending, the length of antenna 145, Enhanced Radiation Reduced Blast efficiency can be increased in the confined space.In the present embodiment, day Line 145 is generally used for what is communicated wirelessly, such as bluetooth communication.In other embodiments, WiFi communication, honeybee be can also be Nest data communication, NFC etc..

Optionally, antenna body 145a includes parallel portion 145a1 and kink 145a2, perpendicular to circuit board 141 Side looks up, and parallel portion 145a1 width is more than kink 145a2 width, parallel portion 145a1 one end connection grounding parts 145b and current feed department 145c, it is in rank that the other end, which connects kink 145a2, parallel portion 145a1 and kink 145a2 in junction, Scalariform is set, and kink 145a2 is bent from junction to the side of circuit board 141.

Optionally, control circuit component 14 further comprises the grounded parts 146 being arranged on circuit board 141, wherein Antenna body 145a bends extension to the side of the remote grounded parts 146 of circuit board 141.In the present embodiment, grounded parts 146 be the switch 142 on USB interface and/or circuit, or other grounded parts 146.Typically, such as USB of grounded parts 146 Interface, certain interference can be all caused to antenna 145, in the present embodiment, antenna body 145a connects to the remote of circuit board 141 The side bending extension of ground part 146, can improve interference of the grounded parts 146 to the signal of antenna 145 in the confined space, protect Demonstrate,prove signal quality.In the present embodiment, USB interface can be used in bone conduction earphone and external device such as mobile terminal transmission number According to, it can also be used to charged for battery component 13.

Optionally, bearing of trend of the antenna body 145a width along antenna body 145a tapers into.It is such as specific Ground, the parallel portion 145a1 width width that passes through is constant, kink 145a2 width gradually along bearing of trend by Gradual change is small.Certainly in other embodiments, parallel portion 145a1 width passes through and can tapered into, but parallel Width of the width of portion's 145a1 other ends still greater than kink 145a2.

Optionally, bearing of trend of the antenna body 145a bending angle along antenna body 145a becomes larger.Such as Bending angle becomes larger, usually in order to which remote grounded parts 146 is such as USB, so as to ensure that the radiation of antenna 145 is imitated Rate.Optionally, there is bending pin 145a3, bending angle herein in the one end of kink 145a2 away from parallel portion 145a1 Maximum, on the other hand it is to lift radiation efficiency on the one hand in order to meet the needs of the size of antenna 145.

Embodiment of the present utility model is the foregoing is only, not thereby limits the scope of the claims of the present utility model, it is all It is the equivalent structure or equivalent flow conversion made using the utility model specification and accompanying drawing content, or directly or indirectly uses In other related technical areas, similarly it is included in scope of patent protection of the present utility model.

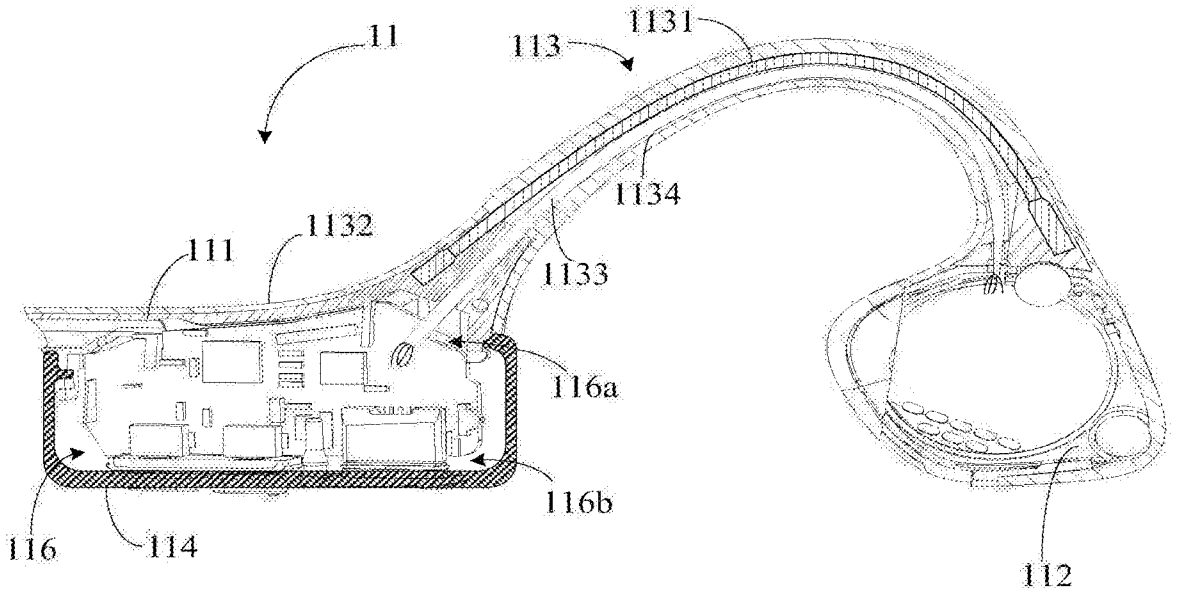


图1

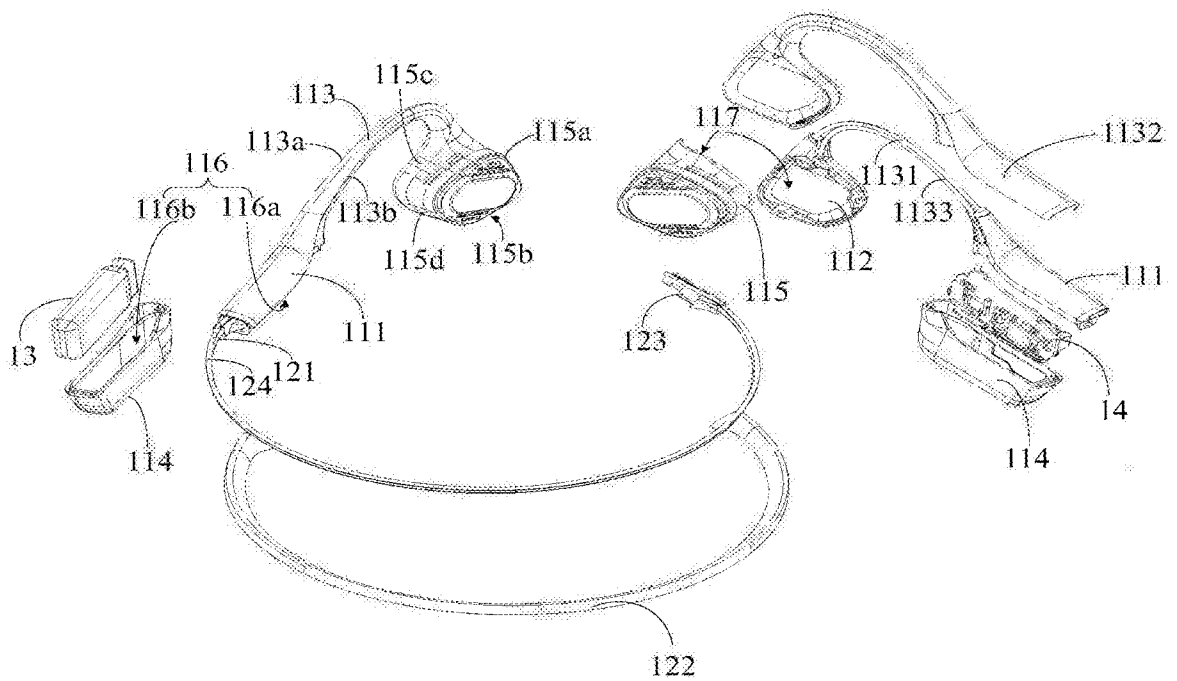


图2

IPR2025-00843; Mojawa
Ex. 1002 - Page 955

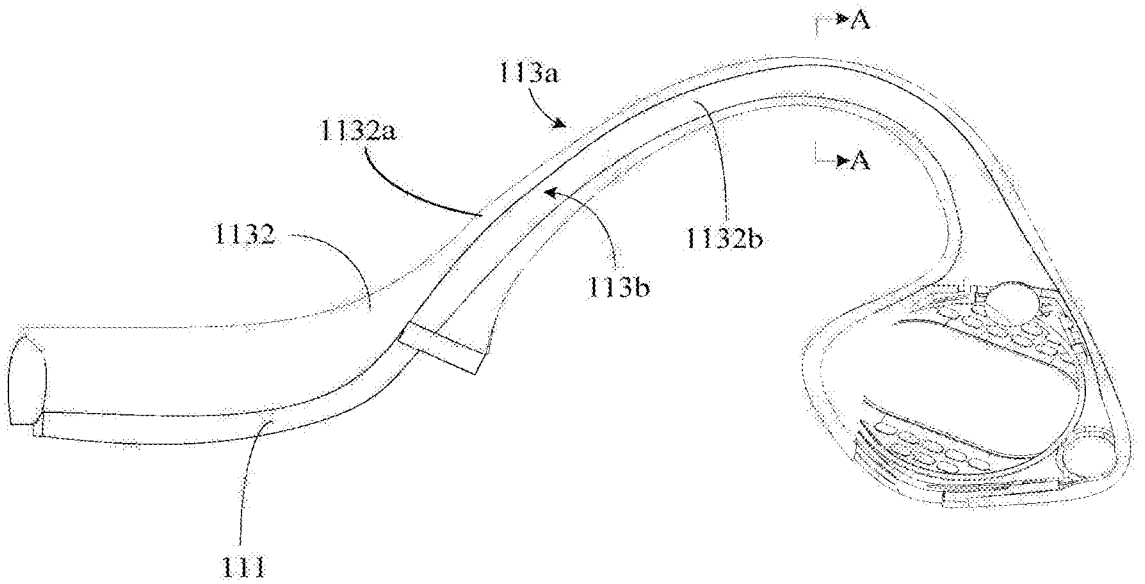


图3

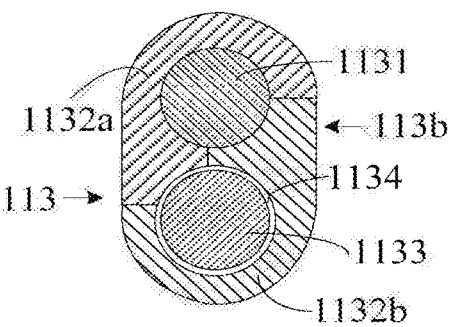


图4

IPR2025-00843; Mojawa
Ex. 1002 - Page 956

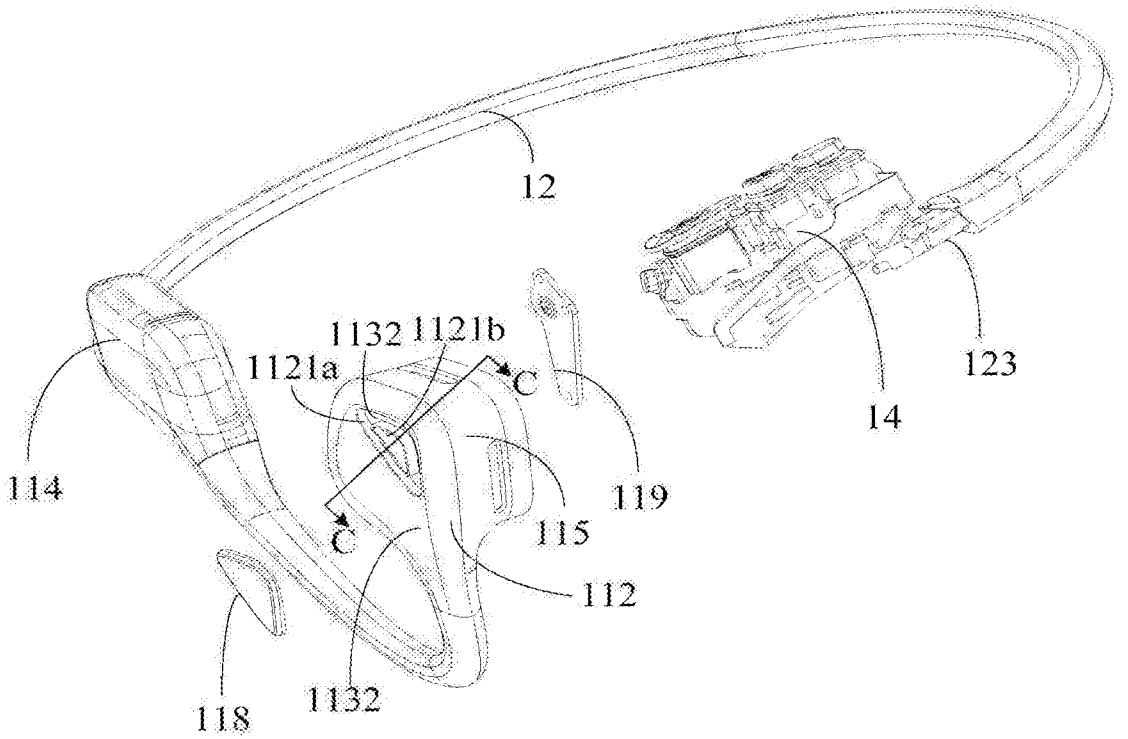


图5

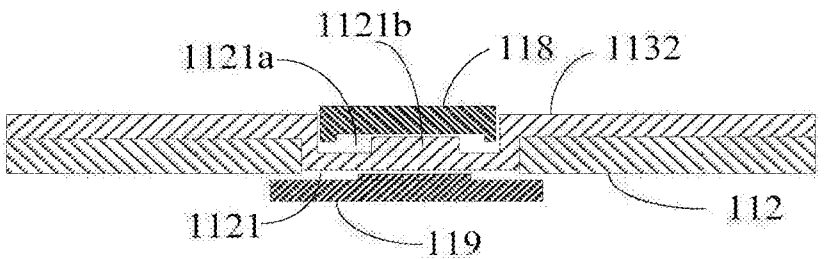


图6

IPR2025-00843; Mojawa
Ex. 1002 - Page 957

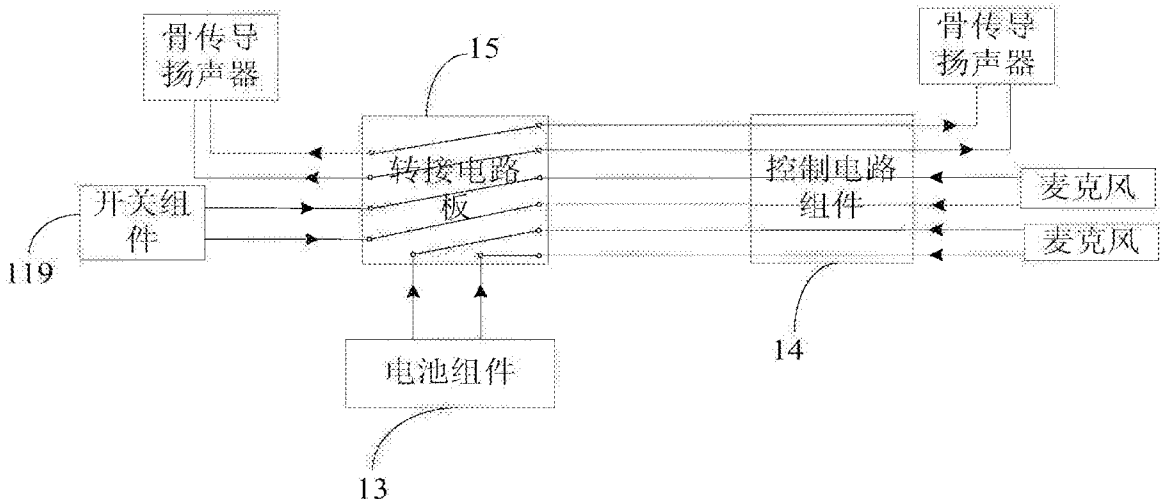


图7

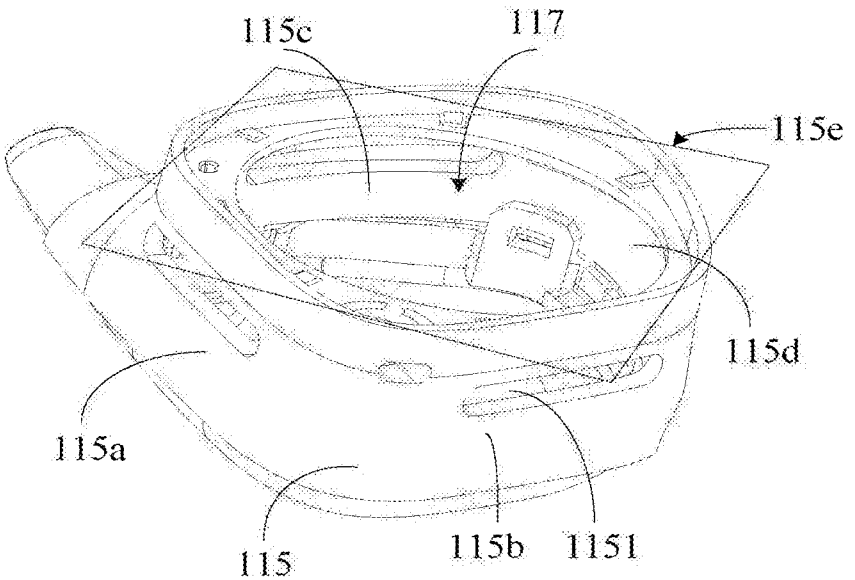


图8

IPR2025-00843; Mojawa
Ex. 1002 - Page 958

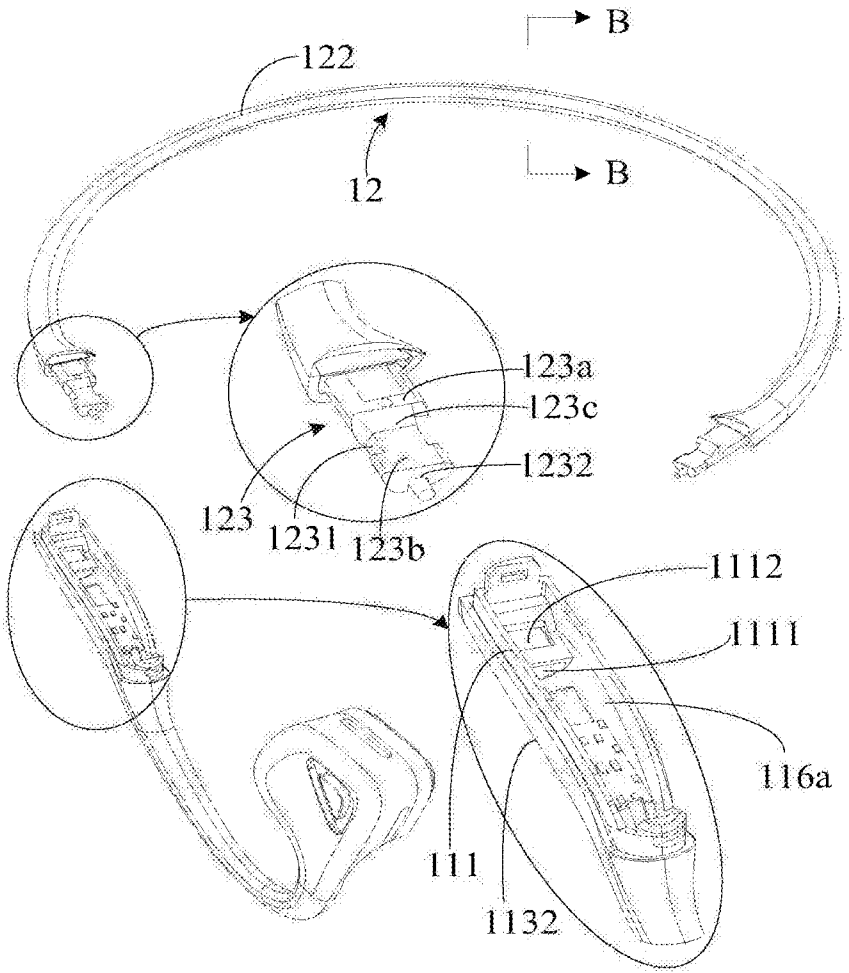


图9

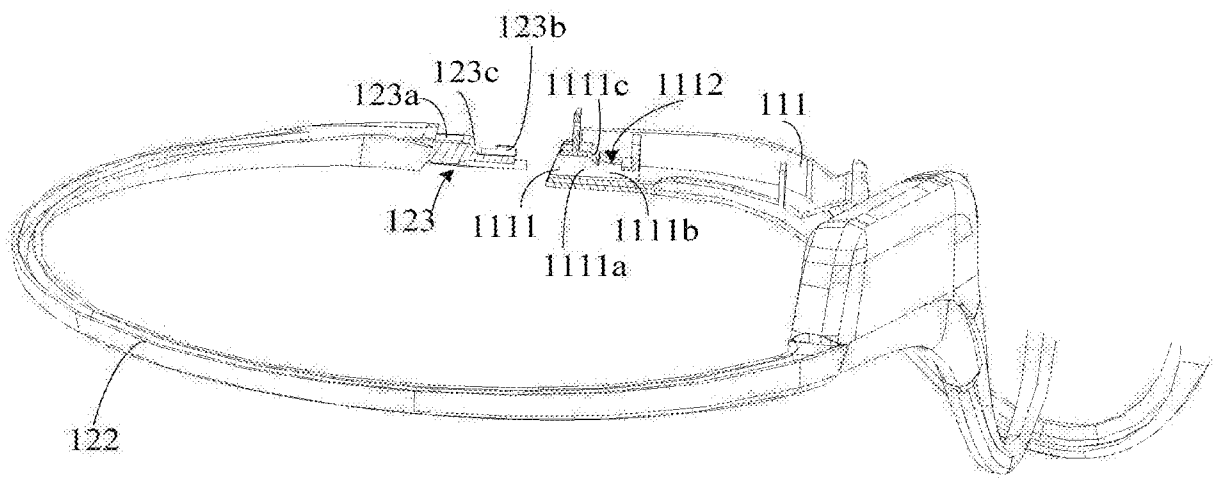


图10

IPR2025-00843; Mojawa
Ex. 1002 - Page 959

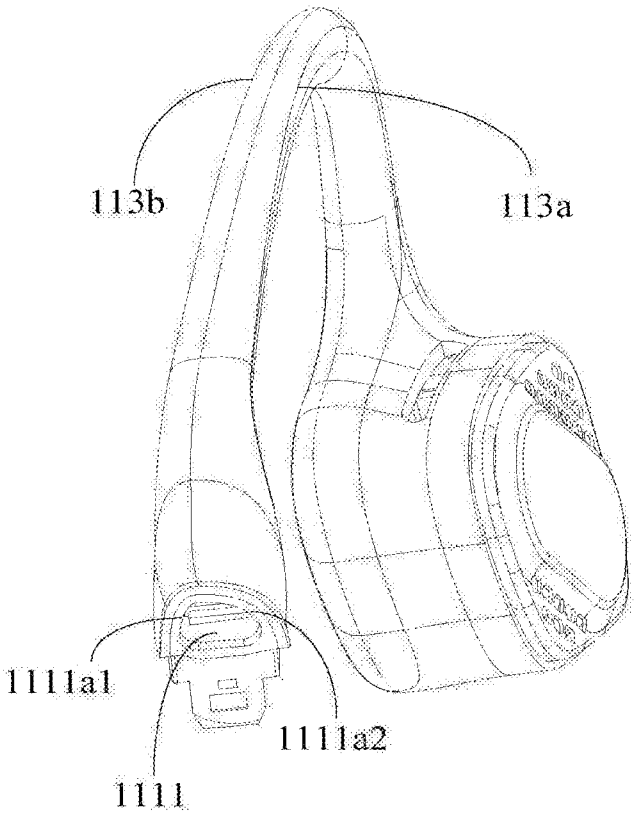


图11

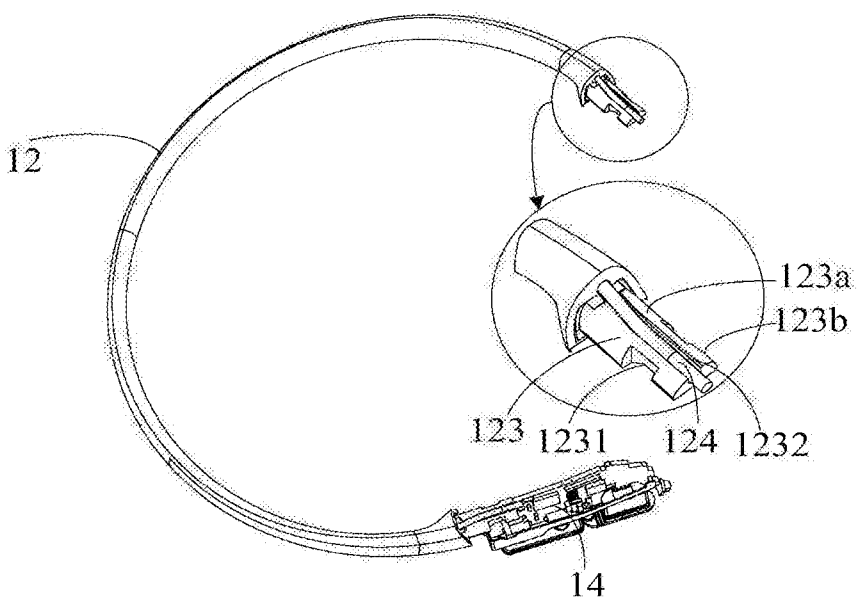


图12

IPR2025-00843; Mojawa
Ex. 1002 - Page 960

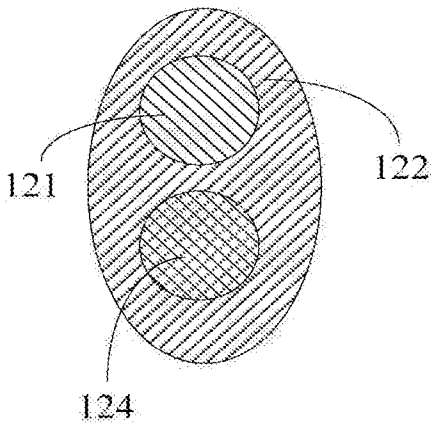


图13

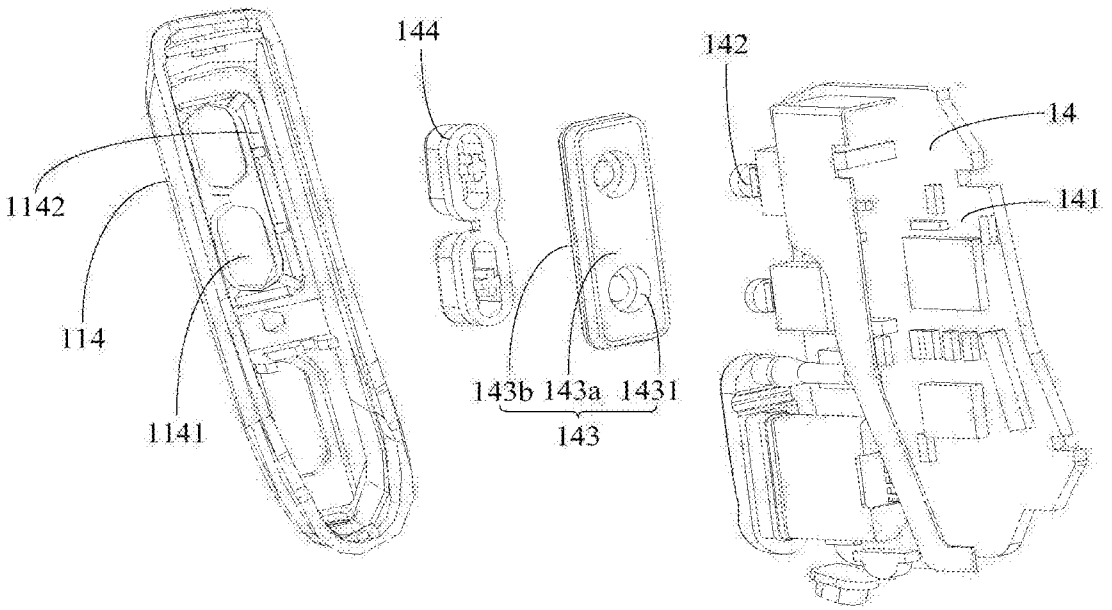


图14

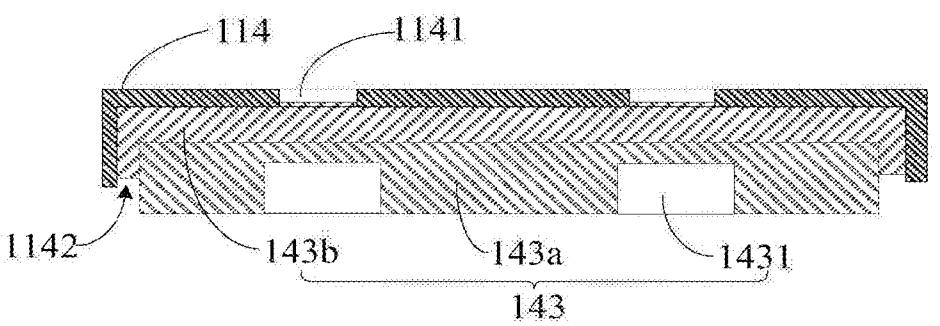


图15

IPR2025-00843; Mojawa
Ex. 1002 - Page 961

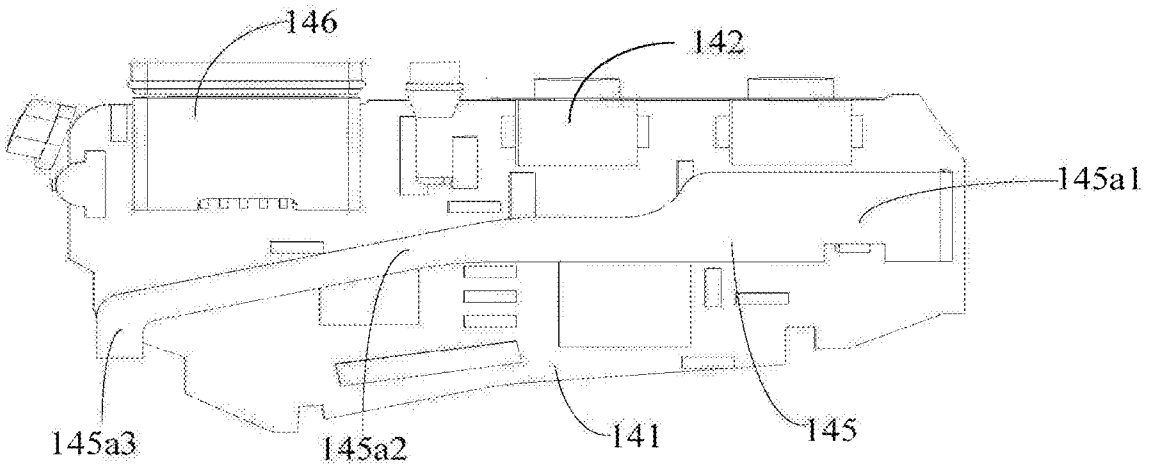


图16

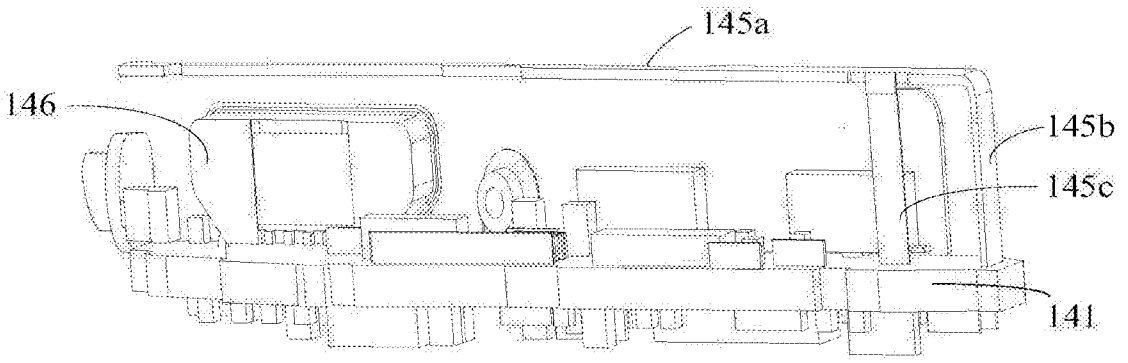


图17

IPR2025-00843; Mojawa
Ex. 1002 - Page 962

(19)中华人民共和国国家知识产权局

(12)实用新型专利

(10)授权公告号 CN 207039848 U
(45)授权公告日 2018.02.23

(21)申请号 201721042039.5

(22)申请日 2017.08.18

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(51)Int.Cl.
H04R 1/10(2006.01)

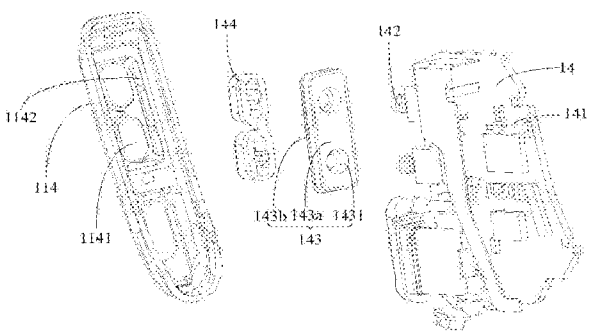
权利要求书2页 说明书11页 附图8页

(54)实用新型名称

一种骨传导耳机

(57)摘要

本实用新型实施例提供一种骨传导耳机包括耳挂组件，该耳挂组件包括第一壳体、第二壳体、第三壳体以及控制电路组件，第三壳体与第一壳体配合，以形成用于收容控制电路组件的第一容置空间，第三壳体上设置有按键开孔和与按键开孔连通的容置槽，控制电路组件包括电路板、固定于电路板上的开关、防水衬板以及按键，其中按键设置于按键开孔内且经按键开孔外露，防水衬板包括衬板主体以及以注塑方式包覆在衬板主体上的第三弹性覆层，防水衬板设置于容置槽内且第三弹性覆层与容置槽的侧壁弹性抵接，按键和开关分别设置于防水衬板的两侧且分别与防水衬板抵接。通过上述方式，本实用新型能够有效提升骨传导耳机的防水性能。



CN 207039848 U

IPR2025-00843; Mojawa
Ex. 1002 - Page 963

1.一种骨传导耳机，其特征在于，所述骨传导耳机包括耳挂组件，所述耳挂组件包括第一壳体、第二壳体、连接所述第一壳体和第二壳体的连接部件、第三壳体以及控制电路组件，所述第三壳体与所述第一壳体配合，以形成用于收容所述控制电路组件的第一容置空间，所述第三壳体上设置有按键开孔和与所述按键开孔连通的容置槽，所述控制电路组件包括电路板、固定于所述电路板上的开关、防水衬板以及按键，其中所述按键设置于所述按键开孔内且经所述按键开孔外露，所述防水衬板包括衬板主体以及以注塑方式包覆在所述衬板主体上的第三弹性覆层，所述防水衬板设置于所述容置槽内且所述第三弹性覆层与所述容置槽的侧壁弹性抵接，所述按键和所述开关分别设置于所述防水衬板的两侧且分别与所述防水衬板抵接。

2.根据权利要求1所述的骨传导耳机，其特征在于，所述耳挂组件进一步包括第四壳体，所述第四壳体与所述第二壳体配合，以形成用于收容骨传导扬声器的第二容置空间，所述第四壳体呈棱柱状设置，其中在所述第四壳体的至少一侧面上设置有条形引音孔，其中所述条形引音孔的长度方向与所述第四壳体的底面平行设置，且所述条形引音孔的长度不小于其所在的所述侧面的宽度的三分之二。

3.根据权利要求1所述的骨传导耳机，其特征在于，所述连接部件包括两端分别连接所述第一壳体与所述第二壳体的第一弹性金属丝以及包覆在所述第一弹性金属丝上的第一弹性覆层。

4.根据权利要求3所述的骨传导耳机，其特征在于，所述第一弹性覆层的内部进一步设置有用于连通所述第一壳体和所述第二壳体的引线通道，所述耳挂组件进一步包括从所述第一壳体经所述引线通道延伸至所述第二壳体的第一导线组，所述引线通道的径向尺寸设置成允许所述第一导线组沿所述引线通道移动；和/或，所述第一壳体内设置有第一子容置空间，所述第三壳体内设置有第二子容置空间，并在所述第三壳体与所述第一壳体配合时与所述第一子容置空间共同形成所述第一容置空间，其中所述第二子容置空间的体积大于所述第一子容置空间。

5.根据权利要求3所述的骨传导耳机，其特征在于，所述第一壳体和第二壳体分别以注塑方式与所述第一弹性金属丝的两端固定连接，所述第一弹性覆层以注塑方式固定包覆于所述第一弹性金属丝上以及所述第一壳体和所述第二壳体的至少部分外表面上。

6.根据权利要求5所述的骨传导耳机，其特征在于，所述第二壳体上形成有通孔，所述第一弹性覆层覆盖所述通孔，并进一步在所述通孔上方且远离所述第二壳体的一侧形成有按键容置部，所述耳挂组件进一步包括按键和开关组件，其中所述按键设置于所述按键容置部内，所述开关组件设置于所述第二壳体的远离所述第一弹性覆层的一侧，并与所述按键下方的所述第一弹性覆层抵接。

7.根据权利要求1所述的骨传导耳机，所述耳挂组件的数量为两个，所述骨传导耳机进一步包括后挂组件，所述后挂组件包括第二弹性金属丝、包覆在所述第二弹性金属丝上的第二弹性覆层以及设置于所述第二弹性金属丝两端的接插部，所述接插部分别与所述两个耳挂组件的第一壳体接插配合，并固定连接。

8.根据权利要求7所述的骨传导耳机，其特征在于，所述第一壳体的端部设置有用于允许所述接插部插入的接插孔以及在所述接插部的插入方向的垂直方向连通所述接插孔与外部的开孔，以允许从外部经所述开孔向所述接插孔内施加胶水或安装卡止件，以使得所

IPR2025-00843; Mojawa
Ex. 1002 - Page 964

述接插部在所述胶水或卡止件的作用下固定在所述接插孔内。

9.根据权利要求8所述的骨传导耳机，其特征在于，所述接插部的侧壁上设置有开槽，所述开槽经所述开孔外露，并用于接收所述胶水或卡止件。

10.根据权利要求9所述的骨传导耳机，其特征在于，所述接插部包括与所述第二弹性金属丝连接的第一接插段以及与所述第一接插段连接且远离所述第二弹性金属丝设置的第二接插段，所述接插孔沿所述接插部的插入方向划分为用于接收所述第一接插段的第一孔段和用于接收所述第二接插段的第二孔段，其中所述第一孔段的尺寸设置成允许所述第二接插段沿所述插入方向在所述第一孔段内自由移动，且使得所述第一接插段与所述第一孔段之间紧配合。

IPR2025-00843; Mojawa
Ex. 1002 - Page 965

一种骨传导耳机

技术领域

[0001] 本实用新型涉及耳机领域，特别是涉及一种骨传导耳机。

背景技术

[0002] 骨传导是一种声音传导方式，即将声音转化为不同频率的机械振动，通过人的颅骨、骨迷路、内耳淋巴液传递、螺旋器、听神经、听觉中枢来传递声波。骨传导耳机利用骨传导技术受话，紧贴骨头，声波直接通过骨头传至听神经。因此可以开放双耳，不伤害鼓膜，也因此受到广大消费者的喜爱。骨传导耳机一般均需要具备一定的防水性能，尤其是在电路板的按键区域更需要具备良好的防水性能，现有的骨传导耳机在电路板的按键区域防水性能较差，不利于电路板以及骨传导耳机的保护。

实用新型内容

[0003] 本实用新型主要解决的技术问题是提供一种骨传导耳机，能够有效提高骨传导耳机的防水性能。

[0004] 为解决上述技术问题，本实用新型实施例提供一种骨传导耳机包括耳挂组件，所述耳挂组件包括第一壳体、第二壳体、连接所述第一壳体和第二壳体的连接部件、第三壳体以及控制电路组件，所述第三壳体与所述第一壳体配合，以形成用于收容所述控制电路组件的第一容置空间，所述第三壳体上设置有按键开孔和与所述按键开孔连通的容置槽，所述控制电路组件包括电路板、固定于所述电路板上的开关、防水衬板以及按键，其中所述按键设置于所述按键开孔内且经所述按键开孔外露，所述防水衬板包括衬板主体以及以注塑方式包覆在所述衬板主体上的第三弹性覆层，所述防水衬板设置于所述容置槽内且所述第三弹性覆层与所述容置槽的侧壁弹性抵接，所述按键和所述开关分别设置于所述防水衬板的两侧且分别与所述防水衬板抵接。

[0005] 与现有技术相比，本实用新型的有益效果是：本实用新型实施例的防水衬板主体上以注塑方式包覆有第三弹性覆层，以使第三弹性覆层不容易从防水衬板主体上脱落，能够使第三弹性覆层与防水衬板主体之间的致密性更好，改善了现有的骨传导耳机防水性能，保证防水的有效性。

附图说明

[0006] 图1是本实用新型骨传导耳机实施例中耳挂组件的结构示意图；

[0007] 图2是本实用新型骨传导耳机实施例中骨传导耳机整体结构拆解示意图；

[0008] 图3是本实用新型骨传导耳机实施例中耳挂组件的另一结构示意图；

[0009] 图4是图3中A-A的截面结构示意图；

[0010] 图5是本实用新型骨传导耳机实施例中骨传导耳机部分结构拆解示意图；

[0011] 图6是图5中C-C的截面结构示意图；

[0012] 图7是本实用新型骨传导耳机实施例中电路示意图；

IPR2025-00843; Mojawa
Ex. 1002 - Page 966

[0013] 图8是本实用新型骨传导耳机实施例中第四壳体的结构示意图；

[0014] 图9是本实用新型骨传导耳机实施例中骨传导耳机接插部与接插孔结构放大示意图；

[0015] 图10是本实用新型骨传导耳机实施例中接插部与接插孔截面结构示意图；

[0016] 图11是本实用新型骨传导耳机实施例中接插孔结构示意图；

[0017] 图12是本实用新型骨传导耳机实施例中接插部结构示意图；

[0018] 图13是图9的B-B的截面结构示意图；

[0019] 图14是本实用新型骨传导耳机实施例中骨传导耳机另一部分结构拆解示意图；

[0020] 图15是图14的部分结构截面示意图；

[0021] 图16是本实用新型骨传导耳机实施例中控制电路组件结构示意图；

[0022] 图17是本实用新型骨传导耳机实施例中控制电路组件另一结构示意图。

具体实施方式

[0023] 参阅图1和图2，本实用新型骨传导耳机实施例包括耳挂组件11，耳挂组件11包括第一壳体111、第二壳体112以及连接第一壳体111和第二壳体112的连接部件113，其中连接部件113包括两端分别连接第一壳体111和第二壳体112的第一弹性金属丝1131以及包覆在第一弹性金属丝1131上的第一弹性覆层1132。

[0024] 一般，骨传导耳机还包括骨传导扬声器、电池、控制电路等元件，例如骨传导扬声器用于以骨传导的方式通过振动向用户输出声音。电池用于给骨传导耳机各元件供电。控制电路用于控制骨传导耳机例如实现调节音量、开关机、播放音频以及蓝牙通讯等功能。

[0025] 耳挂组件11一般用于用户在佩戴骨传导耳机时挂于其耳部，如此可以使骨传导耳机较稳固地佩戴于用户的耳部。耳挂组件11需要具备良好的抗压以及抗变形能力，以便在用户在使用时不容易将骨传导耳机损坏或者致其变形。

[0026] 在本实施例中，连接部件113可直接接触耳部并通过人耳根部支承骨传导耳机，连接部件113包括第一弹性金属丝1131以及包覆在第一弹性金属丝1131上的第一弹性覆层1132，通过第一弹性金属丝1131连接第一壳体111与第二壳体112，能够有效增强骨传导耳机的弯折性能以及结构稳定性，使耳挂组件11在受到弯折时能够有效地进行弹性回复而恢复原状，不易变形。此外采用第一弹性金属丝1131能够改善传统骨传导耳机采用塑料作为耳挂组件的材料所导致的易损坏等问题。可选的是，连接部件113可以包括多根第一弹性金属丝1131，例如可以设置多根细小的第一弹性金属丝1131能够进一步提高耳挂组件11的弯折可靠性，例如设置3根第一弹性金属丝1131，每根第一弹性金属丝1131的直径0.3mm，此时3根第一弹性金属丝的材料可以相同也可以部分相同，或者全部不同，当然每根第一弹性金属丝1131的直径也可以相同、部分相同或者全部不同。

[0027] 在本实施例中，可选的是，第一弹性金属丝1131可以为金属单质，也可以为包括多种金属材料的合金材料，例如弹簧钢、铝合金、镁合金、钛合金、镍合金、钛镍合金、镁锂合金、铬钼钢等，也可以是包括金属材料与非金属材料的复合材料。可选的是，第一弹性金属丝1131为钛合金丝，或者至少由钛合金材料制成，例如直径为0.8-1.5mm的钛合金丝，可选为1.0-1.25mm。

[0028] 在本实施例中，第一弹性金属丝1131外包覆第一弹性覆层1132，第一弹性覆层

IPR2025-00843; Mojawa
Ex. 1002 - Page 967

1132直接与耳部接触，由于第一弹性覆层1132的弹性作用能够使得用户可以舒适地佩戴骨传导耳机。此外，第一弹性覆层1132由于其弹性作用的存在能够更有力地包覆第一弹性金属丝1131，即使在经过多次弯折后仍能有效包覆第一弹性金属丝1131，保证骨传导耳机结构的有效性。可选的是，第一弹性覆层1132为硅胶层，当然在其他实施例中，第一弹性覆层1132还可以是乳胶层或者橡胶层，或者其他有弹性的塑料层，或者为包含硅胶的复合材料层。

[0029] 可选的是，第一壳体111和第二壳体112分别以注塑方式与第一弹性金属丝1131的两端固定连接，第一弹性覆层1132以注塑方式固定包覆于第一弹性金属丝1131上。可选的是，第一壳体111以及第二壳体112为塑料壳体，以注塑成型的方式固定在第一弹性金属丝1131的两端，以及第一弹性覆层1132是一体成型包覆第一弹性金属丝1131上，如此使得第一壳体111、第二壳体112与第一弹性金属丝1131之间的连接更稳固，且使得骨传导耳机的一体感与质感更强，使骨传导耳机的结构更紧凑更轻便。在本实施例中，注塑方式可以是注塑成型、热塑成型、压塑成型等中的一种，但不限于此。

[0030] 参阅图3和图4，可选的是，第一弹性覆层1132由不同颜色的两个子弹性覆层1132a、1132b拼合而成，其中两个子弹性覆层1132a、1132b的拼合缝分别位于连接部件113的相对设置的两个侧面113a、113b上，其中拼合缝在同一侧面上例如在外侧面113a上的投影彼此错开。例如在进行注塑成型时，采用至少两套模具对第一弹性覆层1132的两个子弹性覆层1132a、1132b分别进行成型，由此可形成不同配比的两种颜色例如为淡灰色与深灰色或者其他颜色的组合，且拼合缝位于连接部件113相对设置的两侧面113a、113b上，且在同一侧面上投影彼此错开，使得骨传导耳机的视觉效果更佳，进一步由于错开包覆第一弹性金属丝1131使得包覆效果更好。当然第一弹性覆层1132也可以由同颜色的两个子弹性覆层拼合而成。通过两次注塑成型分别在连接部件113的两侧面113a、113b上形成两个子弹性覆层1132a、1132b，能够改善一次注塑成型或者上下分开注塑成型时由于注塑压力的存在容易导致第一弹性覆层1132内的元件例如第一弹性金属丝1131产生移位降低连接部件113的成型质量。当然，在其他实施例中，第一弹性覆层1132可以直接形成一个覆层，或者形成数量多于两个的子弹性覆层。

[0031] 在本实施例中，连接部件113的两侧面包括相对设置内侧面113b与外侧面113a，是指在佩戴时耳挂组件11挂于人耳，连接部件113朝向人头部的一侧为内侧面113b，朝向人耳的一侧为外侧面113a。

[0032] 继续参阅图3和图4，可选的是，两个子弹性覆层1132a、1132b的拼合缝分别位于连接部件113的内侧面113b和外侧面113a上，且位于连接部件113的外侧面113a上的拼合缝的投影相较于位于连接部件113的内侧面113b上的拼合缝的投影更靠近连接部件113与人耳的接触位置。由此可知道，一条拼合缝位于外侧面113a的靠近接触人耳的位置，而另一条拼合缝位于内侧面113b以使得外侧面113a上几乎显示同一种颜色的子弹性覆层1132a或者1132b，例如外侧面113a几乎显示淡灰色，使得骨传导耳机一体感更强，更加美观。

[0033] 可选的是，拼合缝设置成使得两个子弹性覆层1132a、1132b在同一侧面例如113a或者113b上的面积彼此不同。在其他实施例中，拼合缝可以设置成使得两个子弹性覆层1132a、1132b在同一侧面上的面积相同或者大体相同。

[0034] 参阅图2至图4，可选的是，拼合缝设置成使得两个子弹性覆层1132a、1132b的颜色

IPR2025-00843; Mojawa
Ex. 1002 - Page 968

相对较浅的子弹性覆层1132a在外侧面113a上占据面积相对较大。也即，浅颜色的子弹性覆层1132a更多地位于外侧面113a，深颜色的子弹性覆层1132b更多地位于内侧面113b，如此使得连接件113的表面更具协调性，在保证结构性能的同时增强骨传导耳机的美学性能。

[0035] 继续参阅图1，可选的是，第一弹性金属丝1131的两端呈扁平状设置并分别嵌入第一壳体111和第二壳体112。也即在第一壳体111与第二壳体112以注塑的方式形成且固定于第一弹性金属丝1131呈扁平状设置的两端，如此可以增大第一弹性金属丝1131与第一壳体111、第二壳体112的接触面积，使得第一弹性金属丝1131与第一壳体111、第二壳体112更稳定地相互固定。可选的是，第一弹性金属丝1131呈扁平设置的两端的宽度大于连接该呈扁平设置的两端的连接部分的宽度，如此在成型后起到一个限位的作用，防止将第一弹性金属丝1131从第一壳体111、第二壳体112中拉出或者脱落。可选的是，第一弹性金属丝1131的两端呈螺纹状设置。在成型时，部分壳体可以成型于螺纹中，以起到固定的作用。当然，第一弹性金属丝1131的两端可以分别呈扁平状以及螺纹状设置。在其他实施例中，第一弹性金属丝1131两端还可以内凹以形成凹陷部，第一壳体111与第二壳体112在成型时，部分位于凹陷部内，以起到固定作用。

[0036] 参阅图1和图2，可选的是，第一弹性覆层1132进一步包覆第一壳体111和第二壳体112的至少部分外表面，例如全部外表面。即第一弹性覆层1132以注塑成型的方式包覆第一弹性金属丝1131、第一壳体111的至少部分外表面、第二壳体112的至少部分外表面，如此使得骨传导耳机的质感以及一体感更强，而且第一弹性覆层1132的存在，可以进一步保护壳体以及壳体内部的元件，使得骨传导耳机更耐磨损。

[0037] 参阅图5和图6，可选的是，第二壳体112上形成有通孔1121。即通孔1121贯穿第二壳体112的内侧面与外侧面。第一弹性覆层1132覆盖通孔1121并进一步在通孔1121上方且远离第二壳体112(即远离第二壳体112的内侧面)的一侧形成有按键容置部1121a。按键容置部1121a是由第一弹性覆层1132在注塑过程中覆盖通孔1121而形成，按键容置部1121a内由于第一弹性覆层1132的存在是可以隔绝水份、尘土等进入第二壳体内112。耳挂组件11进一步包括按键118和开关组件119，其中按键118设置于按键容置部1121a内。开关组件119设置于第二壳体112的远离第一弹性覆层1132的一侧，即第二壳体112的内侧面，并与按键118下方的第一弹性覆层1132抵接。可选的是，按键容置部1121a内设置有一凸台1121b，按键118以例如黏贴的方式固定在凸台1121b上。在本实施例中，由于第一弹性覆层1132以注塑方式固定包覆在第二壳体112上，且覆盖通孔1121，具有更好防水效果。可选的是，凸台1121b是在第一弹性覆层1132覆盖通孔1121时由第一弹性覆层1132一体成型而形成的。

[0038] 在本实施例中，第二壳体112上的开关组件119主要是用于控制骨传导耳机的功能开关，例如音乐的播放与暂停、语音的接听与挂断、连通无线信号以连接移动设备例如蓝牙通讯，或者骨传导耳机工作模式的选择等，不限于此。

[0039] 参阅图1、图2、图4和图7，可选的是，第一弹性覆层1132的内部进一步设置有用于连通第一壳体111和第二壳体112的引线通道1134，耳挂组件11进一步包括从第一壳体111经引线通道1134延伸至第二壳体112的第一导线组1133，引线通道1134的径向尺寸设置成允许第一导线组1133沿引线通道1134移动。

[0040] 通过设置引线通道1134，例如在后期组装时可以先将第一导线组1133一端连接(例如以板载的方式)第二壳体112内的元件例如骨传导扬声器，再将第一导线组1133另一

IPR2025-00843; Mojawa
Ex. 1002 - Page 969

端穿过引线通道1134以连接第一壳体111内的元件例如电池组件13、控制电路组件14或者转接电路板15等，如此可以减少组装工艺，而且能够改善现有骨传导耳机在第一弹性覆层1132在注塑成型时埋入第一导线组1133所带来的接线困难且不利于后期维修等问题。当然，在后期组装时也可以先将第一导线组1133一端连接（例如以板载的方式）第一壳体111内的元件例如电池组件13、控制电路组件14或者转接电路板15，再将第一导线组1133另一端穿过引线通道1134以连接第二壳体112内的元件例如骨传导扬声器等。

[0041] 在本实施例中，引线通道1134具体的成型方式例如包括首先提供一个第一弹性金属丝1131连接的第一壳体111与第二壳体112的组件，进一步在第二壳体112与第一壳体111之间以可拆卸的方式设置附加金属丝（图未示），再进一步在第一弹性金属丝1131、附加金属丝以及第一壳体111和第二壳体112的部分外表面以注塑方式形成第一弹性覆层1132，成型后抽取附加金属丝以形成引线通道1134。在其他实施例中，例如第一弹性覆层1132注塑成型时，埋入易融性材料，在第一弹性覆层1132注塑成型时，该易融性材料融化而流出，形成引线通道1134。又例如引线通道1134可以在第一弹性覆层1132成型后，通过穿针的方式形成通道，再通过热熔的方式扩大通道形成引线通道1134。

[0042] 继续参阅图1和图4，在本实施例中，可选的是，引线通道1134设置于第一弹性金属丝1131的下侧，以在使用时相较于第一弹性金属丝1131更靠近连接部件113与人耳的接触位置。在本实施例中，第一引线通道1134与第一弹性金属丝1131间隔独立设置。在其他实施例中，第一引线通道1134可以与第一弹性金属丝1131合并设置，即第一导线组1133在第一引线通道1134内可接触第一弹性金属丝1131。在本实施例中，引线通道1134设置于第一弹性金属丝1131的下侧，以在使用时相较于第一弹性金属丝1131更靠近连接部件113与人耳的接触位置，由于引线通道1134的存在，可以使得靠近人耳的第一弹性覆层1132更具弹性更加柔和，佩戴更加舒适。在其他实施例中，当然第一引线通道1134也可以设置在第一弹性金属丝1131的上侧，在使用时第一弹性金属丝1131更靠近人耳。

[0043] 参阅图1、图2和图8，可选的是，耳挂组件11包括第三壳体114和第四壳体115。其中第三壳体114与第一壳体111配合，以形成用于收容电池组件13或控制电路组件14的第一容置空间116。第四壳体115与第二壳体112配合，以形成用于收容骨传导扬声器的第二容置空间117。可选的是，第四壳体115与第三壳体114为塑料壳体。

[0044] 可选的是，第二壳体112与第四壳体115通过第一卡扣组件（未标注）连接，第一卡合组件包括第一卡合部以及第一扣合部，第一卡合部设置于第四壳体115上，第一扣合部设置于第二壳体112上，第二壳体112与第四壳体115配合时，第四壳体115上的第一卡合部卡入第二壳体112的第一扣合部，以将第二壳体112与第四壳体115固定在一起。可选的是，第二壳体112与第四壳体115通过至少一组第一卡扣组件例如4组第一卡扣组件进行连接。当然第二壳体112与第四壳体115也可以通过胶水粘合，或者通过第一卡合组件与胶水同时作用进行固定，或者通过螺丝等紧固件连接固定。

[0045] 可选的是，第三壳体114与第一壳体111通过第二卡扣组件（未标注）连接，第二卡扣组件包括第二卡合部以及第二扣合部，第二卡合部设置在第三壳体114上，第二扣合部设置在第一壳体111上，在第一壳体111与第三壳体114配合时，第三壳体114的第二卡合部卡入第一壳体111的第二扣合部，以将第一壳体111与第三壳体114固定在一起。

[0046] 在本实施例中，耳挂组件11的第三壳体114与第一壳体111配合，以形成用于收容

IPR2025-00843; Mojawa
Ex. 1002 - Page 970

电池组件13或控制电路组件14的第一容置空间116，第四壳体115与第二壳体112配合，以形成用于收容骨传导扬声器的第二容置空间117，第一导线组1133可以移动穿过引线通道1134用于电连接骨传导扬声器与电池组件13或控制电路组件14。在本实施例中，电池组件13例如包括电池以及电池管理电路，电池通过电池管理电路为骨传导耳机其他部件进行供电，例如电池管理电路包括充电电路、过流保护电路、过放保护电路、过压保护电路等。例如电池为可充电电池，例如为锂电池。参阅图7，可选的是，骨传导耳机还进一步包括例如转接电路板15，设置于第一容置空间116内，电池组件14通过转接电路板15分成多个接线焊点，以相对应连接骨传导耳机的两个骨传导扬声器、控制电路组件14、麦克风、以及开关组件119等，上述元件相关导线与上述接线焊点连接并按图7方式导通，便于接线和组装。例如电池组件14通过正负极的两个接线焊点连接转接电路板15，转接电路板15分出10个接线焊点，以连接骨传导耳机的其他部件。

[0047] 参阅图1和图2，可选的是，第一壳体111内设置有第一子容置空间116a，第三壳体114内设置有第二子容置空间116b，并在第三壳体114与第一壳体111配合时与第一子容置空间116a共同形成第一容置空间116，例如通过第一卡扣组件进行固定连接。其中第二子容置空间116b的体积大于第一子容置空间116a。例如第二子容置空间116b的体积是第一子容置空间116a的2-5倍，例如为3-4倍，例如为3.2倍，或例如为2.5倍。

[0048] 在组装电池组件13或者控制电路组件14，例如先将电池组件13或者控制电路组件14放置在第一子容置空间116a内，例如电池通过胶材或者双面胶粘贴于第一子容置空间116a内，或者控制电路组件14通过卡合结构固定于第一子容置空间116a内，使得电池组件13或者控制电路组件14大部分外露，便于组装和接线等工艺，再将第三壳体114通过第二卡扣组件与第一壳体111盖合，第一子容置空间116a与第二子容置空间116b形成第一容置空间116，如此改善了传统骨传导耳机需要将电池或者控制电路板装配并容纳在与耳挂一体成型的壳体内并进一步利用硅胶条贴于电池控制电路板外部部分进行包覆所导致的组装工序复杂的问题，简化结构以及组装工序。

[0049] 参阅图2和图8，可选的是，第四壳体115呈棱柱状设置，其中在第四壳体115的至少一侧面上设置有条形引音孔1151，其中条形引音孔1151的长度方向与第四壳体115的底面平行或者大致平行设置，且条形引音孔1151的长度不小于其所在的侧面的宽度的三分之二。在本实施例中，条形引音孔相对平行的底面115e是指在佩戴时第四壳体115朝向人体脸部的一面的开口边缘所定义的平面。

[0050] 一般，骨传导扬声器在振动的过程中会向周边的环境传递声音，除了佩戴者外，环境中的他人也能够听到扬声器的声音，例如骨传导扬声器的振动引起了第二容置空间117内空气的振动以及引起第四壳体115等的振动，从而出现漏音现象，会影响骨传导耳机的音质。引音孔1151是将第二容置空间117内的声波引导传播至空间外，与漏音声波同在空气中传播发生干涉，从而降低漏音声波的振幅，减小漏音。

[0051] 继续参阅图8，为了进一步改善漏音现象，本实施例通过在第四壳体115的至少一侧面设置条形引音孔1151，并适当设置其尺寸和方向改善了传统骨传导耳机带来的漏音现象仍比较严重的问题。进一步地，条形引音孔1151的长度方向与第四壳体115的底面平行设置，不仅可以保证美观，而且经平行引导的声波强度的均匀性，从而保证干涉效果。在本实施例中，条形引音孔1151的长度不小于其所在的侧面的宽度的三分之二，能够有效引导第

IPR2025-00843; Mojawa
Ex. 1002 - Page 971

二容置空间117内的声波。可选为，条形引音孔1151的长度为其所在的侧面的宽度的四分之三。当然，在其他实施例中，其中在第四壳体115的至少一侧面上并列设置有至少两条条形引音孔1151，例如在至少一侧面上设置两条平行的条形引音孔1151，且与第四壳体115的底面115e平行。

[0052] 可选的是，第四壳体115在骨传导耳机使用时靠近人耳的侧面115d上不设置条形引音孔1151。当然，在其他实施例中，也可以在第四壳体115在骨传导耳机使用时靠近人耳的侧面115d上设置引音孔，可以是点式引音孔，或者条形引音孔1151。

[0053] 继续参阅图2和图8，可选的是，第四壳体115呈四棱柱状设置，其中在第四壳体115与连接部件113相邻设置的两个侧面115a、115c上设置有条形引音孔1151，进一步剩余的两个侧面115b、115d中的在骨传导耳机使用时远离人耳的侧面115b同样设置条形引音孔1151，且剩余的两个侧面115b、115d中的在骨传导耳机使用时靠近人耳的侧面115b上不设置条形引音孔1151。也即在三个侧面115a、115b、115c上设置三个条形引音孔1151，在骨传导耳机使用时靠近人耳的侧面115d不设置条形引音孔1151，如此可以进一步减少漏音现象，保证骨传导耳机的音质。

[0054] 在本实施例中，第四壳体115呈四棱柱状设置，例如包括正四棱柱以及类四棱柱状。例如具体地，第四壳体115的与连接部件113相邻设置的两个侧面115a、115c的任一个侧面的长度均大于剩余的两个侧面115b、115d的任一个侧面的长度，进一步地，第四壳体115的与连接部件113相邻设置的两个侧面115a、115c的长度不相等或者相等。在其他实施例中，第四壳体115呈四棱柱状设置，其四个侧面的长度均可相等。

[0055] 在本实施例中，可选的是，第四壳体115的与连接部件113相邻设置的两个侧面115a、115c之间的夹角为90°-150°，可选为100°-130°，可选为110°-120°。

[0056] 可选的是，第四壳体115内进一步设置有覆盖条形引音孔1151的防水防尘滤网，例如防水透气膜(图未示)。设置防水防尘滤网，可以防止骨传导耳机外的灰尘以及防水骨传导耳机进水进入损坏骨传导扬声器。

[0057] 在本实施例中，第二壳体112与第四壳体115上分别设置有一麦克风孔(图未示)，具体的，第一麦克风孔设置在第四壳体115不直接与连接部件113连接的剩余两侧面115b、115d的连接处，第二麦克风孔设置在第二壳体112的外侧面且靠近第四壳体115与连接部件113的连接处。通过在两个错开设置的麦克风孔内设置两个麦克风，能够增强语音输入质量，且起到有效的降噪作用，由此提高语音输入的清晰度。

[0058] 参阅图2以及图9，在本实施例中，耳挂组件11的数量为两个，骨传导耳机进一步包括后挂组件12。后挂组件12包括第二弹性金属丝121、包覆在第二弹性金属丝121上的第二弹性覆层122以及设置于第二弹性金属丝121两端的接插部123。接插部123分别与两个耳挂组件11的第一壳体111接插配合，并固定连接。可选的是，接插部123以注塑方式固定于第二弹性金属丝121的两端，如此可以使接插部123更稳固地固定于第二弹性金属丝121的两端。可选的是，第二弹性金属丝121可以为金属单质，也可以为包括多种金属材料的合金材料，例如弹簧钢、铝合金、镁合金、钛合金、镍合金、钛镍合金、镁锂合金、铬钼钢等，也可以是包括金属材料与非金属材料的复合材料。在本实施例中，第二弹性金属丝121为钛合金丝，或者至少由钛合金材料制成。在本实施例中，第二弹性覆层122为硅胶层。在其他实施例方式中，第二弹性覆层122也可以为橡胶层或者乳胶层，或者是包括硅胶的复合材料层。

IPR2025-00843; Mojawa
Ex. 1002 - Page 972

[0059] 通过后挂组件12的接插部123与两个耳挂组件11的第一壳体111进行接插配合，改善了现有的骨传导耳机采用螺丝等固定方式带来的耳机尺寸较大等问题，从而简化结构，减轻骨传导耳机的重量，方便后期接线且能降低成本。

[0060] 参阅图9和图10，可选的是，第一壳体111的端部设置有用于允许接插部123插入的接插孔1111以及在接插部123的插入方向的垂直方向连通接插孔1111与外部的开孔1112，以允许从外部经开孔1112向接插孔1111内施加胶水或安装卡止件(图未示)，以使得接插部123在胶水或卡止件的作用下固定在接插孔1111内。在本实施中，开孔1112位于所述第一子容置空间116a内。在其他实施例中，第一壳体111的端部设置有用于允许接插部123插入的接插孔1111，接插部123上具有一凹部，接插孔1111内具有一弹性凸部，接插部123插入接插孔1111时，弹性凸部卡入凹部，以将接插部123与接插孔1111配合固定。例如接插部123插入接插孔1111时，弹性凸部先被挤压，后在弹性恢复力的作用下卡入凹部内。可选的是，接插部123插入接插孔1111的深度为6-11mm，可选为8-10mm。

[0061] 继续参阅图9和图10，可选的是，接插部123的侧壁上设置有开槽1231。开槽1231经开孔1112外露或者部分外露，并用于接收胶水或卡止件。可选的是，接插部123的至少一个侧壁上设置有开槽1231，例如两个侧壁上均设置有开槽1231。在其他实施例中，可以同时使用胶水和卡止件，例如先使用卡止件固定，再施加胶水进一步固定。在本实施例中，卡止件例如是楔子或者销钉、或者具有一定弹性的固定件插入开槽1231进行过盈配合。

[0062] 参阅图2、图9和图10，可选的是，接插部123包括与第二弹性金属丝121连接的第一接插段123a以及与第一接插段123a连接且远离第二弹性金属丝121设置的第二接插段123b。接插孔1111沿接插部123的插入方向划分为用于接收第一接插段123a的第一孔段1111a和用于接收第二接插段123b的第二孔段1111b。其中第一孔段1111a的尺寸设置成允许第二接插段123b沿插入方向在第一孔段1111a内自由移动，且使得第一接插段123a与第一孔段1111a之间紧配合。通过两段接插段与两端孔段的分别配合固定，可以使得接插部123更稳固地固定在第一壳体111内，增强骨传导耳机的结构稳定性。

[0063] 继续参阅图9和图10，可选的是，开槽1231进一步设置在第二接插段123b的侧壁。开孔1112连通接插孔1111的第二孔段1111b。在本实施例中，在接插部123第二接插段123b依次通过第一孔段1111a以及第二孔段1111b，以使第一接插段123a与第一孔段1111a紧配合，第二接插段123b的开槽1231经开孔1112外露，以用于接收胶水或者卡止件。通过第一接插段123a与第一孔段1111a的紧配合以及第二接插孔1111与第二孔段1111b的进一步配合固定，能够有效地将后挂与耳挂固定连接。在其他实施例中，开槽1231可以设置在第一接插段123a的侧壁上。开孔1112连通接插孔1111的第二孔段1111b。

[0064] 可选的是，第二孔段1111b的尺寸设置成使得第二接插段123b与第二孔段1111b之间紧配合。如此通过第一接插段123a与第一孔段1111a的紧配合、第二接插孔1111与第二孔段1111b的紧配合以及施加的胶水或者卡止件进行固定，进一步有效地将后挂与耳挂固定连接，且能够简化结构，使骨传导耳机轻便化。当然，在其他实施例中，第一接插段123a与第一孔段1111a之间紧配合，而第二接插段123b与第二孔段1111b可以是其他类型的固定配合例如卡扣配合。

[0065] 参阅图11，可选的是，第一接插段123a两侧与第一孔段1111a接触的接触面的形状不同。第一接插段123a的两侧形状不同，相对应地第一孔段1111a与第一接插段123a接触的

IPR2025-00843; Mojawa
Ex. 1002 - Page 973

两侧面1111a1、1111a2也不同。例如，第一孔段1111a的两侧面均呈弧形设置，内侧面1111a2的曲率半径大于外侧面1111a1的曲率半径，也即内侧面1111a2的弧度变化相对较缓，而外侧面1111a1的弧度变化相对较大，第一接插段123a两侧面相对应设置。当然，在其他实施例中，第一孔段1111a的两侧面均呈弧形设置，内侧面1111a2的曲率半径小于外侧面1111a1的曲率半径，也即内侧面1111a2的弧度变化相对较大，而外侧面1111a1的弧度变化相对较小。第一孔段1111a的两侧面在佩戴时靠近人体头部的为内侧面1111a2，远离人体头部即为外侧面1111a1。第一接插段123a两侧与第一孔段1111a接触的接触面的形状不同，使得第一接插段123a不能反插，且也使得后挂两个接插部123不能混插，起到有效的防呆效果，方便组装。

[0066] 参阅图9和图10，可选的是，第一接插段123a和第二接插段123b的底面呈阶梯状设置且在第一接插段123a和第二接插段123b的连接处设置有第一楔形过渡段123c，并第一孔段1111a和第二孔段1111b的连接处设置有与第一楔形过渡段123c对应的第二楔形过渡段1111c。

[0067] 在本实施例中，第一接插段123a与第二接插段123b的底面是指在佩戴时靠近人耳根部的一面。顶面则为远离人耳根部的一面。

[0068] 在本实施例中，第一接插段123a厚度要大于第二接插段123b的厚度即呈阶梯状设置，两者的连接处存在厚度差，且设置第一楔形过渡段123c，相对应的在第一孔段1111a和第二孔段1111b的连接处设置与第一楔形过渡段123c相适应的第二楔形过渡段1111c，在第一接插段123a与第二接插段123b依次插入第一孔段1111a与第二孔段1111b时，第一楔形过渡段123c与第二楔形过渡段1111c相抵接，能够方便第二接插段123b与第一接插段123a的插入，且起到缓冲过渡、限位以及进一步固定的作用。

[0069] 参阅图9、图12以及图13，可选的是，后挂组件12进一步包括由第二弹性覆层122包覆的第二导线组124，其中第二导线组124的两端从第二弹性覆层122外露，接插部123的顶面设置有用于容纳第二导线组124的外露部分的埋线槽1232。在本实施例中，第二导线组124，用于连接两个耳挂组件11内的元件例如连接电池以及控制电路组件14等。设置埋线槽1232，一方面可以有效布置和固定第二导线组124，另一方面可以减少体积。在其他实施例中，也可以不设置埋线槽1232，而通过其他方式例如胶水或者双面胶等将第二导线组124进行固定，或者在接插部123顶面设置有两排并列设置的凸块(图未示)，两排凸块之间可以容纳第二导线组124。

[0070] 参阅图2，可选的是，骨传导耳机进一步包括电池组件13和控制电路组件14，其中电池组件13设置于两个耳挂组件11中的一者的第一容置空间116，控制电路组件14设置于两个耳挂组件11中的另一者的第一容置空间116内。

[0071] 参阅图14和图15，可选的是，用于容纳控制电路组件14的耳挂组件11的第三壳体114上设置有按键开孔1141和与按键开孔1141连通的容置槽1142，控制电路组件14包括电路板141、固定于电路板141上的开关142、防水衬板143以及按键144，其中按键144设置于按键开孔1141内且经按键开孔1141外露，防水衬板143包括衬板主体143a以及以注塑方式包覆在衬板主体143a上的第三弹性覆层143b，防水衬板143设置于容置槽1142内且第三弹性覆层143b与容置槽1142的侧壁弹性抵接，按键144和开关142分别设置于防水衬板143的两侧且分别与防水衬板143抵接。在本实施中，第三弹性覆层143b包覆衬板主体143a的一侧面

IPR2025-00843; Mojawa
Ex. 1002 - Page 974