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



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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的一侧面以及衬板主体143a的边缘，当然至少包覆部分边缘，也可以包覆全部边缘。在其他实施例中，第三弹性覆层143b可以完全包覆衬板主体143a，即包覆衬板主体143a的两侧面。

[0072] 在本实施例中，电路板141上的开关142主要是用于开关机、音量调节、或者其他切换功能等。

[0073] 继续参阅图14和图15，防水衬板143主体上以注塑方式包覆有第三弹性覆层143b，以使第三弹性覆层143b不容易从防水衬板143主体上脱落，且第三弹性覆层143b与防水衬



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板主体143a之间的致密性更好，改善了现有骨传导耳机防水性能，保证防水的有效性。在本实施例中，衬板主体143a可以为塑料，第三弹性覆层143b可以为硅胶、乳胶、橡胶或者为合成物。

[0074] 可选的是，防水衬板143靠近开关142的一侧设置有用于容纳开关142的定位槽1431。

[0075] 在本实施例中，组装控制电路组件14的方法例如首先将按键144、防水衬板143依次安置在第三壳体114上，且按键144设经按键开孔1141外露，接着电路板141通过开关142以及防水衬板143的定位槽1431与防水衬板143抵接。通过设置定位槽1431，能使开关142精准地与按键144进行定位配合，从而能够通过按键144有效地操作开关142。

[0076] 参阅图16和图17，可选的是，控制电路组件14进一步包括设置于电路板141上的天线145，天线145包括与电路板141间隔设置的天线主体145a以及连接天线主体145a与电路板141的接地部145b和馈电部145c，其中在垂直于电路板141的方向上观察时，天线主体145a从接地部145b向电路板141的一侧弯折延伸。在本实施例中，天线主体145a向电路板141的一侧弯折，能够在有限空间内增大天线145的长度，增大辐射效率。在本实施例中，天线145一般是用于进行无线通讯的，例如蓝牙通讯。在其他实施例中，还可以是WiFi通讯、蜂窝数据通讯，NFC近场通讯等。

[0077] 可选的是，天线主体145a包括平行部145a1与弯折部145a2，在垂直于电路板141的方向上观察，平行部145a1的宽度大于弯折部145a2的宽度，平行部145a1一端连接接地部145b以及馈电部145c，另一端连接弯折部145a2，平行部145a1与弯折部145a2在连接处呈阶梯状设置，弯折部145a2从连接处向电路板141的一侧弯折。

[0078] 可选的是，控制电路组件14进一步包括设置于电路板141上的接地部件146，其中天线主体145a向电路板141的远离接地部件146的一侧弯折延伸。在本实施例中，接地部件146为USB接口和/或电路上的开关142，或者其他接地部件146。一般，接地部件146例如USB接口，都会对天线145造成一定的干扰，在本实施例中，天线主体145a向电路板141的远离接地部件146的一侧弯折延伸，能够在有限空间内改善接地部件146对天线145信号的干扰，保证信号质量。在本实施例中，USB接口可用于在骨传导耳机与外界设备例如移动终端传输数据，也可用于为电池组件13充电。

[0079] 可选的是，天线主体145a的宽度沿天线主体145a的延伸方向逐渐变小。例如具体地，平行部145a1的宽度从一端到另一端宽度不变，弯折部145a2的宽度逐渐沿延伸方向逐渐变小。当然在其他实施例中，平行部145a1的宽度从一端到另一端可以逐渐变小，但平行部145a1另一端的宽度仍大于弯折部145a2的宽度。

[0080] 可选的是，天线主体145a的弯折角度沿天线主体145a的延伸方向逐渐变大。例如弯折角度逐渐变大，一般是为了远离接地部件146例如USB等，从而保证天线145的辐射效率。可选的是，在弯折部145a2远离平行部145a1的一端具有弯折脚145a3，此处的弯折角度最大，一方面为了满足天线145尺寸的需要，另一方面是为了提升辐射效率。

[0081] 以上所述仅为本发明的实施方式，并非因此限制本发明的专利范围，凡是利用本发明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，均同理包括在本发明的专利保护范围内。



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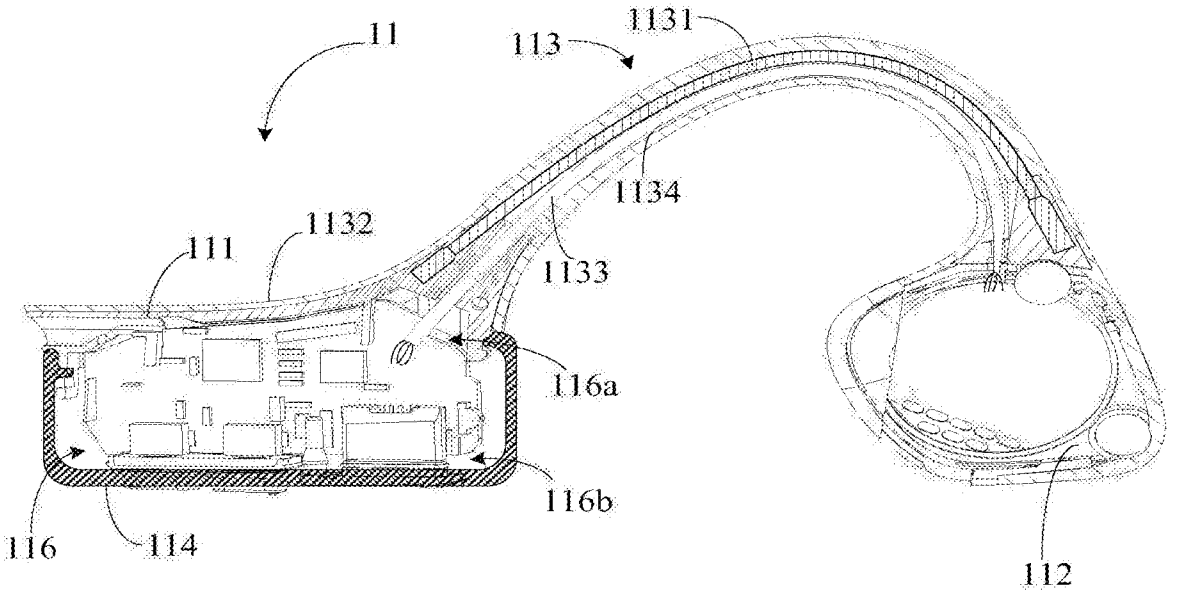



图1

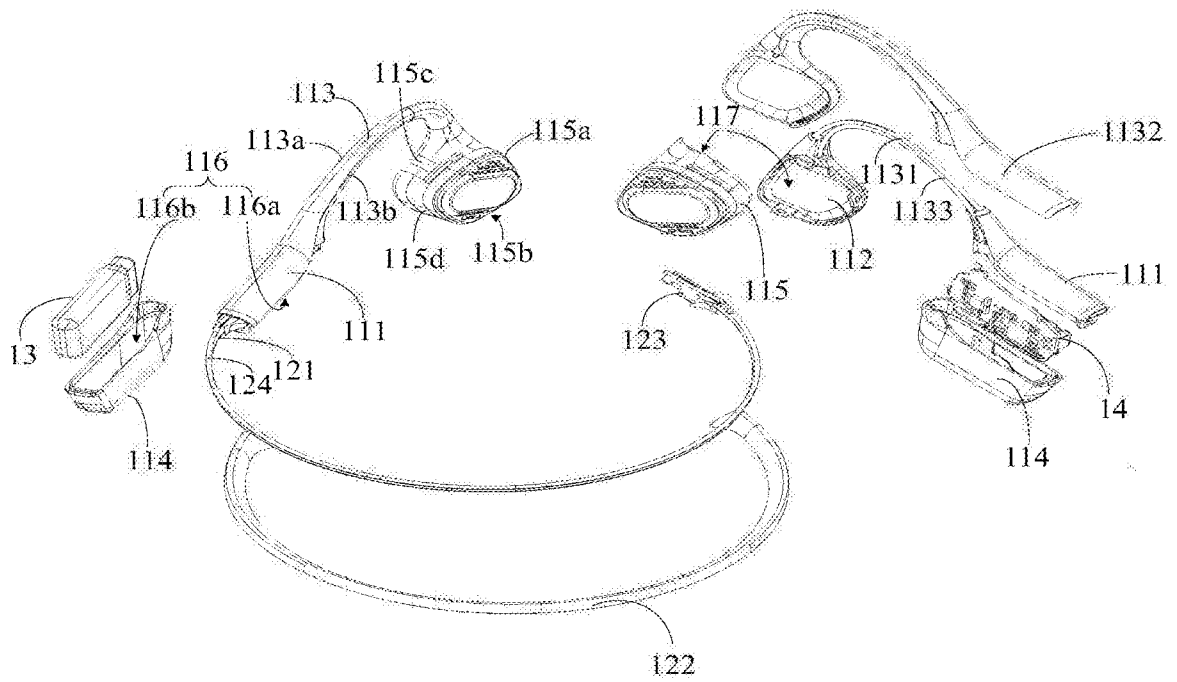



图2



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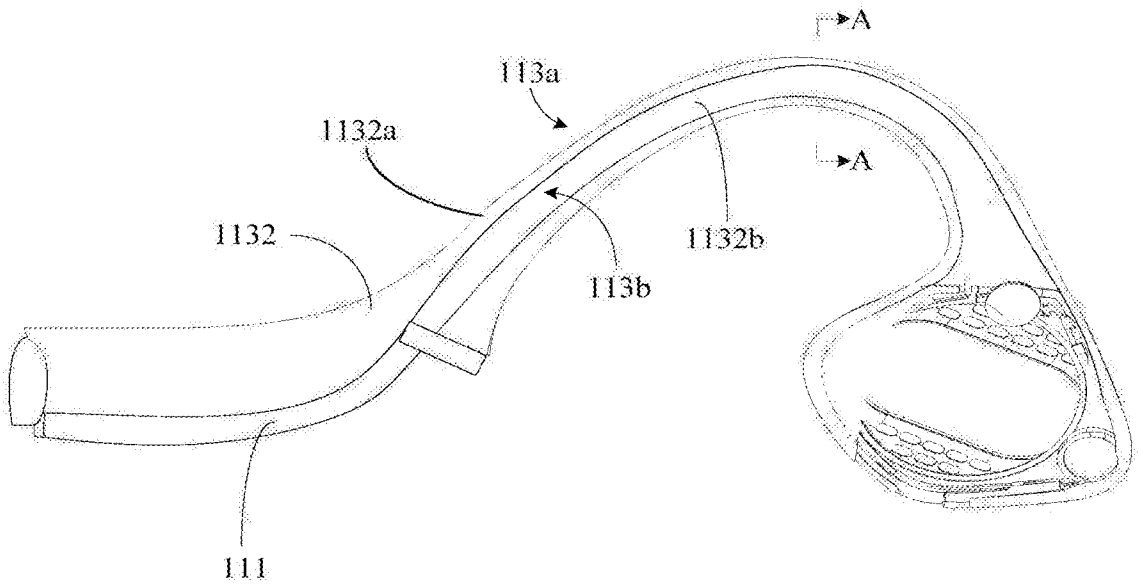



图3

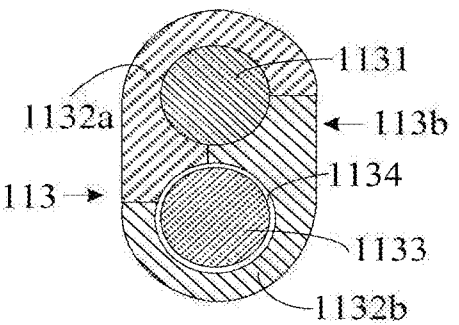



图4



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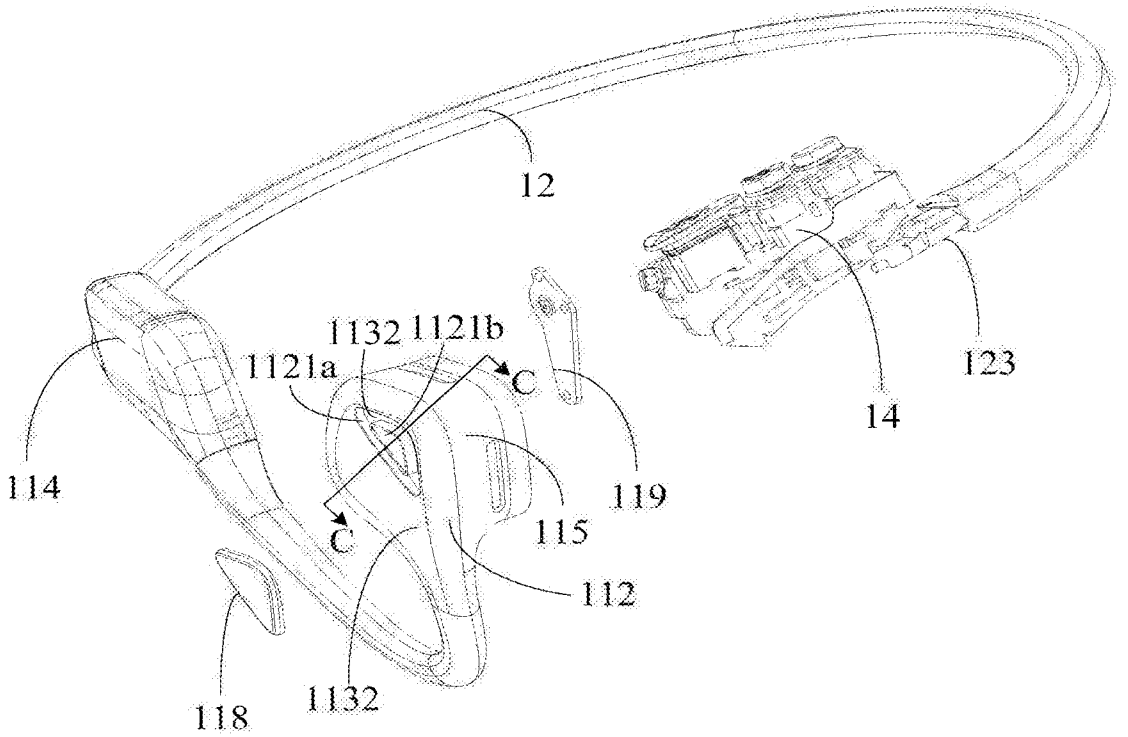



图5

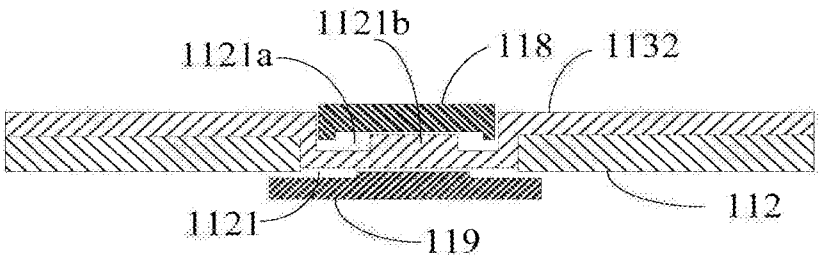



图6



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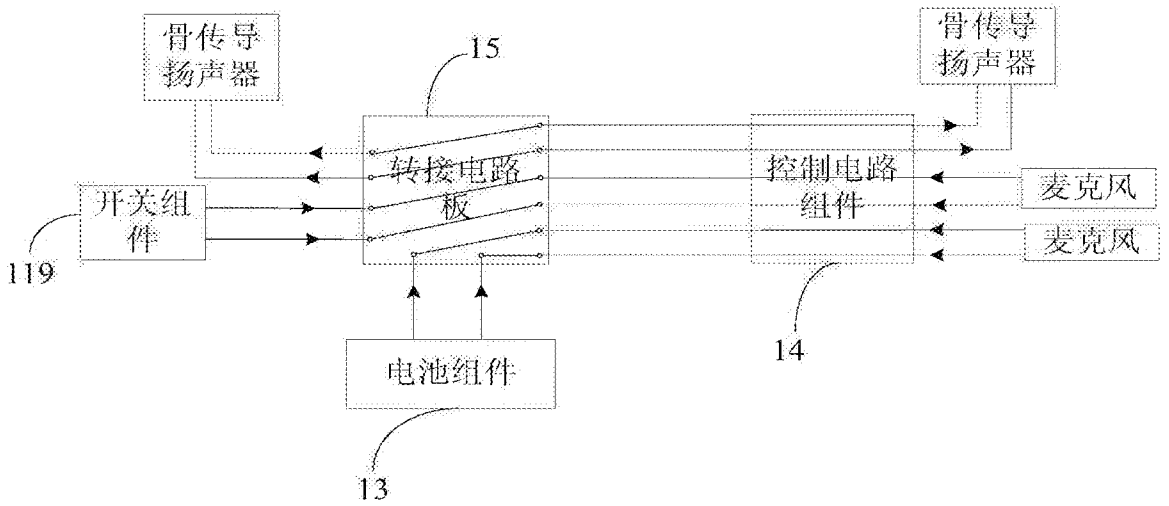



图7

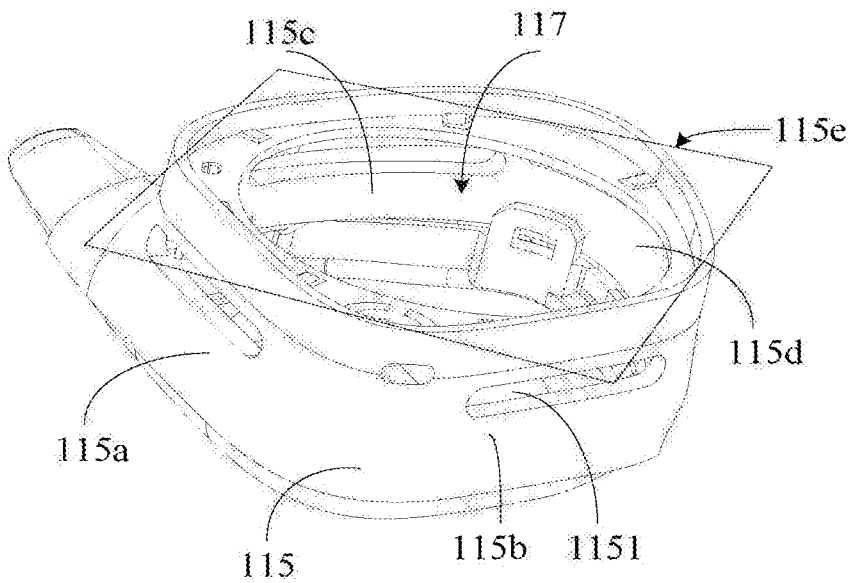



图8



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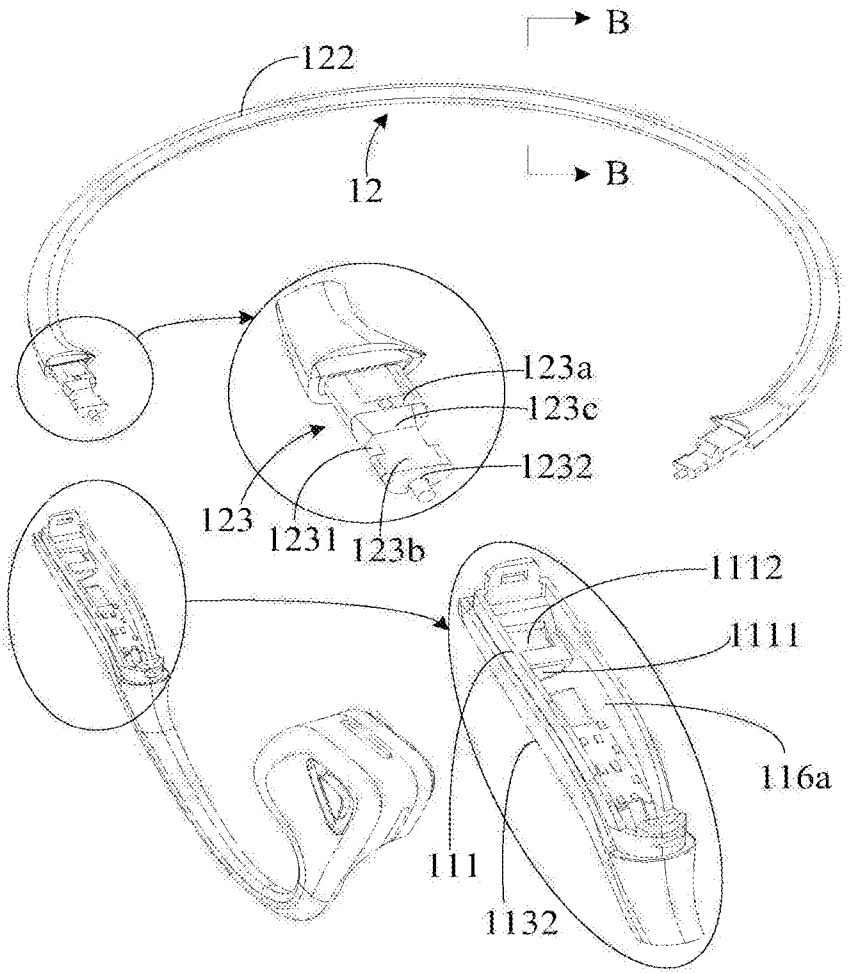



图9

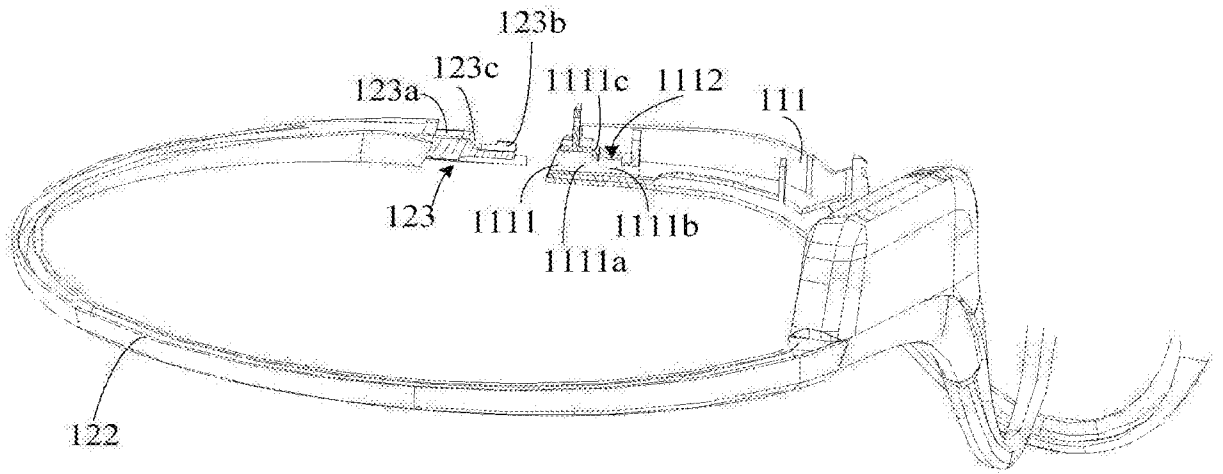



图10



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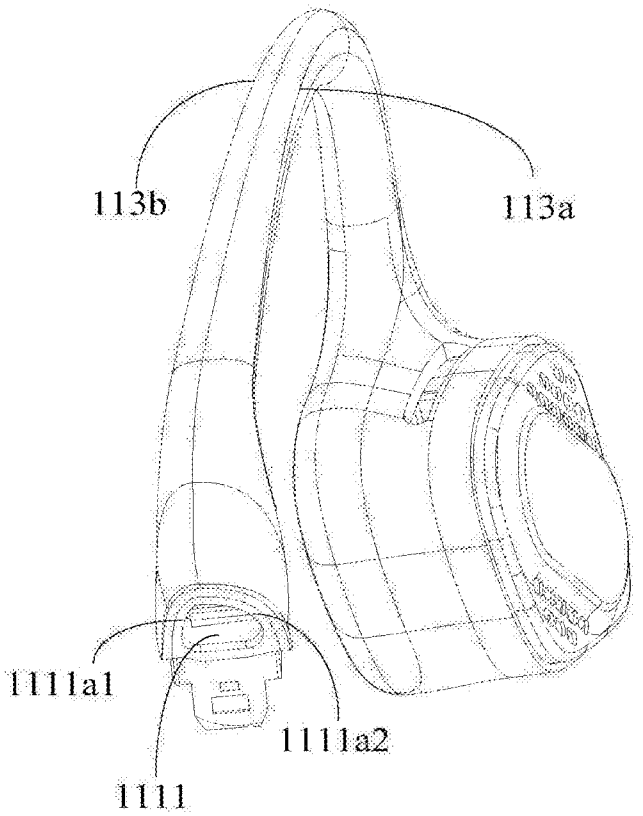



图11

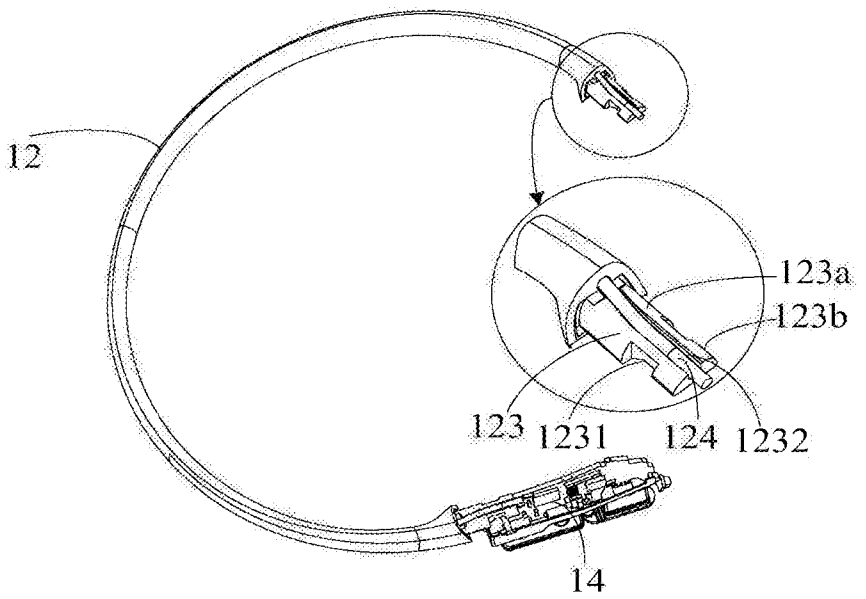



图12



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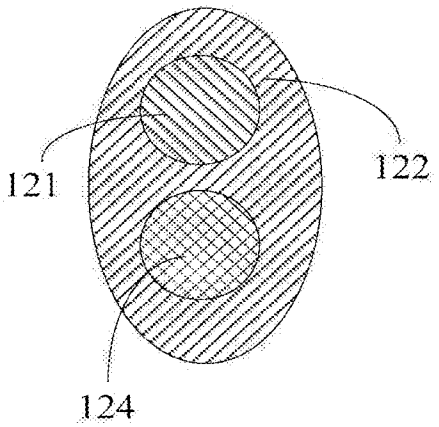



图13

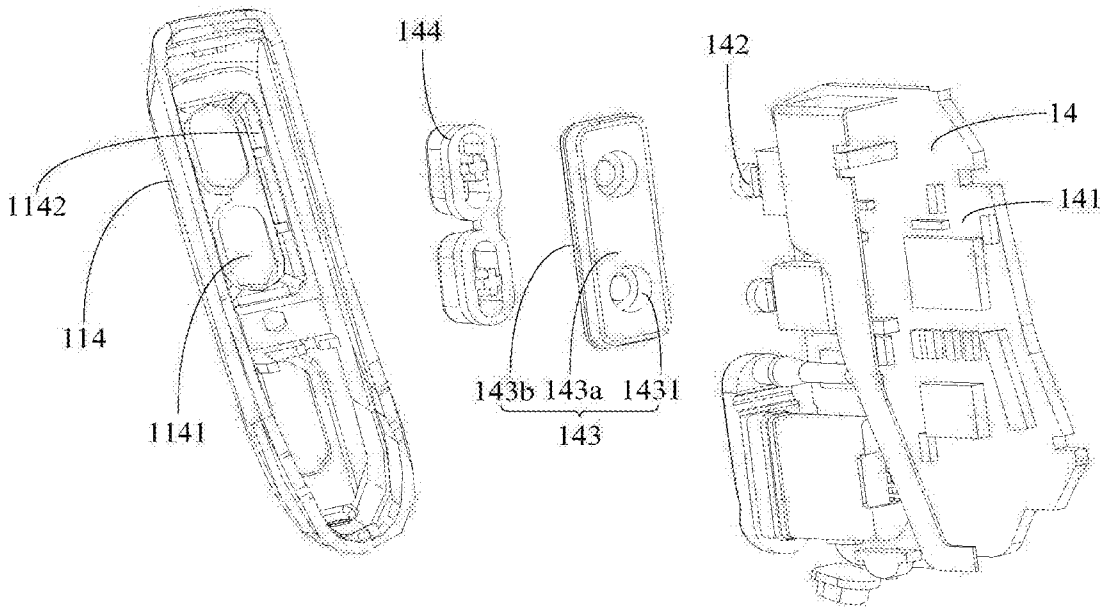



图14

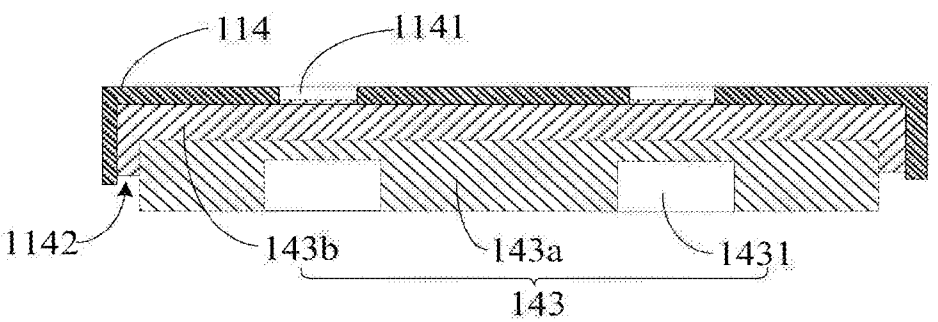



图15



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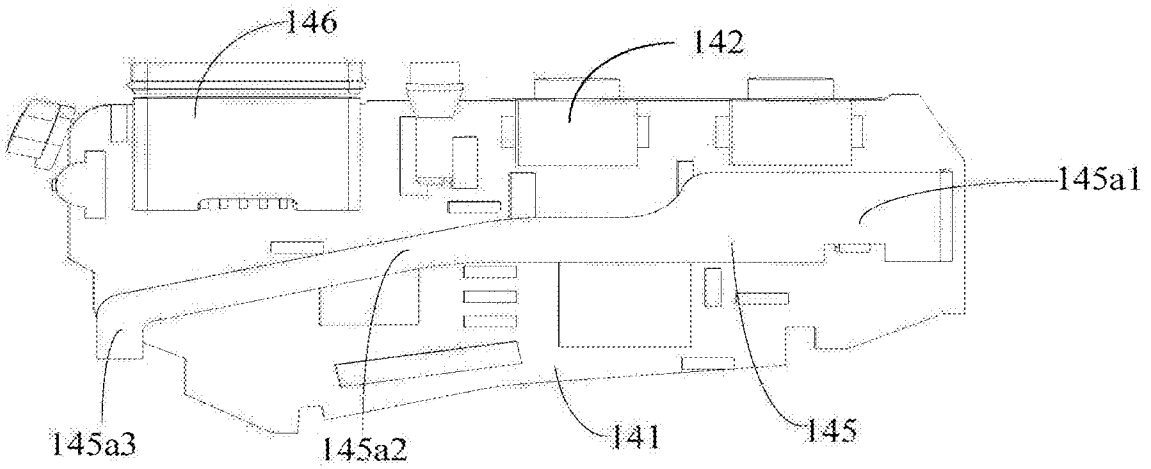



图16

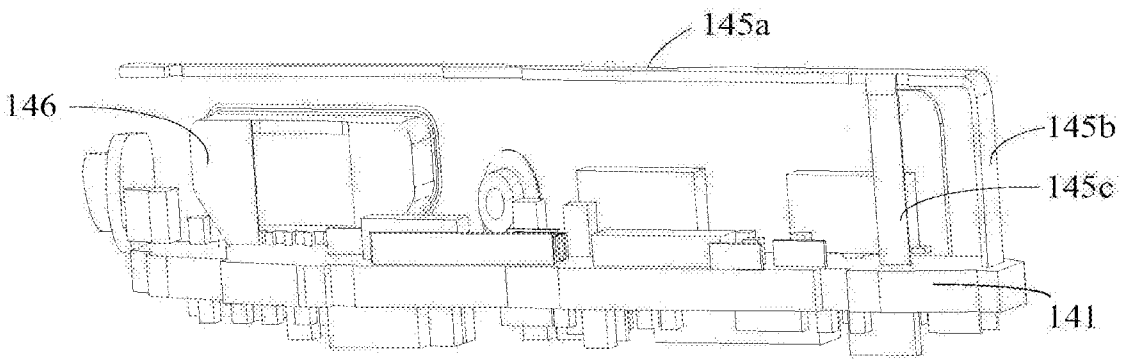



图17



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# Osteoacusis loudspeaker arrangement


## Abstract

This application discloses a kind of osteoacusis loudspeaker arrangements, comprising: ear-hang and circuit shell ; The circuit shell is connect for accommodating control circuit or battery with ear-hang ; Shell sheath is wherein molded on ear-hang, shell sheath is coated on the periphery of circuit shell in a manner of being set with.By the above-mentioned means, the application can reduce formative stage to control circuit or battery adverse effect.



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China

**Other languages:** Chinese

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**Worldwide applications**

2019 CN WO WO WO

**Application CN201910009874.6A events**

| | |
|---|---|
| **2019-01-05** | Application filed by 深圳市新音科技有限公司 |
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| **2019-03-29** | Publication of CN109547905A |
| 2019-08-24 | Priority claimed from PCT/CN2019/102400 |

**Info:** Patent citations (23), Cited by (5), Legal events, Similar documents, Priority and Related Applications

**External links:** Espacenet, Global Dossier, Discuss


## Description

Osteoacusis loudspeaker arrangement

Technical field

This application involves bone conduction technology fields, more particularly to a kind of osteoacusis loudspeaker arrangement.

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 is in formative stage, for accommodating the circuit shell of control circuit or battery and being arranged in circuit The protection sleeve pipe of closure periphery can be integrally formed.However, since circuit shell inner containment has control circuit or battery, if by two Person is integrally

## Claims (12)

Hide Dependent

1. a kind of osteoacusis loudspeaker arrangement characterized by comprising

Ear-hang ;

Circuit shell is connect for accommodating control circuit or battery, and with the ear-hang ;

Shell sheath is wherein molded on the ear-hang, the shell sheath is coated on the outer of the circuit shell in a manner of being set with it encloses.

2. osteoacusis loudspeaker arrangement according to claim 1, which is characterized in that the shell sheath is bag open at one end Shape structure, so that the circuit shell enters the inside of the shell sheath via the open end of the shell sheath.

3. osteoacusis loudspeaker arrangement according to claim 2, which is characterized in

formed, then hot environment is easy to bring damage to control circuit or battery, to influence the matter of osteoacusis loudspeaker arrangement Amount.

Summary of the invention

The application can be reduced in formative stage pair mainly solving the technical problems that provide a kind of osteoacusis loudspeaker arrangement Control circuit or battery adverse effect.

In order to solve the above technical problems, the technical solution that the application uses is: a kind of osteoacusis loudspeaker arrangement is provided, It include: ear-hang ; Circuit shell is connect for accommodating control circuit or battery, and with the ear-hang ; Wherein it is molded on the ear-hang There is shell sheath, the shell sheath is coated on the periphery of the circuit shell in a manner of being set with.

The beneficial effect of the application is: being in contrast to the prior art, molding of the application in osteoacusis loudspeaker arrangement And assembling stage, circuit shell and shell sheath are separately formed, are then set in together again, so as to avoid the two one When molding, hot environment is damaged to brought by control circuit or battery, to reduce formative stage to control circuit or battery Adverse effect.

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 ;

that the open end of the shell sheath is provided with Inwardly projecting collar flange, the stepped setting in end of the circuit shell far from the ear-hang, and then form the first ring Shape table top, when the shell sheath is coated on the periphery of the circuit shell, the collar flange is connected to first ring On shape table top.

4. osteoacusis loudspeaker arrangement according to claim 3, which is characterized in that in the collar flange and first ring The engaging zones of shape table top are applied with sealant, the shell sheath and circuit shell to be connected and sealed.

5. osteoacusis loudspeaker arrangement according to claim 3, which is characterized in that be provided with edge on the first annular table top The locating piece that the circuit shell extends away from the direction of the ear-hang, is provided at the collar flange of the shell sheath and institute The corresponding locating slot of locating piece is stated, the locating slot is covered on the periphery of at least partly described locating piece, to protect to the shell Set is positioned.

6. osteoacusis loudspeaker arrangement according to claim 3, which is characterized in that the circuit shell includes fastening each other Two sub- shells, wherein the first annular table top is formed on the sub- shell, the shell sheath is to described two The joint close of sub- shell carries out all standing.

7. osteoacusis loudspeaker arrangement according to claim 6, which is characterized in that two sub- shells abutted each other connects Conjunction face is the stairstepping mutually agreed with.

8. osteoacusis loudspeaker arrangement according to claim 3, which is characterized in that be provided with multiple peaces in the circuit shell Hole is filled, and the outer surface depressions of the circuit shell are provided with the first glue groove, the multiple mounting hole is located at first glue In slot, the osteoacusis loudspeaker arrangement further comprises the conductive column being inserted in the mounting hole respectively, the shell sheath It further comprise the exposed hole for allowing the conductive column exposed, wherein sealant is applied in first glue groove, in institute The shell sheath and the circuit shell is stated connected and sealed in the periphery for stating mounting hole.

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 ;

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

9. osteoacusis loudspeaker arrangement according to claim 8, which is characterized in that the osteoacusis loudspeaker arrangement further wraps Auxiliary piece is included, the auxiliary piece includes plate body, vacancy section is provided on the plate body, wherein the plate body is set to the circuit On the inner surface of shell, and the mounting hole is located inside the vacancy section, and then forms the second glue in the conductive column periphery Slot, wherein it is applied with sealant in second glue groove, it is close to be carried out in the inside of the circuit shell to the mounting hole Envelope.

10. osteoacusis loudspeaker arrangement according to claim 1, which is characterized in that the osteoacusis loudspeaker arrangement is further including machine core shell, the machine core shell is provided with and is connected to the outer end face of the machine core shell for accommodating earphone core Jointing holes are provided with stop block on the inner sidewall of the jointing holes,

The ear-hang includes elastic metallic yarn and the end that patches for being set to described elastic metallic yarn one end, and the end that patches is wrapped It includes:

Insertion section is at least partially inserted into the 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 and it is described patch end patch fixation.

11. osteoacusis loudspeaker arrangement according to claim 10, which is characterized in that the insertion section partial insertion is in described The stepped setting of exposed parts in jointing holes, and in the insertion section, and then form the outer end face with the machine core shell Spaced second circular table, the ear-hang further include being molded to hold periphery in the elastic metallic yarn and described patch Protection sleeve pipe, the protection sleeve pipe further extend to second circular table towards the machine core shell outer end face one Side, and abutted when termination inserts fixed with the machine core

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 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 shell body elasticity in the machine core shell with described patch, and then realize sealing.

12. osteoacusis loudspeaker arrangement according to claim 11, which is characterized in that the protection sleeve pipe is in second ring The side of shape table top towards the outer end face of the machine core shell forms an annular abutment face and is located in the annular abutment face Portion and the annular convex platform being arranged relative to annular abutment face protrusion ;

The machine core shell further comprises the inner sidewall of the outer end face and the jointing holes for connecting the machine core shell Connect inclined-plane ;

Wherein, the machine core shell and it is described patch termination and insert fixed when, the annular abutment face and the annular convex platform point It is not abutted with the outer end face of the machine core shell and connection inclined-plane elasticity.

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.

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 two 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 internal 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 252 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 leas 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 settable 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 luge 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 8615 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 861, 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.

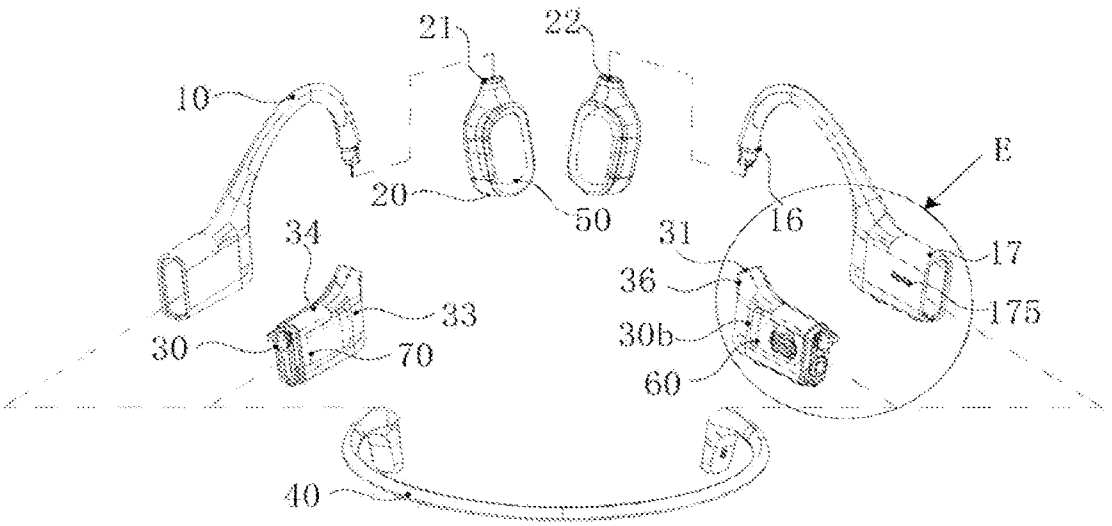



图1

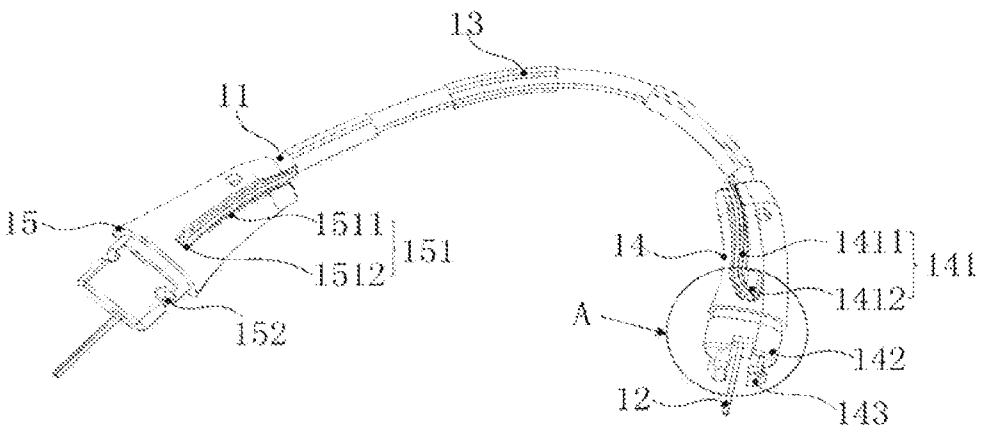



图2



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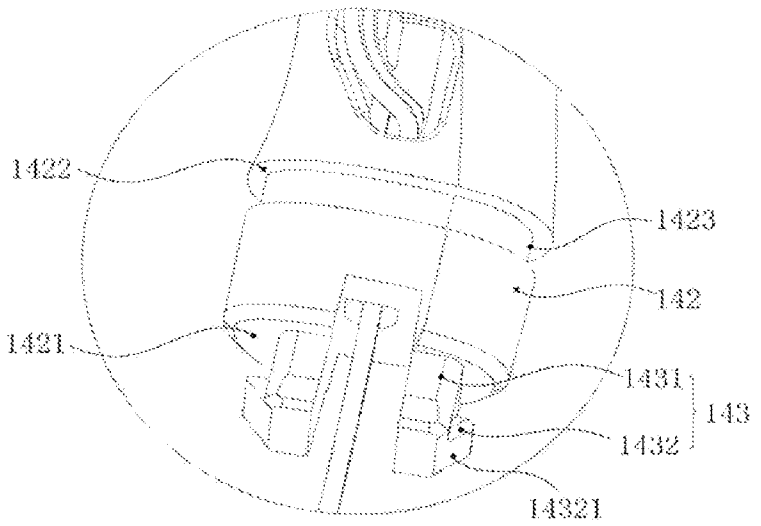



图3

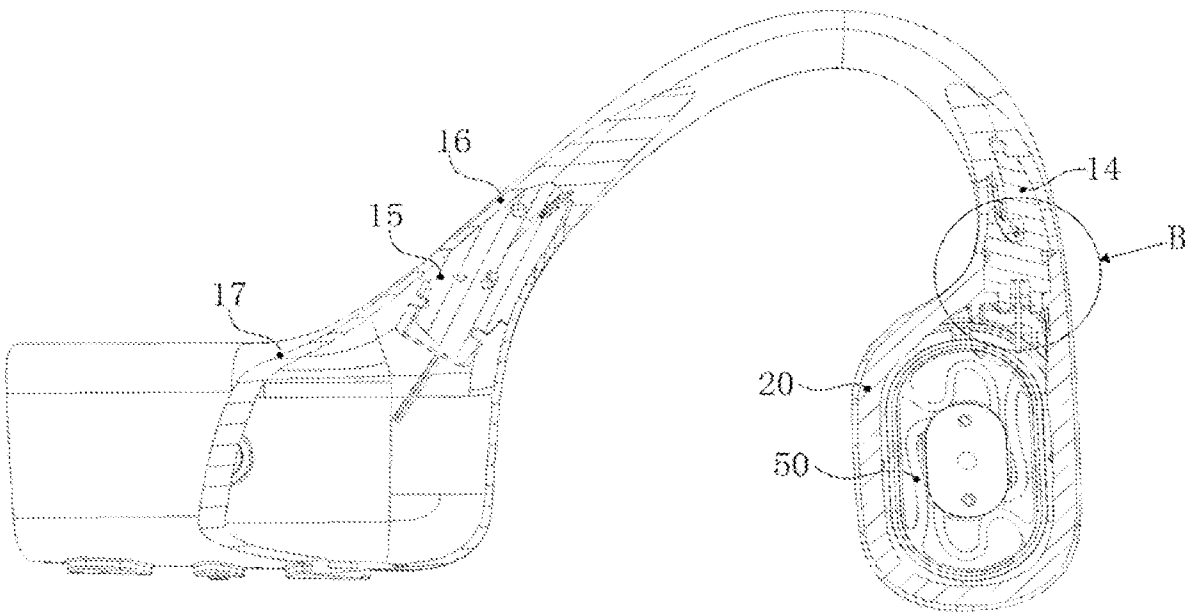



图4



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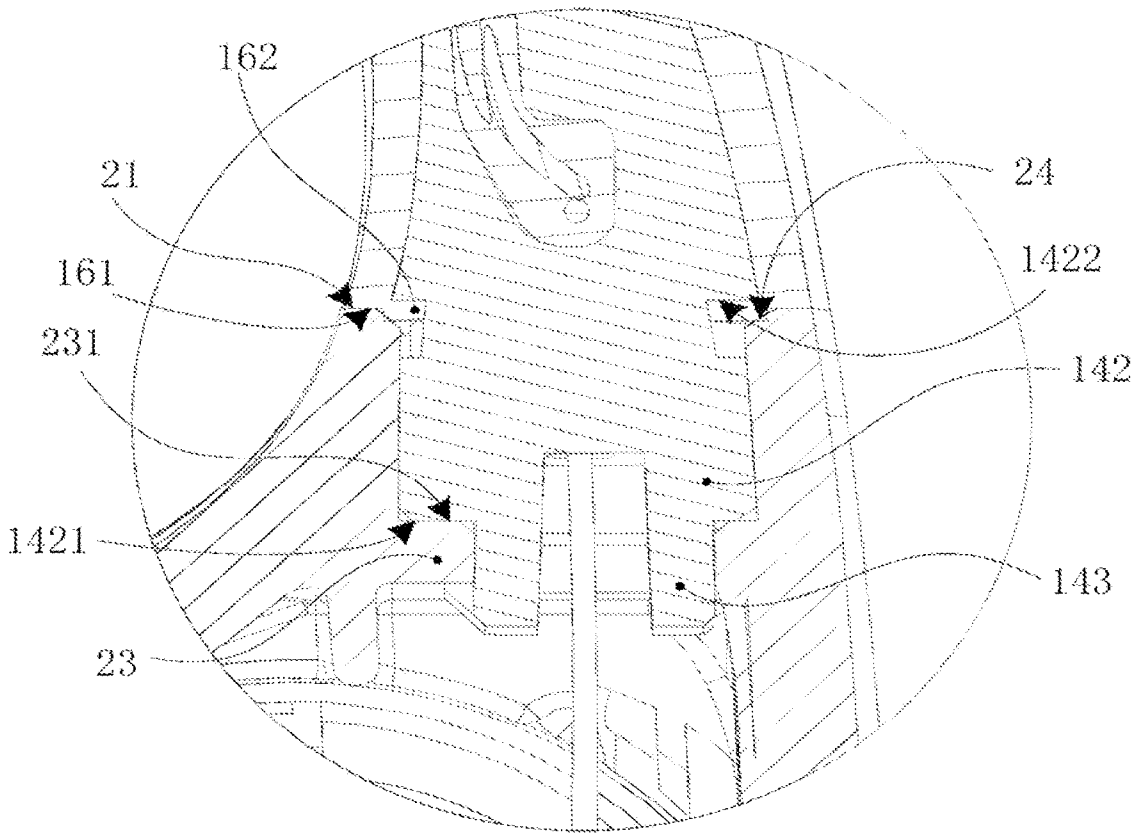



图5

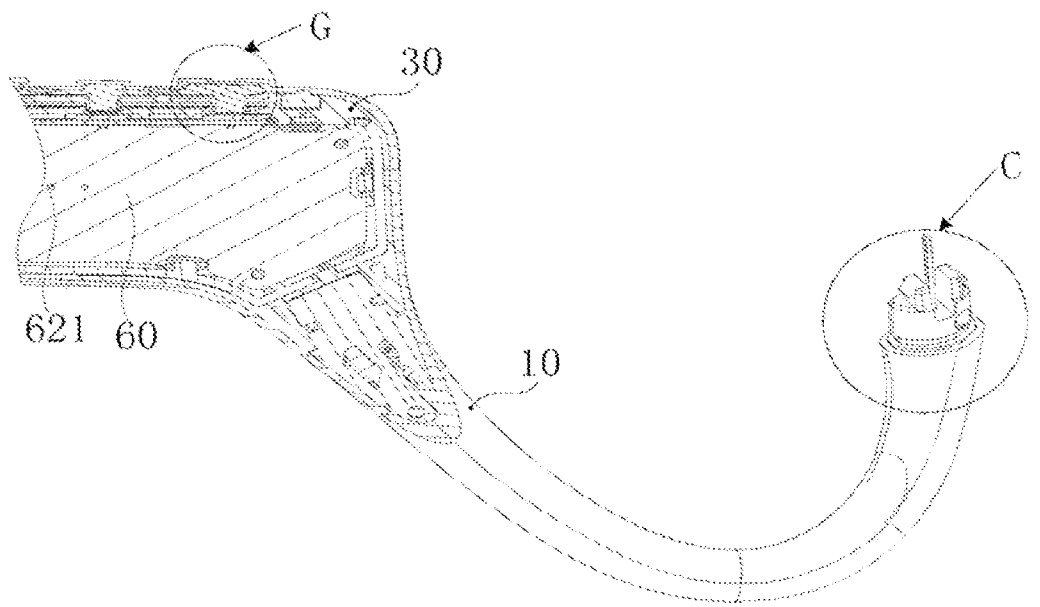



图6



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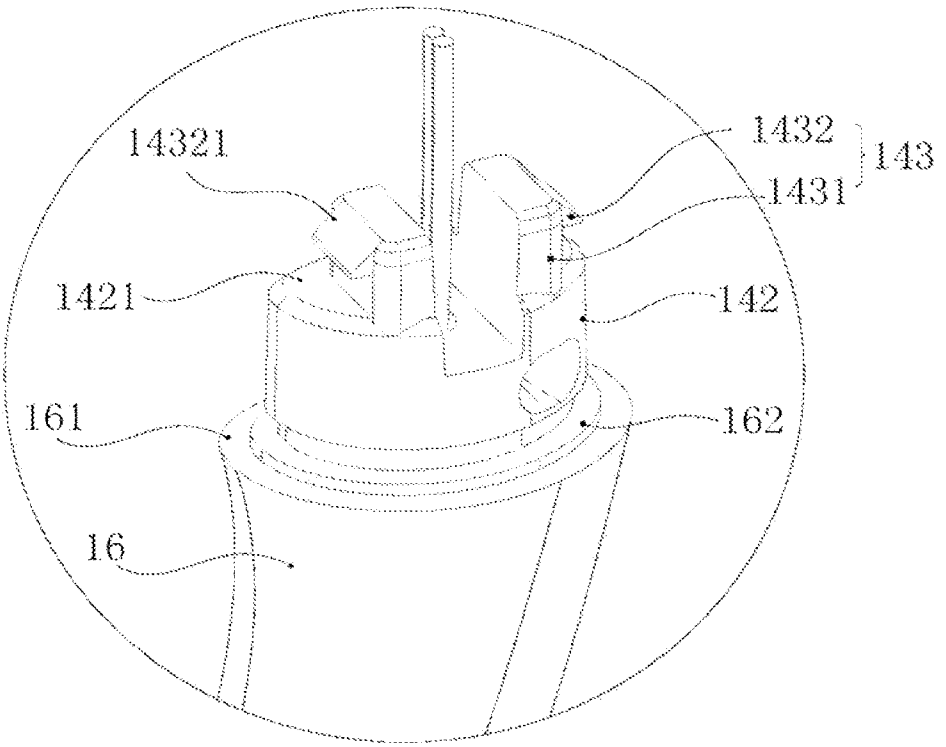



图7

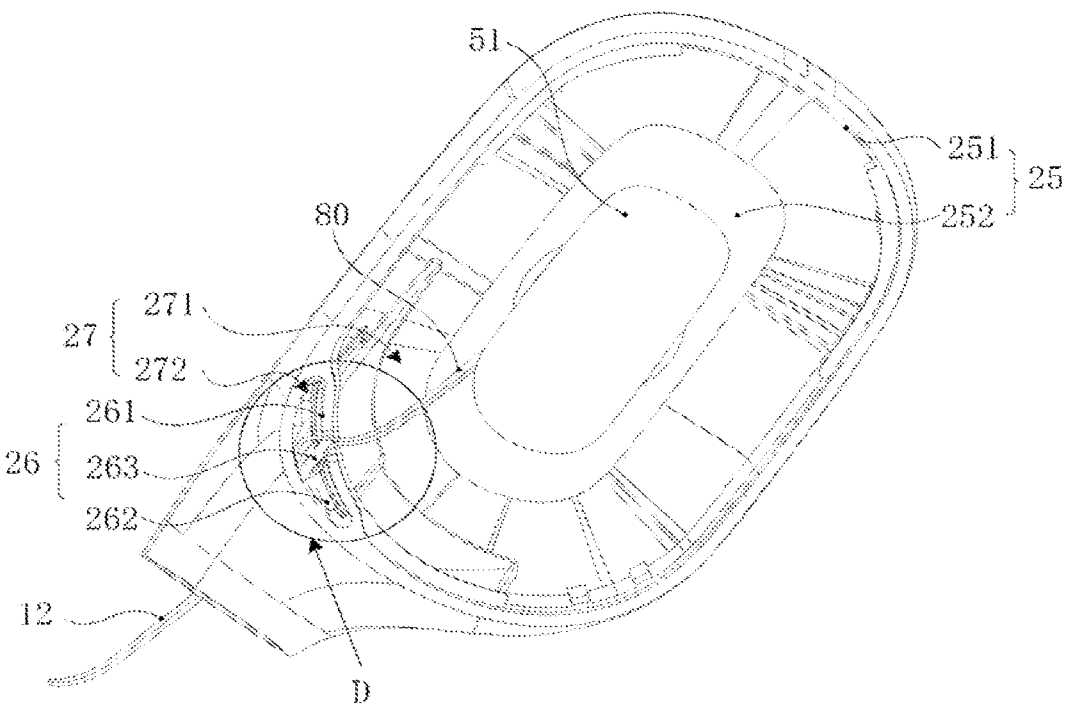



图8



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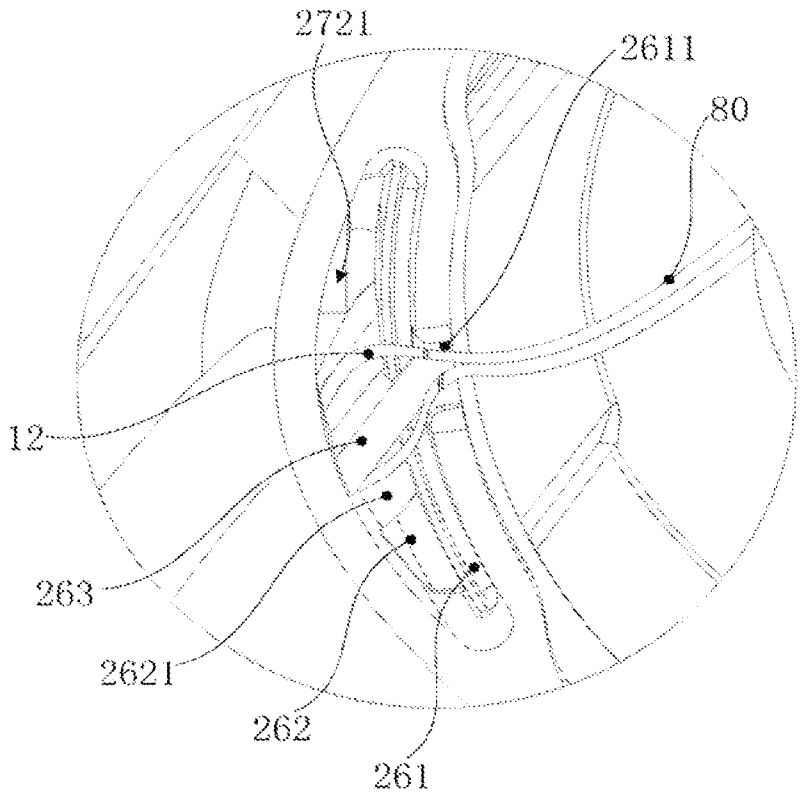



图9

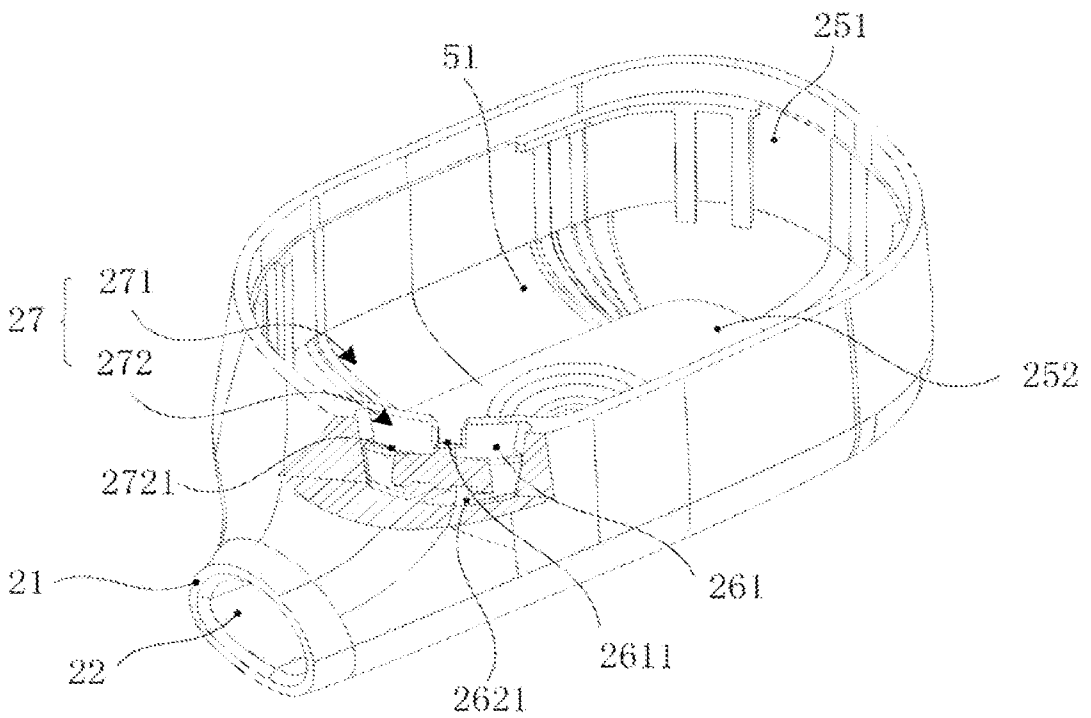



图10



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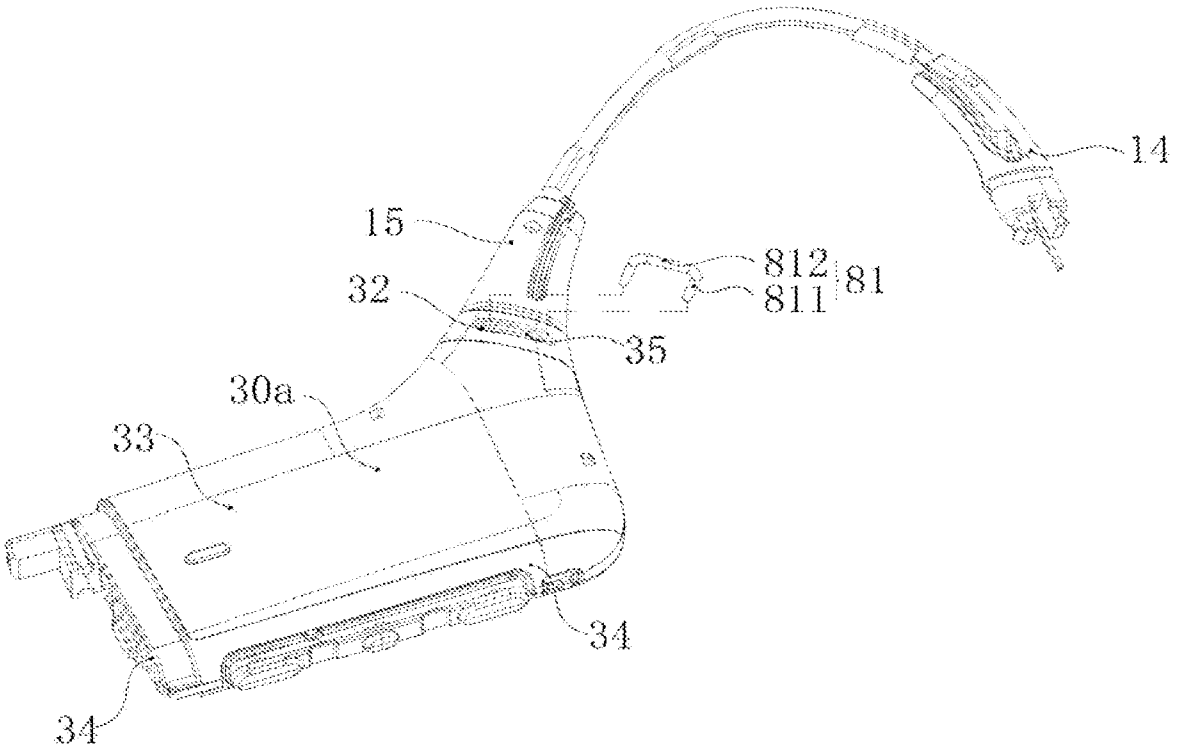



图11

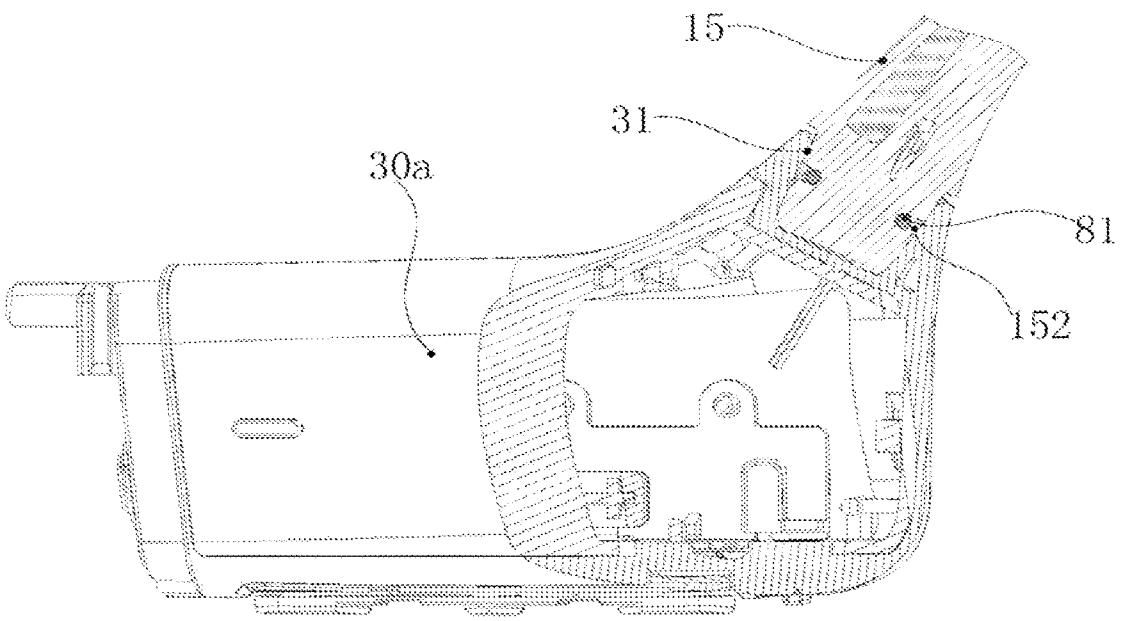



图12



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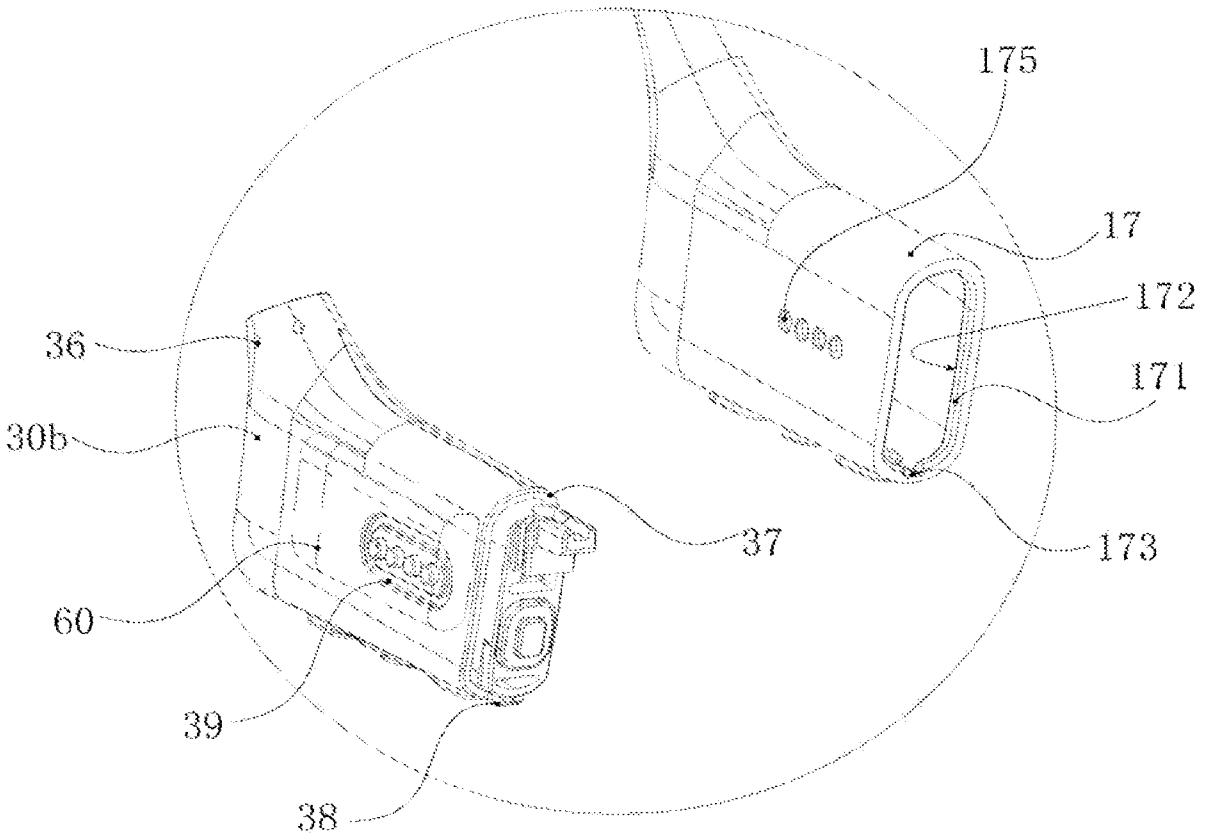



图13

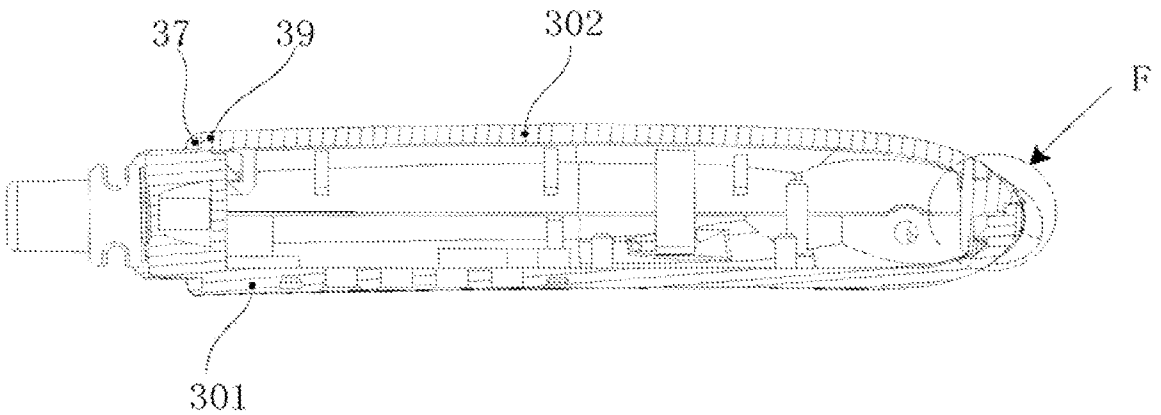



图14



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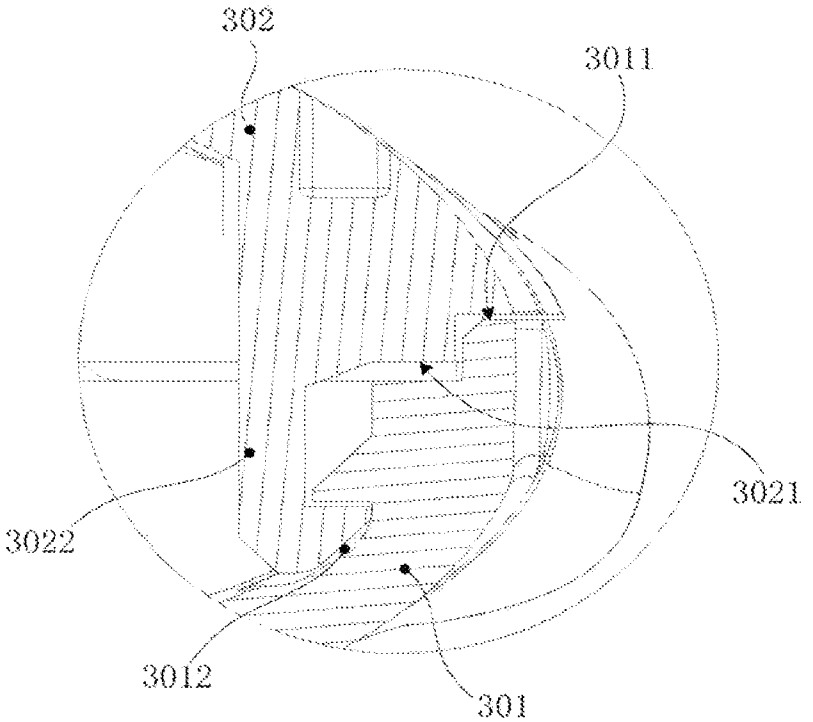



图15



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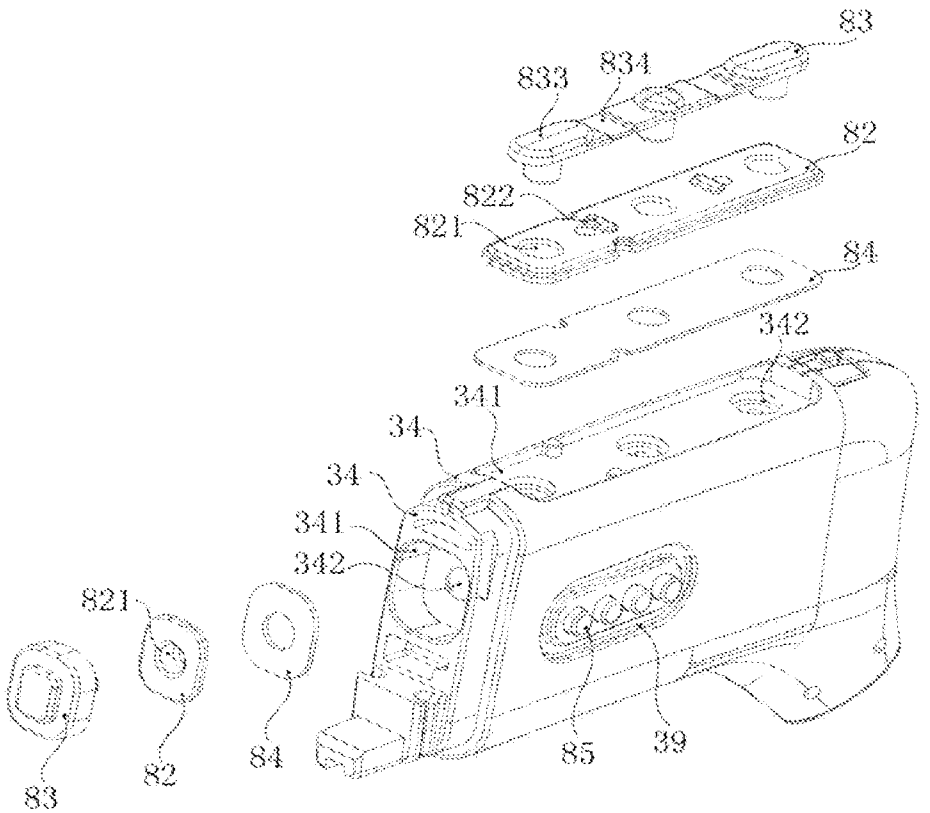



图16

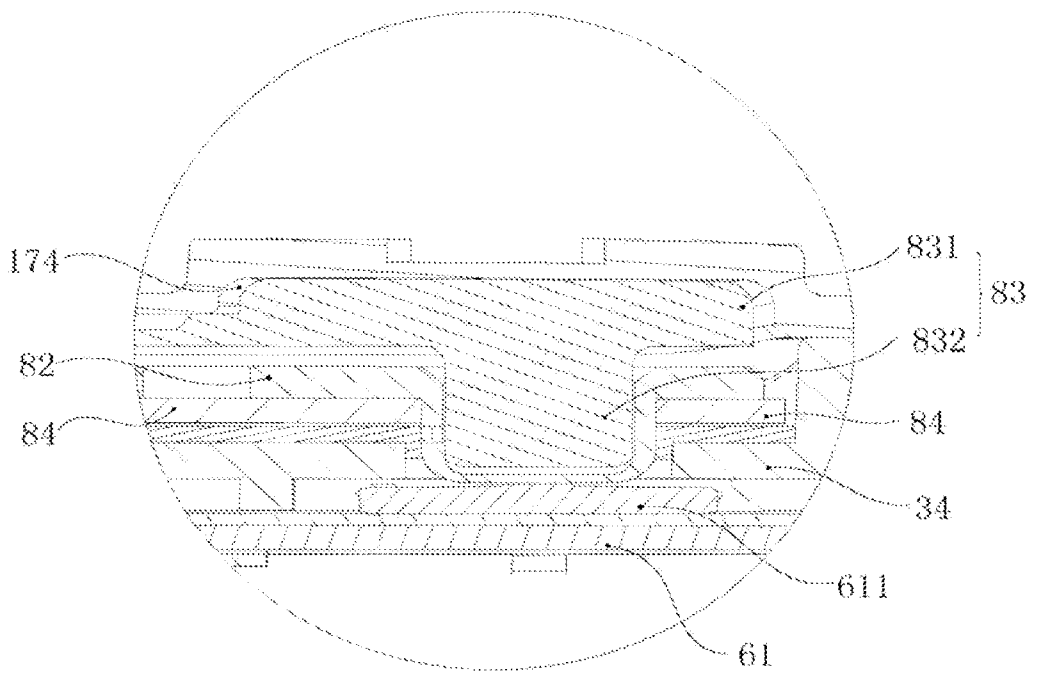



图17



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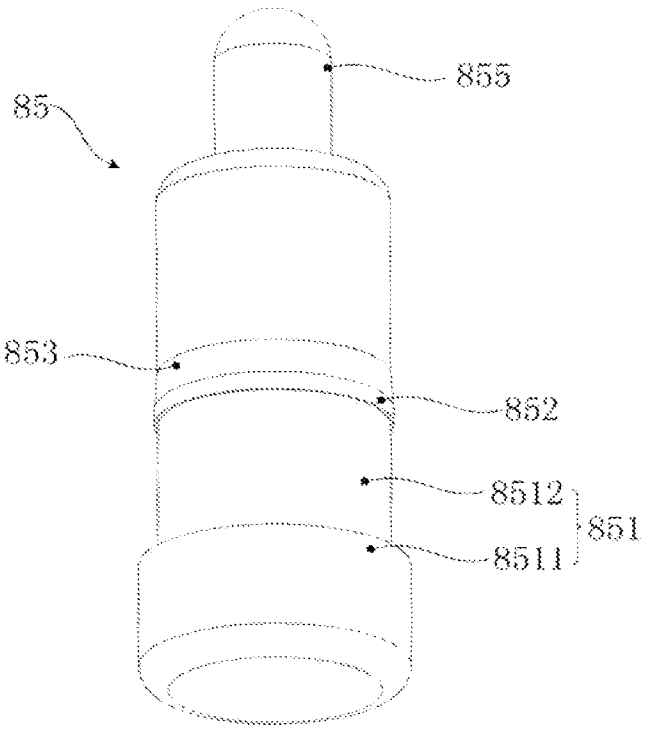



图18

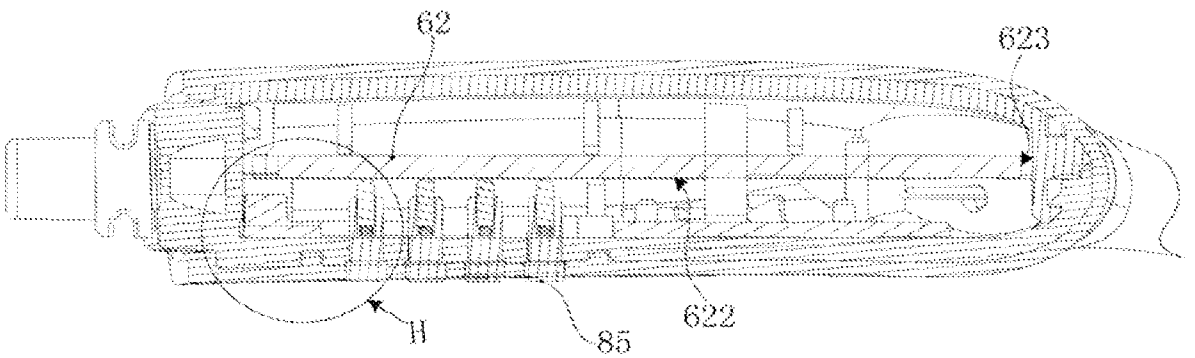



图19



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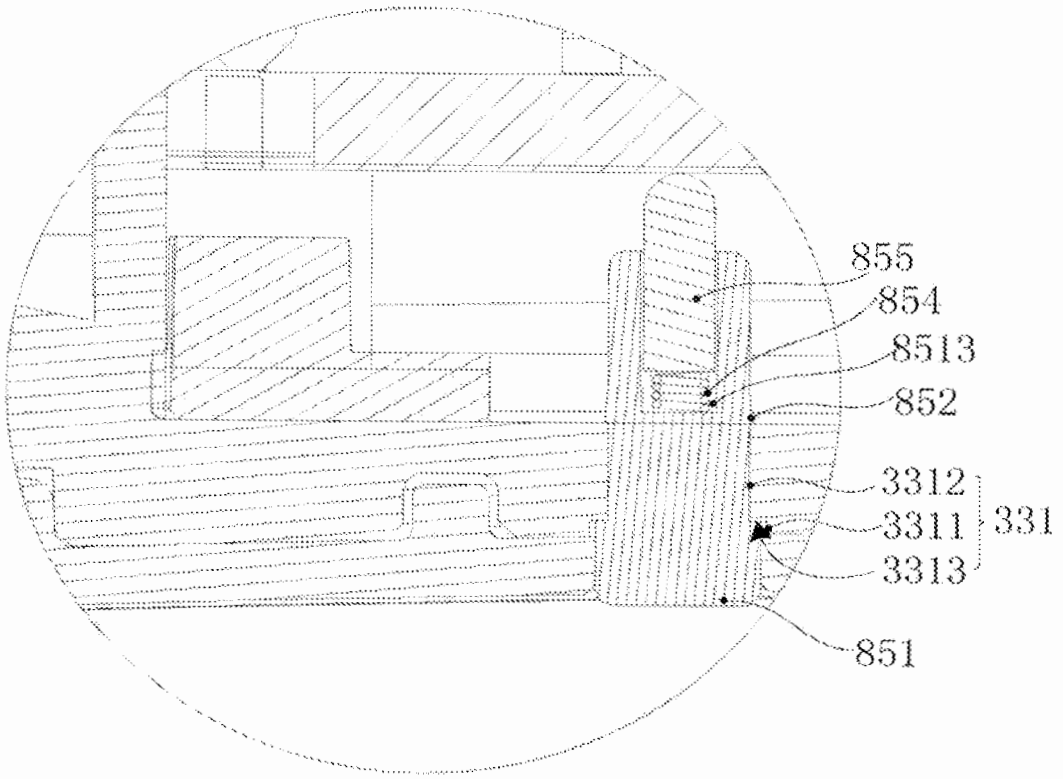



图20



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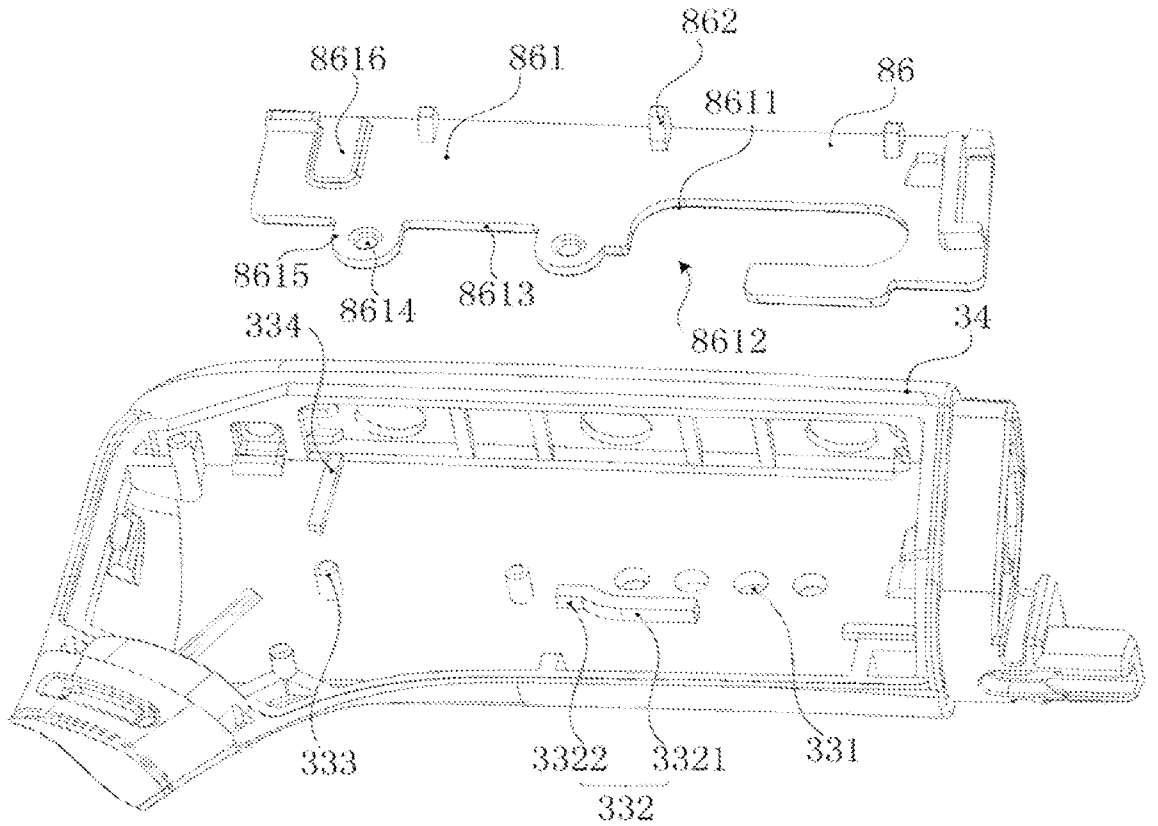



图21

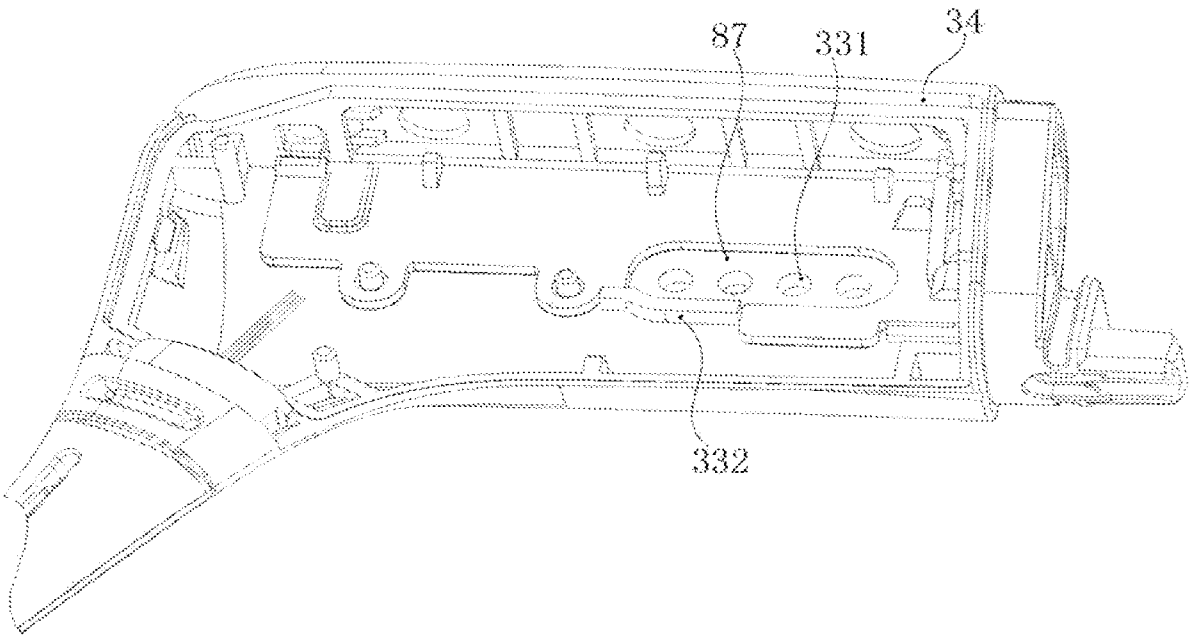



图22



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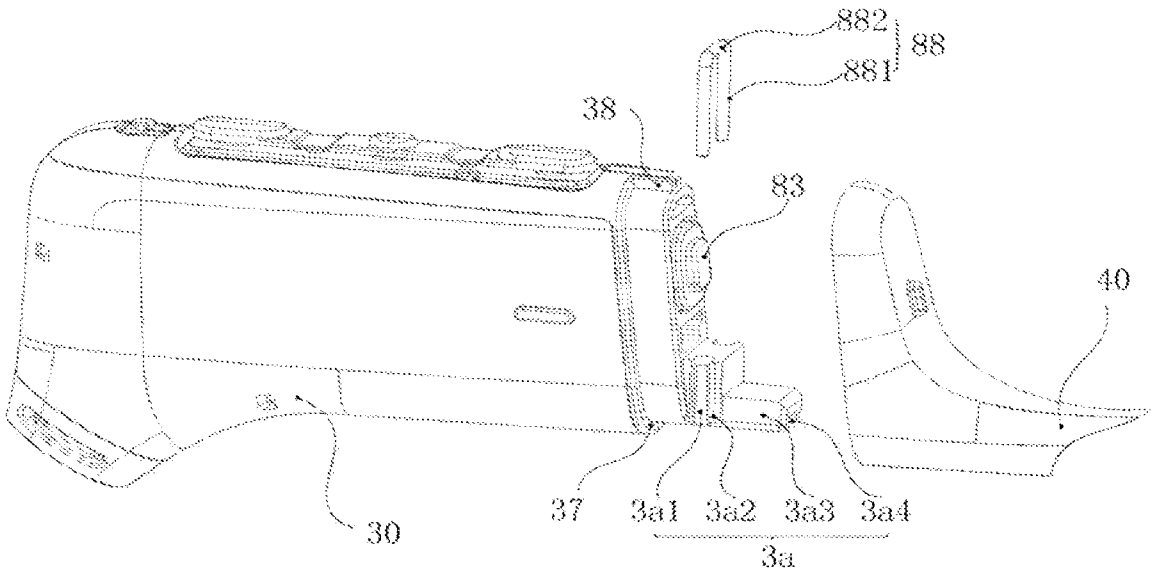



图23

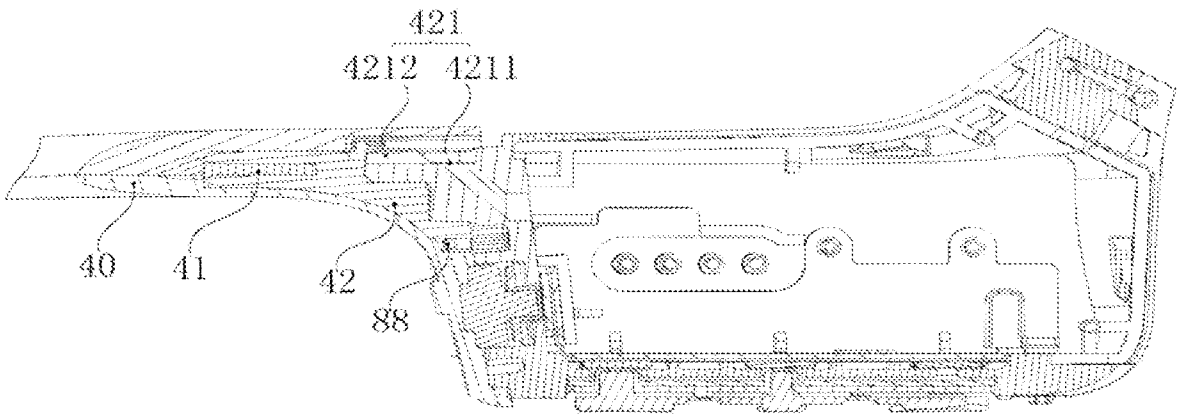



图24



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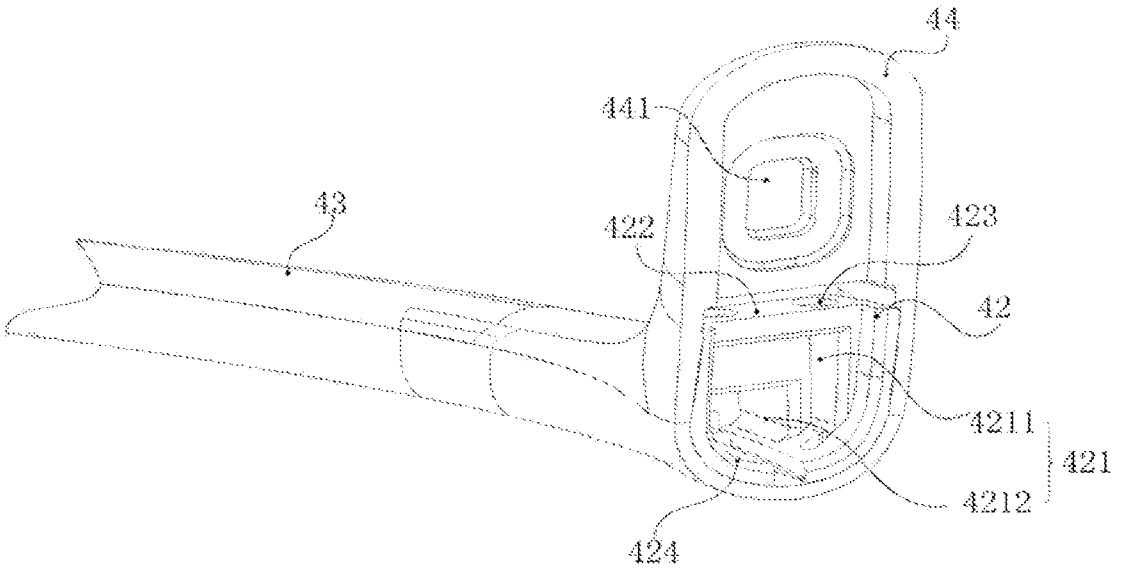



图25



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代理人 李庆波

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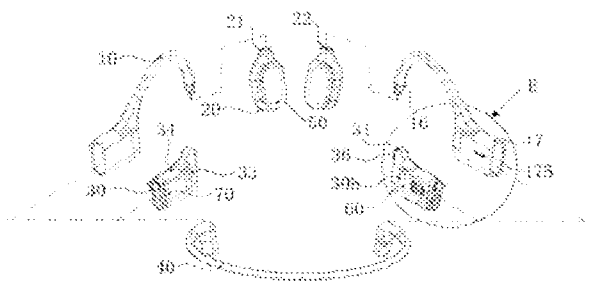
权利要求书2页 说明书19页 附图14页

(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：耳挂及电路壳体；该电路壳体用于容纳控制电路或电池，并与耳挂连接；其中耳挂上注塑有壳体护套，壳体护套以套装方式包覆于电路壳体的外围。通过上述方式，本申请能够减少成型阶段对控制电路或电池所带来的不利影响。




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1.一种骨传导扬声装置，其特征在于，包括：

耳挂；

电路壳体，用于容纳控制电路或电池，并与所述耳挂连接；

其中所述耳挂上注塑有壳体护套，所述壳体护套以套装方式包覆于所述电路壳体的外围。

2.根据权利要求1所述的骨传导扬声装置，其特征在于，所述壳体护套为一端开口的袋状结构，以使得所述电路壳体经由所述壳体护套的开口端进入所述壳体护套的内部。

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，进而形成第一环形台面，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第一环形台面上。

4.根据权利要求3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第一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。

5.根据权利要求3所述的骨传导扬声装置，其特征在于，所述第一环形台面上设置有沿所述电路壳体背离所述耳挂的方向延伸的定位块，所述壳体护套的环状凸缘处设置有与所述定位块对应的定位槽，所述定位槽覆盖在至少部分所述定位块的外围，以对所述壳体护套进行定位。

6.根据权利要求3所述的骨传导扬声装置，其特征在于，所述电路壳体包括彼此扣合的两个子壳体，其中所述第一环形台面形成于一个所述子壳体上，所述壳体护套对所述两个子壳体的接合缝进行全覆盖。

7.根据权利要求6所述的骨传导扬声装置，其特征在于，两个所述子壳体彼此对接的接合面为相互契合的阶梯形状。

8.根据权利要求3所述的骨传导扬声装置，其特征在于，所述电路壳体上设置有多个安装孔，并在所述电路壳体的外表面凹陷设置有第一胶槽，所述多个安装孔位于所述第一胶槽内，所述骨传导扬声装置进一步包括分别插置于所述安装孔内的导电柱，所述壳体护套进一步包括允许所述导电柱外露的外露孔，其中在所述第一胶槽内施加有密封胶，以在所述安装孔的外围对所述壳体护套和所述电路壳体进行密封连接。

9.根据权利要求8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，所述板体上设置有镂空区，其中所述板体设置于所述电路壳体的内表面上，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第二胶槽，其中在所述第二胶槽内施加有密封胶，以在所述电路壳体的内部对所述安装孔进行密封。

10.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，所述机芯壳体用于容纳耳机芯，并设置有与所述机芯壳体的外端面连通的接插孔，所述接插孔的内侧壁上设置有止挡块，

所述耳挂包括弹性金属丝以及设置于所述弹性金属丝一端的接插端，所述接插端包括：

插入部，至少部分插入于所述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



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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接插端的接插固定。

11.根据权利要求10所述的骨传导扬声装置，其特征在于，所述插入部部分插入于所述接插孔内，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第二环形台面，所述耳挂还包括注塑于所述弹性金属丝以及所述接插端外围的保护套管，所述保护套管进一步延伸至所述第二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。

12.根据权利要求11所述的骨传导扬声装置，其特征在于，所述保护套管在所述第二环形台面朝向所述机芯壳体的外端面的一侧形成一环形抵接面以及位于所述环形抵接面内部且相对于所述环形抵接面凸出设置的环形凸台；

所述机芯壳体进一步包括用于连接所述机芯壳体的外端面和所述接插孔的内侧壁的连接斜面；

其中，在所述机芯壳体与所述接插端接插固定时，所述环形抵接面和所述环形凸台分别与所述机芯壳体的外端面和所述连接斜面弹性抵接。



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# 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] 骨传导扬声装置在成型阶段，用于容纳控制电路或电池的电路壳体和设置在电路壳体外围的保护套管可一体成型。然而，由于电路壳体内部容纳有控制电路或电池，若将二者一体成型，则高温环境容易对控制电路或电池带来损伤，从而影响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，能够减少在成型阶段对控制电路或电池所带来的不利影响。

[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：耳挂；电路壳体，用于容纳控制电路或电池，并与所述耳挂连接；其中所述耳挂上注塑有壳体护套，所述壳体护套以套装方式包覆于所述电路壳体的外围。

[0006] 本申请的有益效果是：区别于现有技术的情况，本申请在骨传导扬声装置的成型和装配阶段，将电路壳体和壳体护套分别成型，然后再套装在一起，从而能够避免二者一体成型时，高温环境对控制电路或电池所带来的损伤，从而减少成型阶段对控制电路或电池所带来的不利影响。

## 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；

[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；



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[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



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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



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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。



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[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。

[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



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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。



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[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



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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



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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



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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。

[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



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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。

[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



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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。

[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



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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，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



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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。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



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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。

[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



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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。



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[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，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



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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。



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[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。



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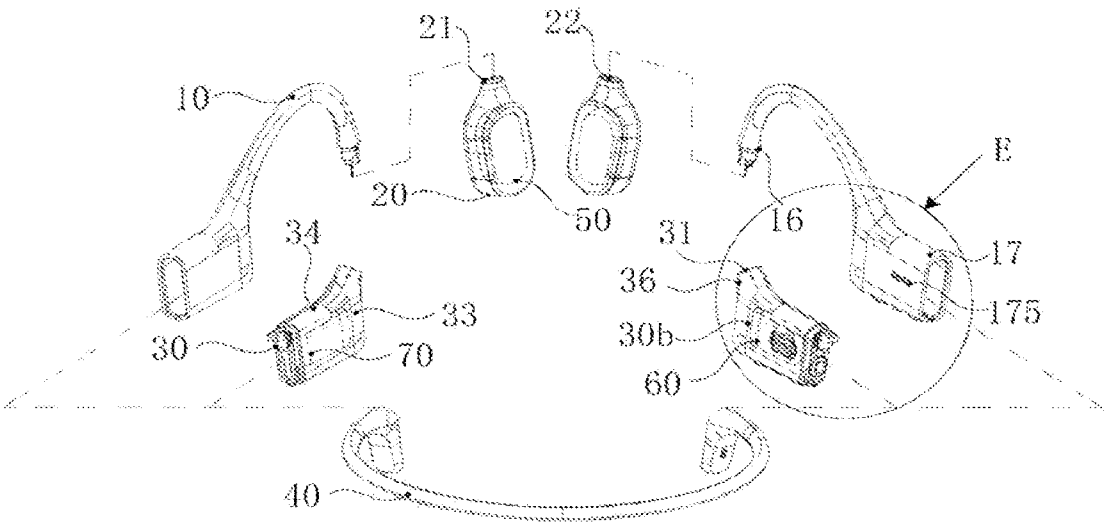



图1

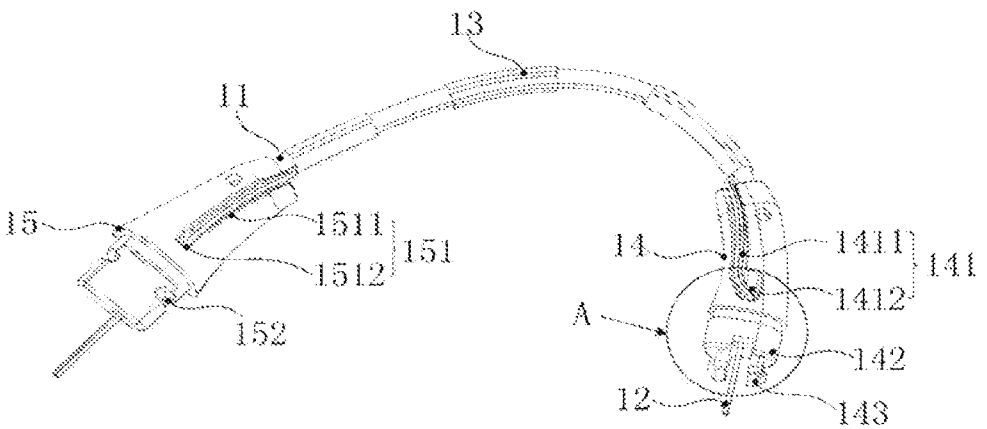



图2



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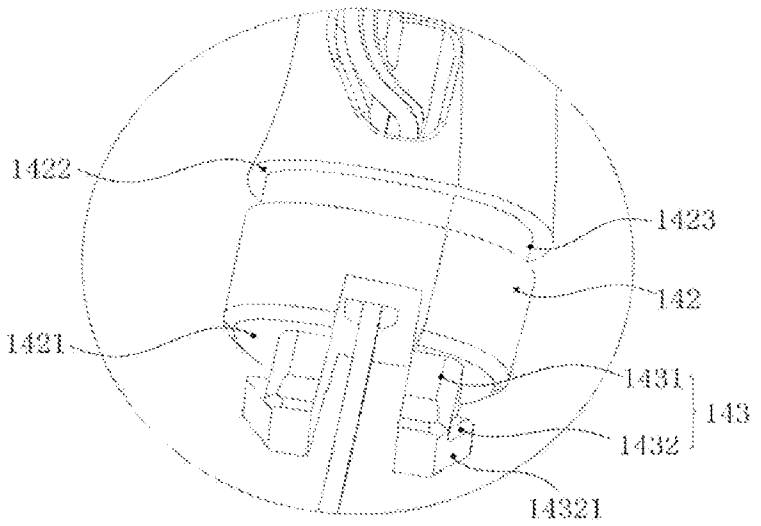



图3

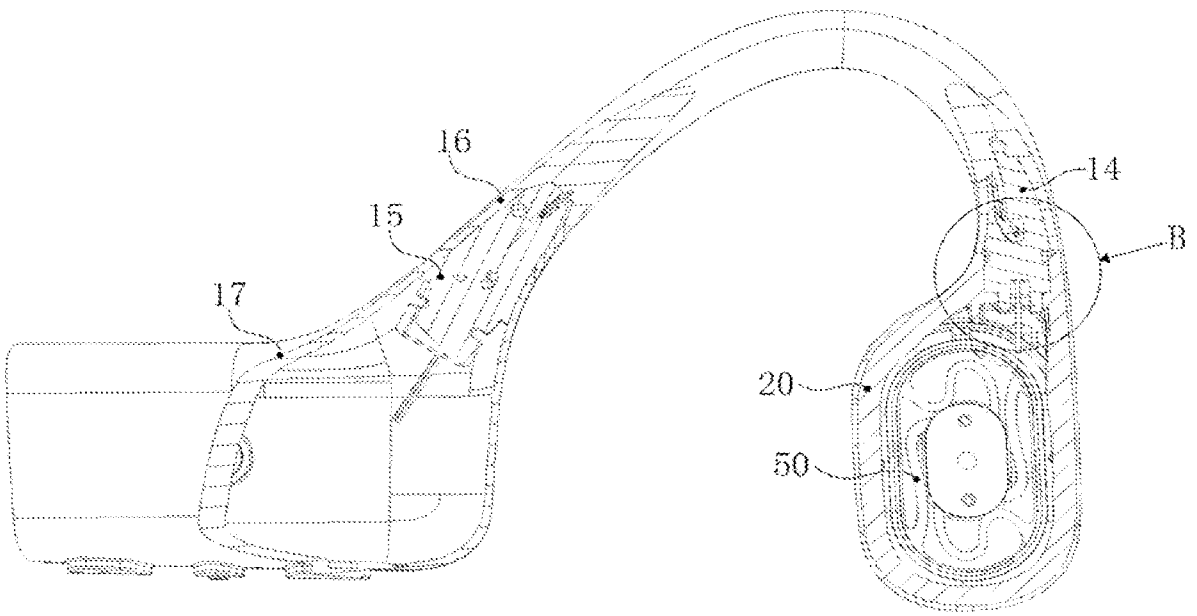



图4



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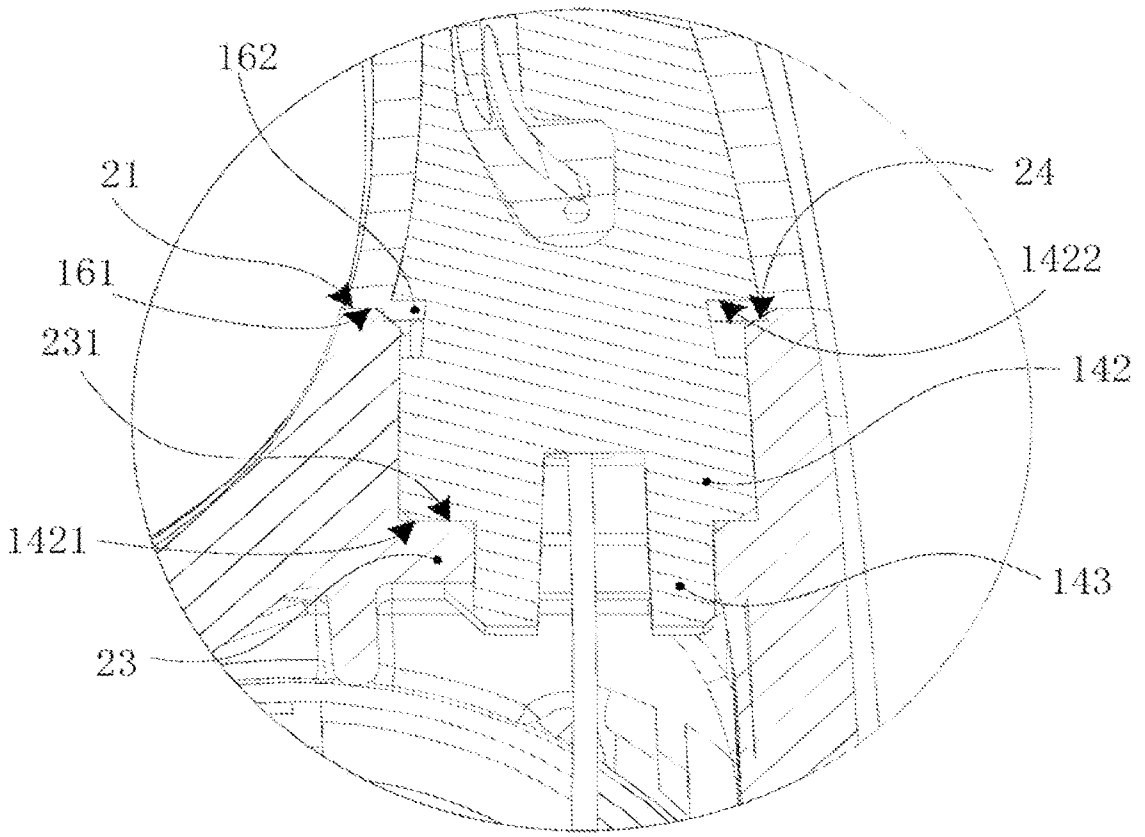



图5

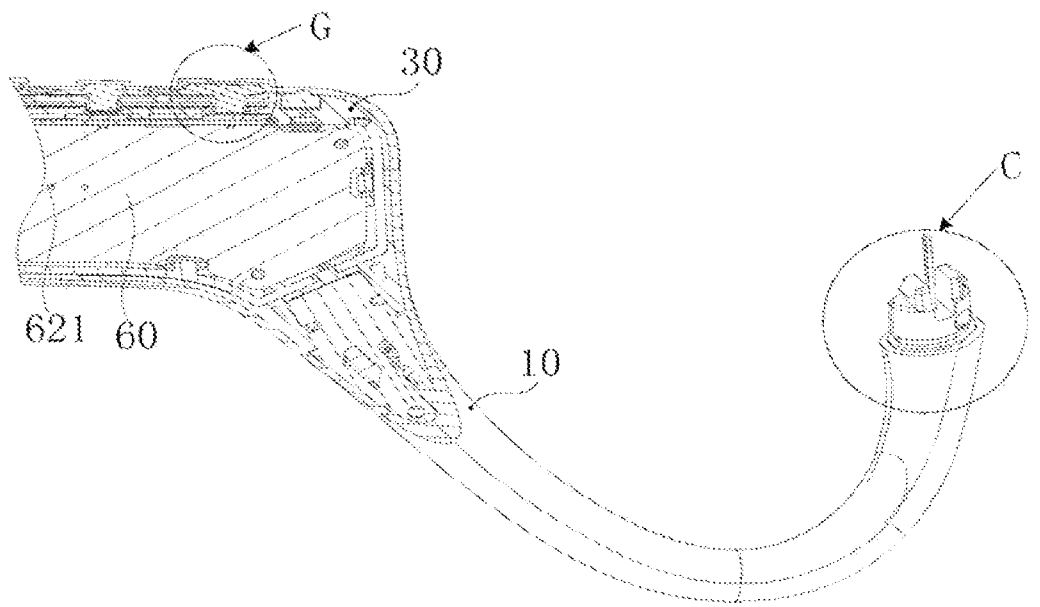



图6



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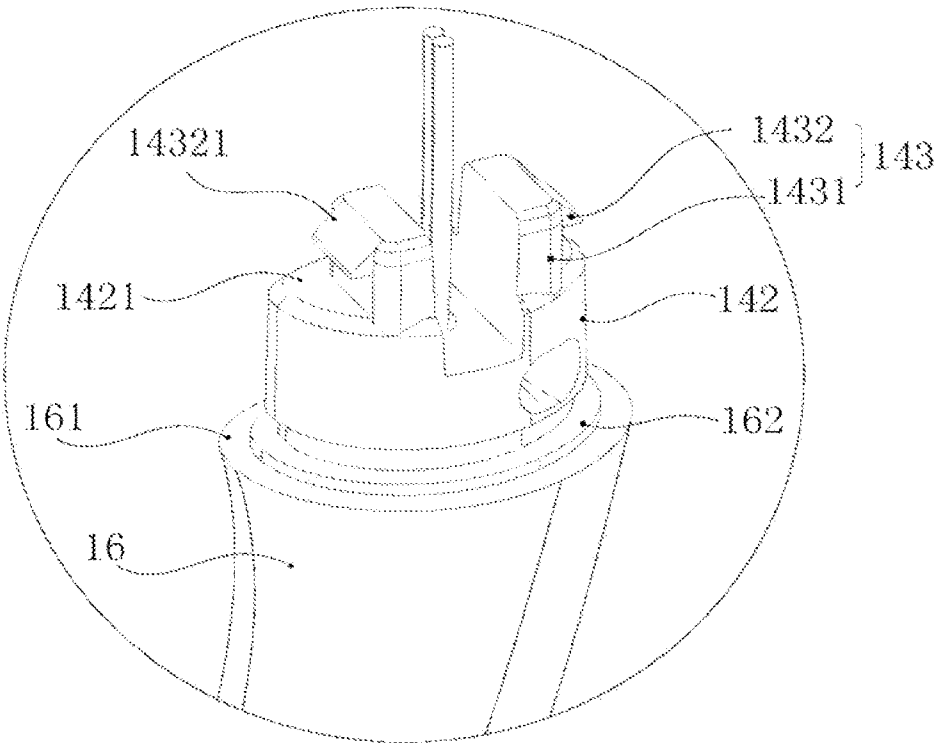



图7

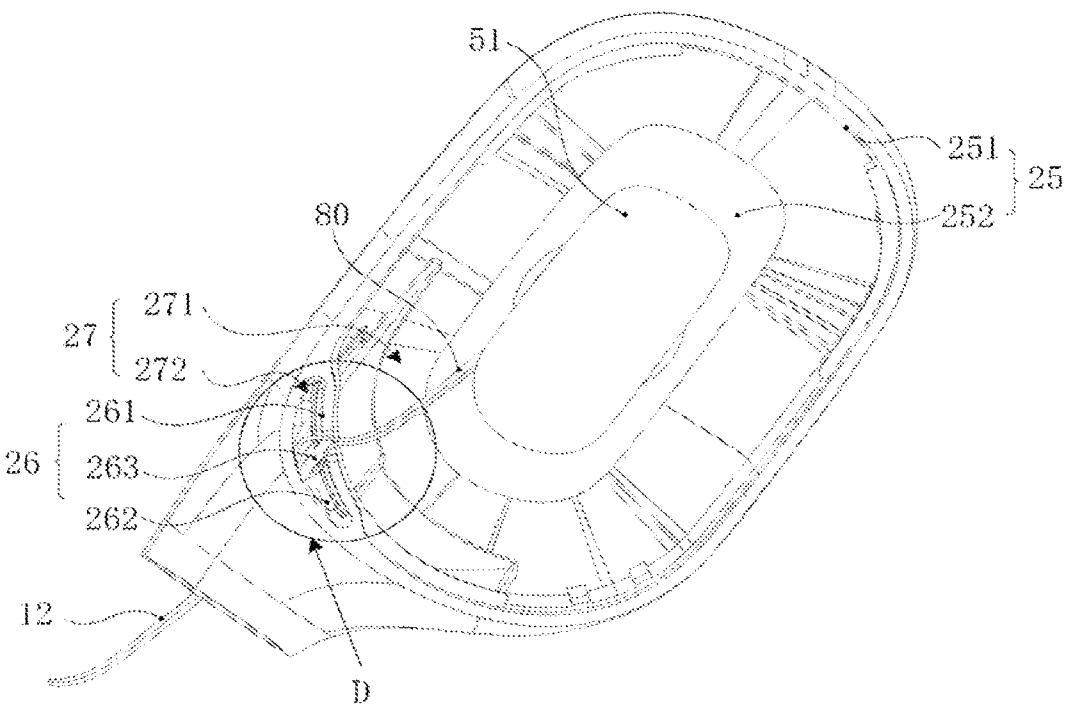



图8



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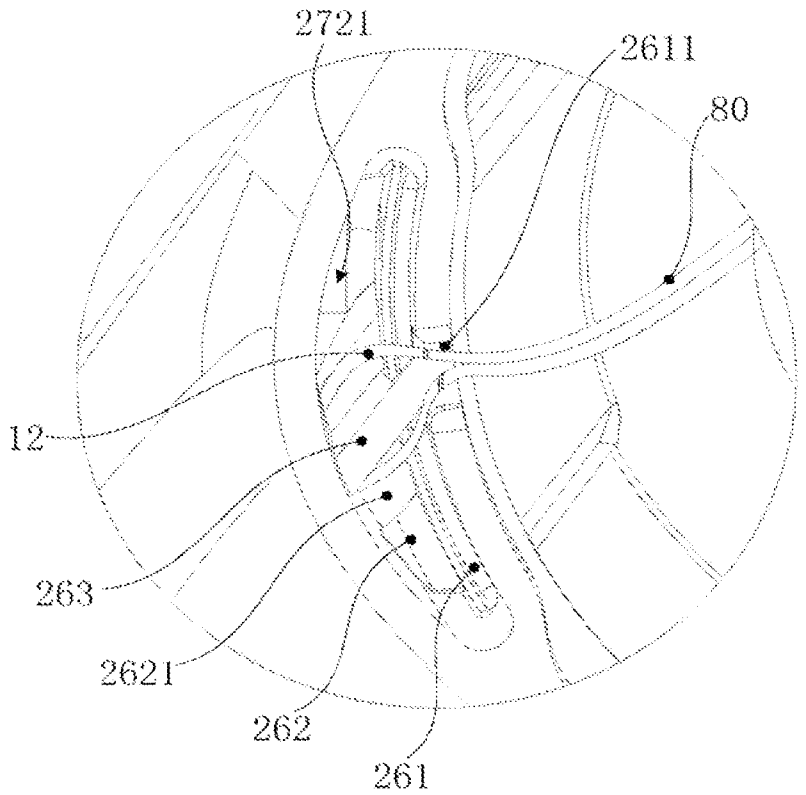



图9

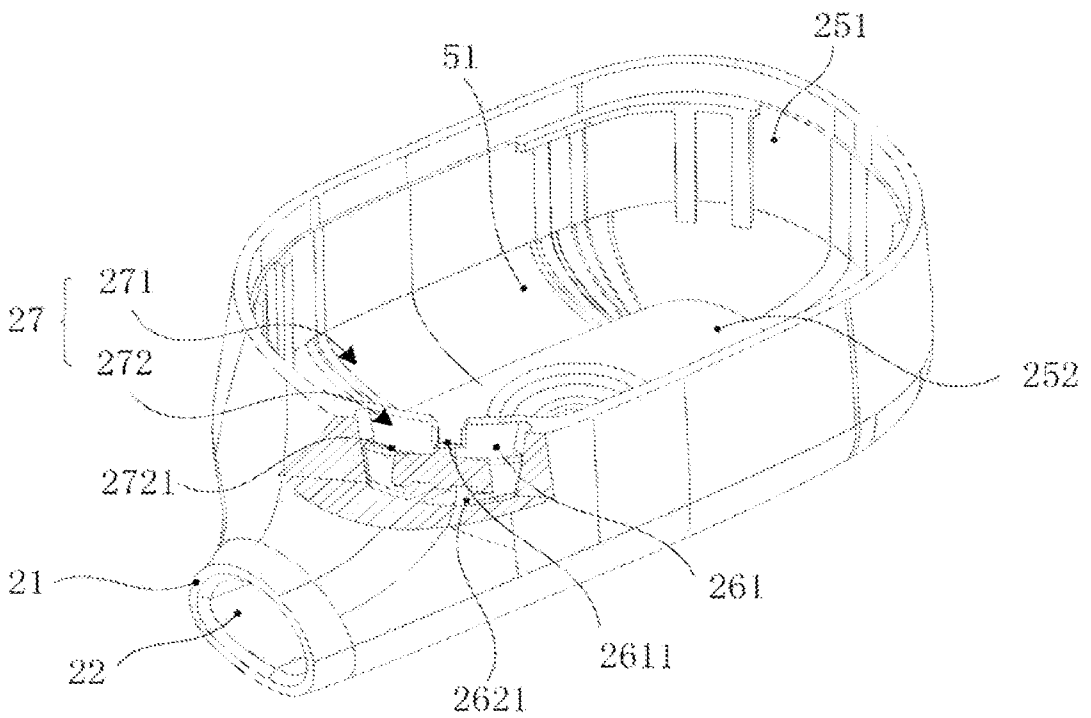



图10



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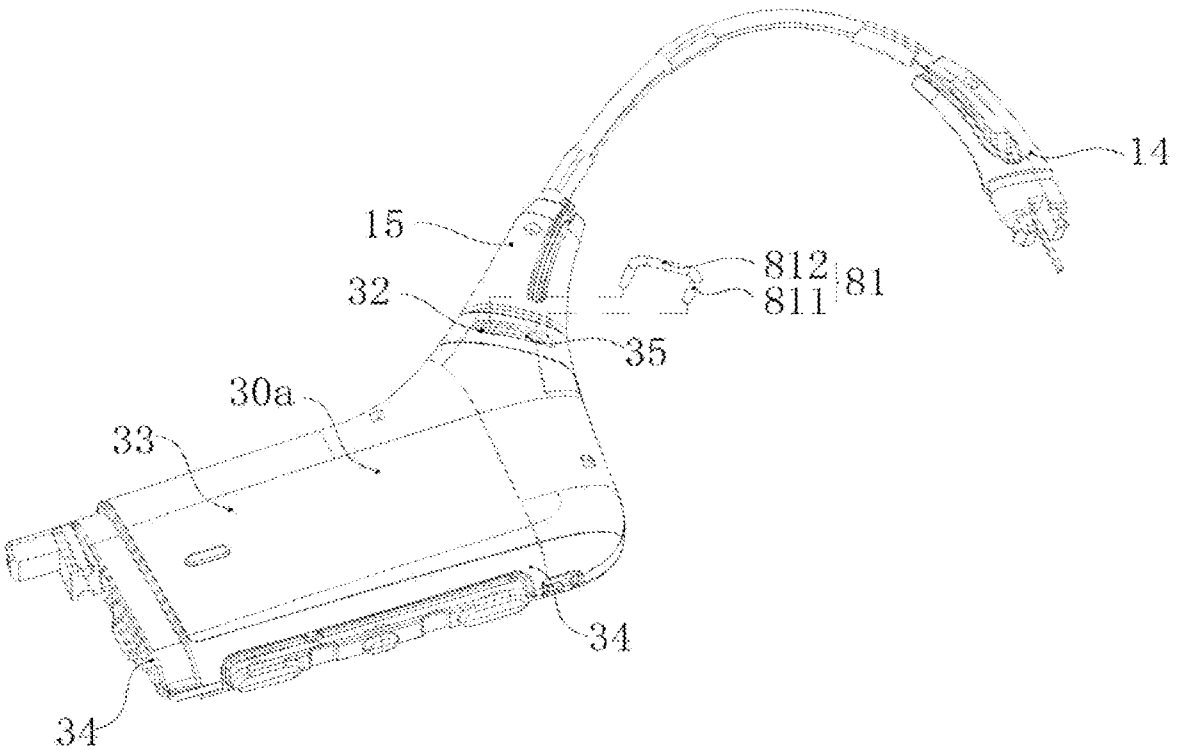



图11

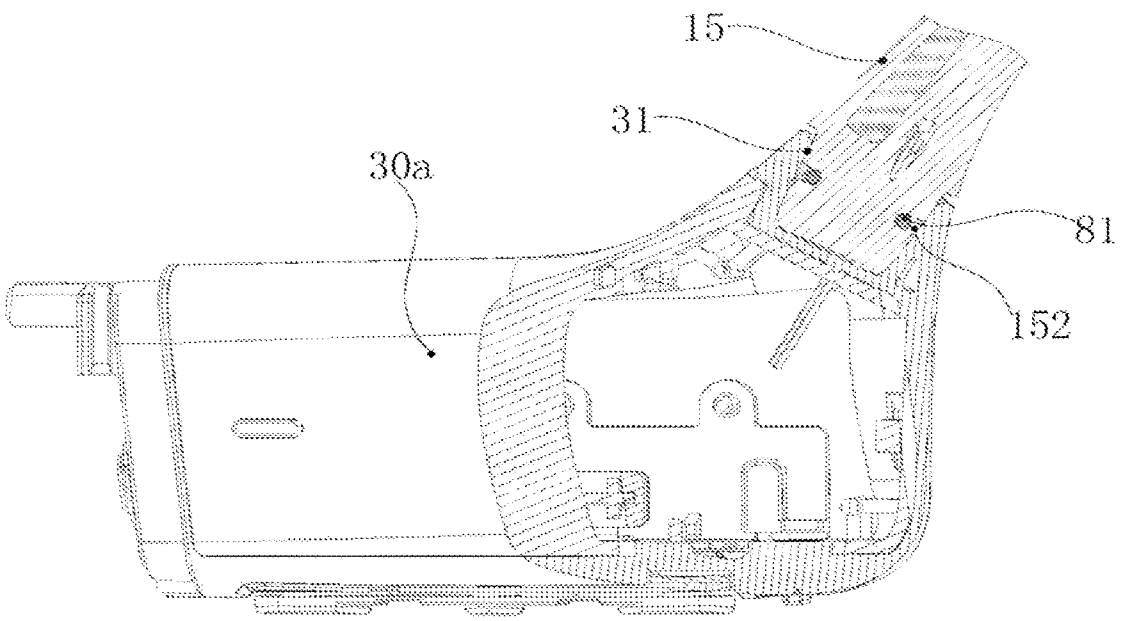



图12



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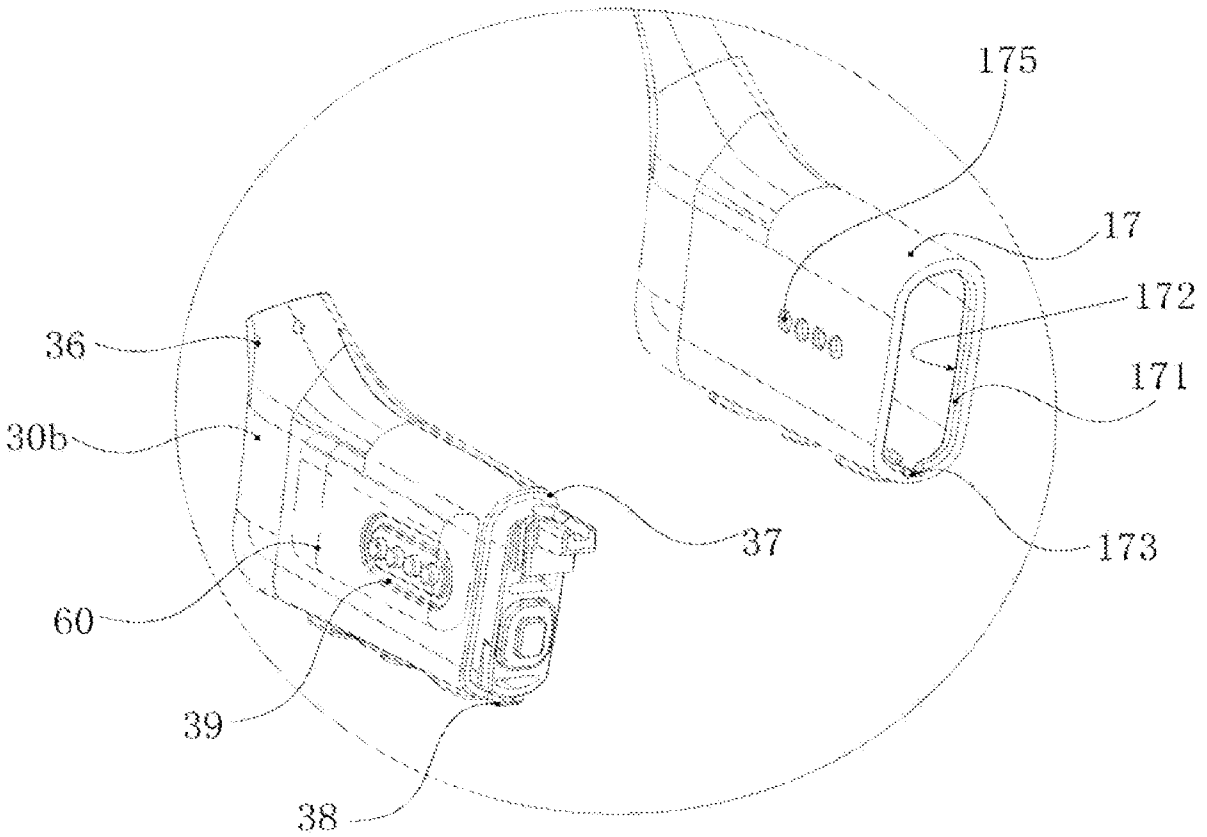



图13

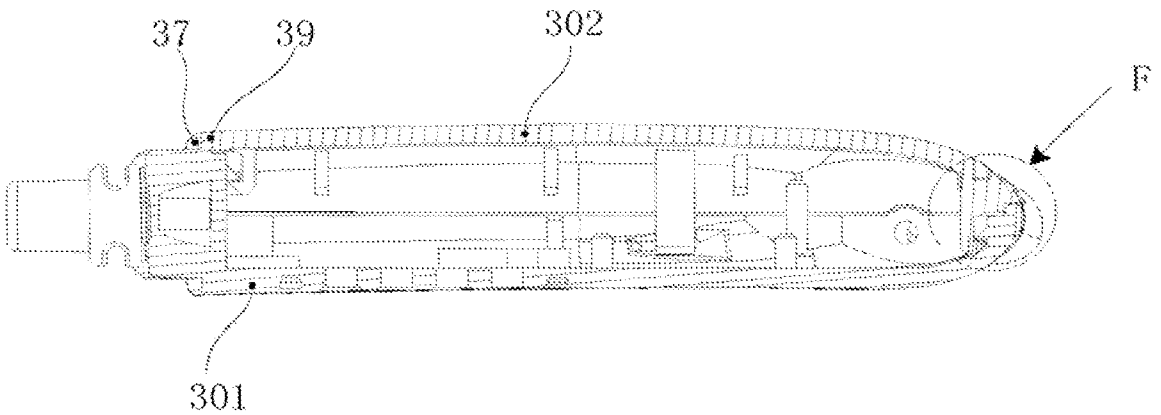



图14



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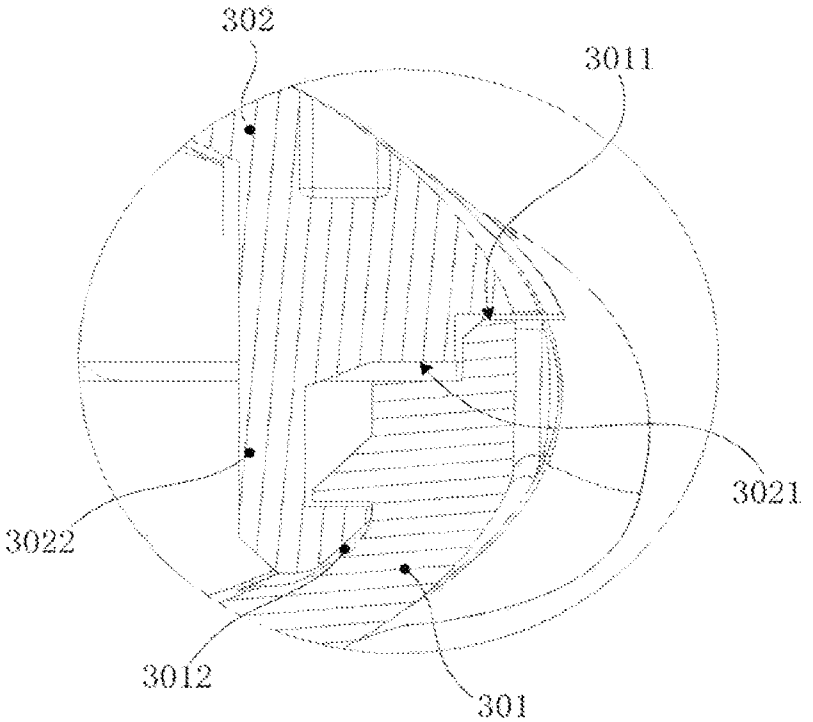



图15



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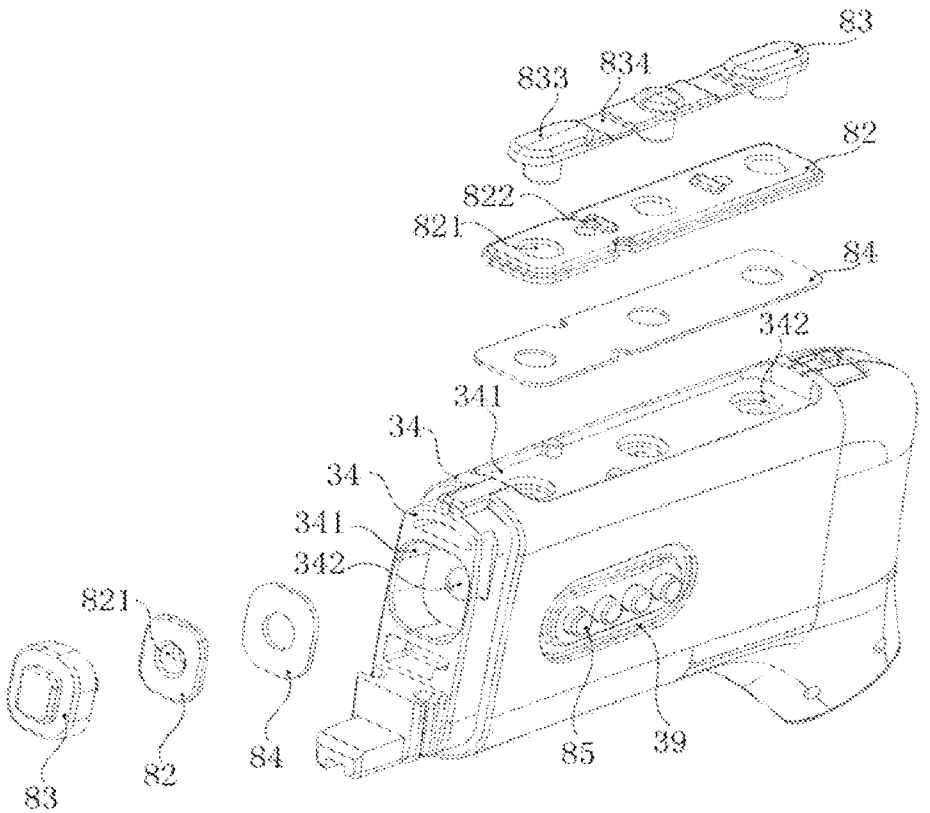



图16

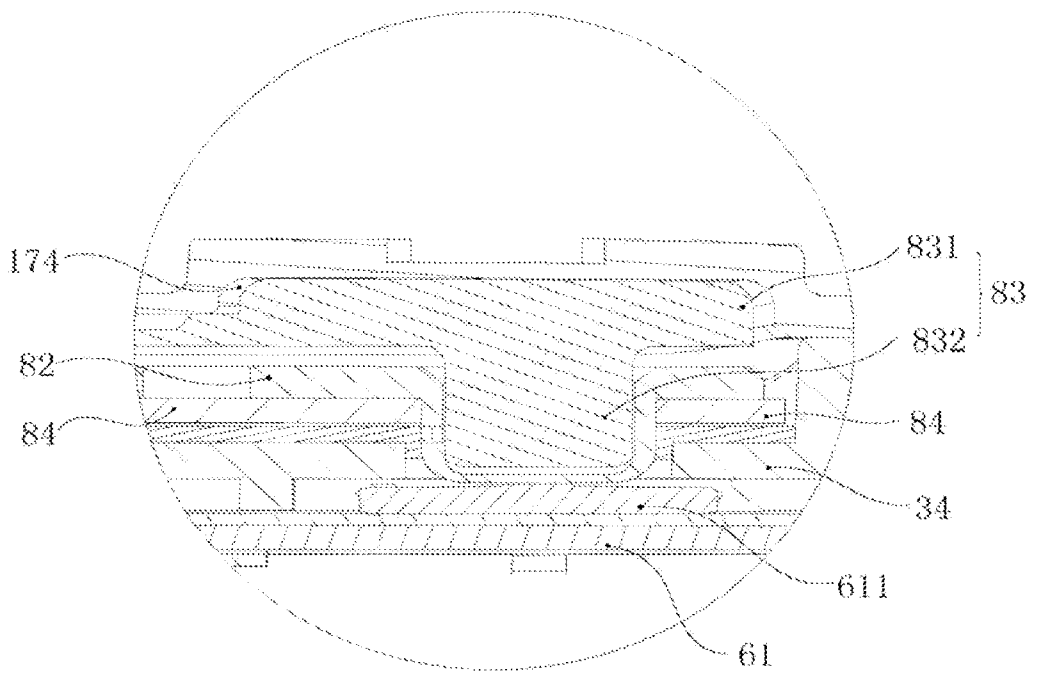



图17



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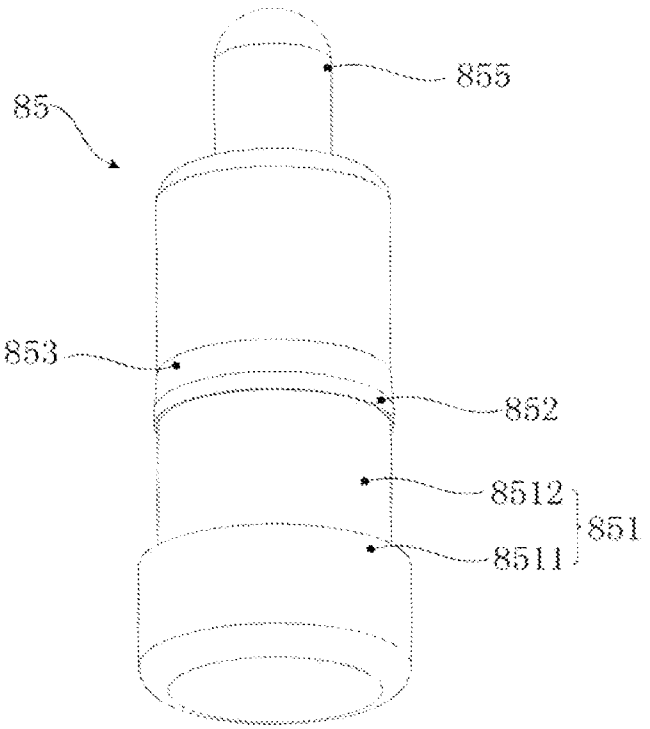



图18

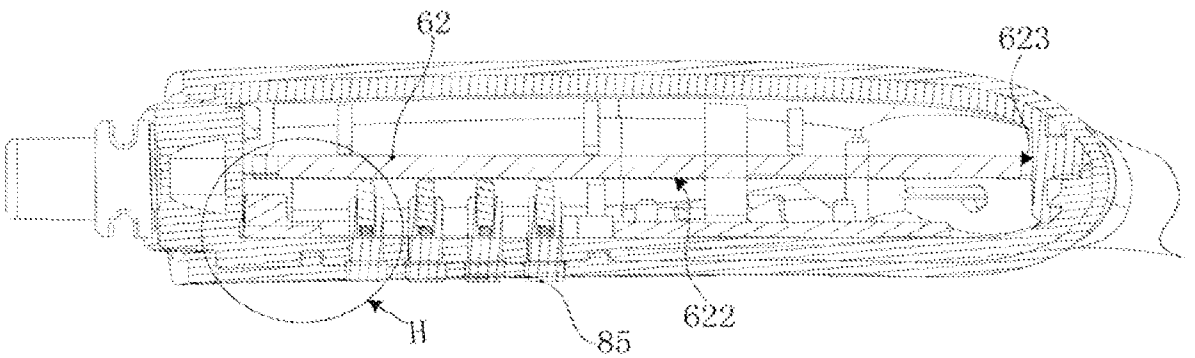



图19



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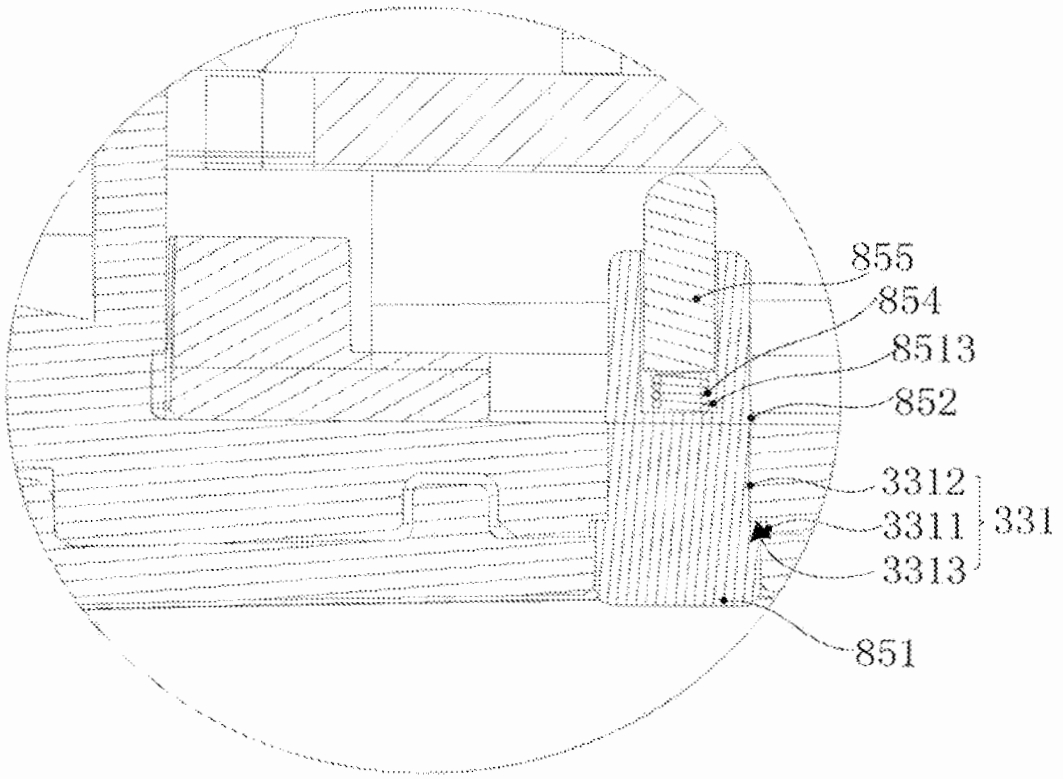



图20



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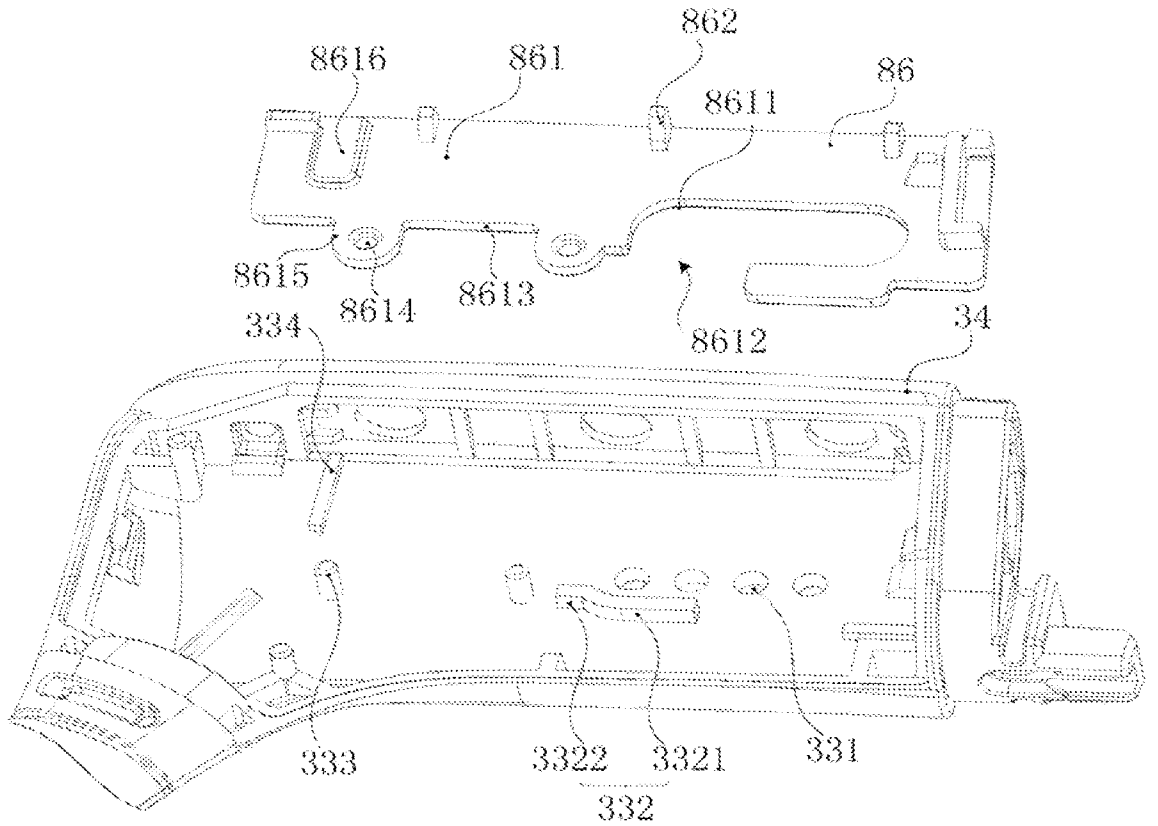



图21

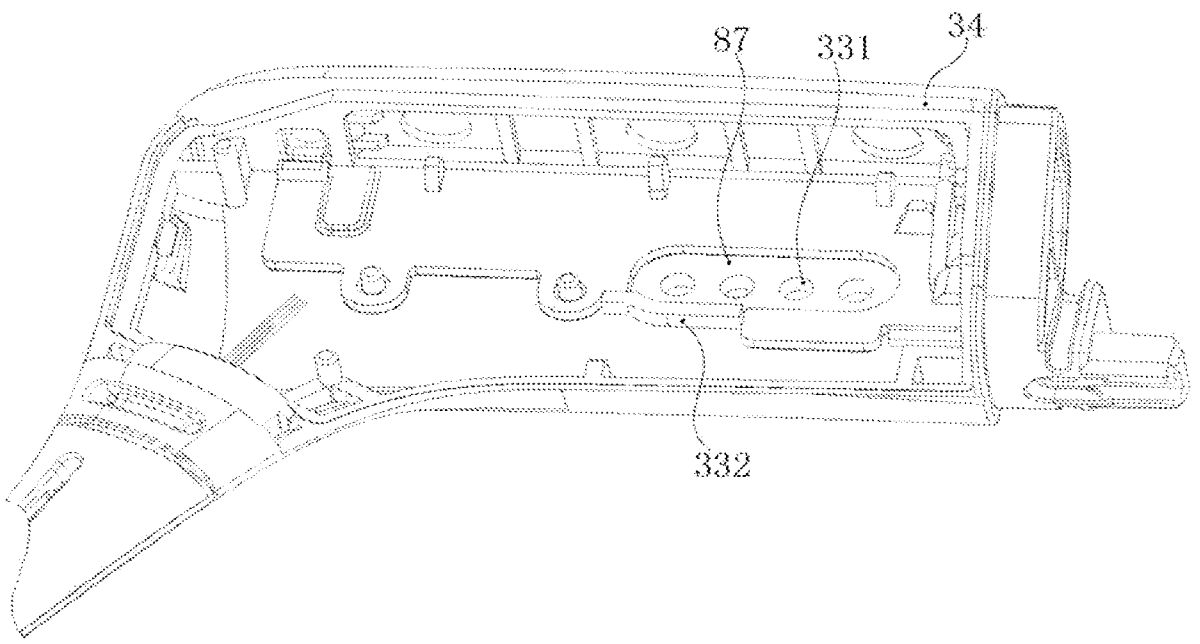



图22



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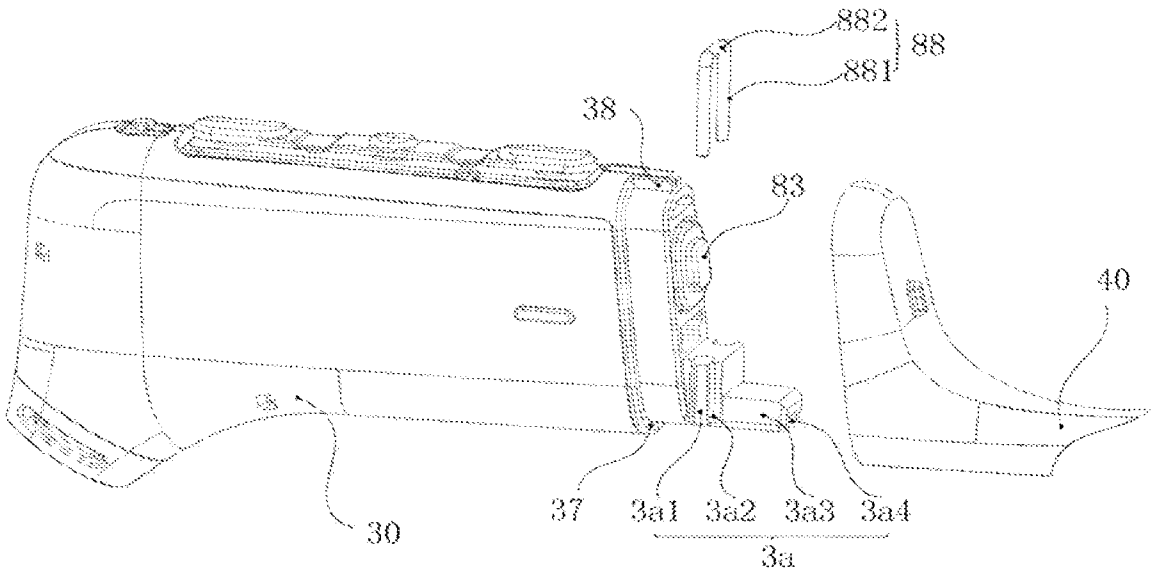



图23

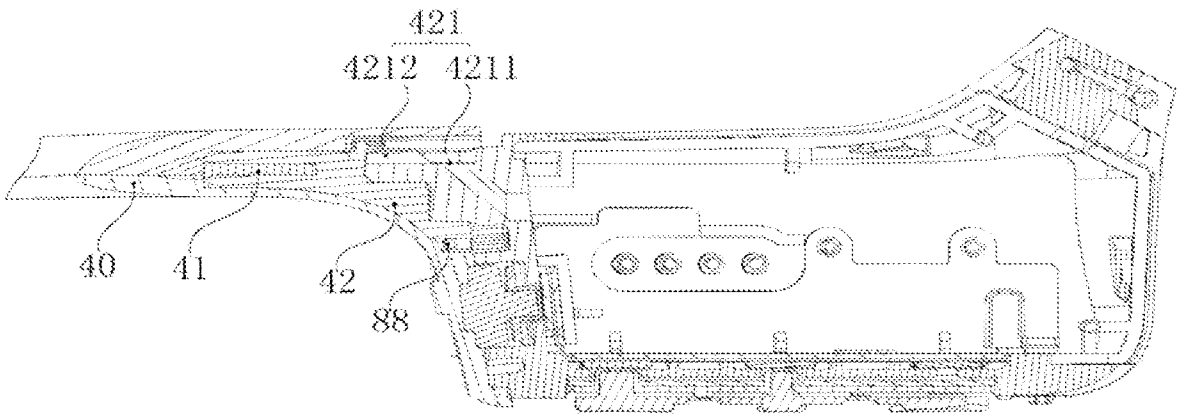



图24



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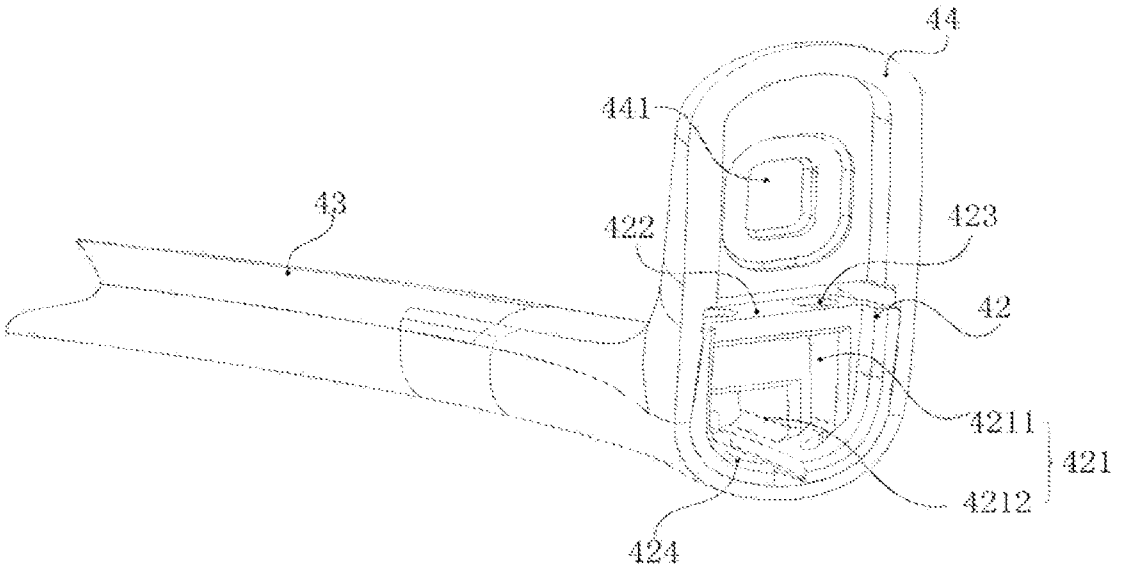



图25



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# Osteoacusis loudspeaker arrangement


## Abstract

This application discloses a kind of osteoacusis loudspeaker arrangement, which includes machine core shell, functional unit and conducting wire ; The machine core shell includes main casing and baffle assembly, and the baffle assembly is located inside the main casing, and connect with the main casing, and then the inner space of the main casing is separated into the first accommodating space and the second accommodating space ; The functional unit is set in first accommodating space ; The conducting wire is used to for the functional unit being electrically connected with the external circuit for being located at the machine core hull outside, wherein the conducting wire is connected to the external circuit via second accommodating space from first accommodating space, and coils and be set in second accommodating space.By the above-mentioned means, the application can reduce the vibration of conducting wire, sound quality is improved.



CN109660901A

China

**Other languages:** Chinese

**Inventor:** 李朝武, 郑金波, 游芬

**Worldwide applications**

2019 CN

**Application CN201910010303.4A events**

| | |
|---|---|
| 2019-01-05 | Application filed by 深圳市新音科技有限公司 |
| 2019-01-05 | Priority to CN201910010303.4A |
| 2019-04-19 | Publication of CN109660901A |

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

**External links:** Espacenet, Global Dossier, Discuss


## Description

Osteoacusis loudspeaker arrangement

Technical field

This application involves bone conduction technology fields, more particularly to a kind of osteoacusis loudspeaker arrangement.

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.

Wherein, when assembling to osteoacusis loudspeaker arrangement, conducting wire is often longer than practical connection requirement, in order to assemble. However if conducting wire extra at earphone core can not be placed reasonably, be easy functional unit work when generate vibration and Abnormal sound is issued, to reduce the sound quality of osteoacusis loudspeaker arrangement, and then influences the audition impression of user.

Summary of the invention

## Claims (11)

Hide Dependent

1. a kind of osteoacusis loudspeaker arrangement characterized by comprising

Machine core shell, the machine core shell include main casing and baffle assembly, and the baffle assembly is located in the main casing Portion, and connect with the main casing, and then the inner space of the main casing is separated into the first accommodating space and the second accommodating Space ;

Functional unit, the functional unit are set in first accommodating space ;

Conducting wire, the conducting wire are used to for the functional unit being electrically connected with the external circuit for being located at the machine core hull outside It connects, wherein the conducting wire is connected to the external circuit, and disk via second accommodating space from first accommodating space Around being set in second accommodating space.


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The application can reduce the vibration of conducting wire mainly solving the technical problems that provide a kind of osteoacusis loudspeaker arrangement, Improve sound quality.

In order to solve the above technical problems, the technical solution that the application uses is: a kind of osteoacusis loudspeaker arrangement is provided, It include: machine core shell, the machine core shell includes main casing and baffle assembly, and the baffle assembly is located in the main casing Portion, and connect with the main casing, and then the inner space of the main casing is separated into the first accommodating space and the second accommodating Space ; Functional unit, the functional unit are set in first accommodating space ; Conducting wire, the conducting wire are used for the function Energy component is electrically connected with the external circuit for being located at the machine core hull outside, wherein the conducting wire is empty from first accommodating Between via second accommodating space be connected to the external circuit, and coil and be set in second accommodating space.

The beneficial effect of the application is: being in contrast to the prior art, main casing institute shape of the application in machine core shell At inner space in isolate the second accommodating space with for accommodating extra conducting wire, thus avoid or reduce it is extra influence of the conducting wire to the sound issued by vibration to osteoacusis loudspeaker arrangement, to improve sound quality.

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 ;

2. osteoacusis loudspeaker arrangement according to claim 1, which is characterized in that the osteoacusis loudspeaker arrangement further wraps Ear-hang is included, is provided on the ear-hang and patches end, the machine core shell, which is further provided with, described patches connecing for end for receiving Jack, wherein second accommodating space is arranged close to the jointing holes.

3. osteoacusis loudspeaker arrangement according to claim 1, which is characterized in that the conducting wire includes one end and the outside The second conducting wire that first conducting wire of circuit connection and one end are connect with the functional unit, wherein first conducting wire is another It holds and is welded to one another with the other end of second conducting wire, and be set in second accommodating space.

4. osteoacusis loudspeaker arrangement according to claim 1, which is characterized in that the main casing include all side walls and with The base end wall of the end face connection of the week side wall, the side partition that the baffle assembly includes both ends to be connect with the week side wall with And the base spacer for being arranged with the base end wall interval and being connect respectively with all side walls and side partition, wherein on the base spacer It is provided with cable hole, the side partition is provided with cabling channel in the top edge far from the base end wall, wherein described first leads Line extends to second accommodating space via the cable hole, and second conducting wire extends to described via the cabling channel Two accommodating spaces.

5. osteoacusis loudspeaker arrangement according to claim 4, which is characterized in that first conducting wire and second conducting wire Respectively two, wherein the baffle assembly further comprises internal partition, the internal partition is further empty by second accommodating Between be separated into two sub- accommodating spaces, and be provided with to walk with corresponding two of the sub- accommodating space respectively on the base spacer String holes, wherein two first conducting wires extend in respective sub-accommodating space along the corresponding cable hole respectively.

6. osteoacusis loudspeaker arrangement according to claim 5, which is characterized in that two first conducting wires and respectively with Second conducting wire of two first

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 ;

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 ;

conducting wires welding coils respectively to be set in respective sub- accommodating space.

7. osteoacusis loudspeaker arrangement according to claim 1, which is characterized in that second accommodating space is further by close Sealing is filled.

8. osteoacusis loudspeaker arrangement according to claim 2, which is characterized in that the jointing holes and the machine core shell Outer end face connection, and stop block is provided on the inner sidewall of the jointing holes, the end that patches includes:

Insertion section is at least partially inserted into institute's 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 and it is described patch end patch fixation.

9. osteoacusis loudspeaker arrangement according to claim 8, which is characterized in that the insertion section partial insertion connects in described The stepped setting of exposed parts in jack, and in the insertion section, and then formed between the outer end face of the machine core shell Every the circular table of setting ;

The ear-hang includes elastic metallic yarn, described to patch hold injection molding in the elastic metallic yarn towards the machine core shell one End, and further comprise being molded in the elastic metallic yarn and the protection sleeve pipe for patching end periphery, the protection sleeve pipe Further extend to the circular table towards the machine core shell outer end face side, and the machine core shell with it is described It patches when termination inserts fixed and is abutted with the machine core shell body elasticity, and then realize sealing.

10. osteoacusis loudspeaker arrangement according to claim 9, which is characterized in that the protection sleeve pipe is in the annular table Form an annular abutment face facing towards the side of the outer end face of the machine core shell and be located inside the annular abutment face and Annular convex

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 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 durnmy when user wears according to user to be adapted to not

platform relative to annular abutment face protrusion setting ;

The machine core shell further comprises the inner sidewall of the outer end face and the jointing holes for connecting the machine core shell Connect inclined-plane ;

Wherein, the machine core shell and it is described patch termination and insert fixed when, the annular abutment face and the annular convex platform point It is not abutted with the outer end face of the machine core shell and connection inclined-plane elasticity.

11. osteoacusis loudspeaker arrangement according to claim 10, which is characterized in that the insertion section is in the circular table The annular groove adjacent with the circular table, the ring are formed further with towards the side of the outer end face of the machine core shell Shape boss is formed in the annular groove.

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.

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 ovennold 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 two 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 internal 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 252 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 assemblied 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, osteocacusis 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 settable 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.Ita 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 861, 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 moiding.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 33, 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 similiarly includes in the scope of patent protection of the application.

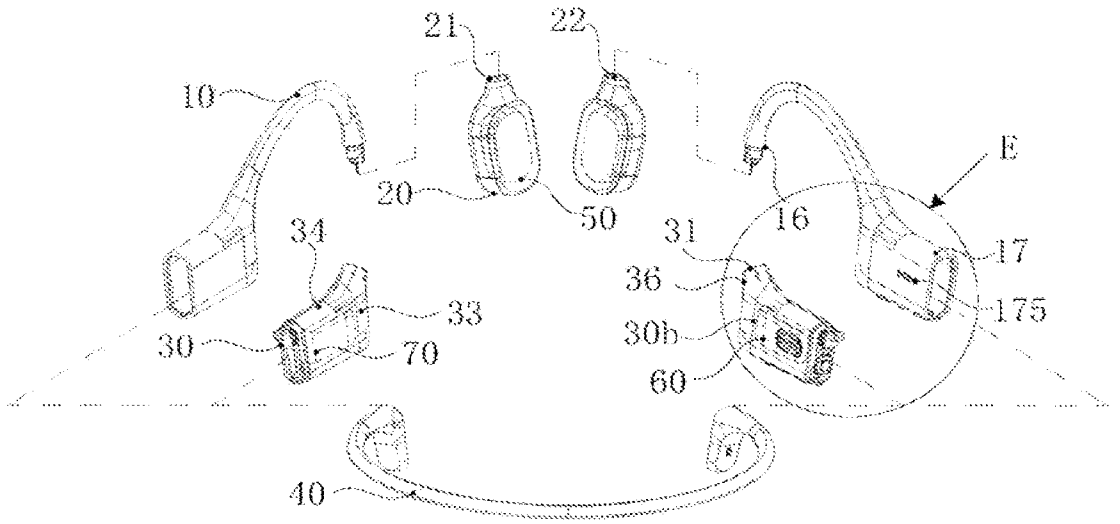



图1

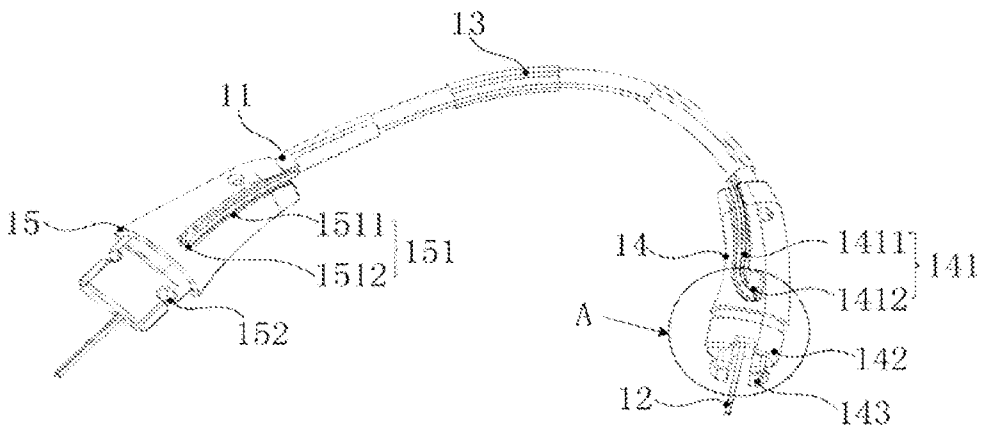



图2



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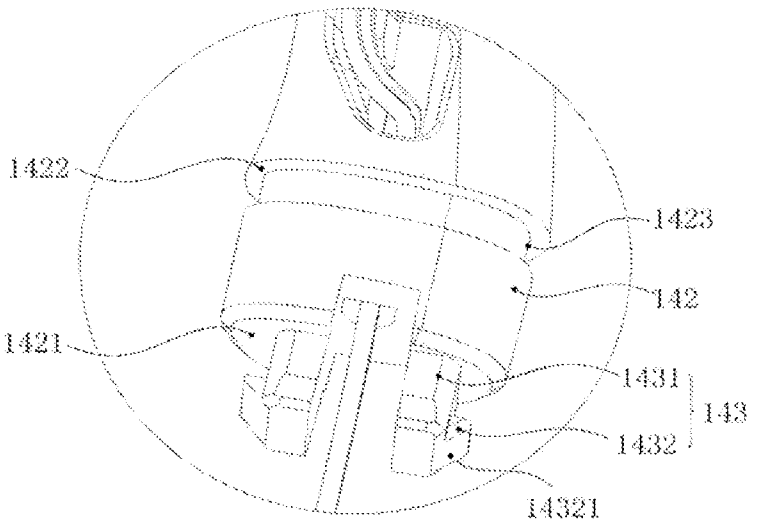



图3

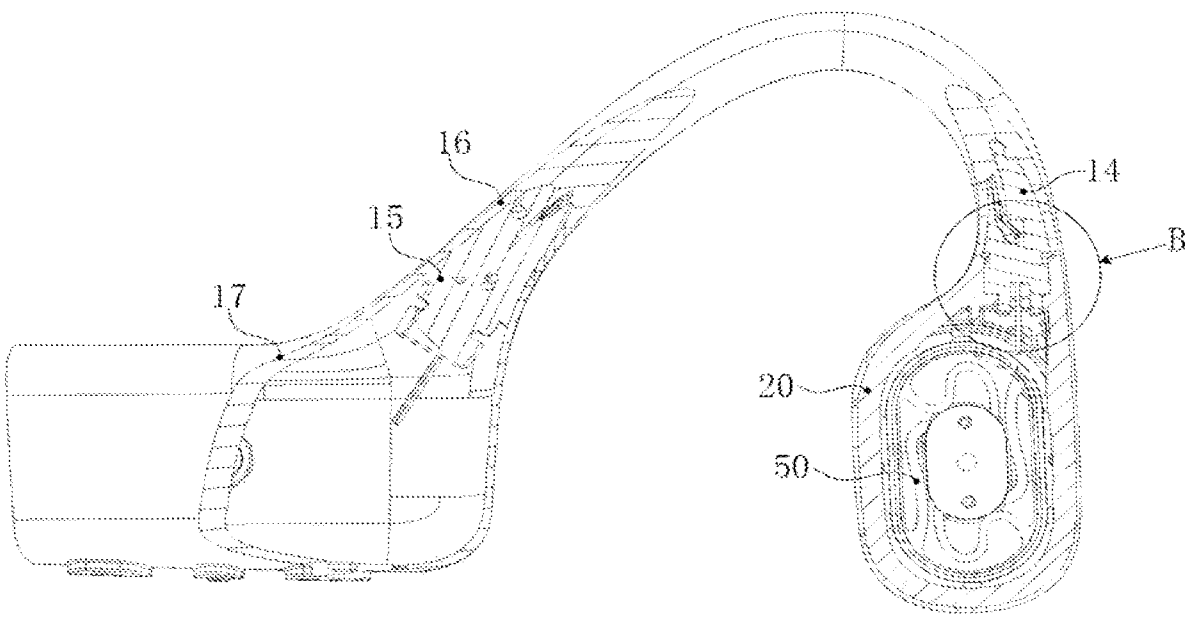



图4



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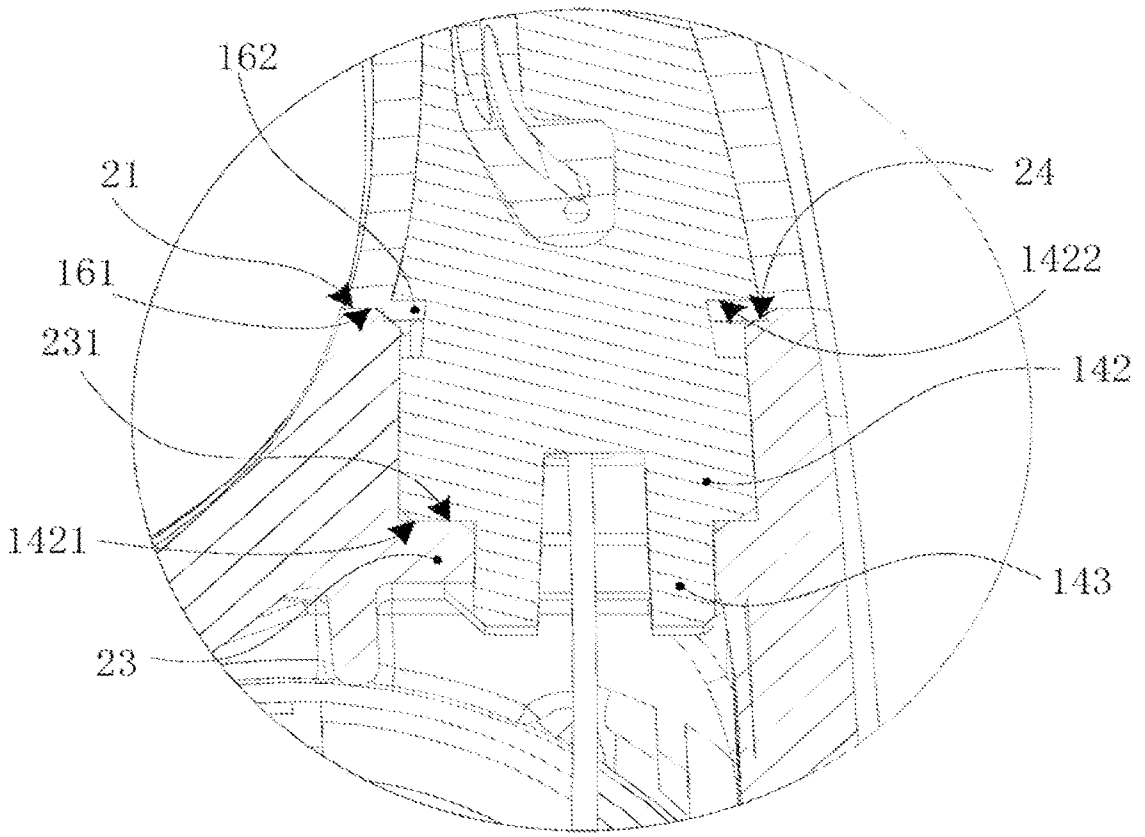



图5

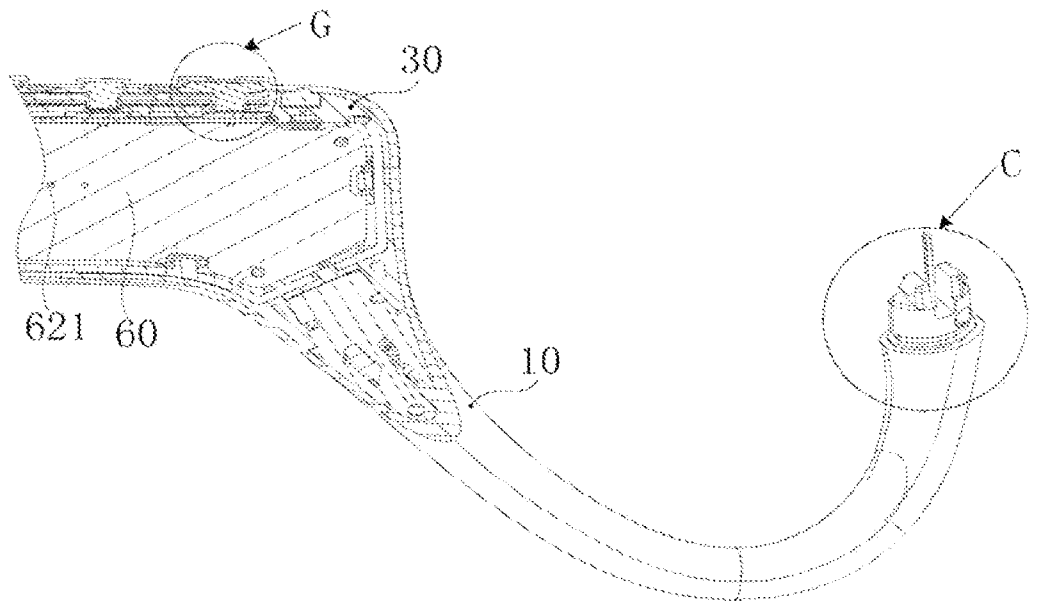



图6



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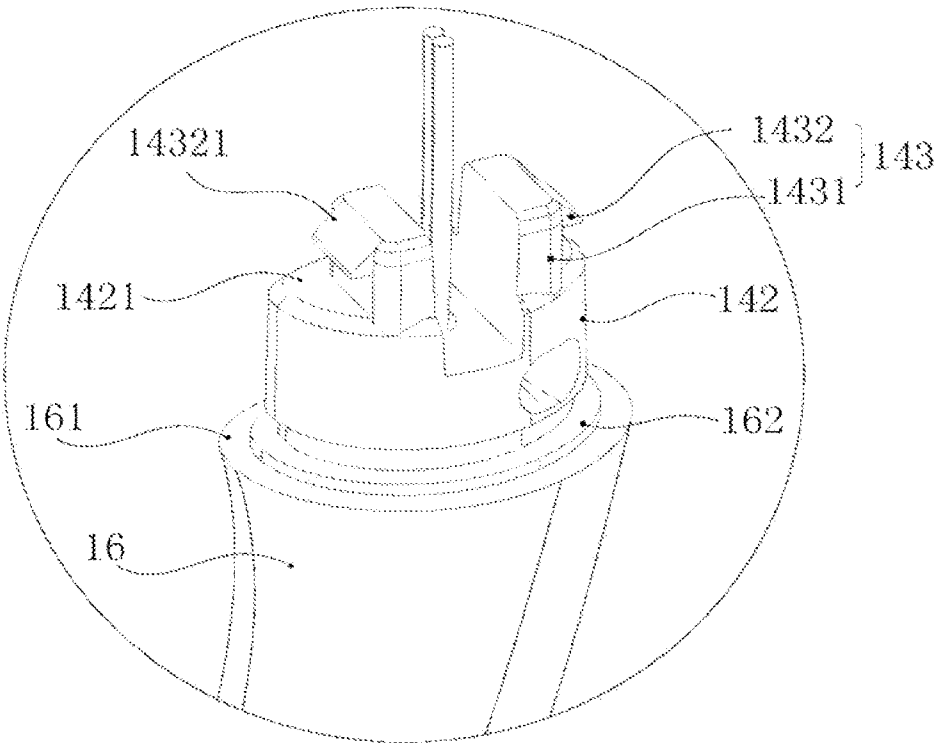



图7

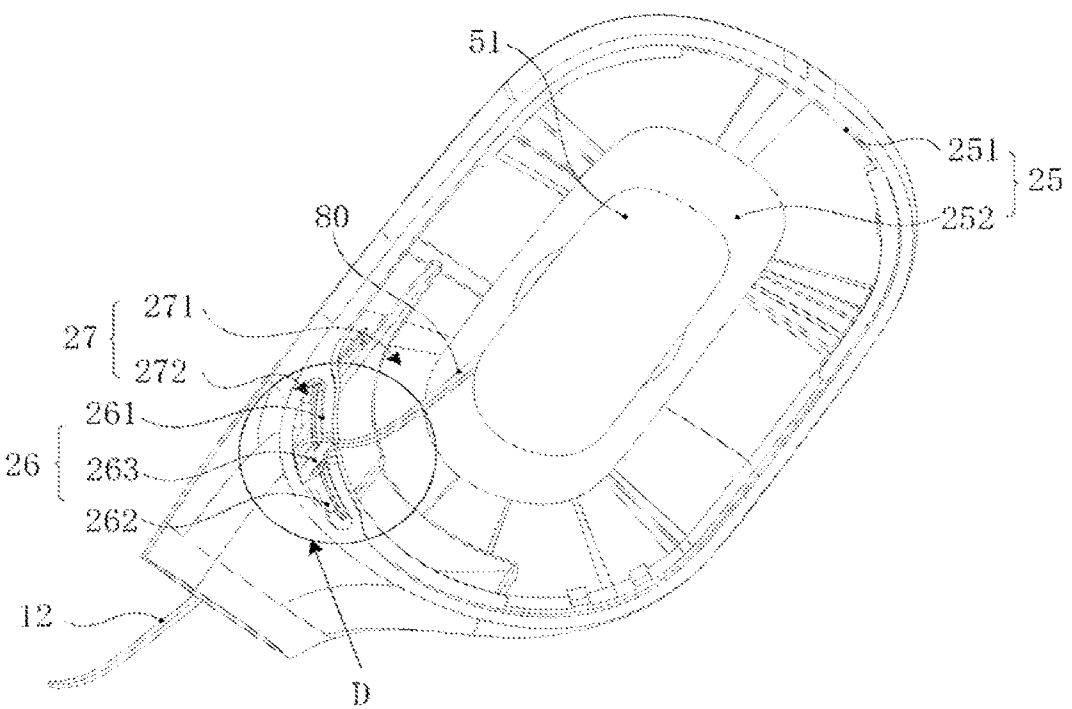



图8



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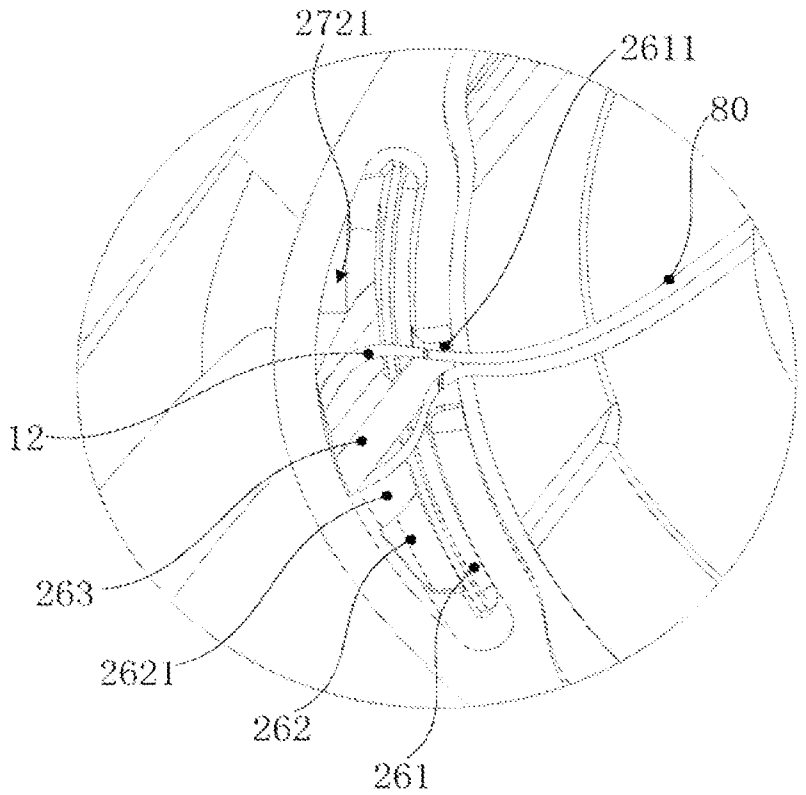



图9

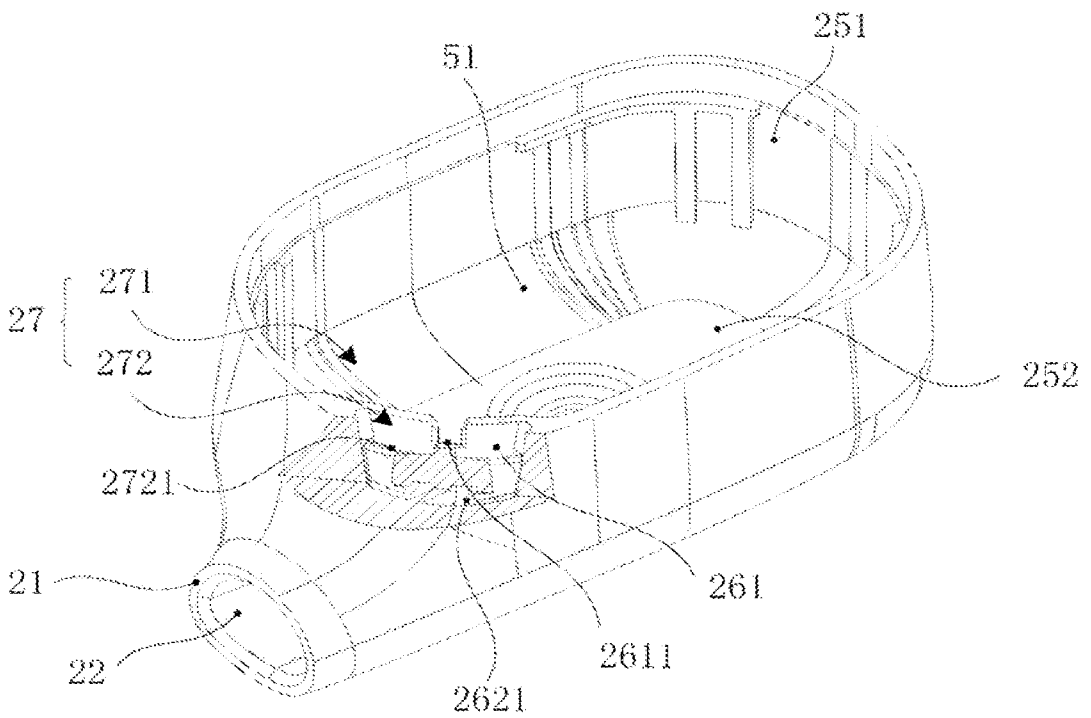



图10



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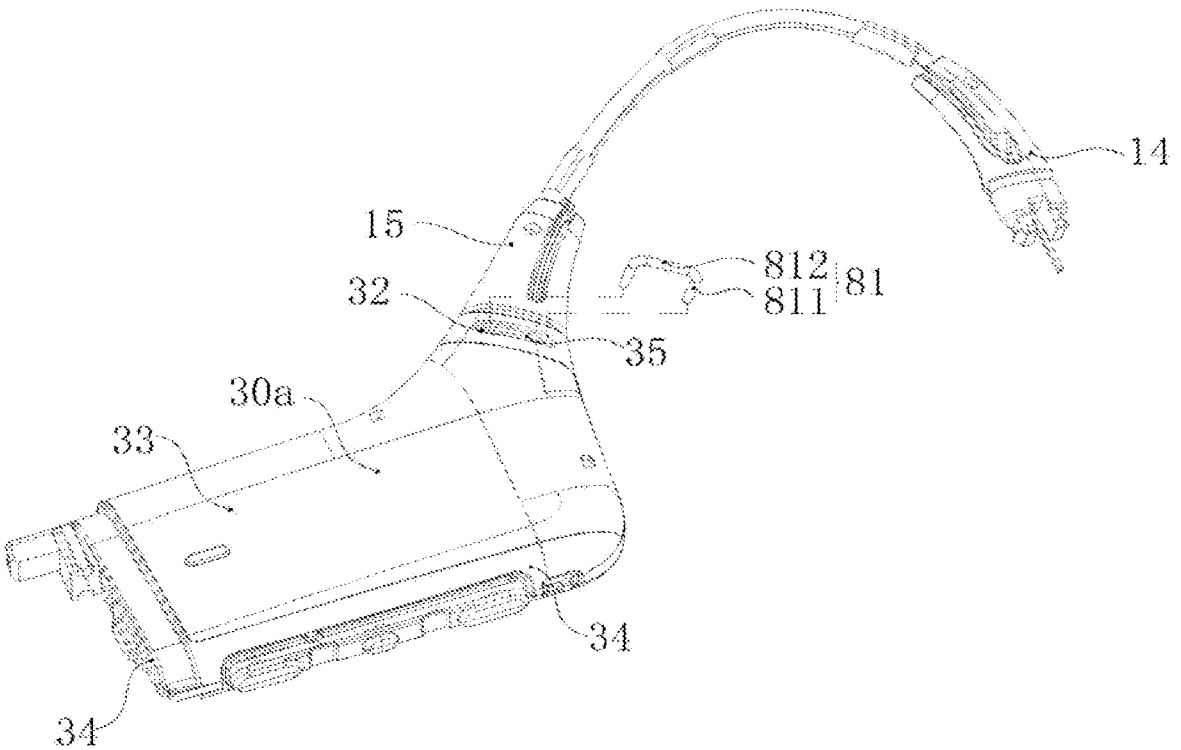



图11

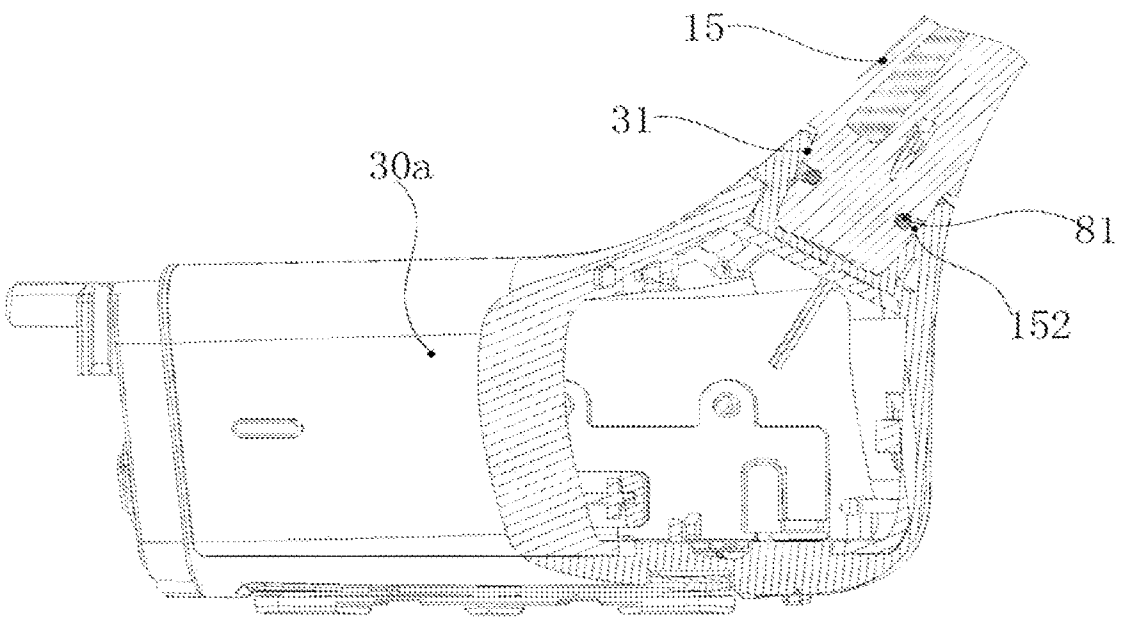



图12



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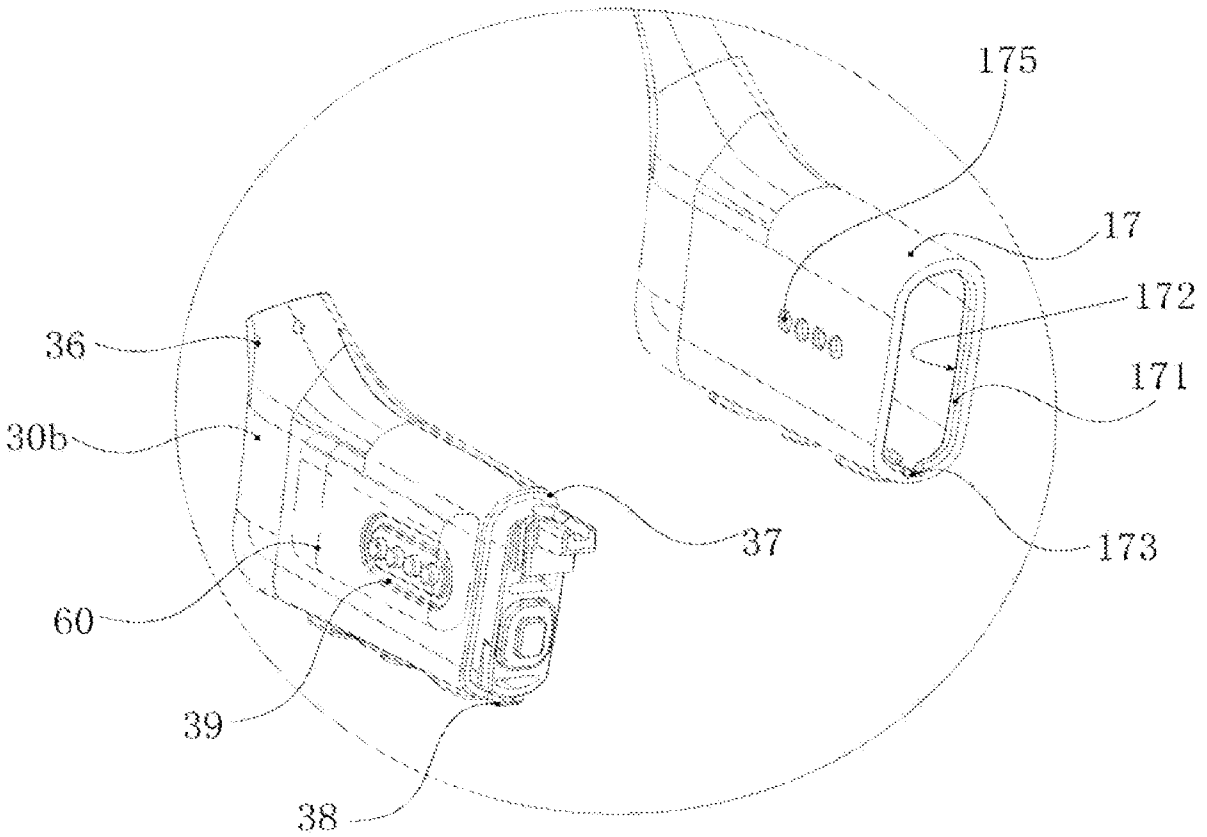



图13

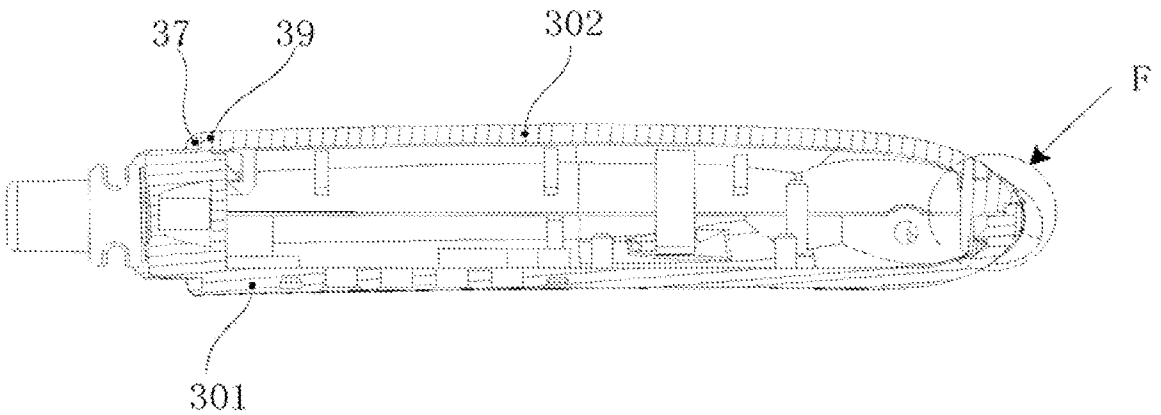



图14



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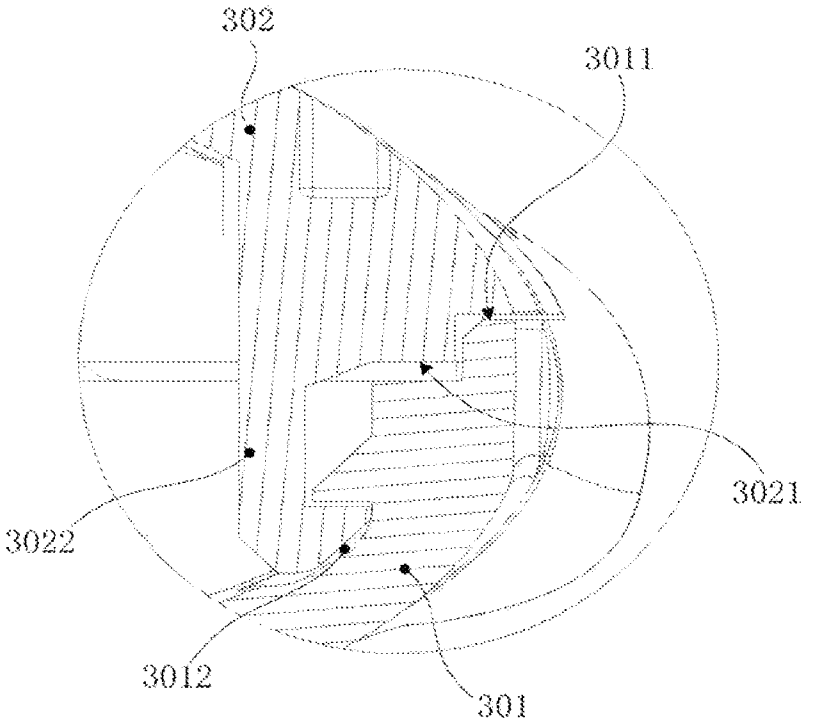



图15



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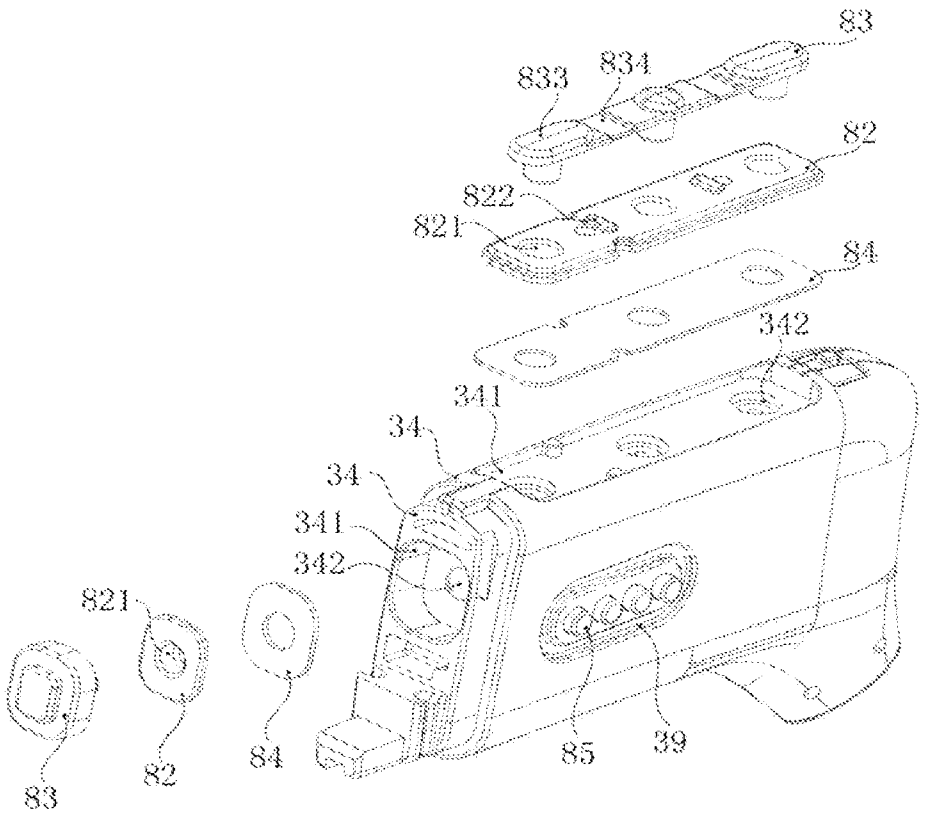



图16

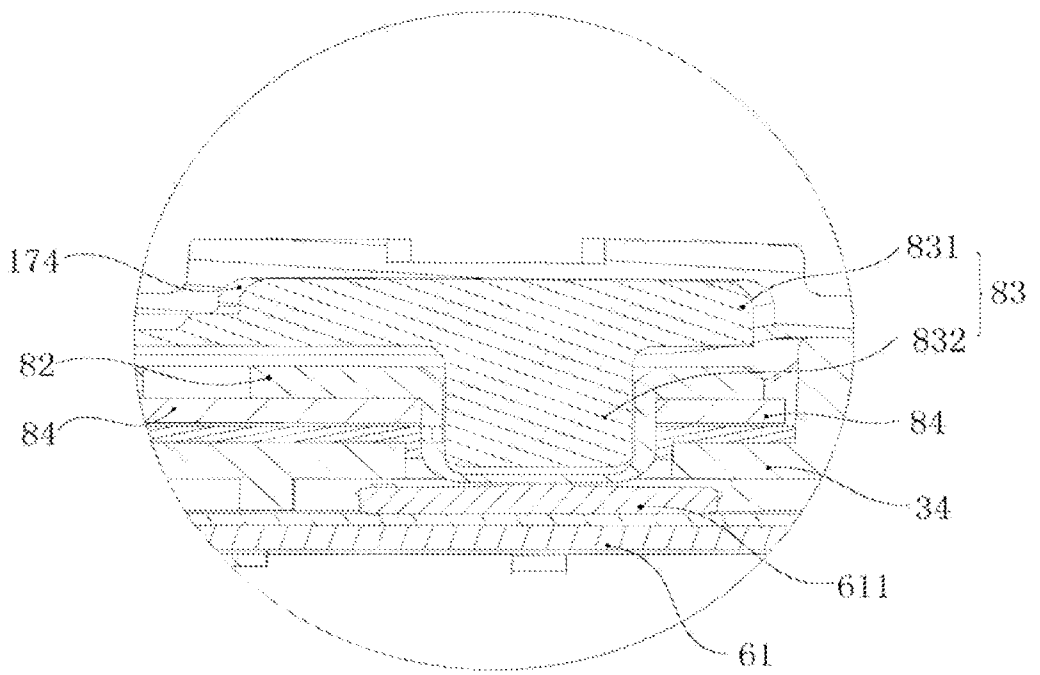



图17



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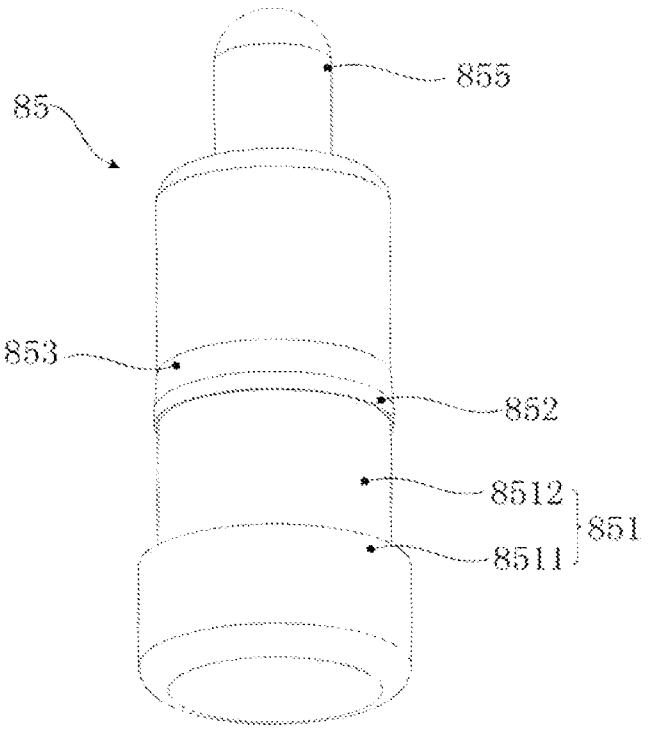



图18

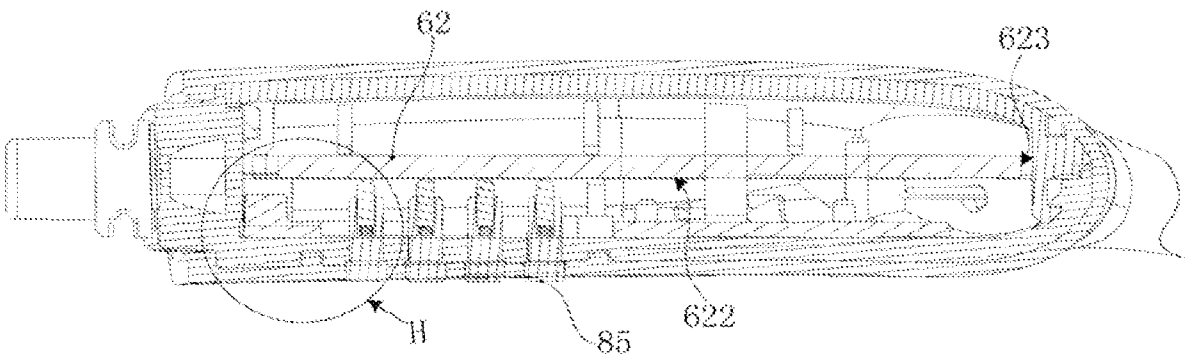



图19



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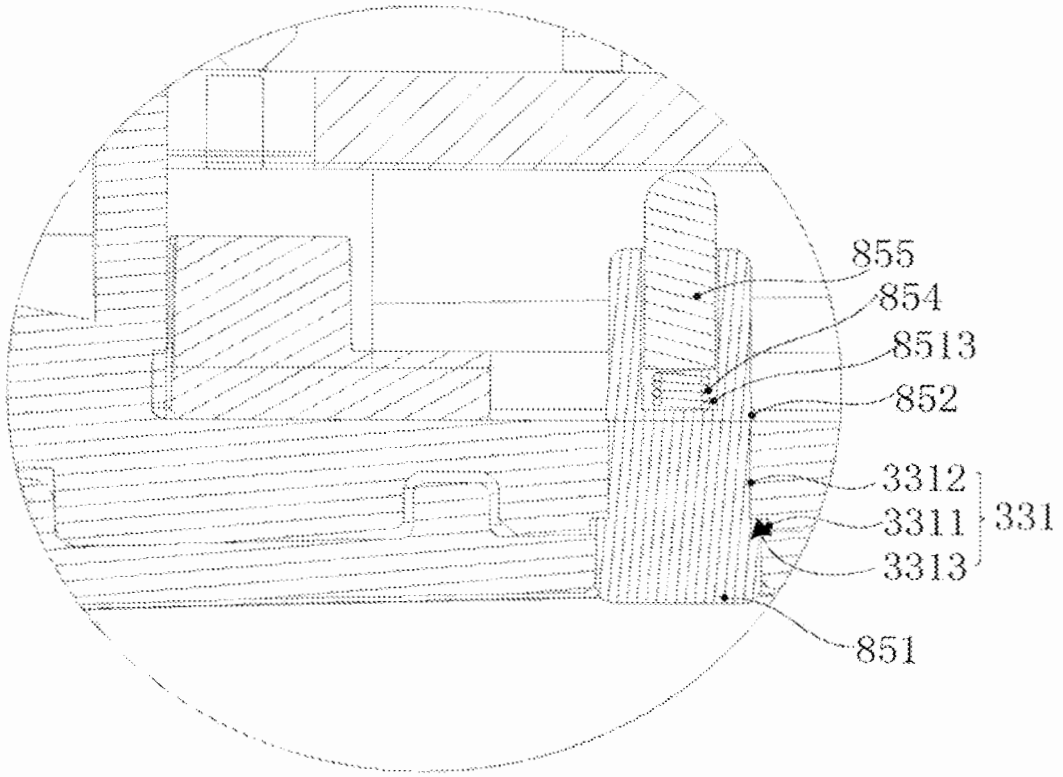



图20



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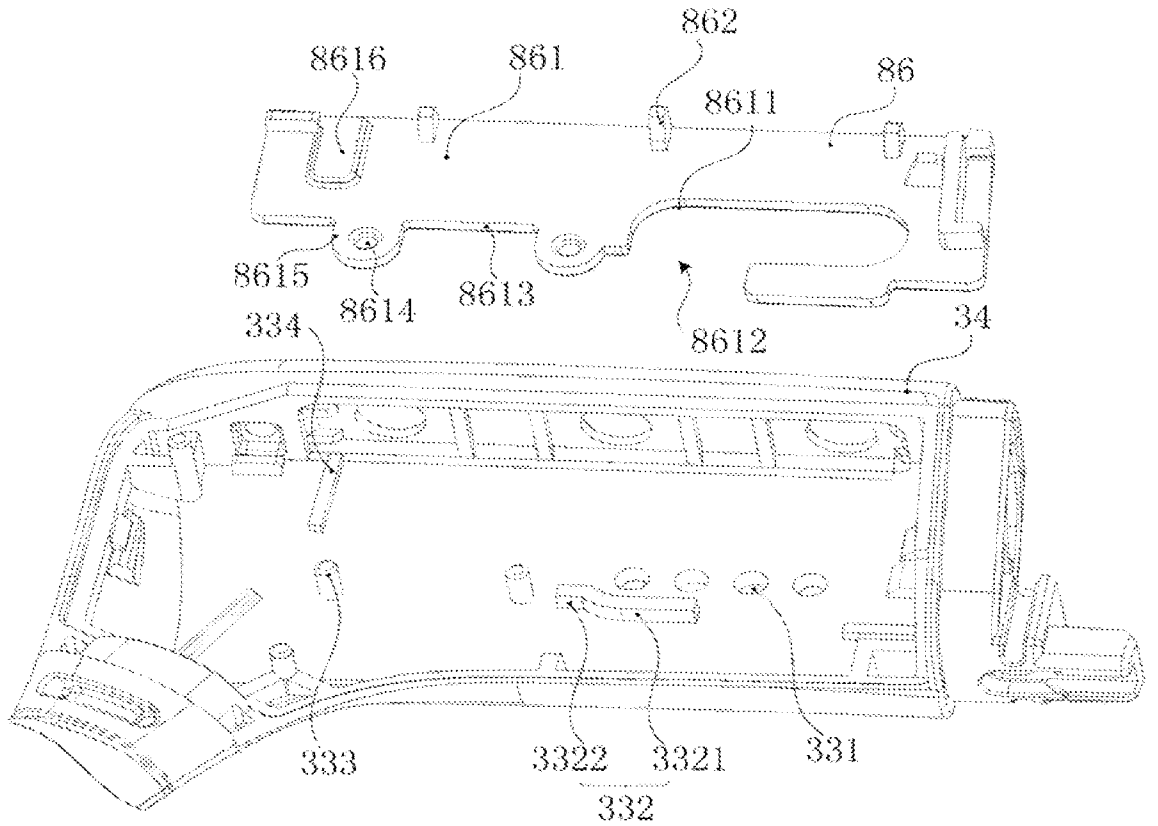



图21

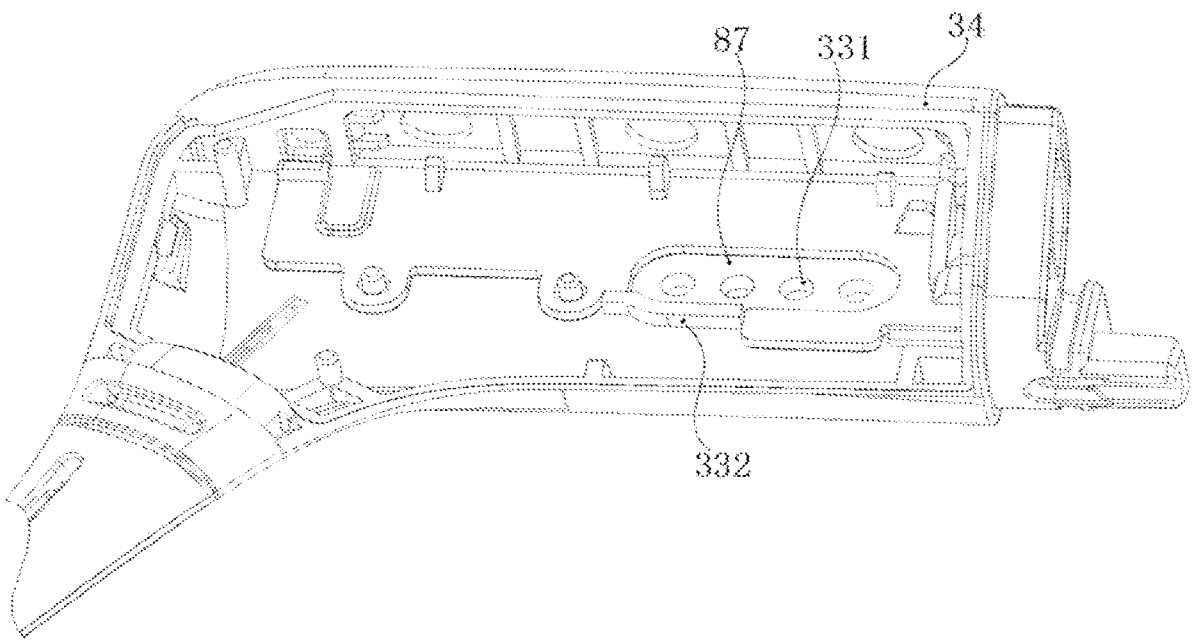



图22



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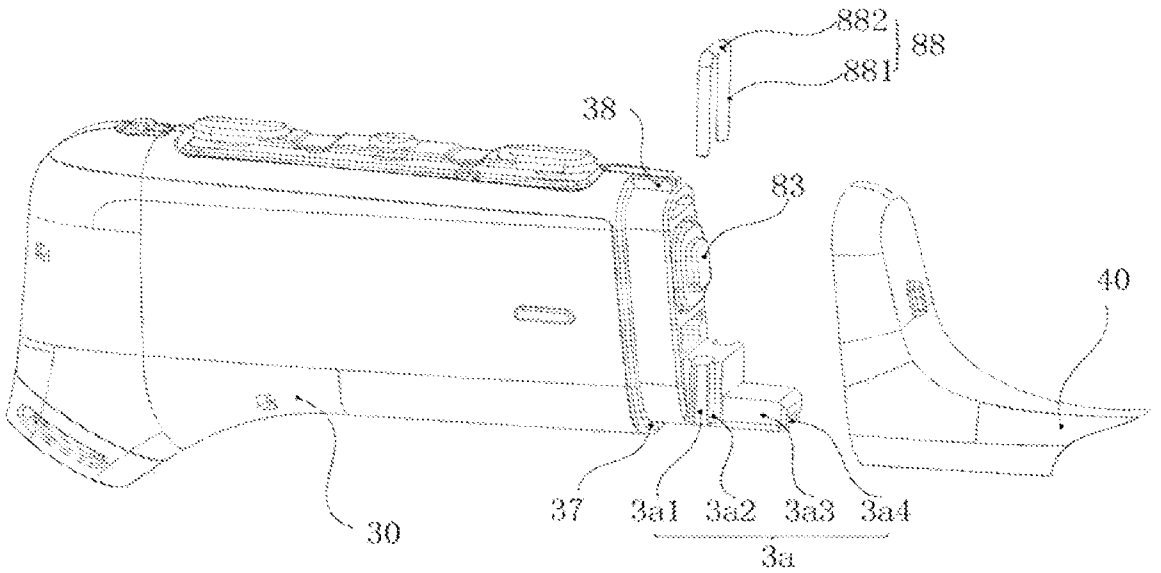



图23

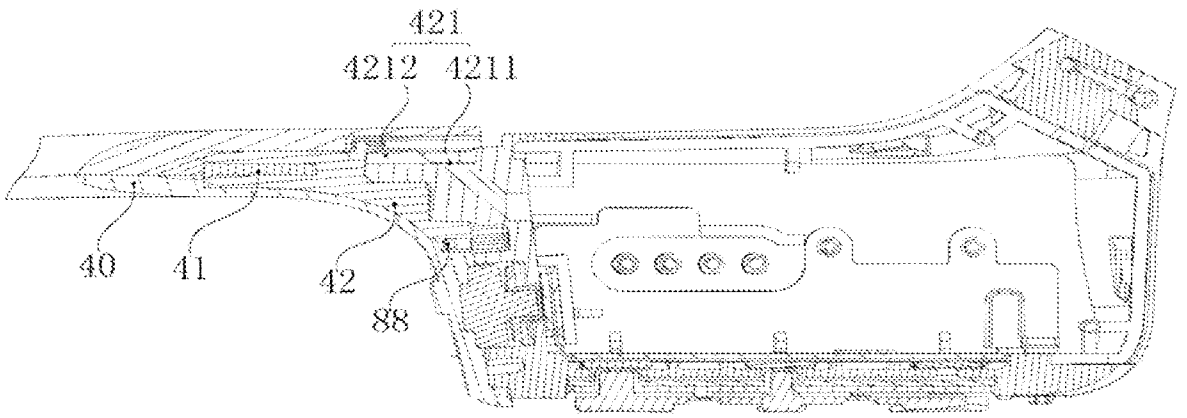



图24



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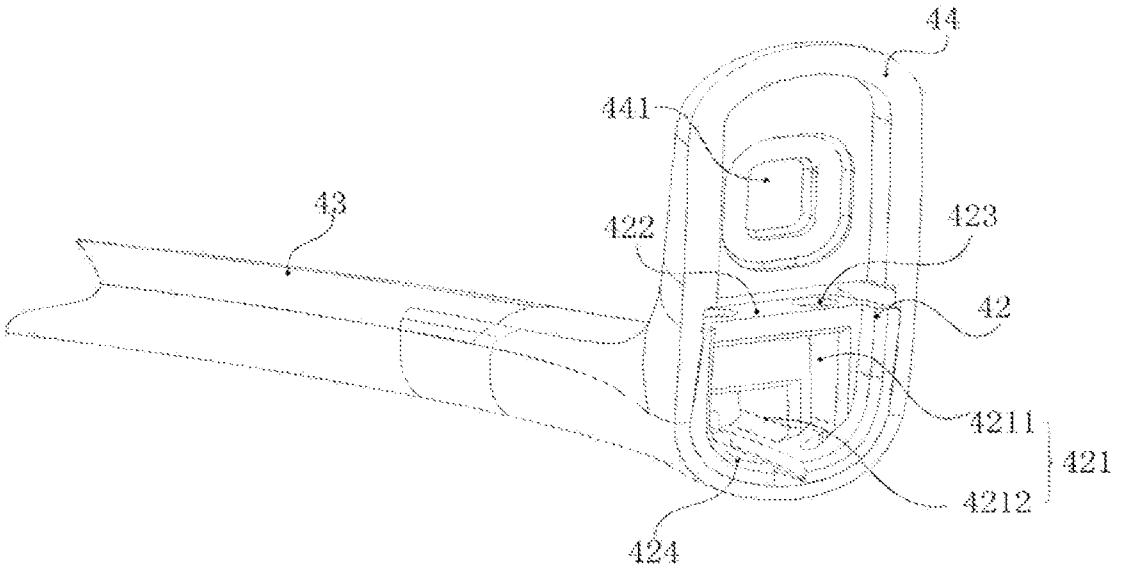



图25



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(19)中华人民共和国国家知识产权局

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*H04R 1/10*(2006.01)
*H04R 1/28*(2006.01)

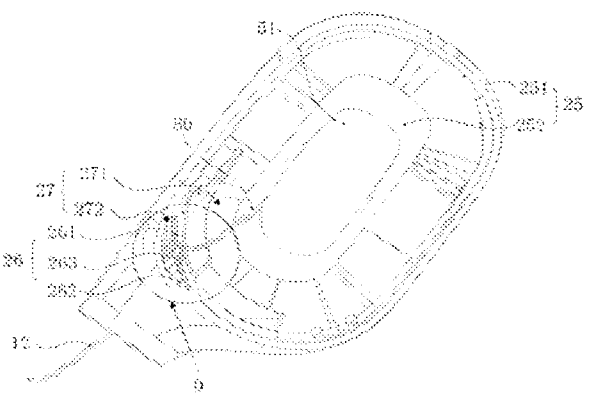
权利要求书2页 说明书19页 附图14页

(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，该骨传导扬声装置包括机芯壳体、功能组件及导线；所述机芯壳体包括主壳体以及隔板组件，所述隔板组件位于所述主壳体内部，并与所述主壳体连接，进而将所述主壳体的内部空间分隔成第一容置空间和第二容置空间；所述功能组件设置于所述第一容置空间内；所述导线用于将所述功能组件与位于所述机芯壳体外部的外部电路进行电连接，其中所述导线从所述第一容置空间经由所述第二容置空间连接至所述外部电路，并盘绕设置于所述第二容置空间内。通过上述方式，本申请能够减少导线的振动，提高声音质量。




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1.一种骨传导扬声装置，其特征在于，包括：

机芯壳体，所述机芯壳体包括主壳体以及隔板组件，所述隔板组件位于所述主壳体内部，并与所述主壳体连接，进而将所述主壳体的内部空间分隔成第一容置空间和第二容置空间；

功能组件，所述功能组件设置于所述第一容置空间内；

导线，所述导线用于将所述功能组件与位于所述机芯壳体外部的外部电路进行电连接，其中所述导线从所述第一容置空间经由所述第二容置空间连接至所述外部电路，并盘绕设置于所述第二容置空间内。

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耳挂，所述耳挂上设置有接插端，所述机芯壳体进一步设置有用于接收所述接插端的接插孔，其中所述第二容置空间靠近所述接插孔设置。

3.根据权利要求1所述的骨传导扬声装置，其特征在于，所述导线包括一端与所述外部电路连接的第一导线以及一端与所述功能组件连接的第二导线，其中所述第一导线的另一端与所述第二导线的另一端彼此焊接，并设置于所述第二容置空间内。

4.根据权利要求1所述的骨传导扬声装置，其特征在于，所述主壳体包括周侧壁以及与所述周侧壁的一端面连接的底端壁，所述隔板组件包括两端与所述周侧壁连接的侧隔板以及与所述底端壁间隔设置且分别与所述周侧壁和侧隔板连接的底隔板，其中所述底隔板上设置有走线孔，所述侧隔板在远离所述底端壁的顶部边缘设置有走线槽，其中所述第一导线经由所述走线孔延伸至所述第二容置空间，所述第二导线经由所述走线槽延伸至所述第二容置空间。

5.根据权利要求4所述的骨传导扬声装置，其特征在于，所述第一导线和所述第二导线分别为两根，其中所述隔板组件进一步包括内隔板，所述内隔板进一步将所述第二容置空间分隔成两个子容置空间，并在所述底隔板上设置有分别与所述子容置空间对应的两个走线孔，其中所述两根第一导线分别沿对应的所述走线孔延伸至各自的子容置空间内。

6.根据权利要求5所述的骨传导扬声装置，其特征在于，所述两根第一导线以及分别与所述两根第一导线焊接的第二导线分别盘绕设置于各自的子容置空间内。

7.根据权利要求1所述的骨传导扬声装置，其特征在于，所述第二容置空间进一步由密封胶进行填充。

8.根据权利要求2所述的骨传导扬声装置，其特征在于，所述接插孔与所述机芯壳体的外端面连通，且所述接插孔的内侧壁上设置有止挡块，所述接插端包括：

插入部，至少部分插入于所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接插端的接插固定。

9.根据权利要求8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；

所述耳挂包括弹性金属丝，所述接插端注塑于所述弹性金属丝朝向所述机芯壳体的一端，并进一步包括注塑于所述弹性金属丝以及所述接插端外围的保护套管，所述保护套管



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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。

10.根据权利要求9所述的骨传导扬声装置，其特征在于，所述保护套管在所述环形台面朝向所述机芯壳体的外端面的一侧形成一环形抵接面以及位于所述环形抵接面内部且相对于所述环形抵接面凸出设置的环形凸台；

所述机芯壳体进一步包括用于连接所述机芯壳体的外端面和所述接插孔的内侧壁的连接斜面；

其中，在所述机芯壳体与所述接插端接插固定时，所述环形抵接面和所述环形凸台分别与所述机芯壳体的外端面和所述连接斜面弹性抵接。

11.根据权利要求10所述的骨传导扬声装置，其特征在于，所述插入部在所述环形台面朝向所述机芯壳体的外端面的一侧进一步形成有与所述环形台面邻接的环形凹槽，所述环形凸台形成于所述环形凹槽内。



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# 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] 其中，在对骨传导扬声装置装配时，导线往往会长于实际连接需求，以便于装配。然而耳机芯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，进而影响用户的听音感受。

## 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，能够减少导线的振动，提高声音质量。

[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：机芯壳体，所述机芯壳体包括主壳体以及隔板组件，所述隔板组件位于所述主壳体内部，并与所述主壳体连接，进而将所述主壳体的内部空间分隔成第一容置空间和第二容置空间；功能组件，所述功能组件设置于所述第一容置空间内；导线，所述导线用于将所述功能组件与位于所述机芯壳体外部的外部电路进行电连接，其中所述导线从所述第一容置空间经由所述第二容置空间连接至所述外部电路，并盘绕设置于所述第二容置空间内。

[0006] 本申请的有益效果是：区别于现有技术的情况，本申请在机芯壳体的主壳体所形成的内部空间当中分离出第二容置空间以用于容置多余的导线，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。

## 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；

[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；



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[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



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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



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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



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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。

[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



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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



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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



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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



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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。



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[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。

[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



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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。

[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



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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。

[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



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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，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



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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。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



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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。

[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



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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



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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，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



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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



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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。



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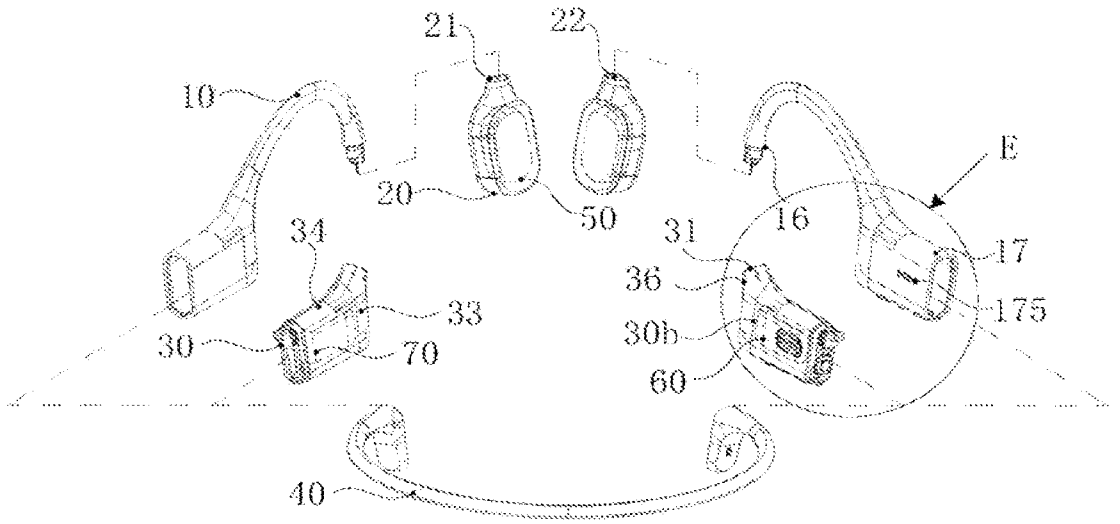



图1

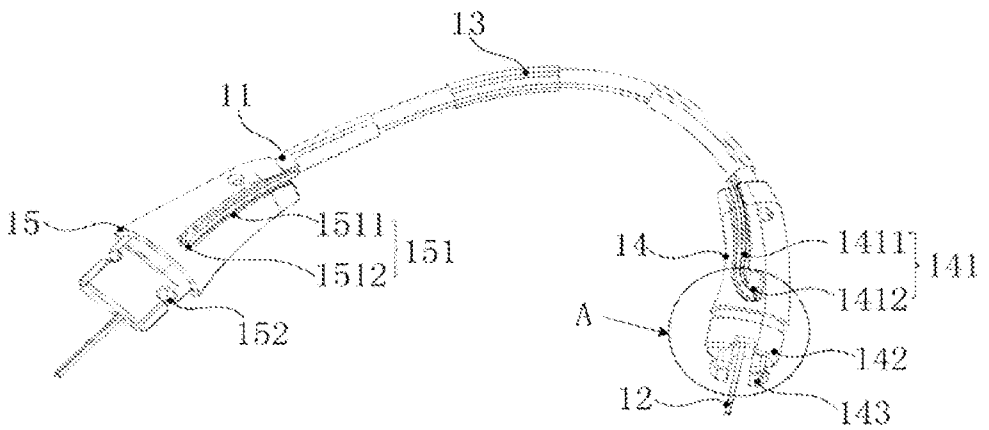



图2



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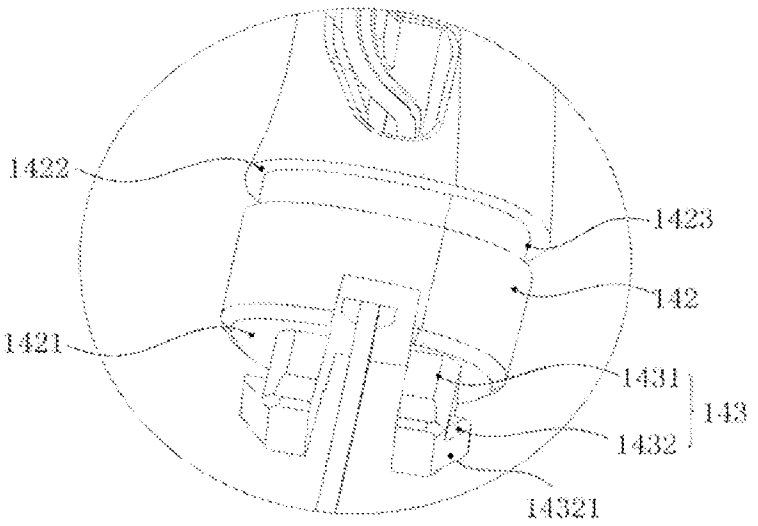



图3

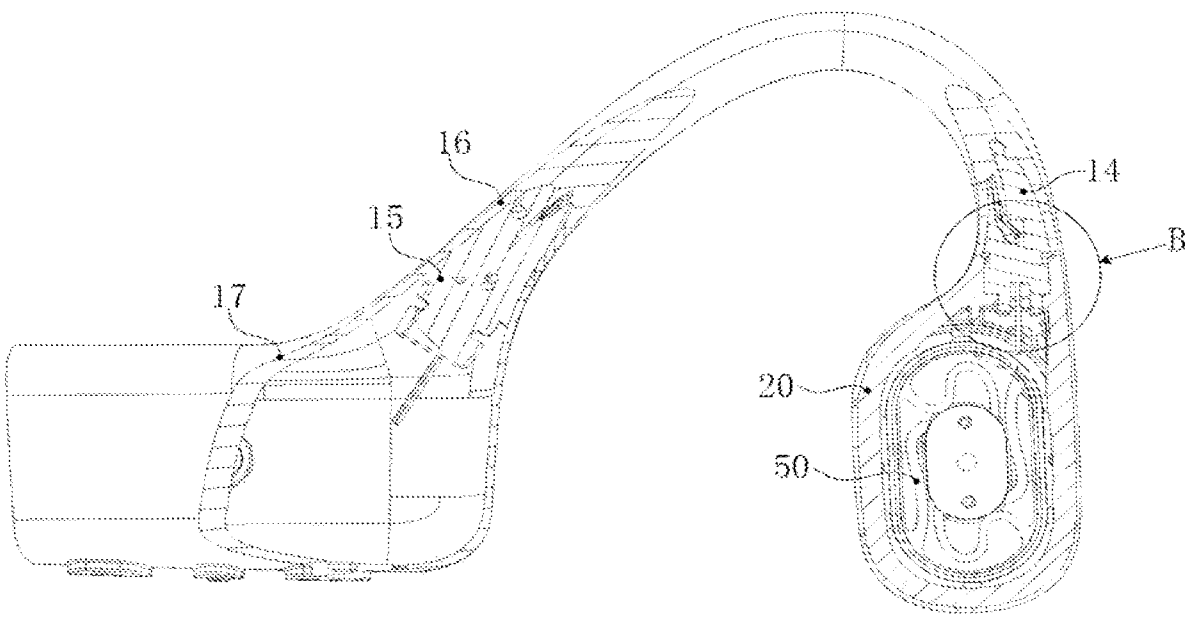



图4



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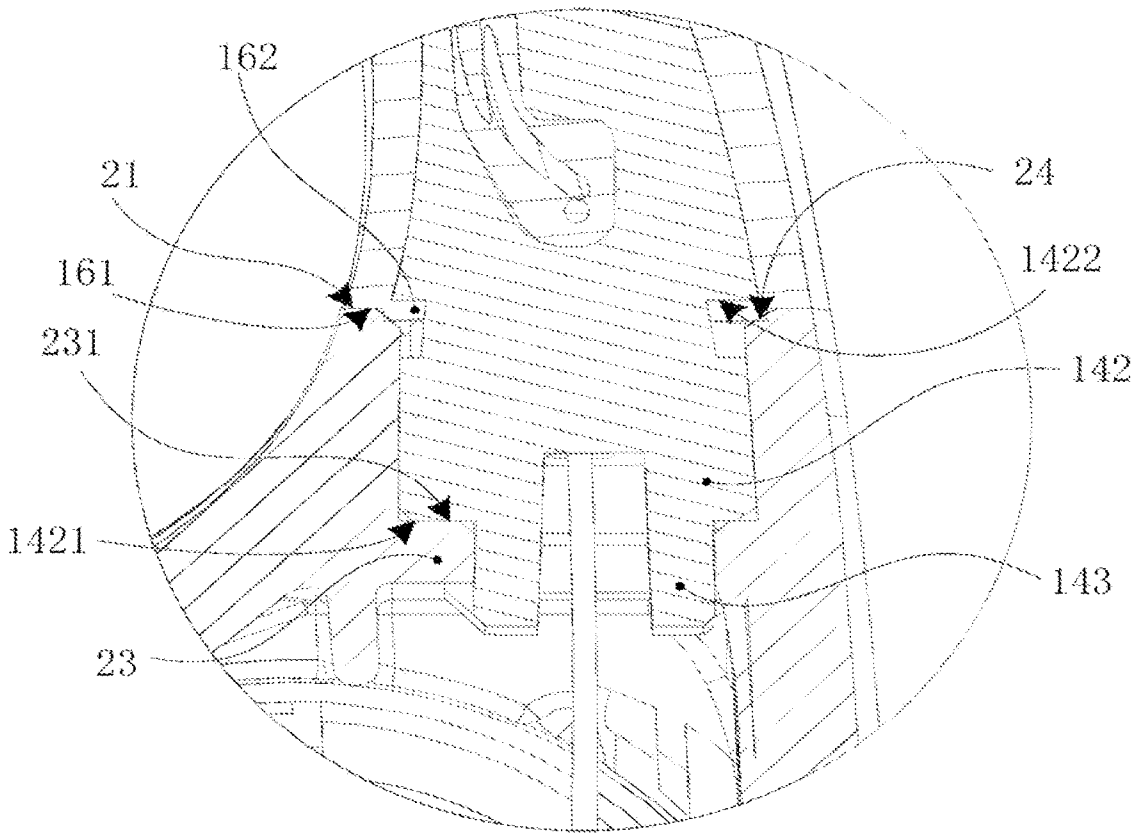



图5

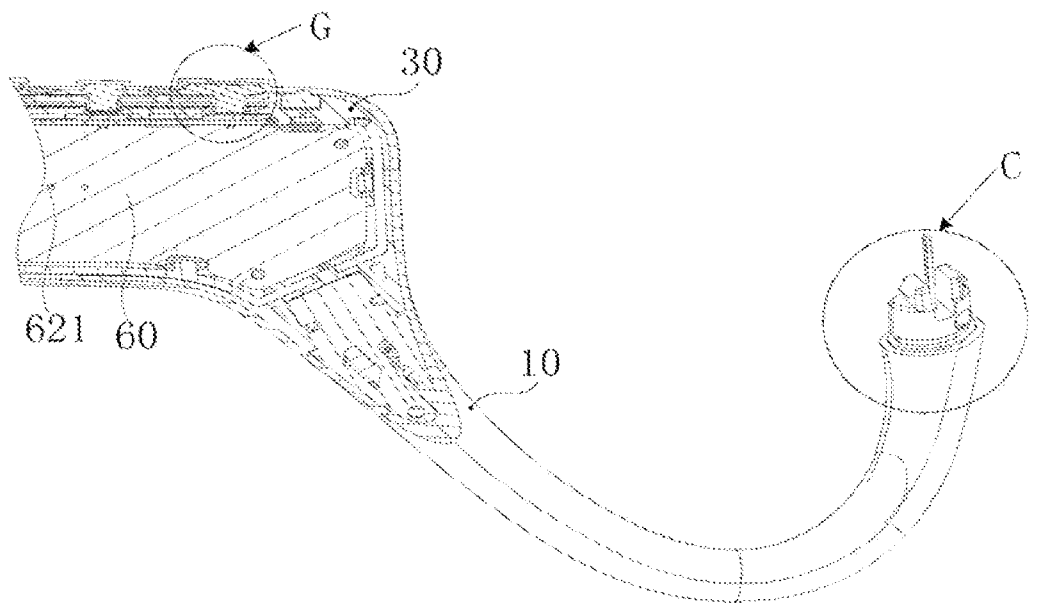



图6



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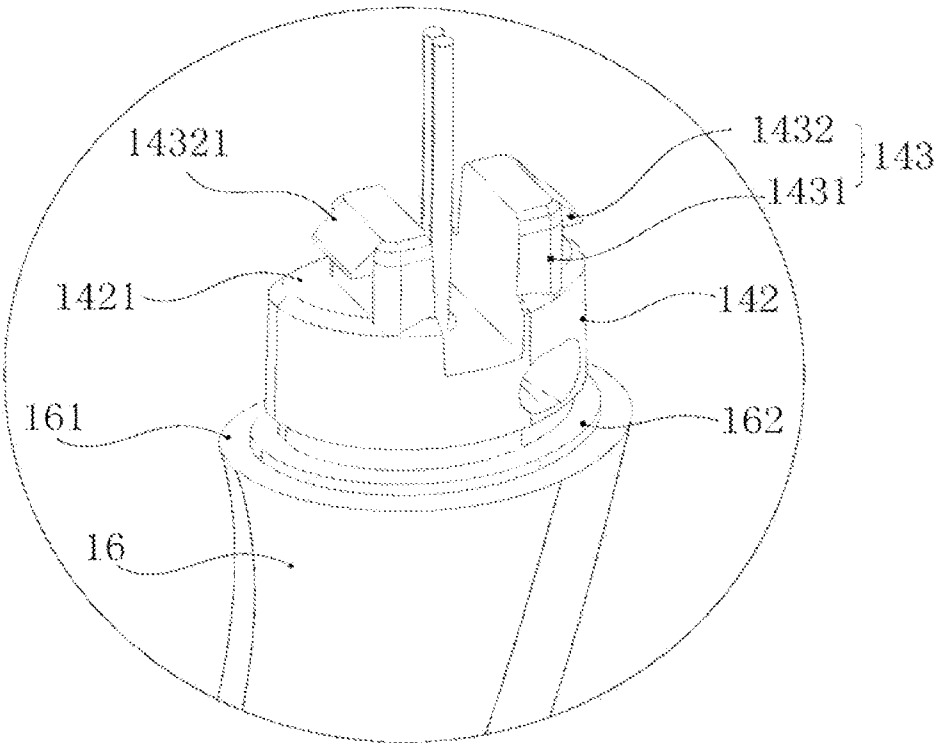



图7

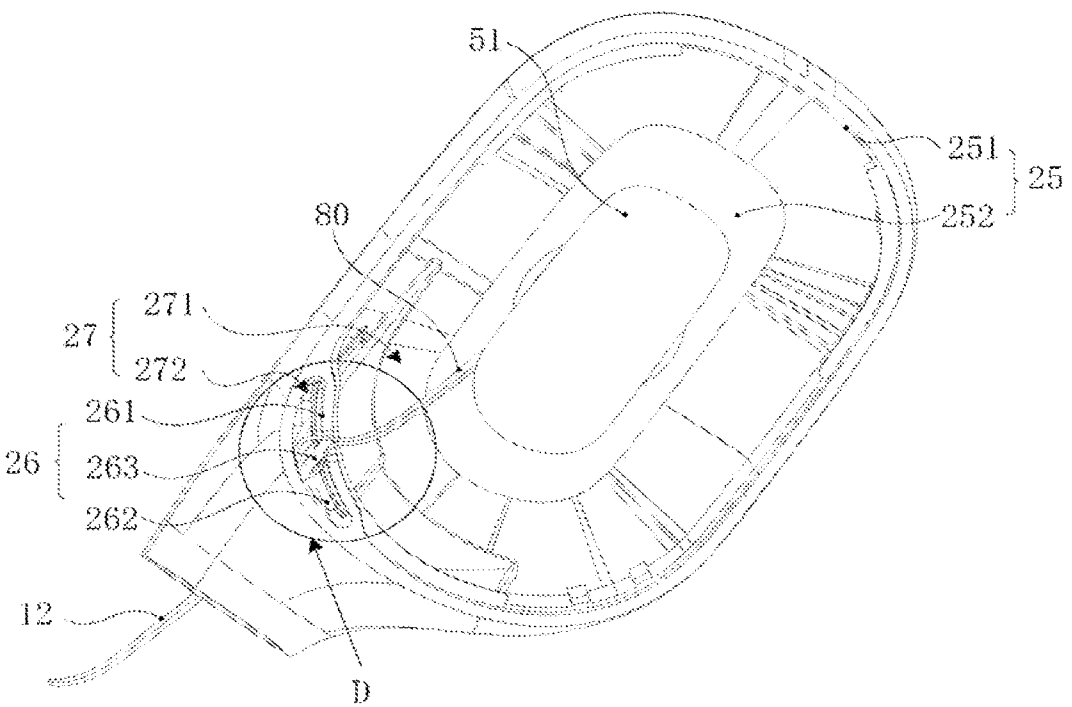



图8



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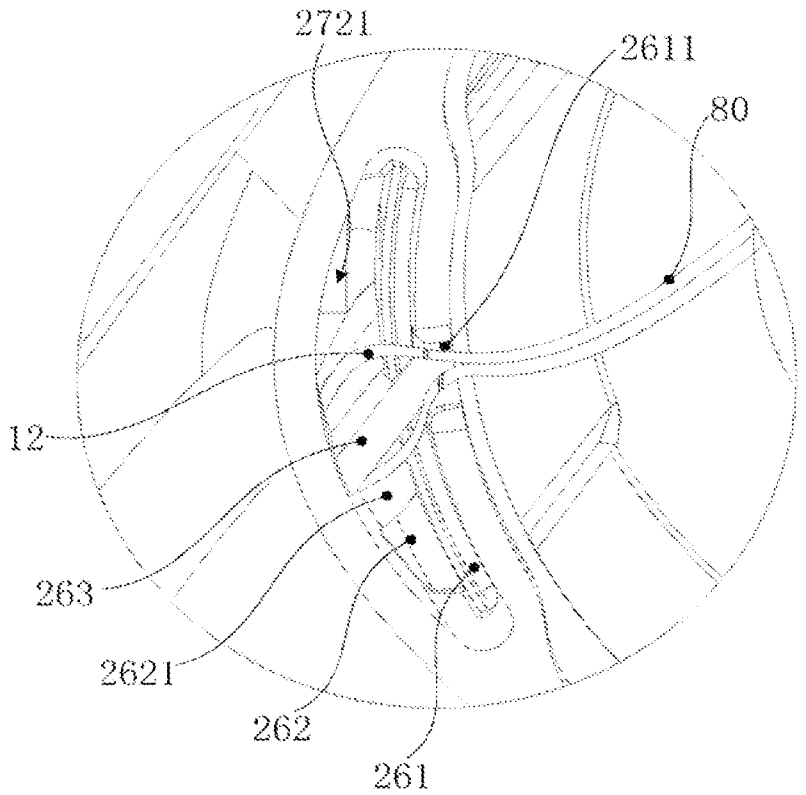



图9

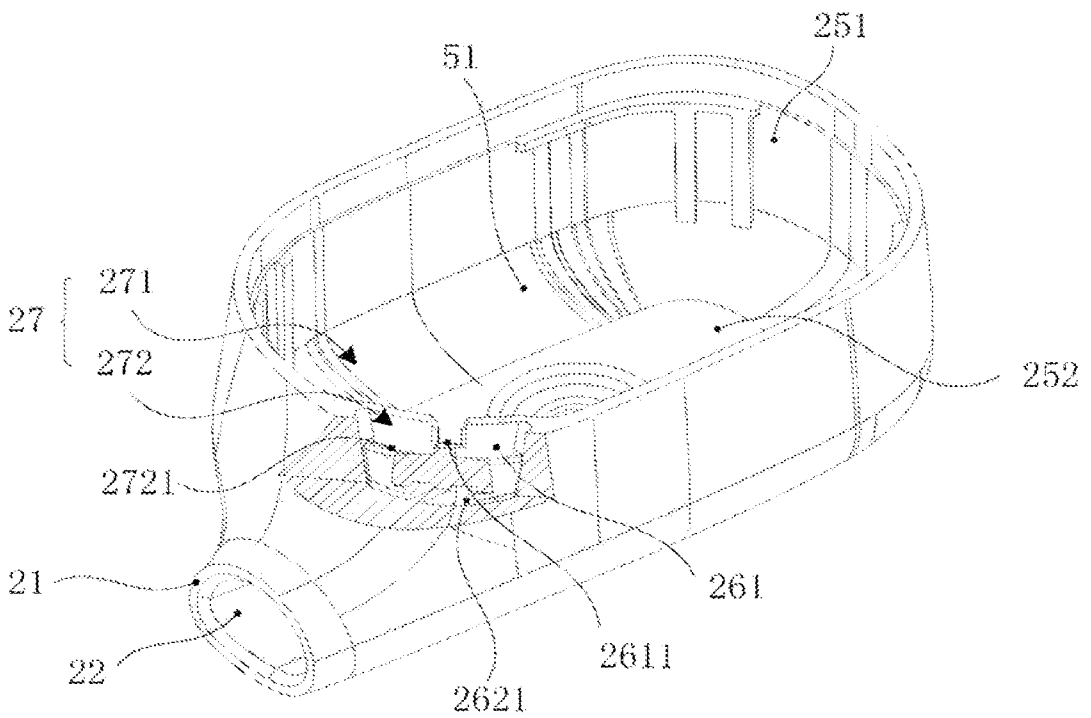



图10



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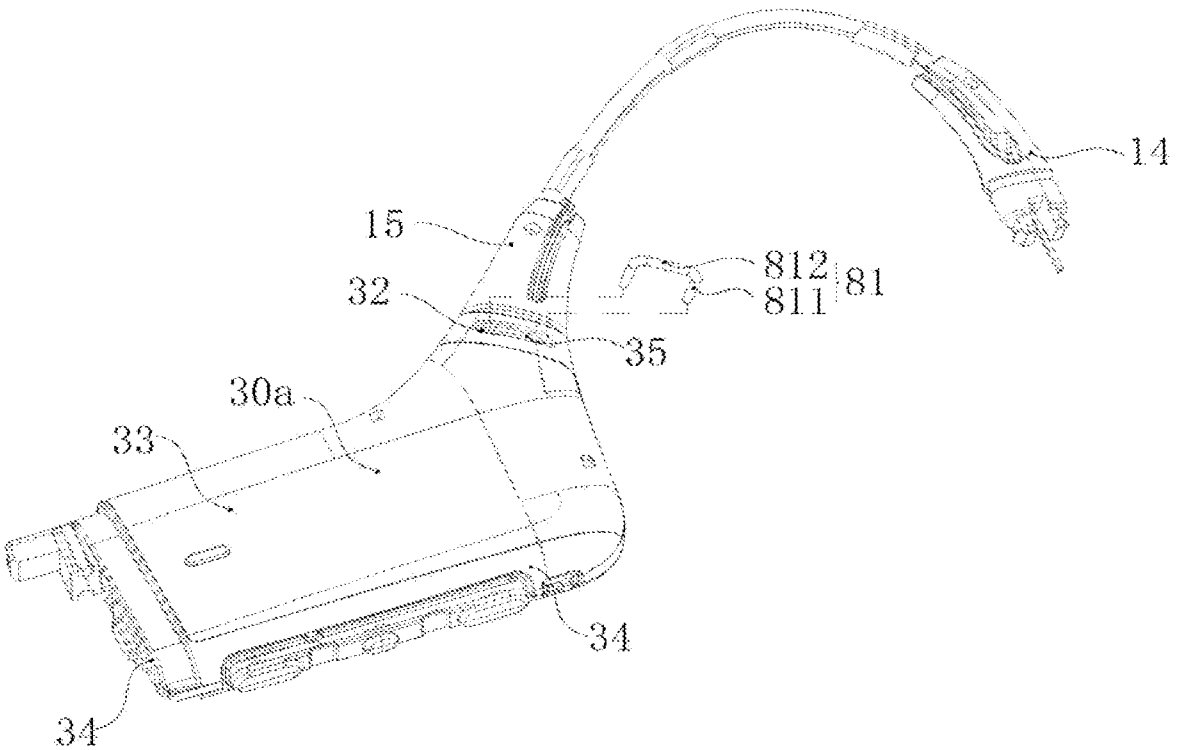



图11

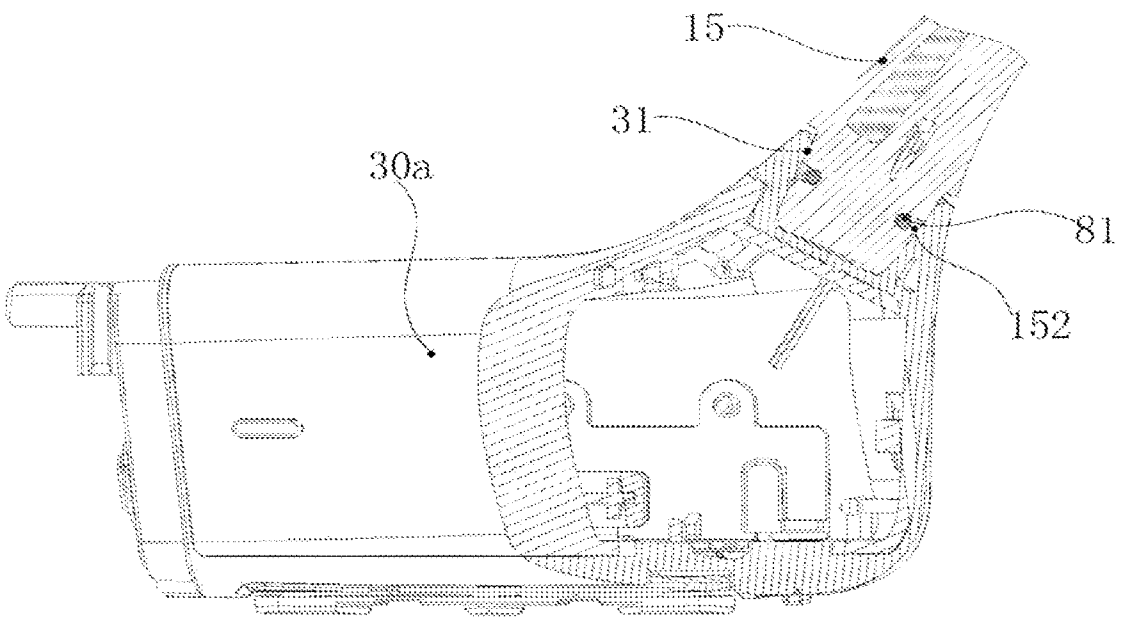



图12



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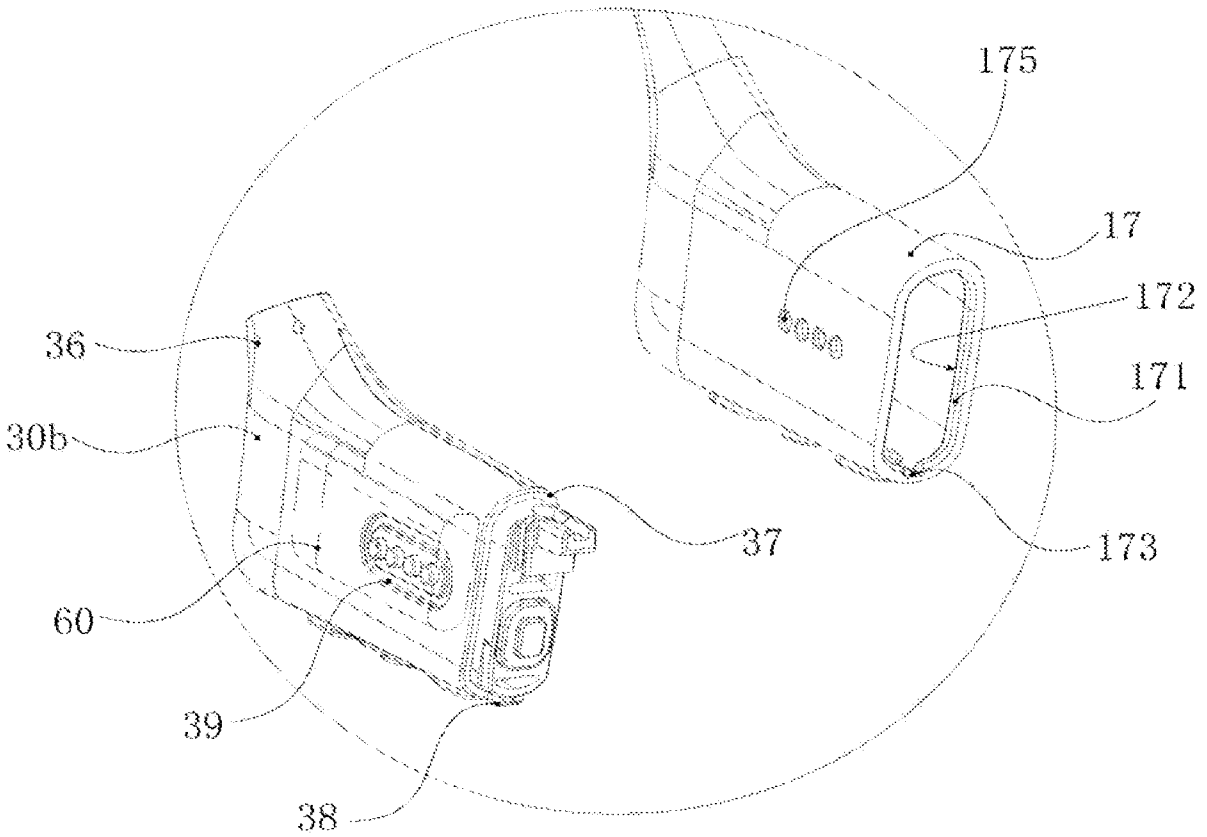



图13

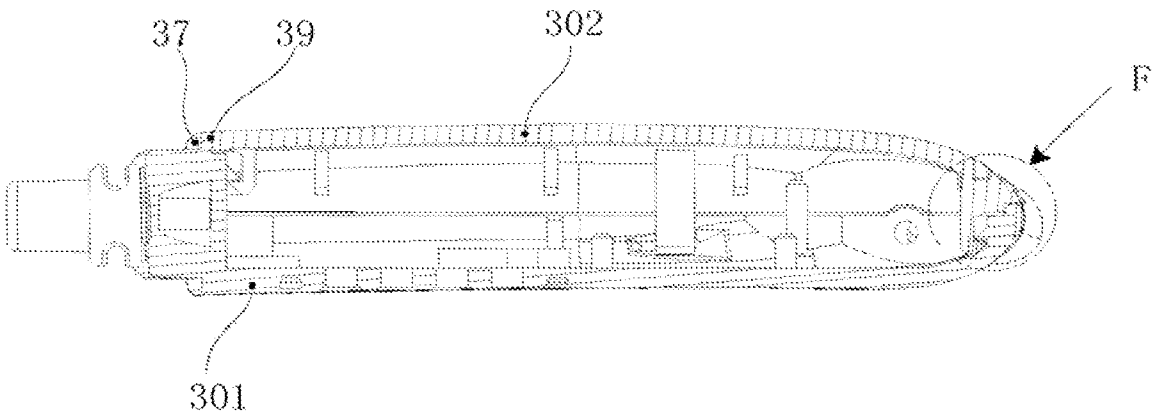



图14



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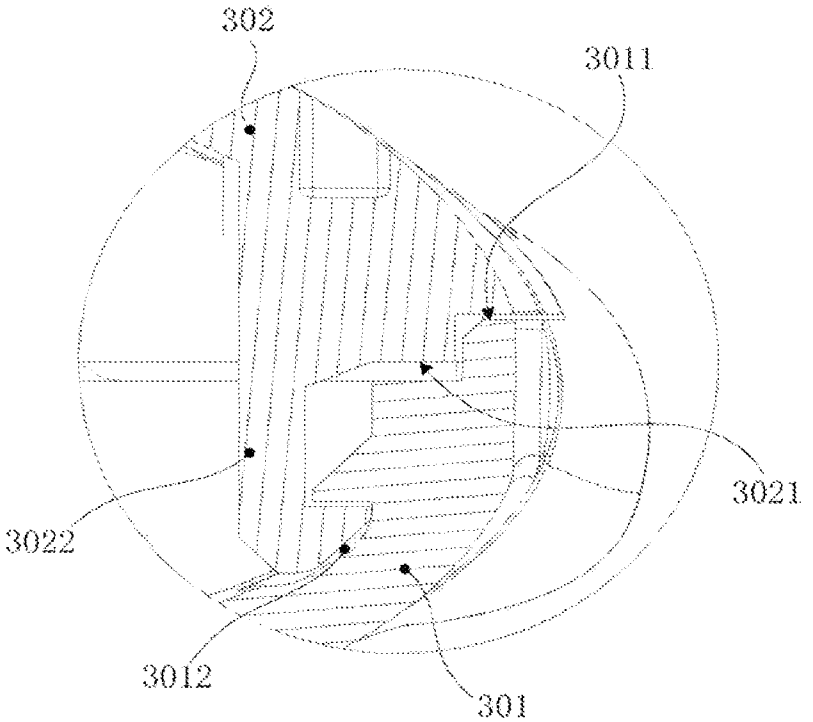



图15



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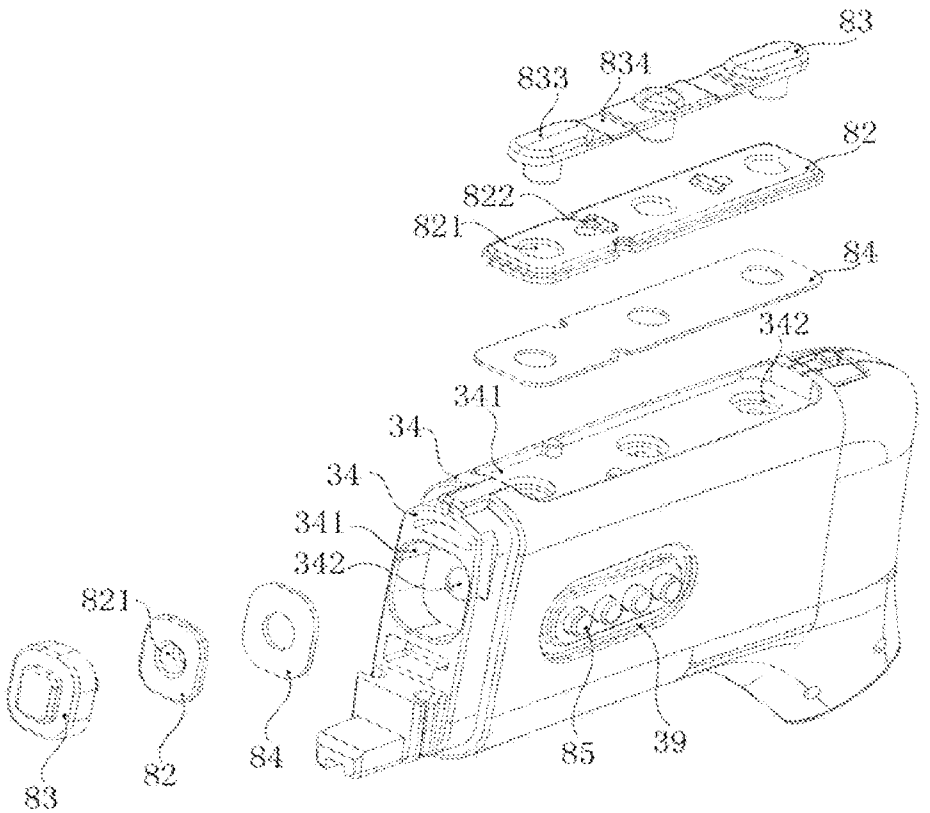



图16

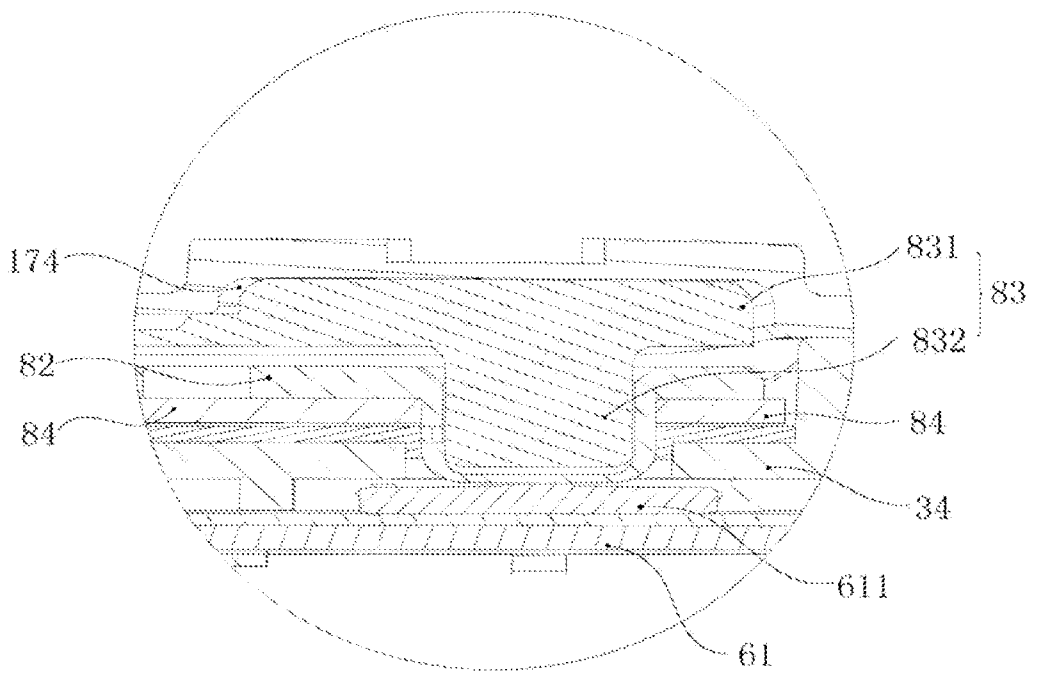



图17



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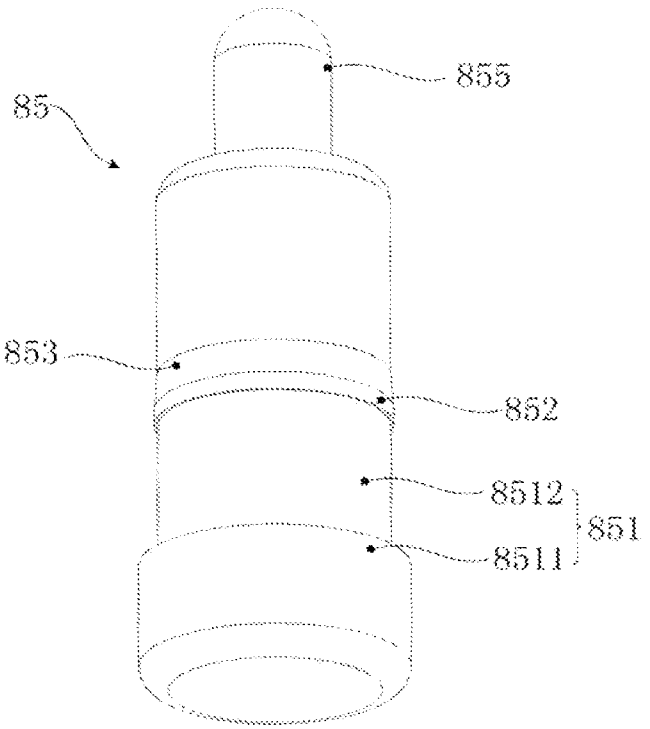



图18

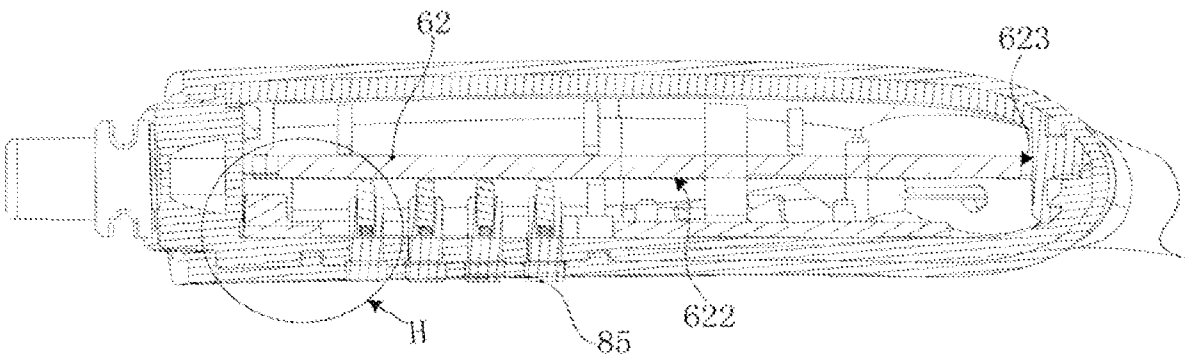



图19



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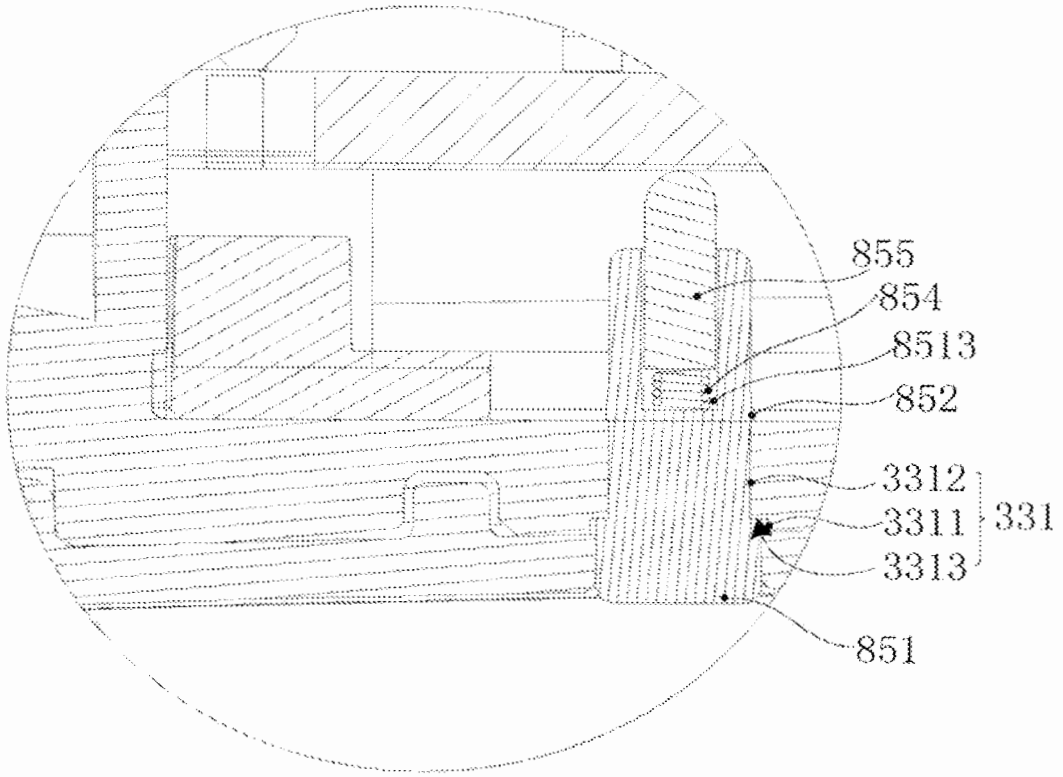



图20



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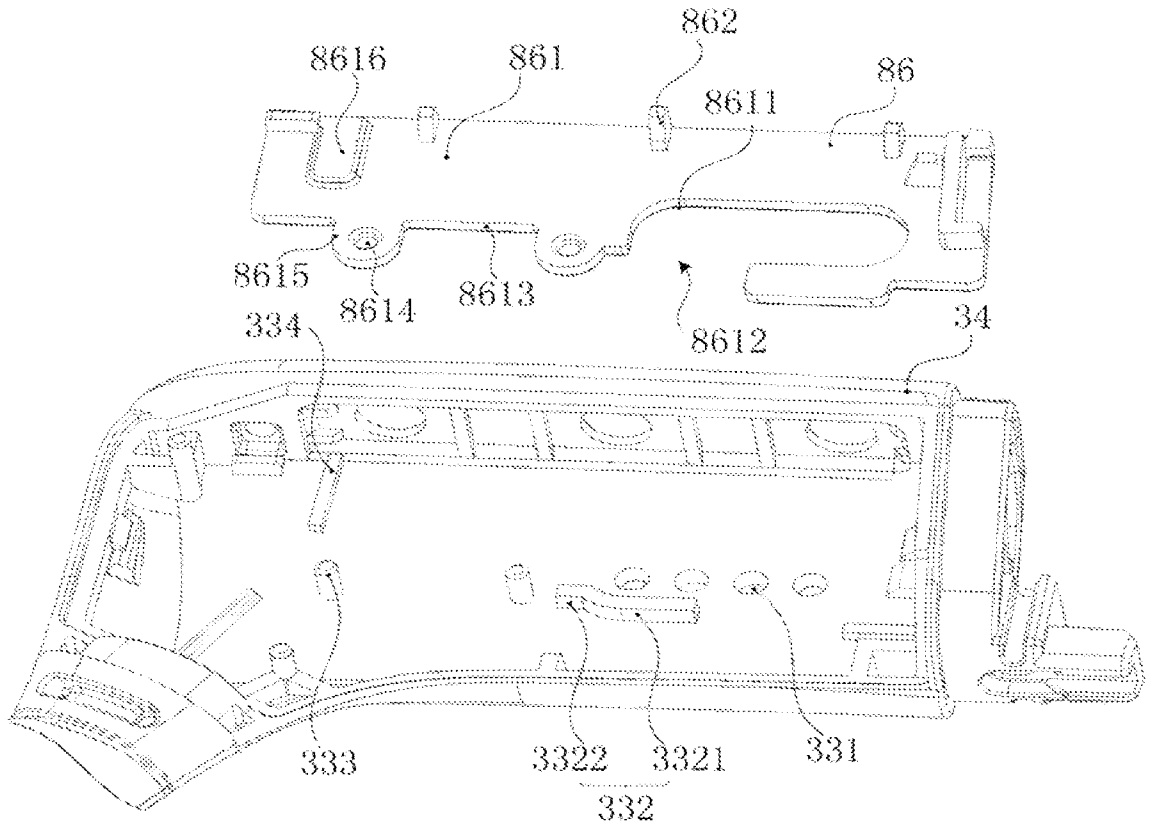



图21

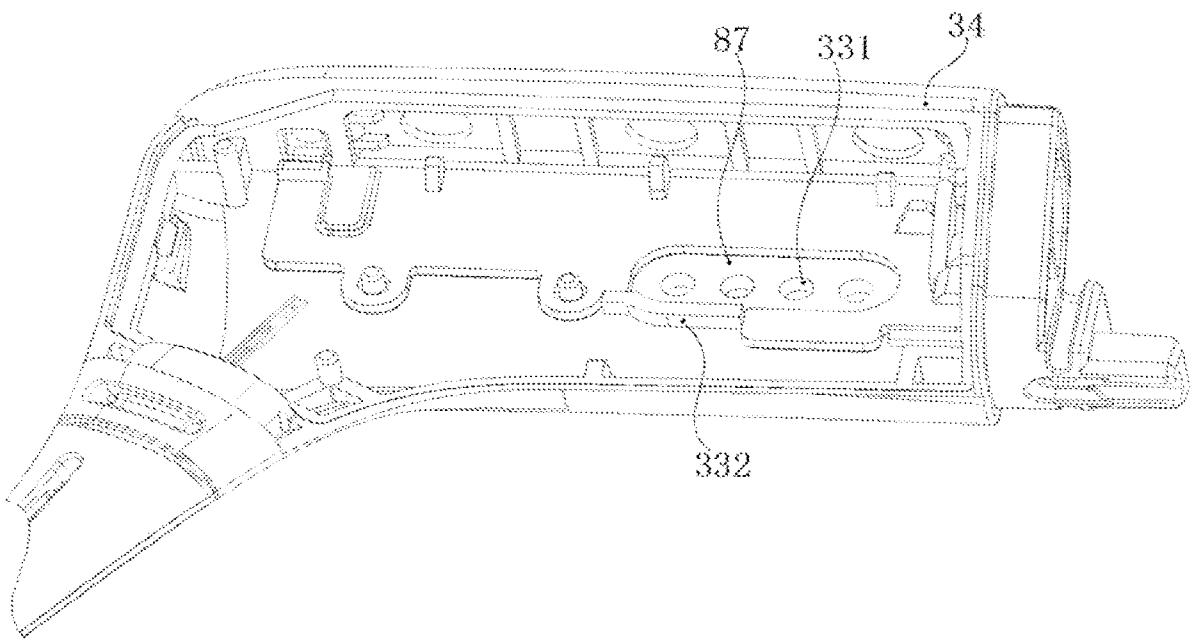



图22



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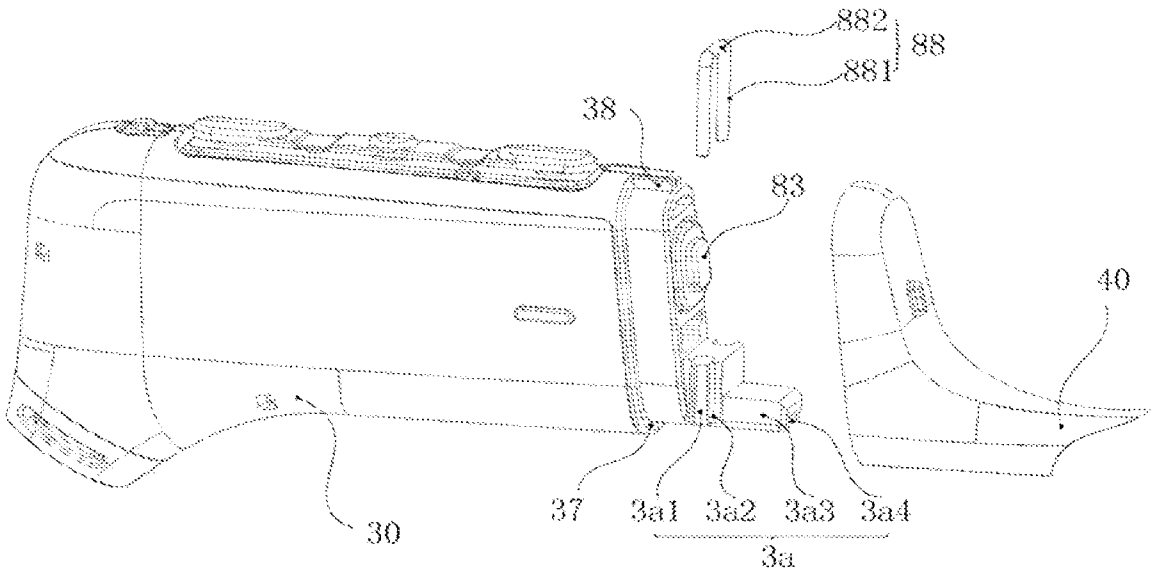



图23

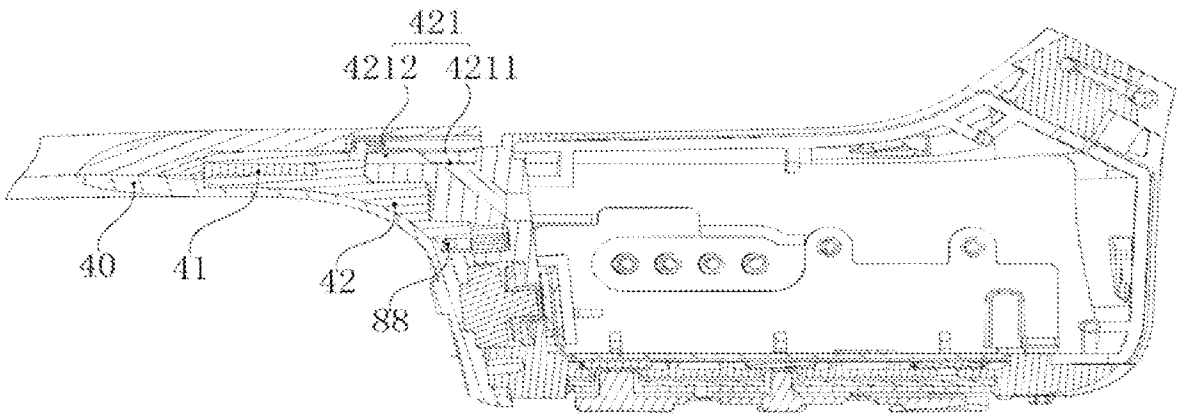



图24



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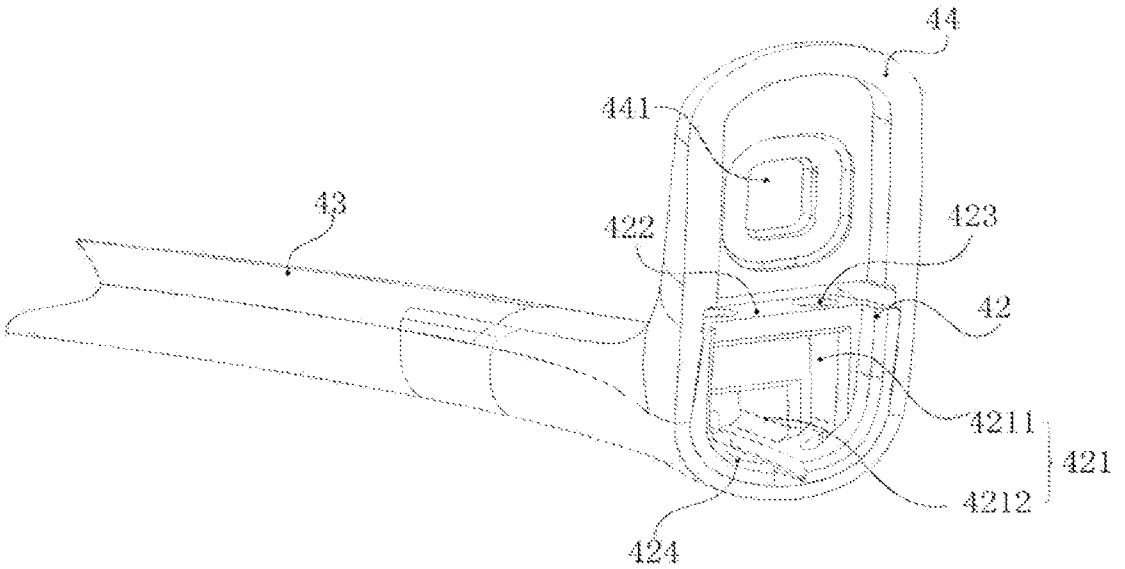



图25



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# Osteoacusis loudspeaker arrangement


## Abstract

This application discloses a kind of osteoacusis loudspeaker arrangement, including circuit shell, conductive column and auxiliary piece, at least one mounting hole is provided in the major side wall of circuit shell；Conductive column is inserted in mounting hole；Auxiliary piece includes that vacancy section is provided on plate body described in plate, wherein the plate body is set on the inner surface of the major side wall, and the mounting hole is located inside the vacancy section, and then forms glue groove in the conductive column periphery.By the above-mentioned means, the application is conducive to going on smoothly for production, the yield of production efficiency and osteoacusis loudspeaker arrangement is improved.



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China

**Other languages:** Chinese

**Inventor:** 张浩峰, 李朝武, 李永堡

**Worldwide applications**

2019 CN

**Application CN201910009891.XA events**

| | |
|---|---|
| 2019-01-05 | Application filed by 深圳市新音科技有限公司 |
| 2019-01-05 | Priority to CN201910009891.XA |
| 2019-05-03 | Publication of CN109714687A |

**Info:** Cited by (1), Legal events, Similar documents, Priority and Related Applications

**External links:** Espacenet, Global Dossier, Discuss


## Description

Osteoacusis loudspeaker arrangement

Technical field

This application involves bone conduction technology fields, more particularly to a kind of osteoacusis loudspeaker arrangement.

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.

The conductive column of connection internal circuit and external circuit is installed, in the conductive column on the shell of osteoacusis loudspeaker arrangement Enclosure interior side is provided with a glue groove, with by apply in glue groove sealant come to the corresponding mounting hole of conductive column into Row sealing etc..Correspondingly, can formative stage inside housings corresponding position be integrally formed a glue groove.

## Claims (11)

Hide Dependent

1. a kind of osteoacusis loudspeaker arrangement characterized by comprising

Circuit shell is provided at least one mounting hole in the major side wall of the circuit shell；

Conductive column, the conductive column are inserted in the mounting hole；

Auxiliary piece, the auxiliary piece include plate body, are provided with vacancy section on the plate body, wherein the plate body is set to the master On the inner surface of side wall, and the mounting hole is located inside the vacancy section, and then forms glue groove in the conductive column periphery.

2. osteoacusis loudspeaker arrangement according to claim 1, which is characterized in that the vacancy section is provided with a notch, institute It states integrally formed with the first strip fin corresponding with the notch on the inner surface of major side wall, and then utilizes first strip Fin and the auxiliary piece

However, in shell formative stage, mounting hole nearby has an other structures toward contact, these structures at the time of molding pair The mold answered may need to exit from the inside of shell, and if be directly integrally formed corresponding glue groove inside housings at this time, The glue groove, which corresponds to side wall, may interfere the smooth of mold of these structures to exit, to make troubles for production.

Summary of the invention

The application can be conducive to the smooth of production mainly solving the technical problems that provide a kind of osteoacusis loudspeaker arrangement It carries out, improves the yield of production efficiency and osteoacusis loudspeaker arrangement.

In order to solve the above technical problems, the technical solution that the application uses is: a kind of osteoacusis loudspeaker arrangement is provided, Include: circuit shell, at least one mounting hole is provided in the major side wall of the circuit shell ; Conductive column, the conductive column are inserted It is placed in the mounting hole ; Auxiliary piece, the auxiliary piece include plate body, are provided with vacancy section on the plate body, wherein the plate Body is set on the inner surface of the major side wall, and the mounting hole is located inside the vacancy section, and then in the conductive column Periphery forms glue groove.

The beneficial effect of the application is: being in contrast to the prior art, auxiliary piece and circuit shell are distinguished in the application It is independent structure, it, can be and auxiliary piece to be installed on to the inside of circuit shell and circuit shell after the two is separately formed Major side wall collectively form a glue groove, thus circuit shell formative stage will not because of glue groove setting and stop portions knot The mold of structure is exited from the inside of circuit shell, to be conducive to going on smoothly for production, improves production efficiency and osteoacusis The yield of loudspeaker arrangement.

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

cooperate so that the glue groove is in closure setting.

3. osteoacusis loudspeaker arrangement according to claim 2, which is characterized in that the first strip fin further extends It is abutted at the side edge of the plate body, and then the plate body is positioned.

4. osteoacusis loudspeaker arrangement according to claim 1, which is characterized in that the osteoacusis loudspeaker arrangement further wraps The button circuit board being set in the circuit shell is included, the auxiliary piece further comprises protruding to be arranged relative to the plate body Pressure holding foot, the pressure holding foot be used for by the button circuit board press in the auxiliary side being connect with the major side wall of the circuit shell On the inner surface of wall.

5. osteoacusis loudspeaker arrangement according to claim 4, which is characterized in that the osteoacusis loudspeaker arrangement further wraps The main control board being arranged in the circuit shell is included, the main control board is arranged and is supported in the major side wall interval On at least partly described pressure holding foot.

6. osteoacusis loudspeaker arrangement according to claim 1, which is characterized in that be further provided with positioning on the plate body Hole, integrally formed with positioning column corresponding with the location hole on the inner surface of the major side wall, the positioning column is inserted in institute State positioning hole.

7. osteoacusis loudspeaker arrangement according to claim 6, which is characterized in that the side edge of the plate body is formed at least Two lugs, the location hole are set on the lug.

8. osteoacusis loudspeaker arrangement according to claim 1, which is characterized in that be further provided with strip on the plate body One end of locating slot, the strip locating slot connect and is vertically arranged with the side edge of the plate body, the interior table of the major side wall integrally formed with the second strip fin corresponding with the strip locating slot on face, the second strip fin is embedded in the item To be positioned to the plate body in shape locating slot.

9. osteoacusis loudspeaker arrangement according to claim 2, which is characterized in that the conductive column includes being

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 ;

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

inserted in the peace The cylindrical body in hole is filled, positioning convex platform, the positioning convex platform and the major side wall are set on the outer peripheral surface of the cylindrical body Clamping, and then the conductive column is fixed on the mounting hole.

10. osteoacusis loudspeaker arrangement according to claim 9, which is characterized in that the cylindrical body is along the column sheet Body is divided into the first cylindrical body and the second cylindrical body relative to the direction of insertion of the mounting hole, wherein first column Ontology perpendicular to the direction of insertion cross section be greater than second cylindrical body perpendicular to the direction of insertion cross section, The positioning convex platform is set in second cylindrical body, and the mounting hole is divided into cross section and institute along the direction of insertion The first cylindrical body and corresponding first hole section of the second cylindrical body and the second hole section are stated, and then in first hole section and second The junction of hole section forms a circular table, when the cylindrical body is inserted in the mounting hole, the first column sheet Body is supported on the circular table, and the positioning convex platform is connected on the inner surface of the major side wall.

11. osteoacusis loudspeaker arrangement according to claim 10, which is characterized in that the cylindrical body is axially disposed to be had Accommodating cavity, the open end of the accommodating cavity in second cylindrical body towards on the end face inside the circuit shell, it is described Conductive column further comprises the spring and conductive contact being set in the accommodating cavity, one end of the contact and the spring It abuts, the open end of the other end from the accommodating cavity is exposed, and the osteoacusis loudspeaker arrangement further comprises being set to the electricity The main control board of road enclosure interior is provided with contact corresponding with the conductive column position on the main control board, described Spring presses the conductive contact elasticity on the contact.

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 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 yam 11, conducting wire 12, fixed sleeving 13 and is set to elastic metallic yam 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.

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 elastically 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 ovennold 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 two 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 maiches 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 internal 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 262 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 252 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 settable 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 851 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.Ita 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 861, 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 moiding.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 33, 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 similiarly includes in the scope of patent protection of the application.

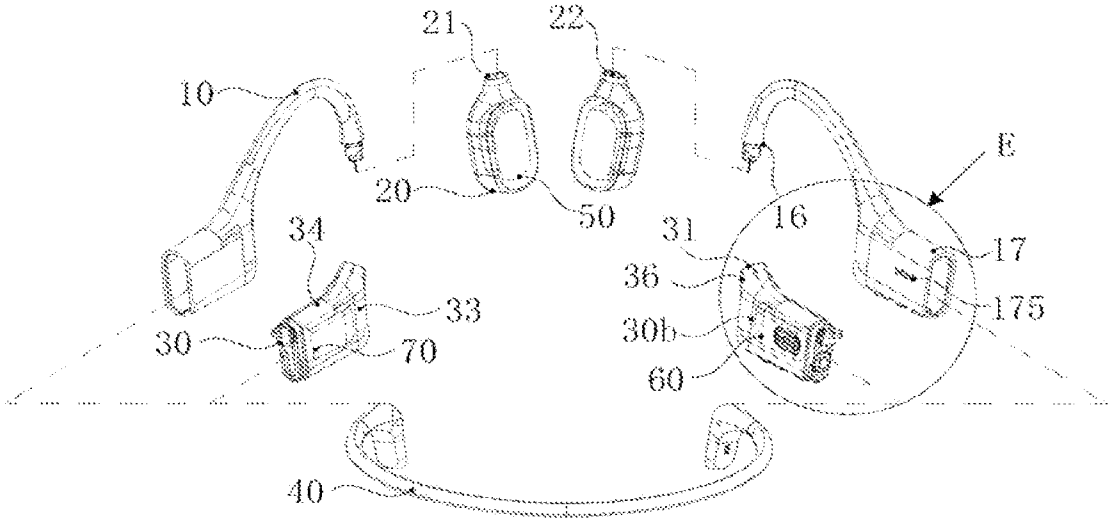



图1

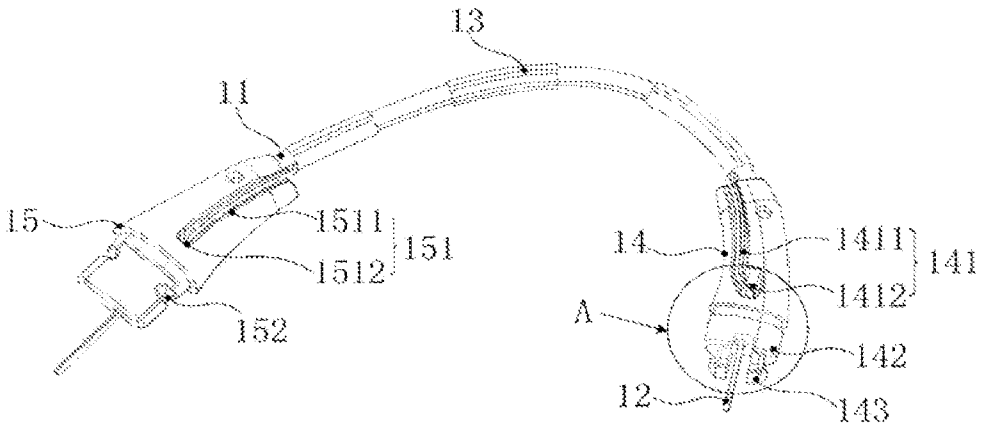



图2



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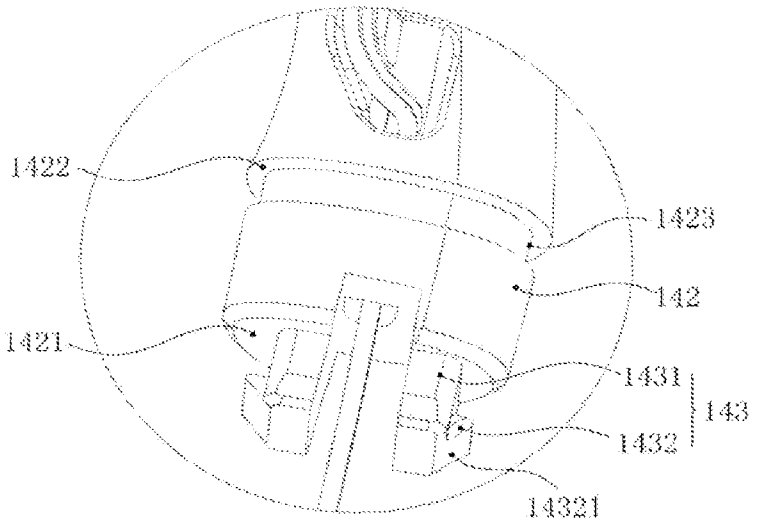



图3

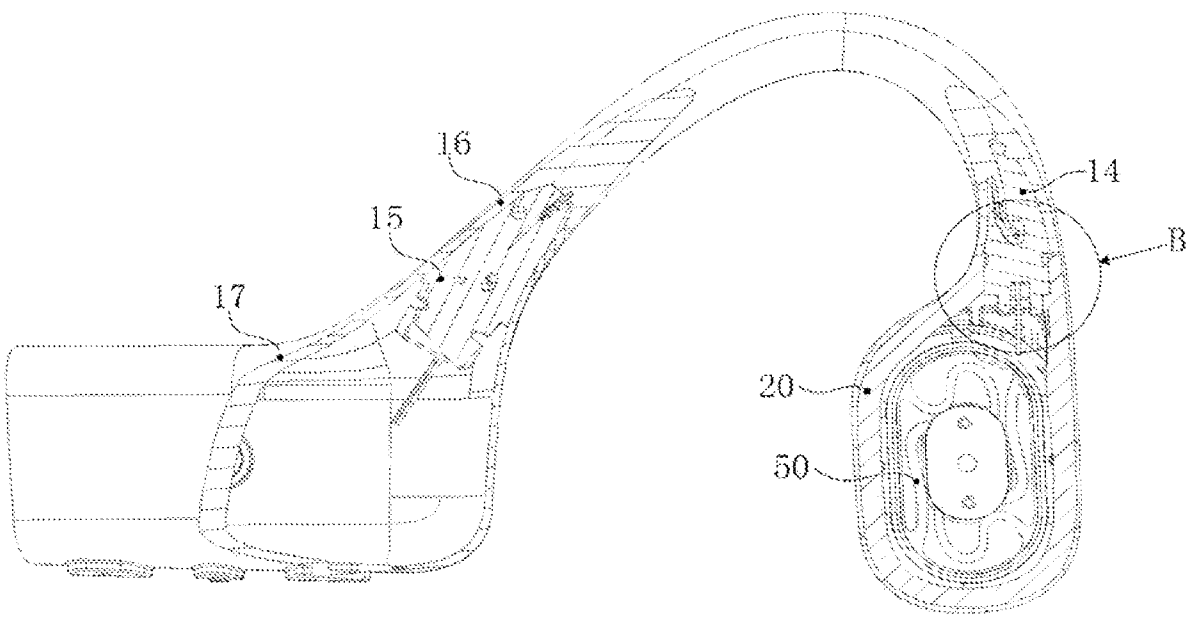



图4



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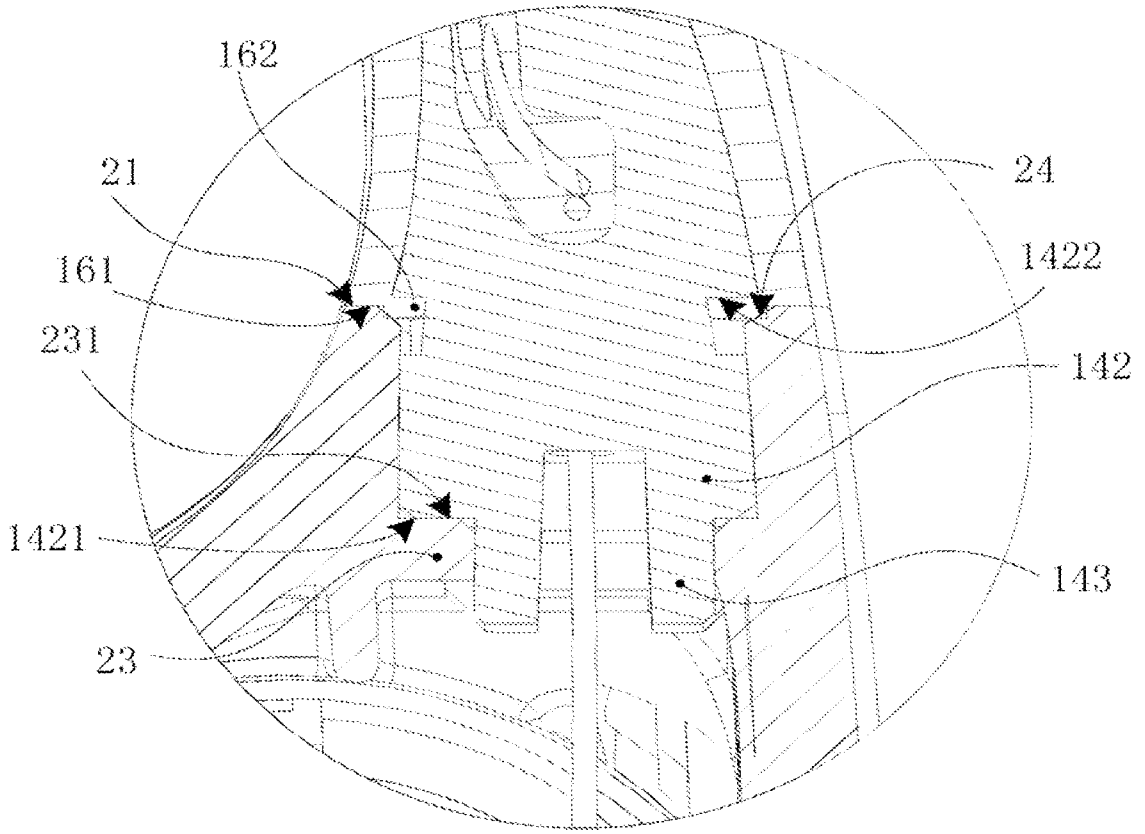



图5

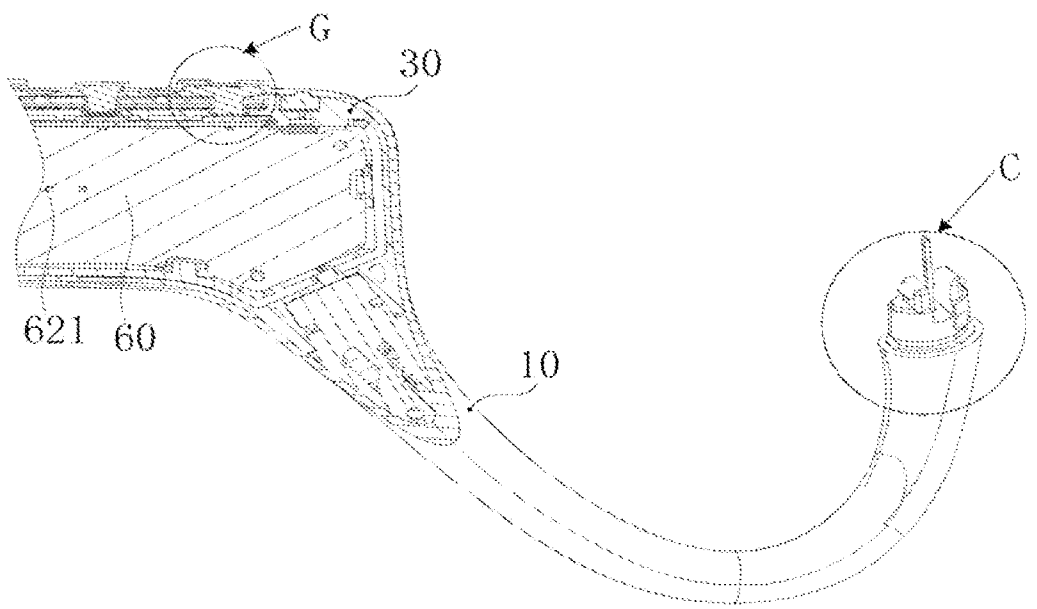



图6



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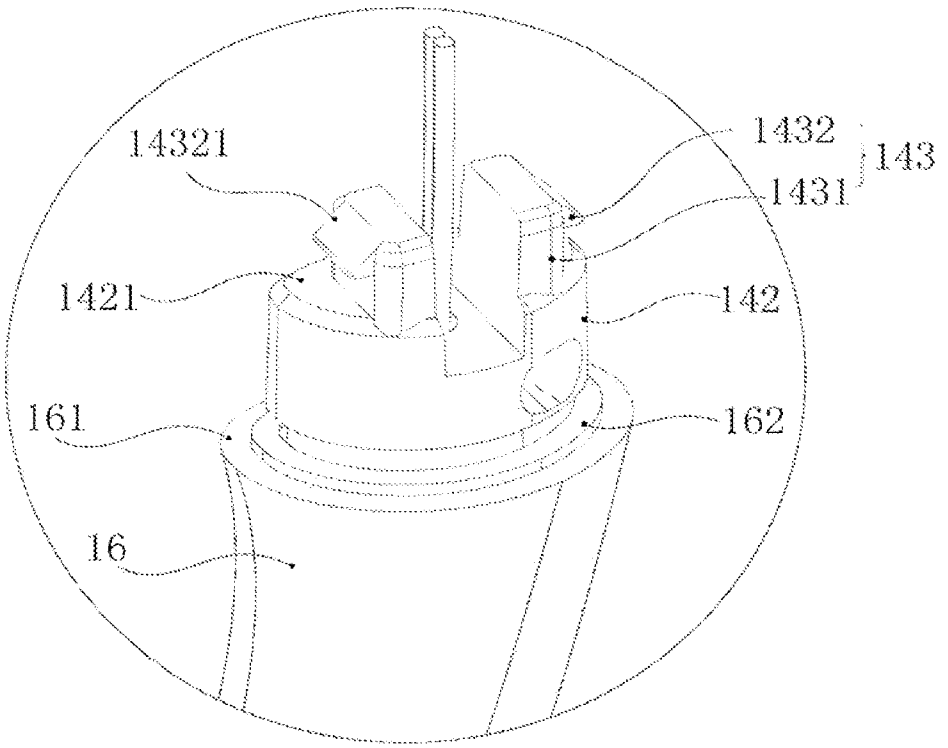



图7

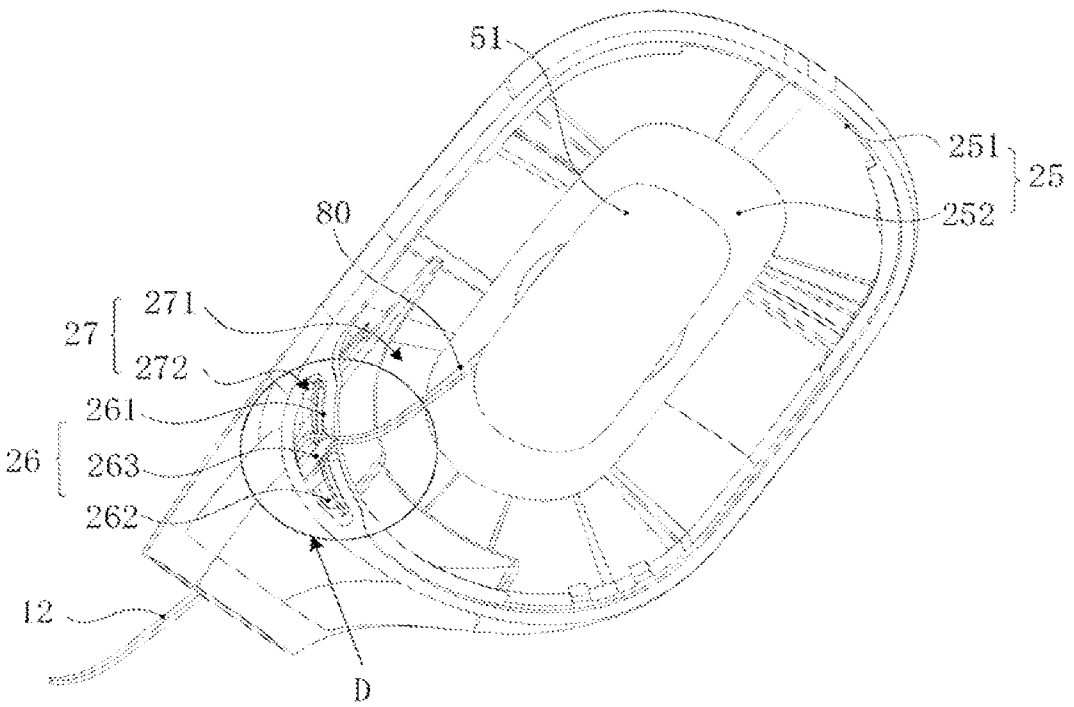



图8



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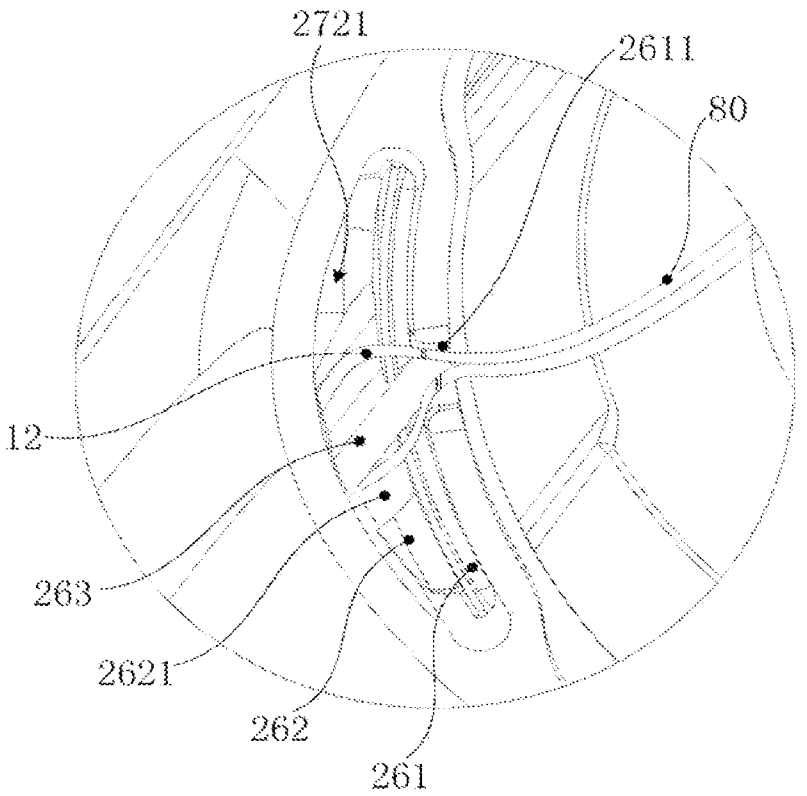



图9



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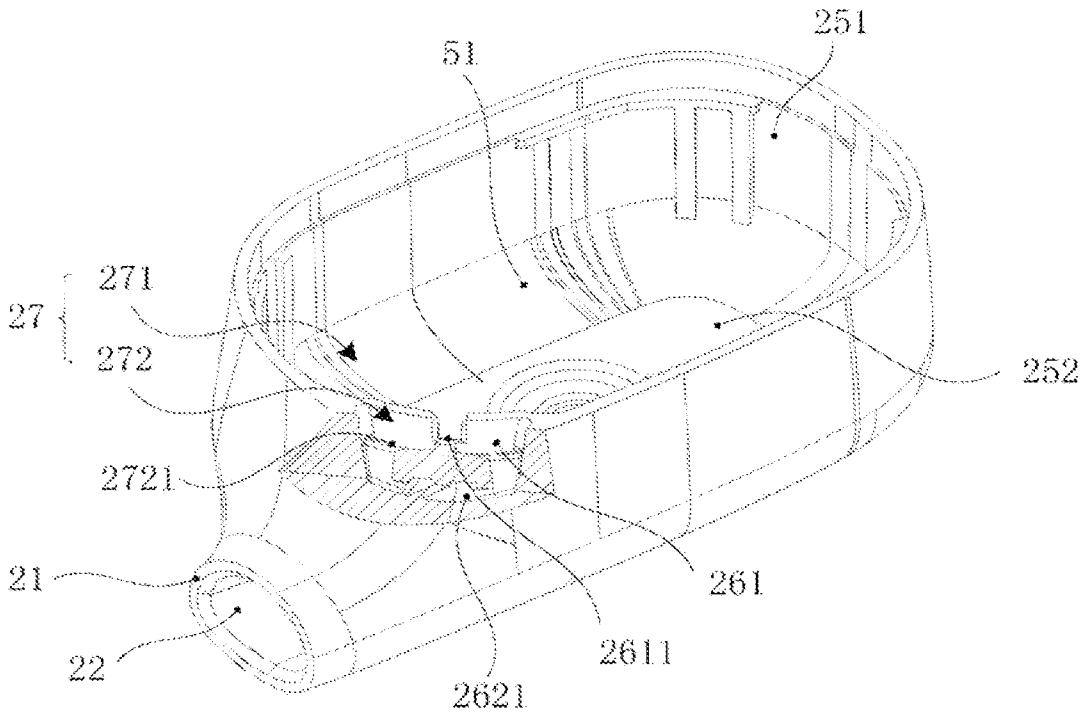



图10

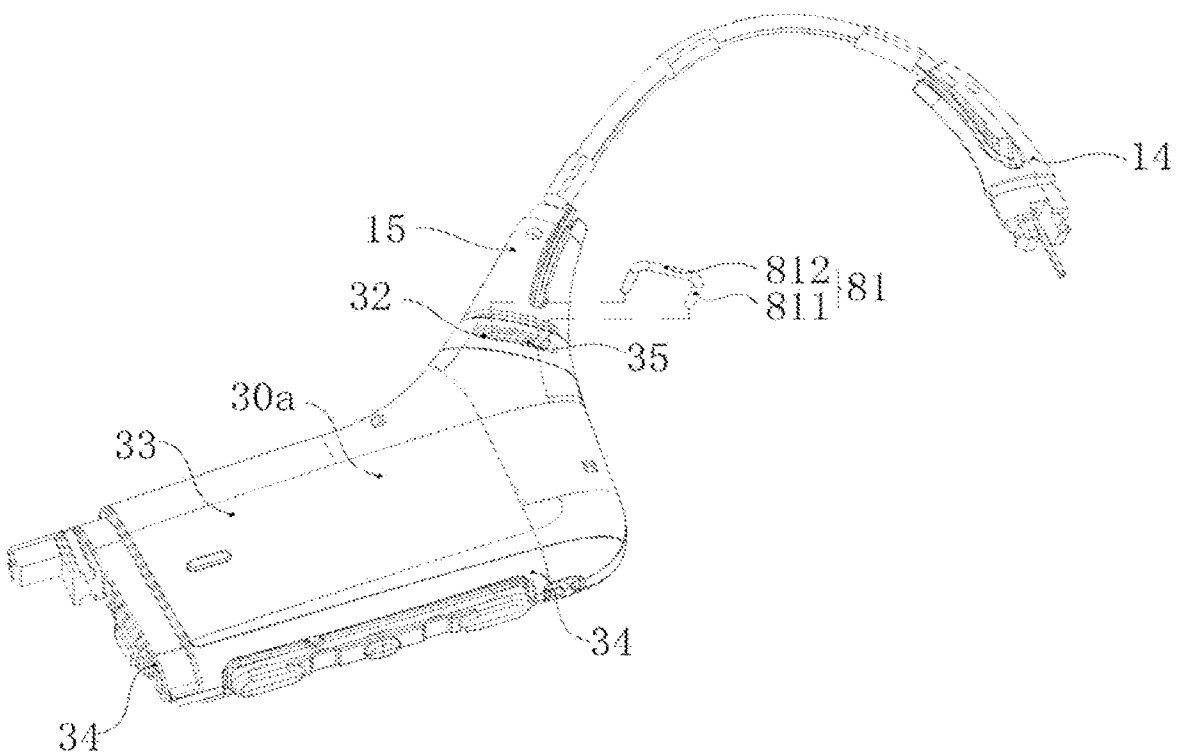



图11



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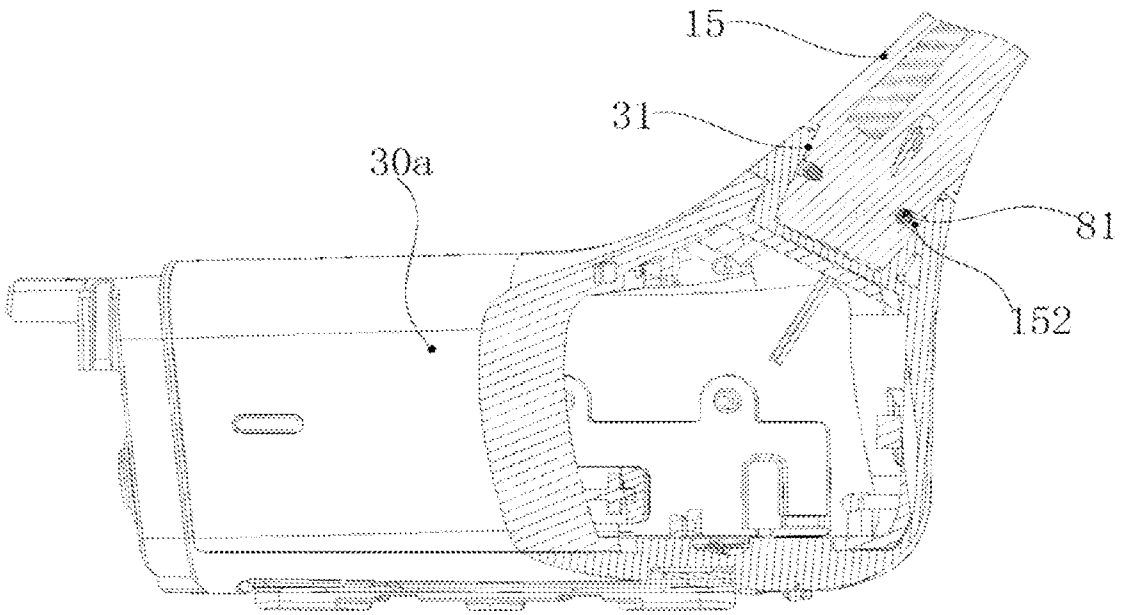



图12

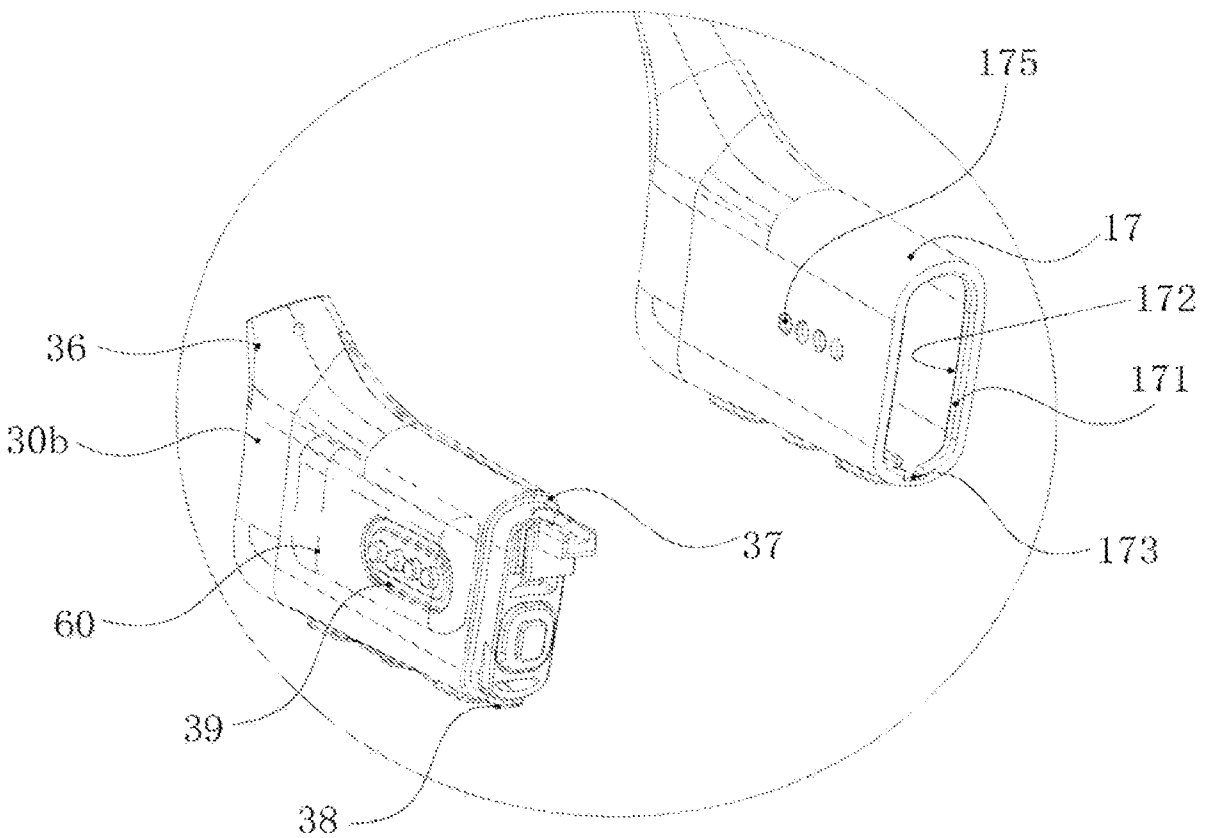



图13



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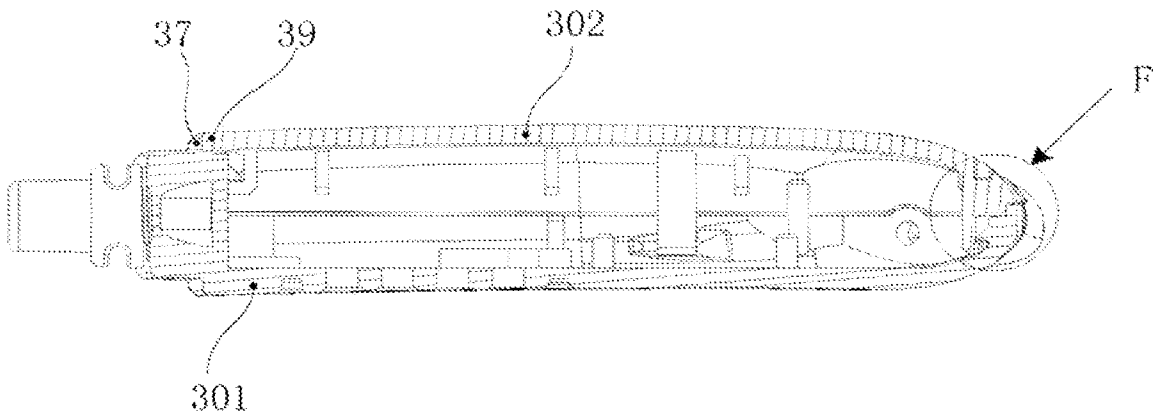



图14

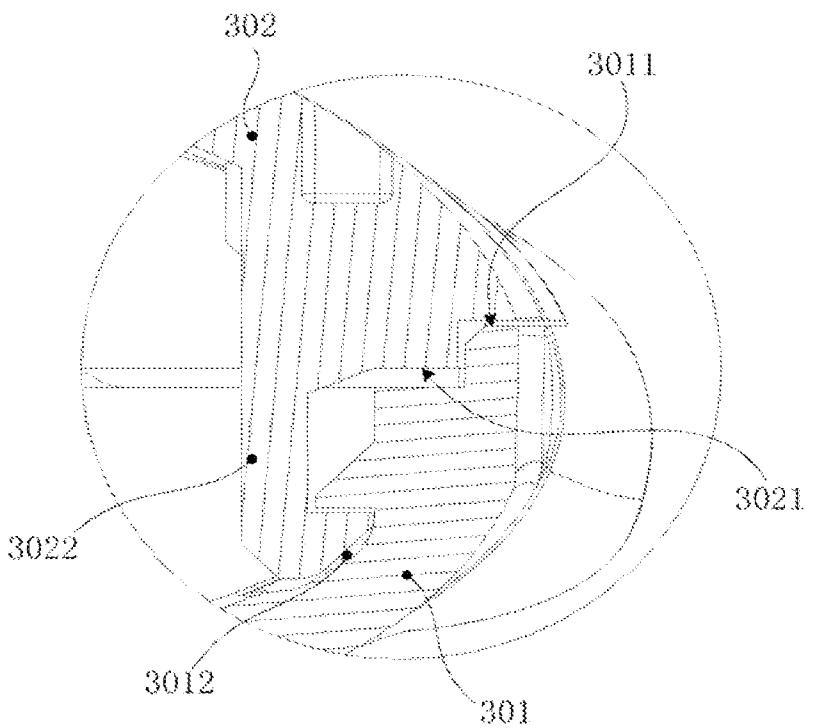



图15



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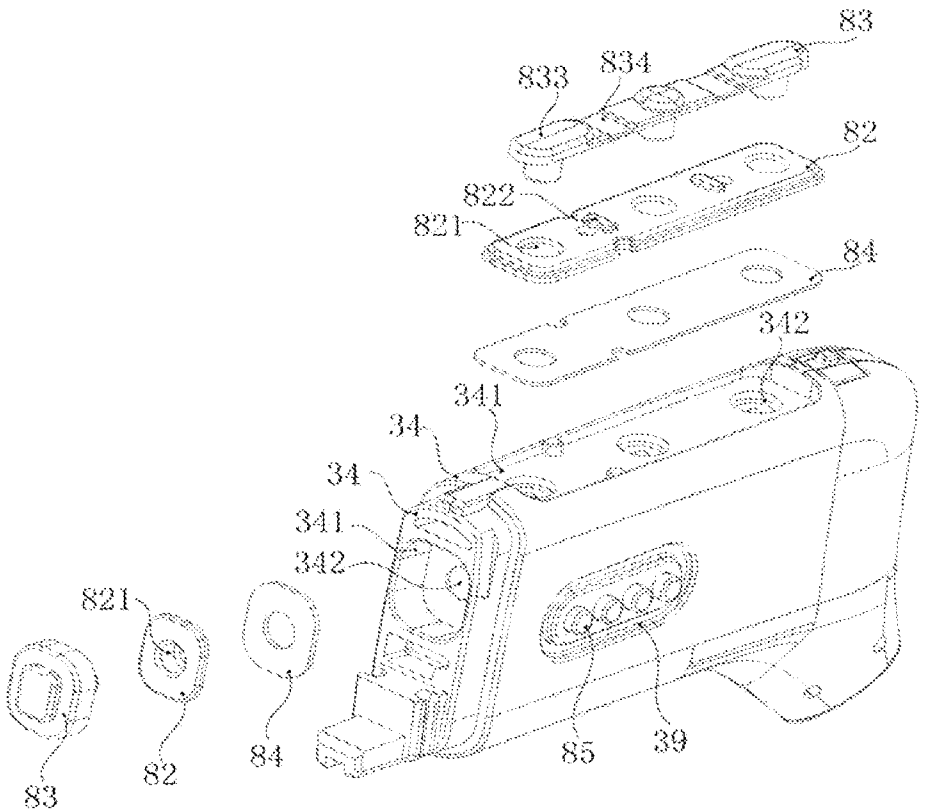



图16

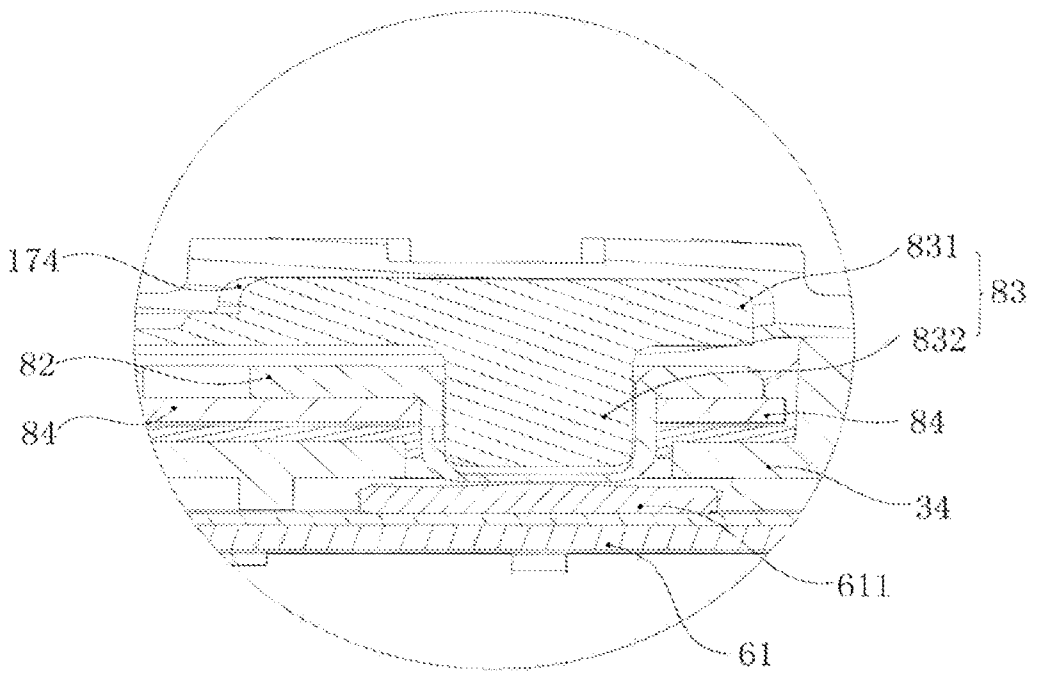



图17



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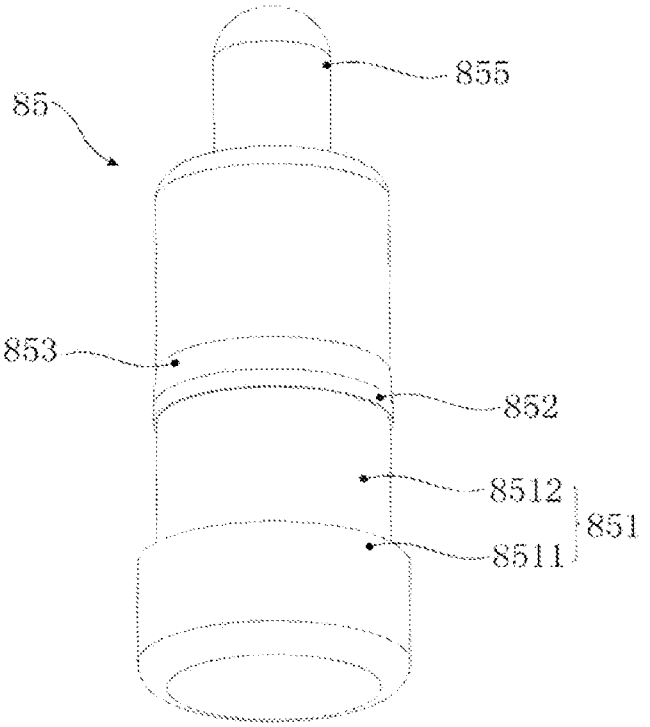



图18

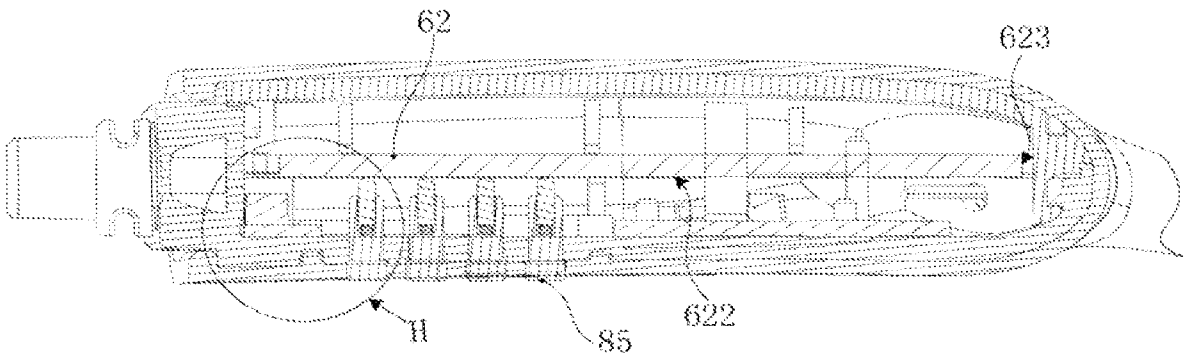



图19



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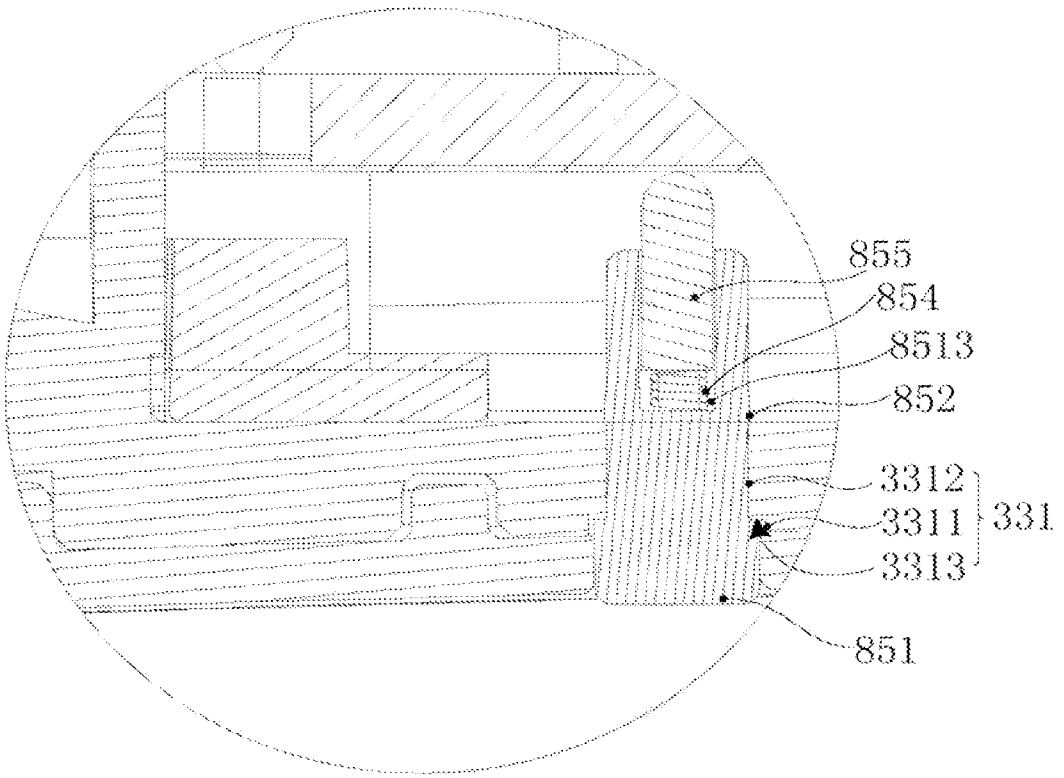



图20



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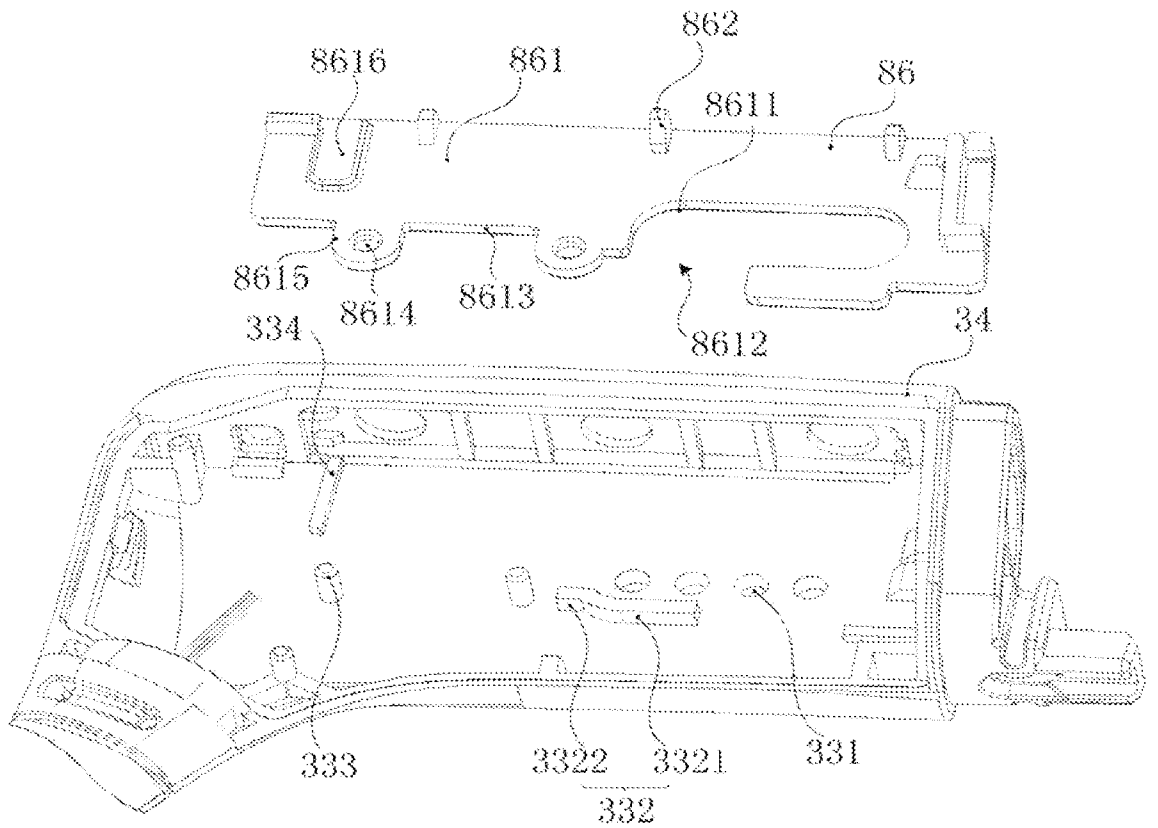



图21

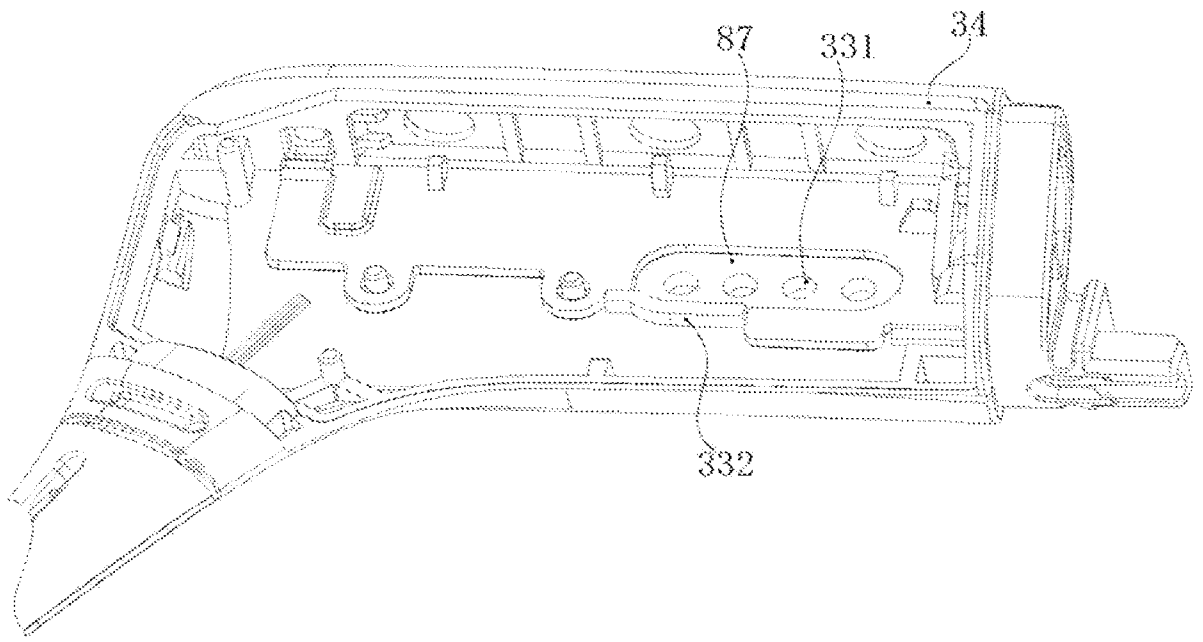



图22



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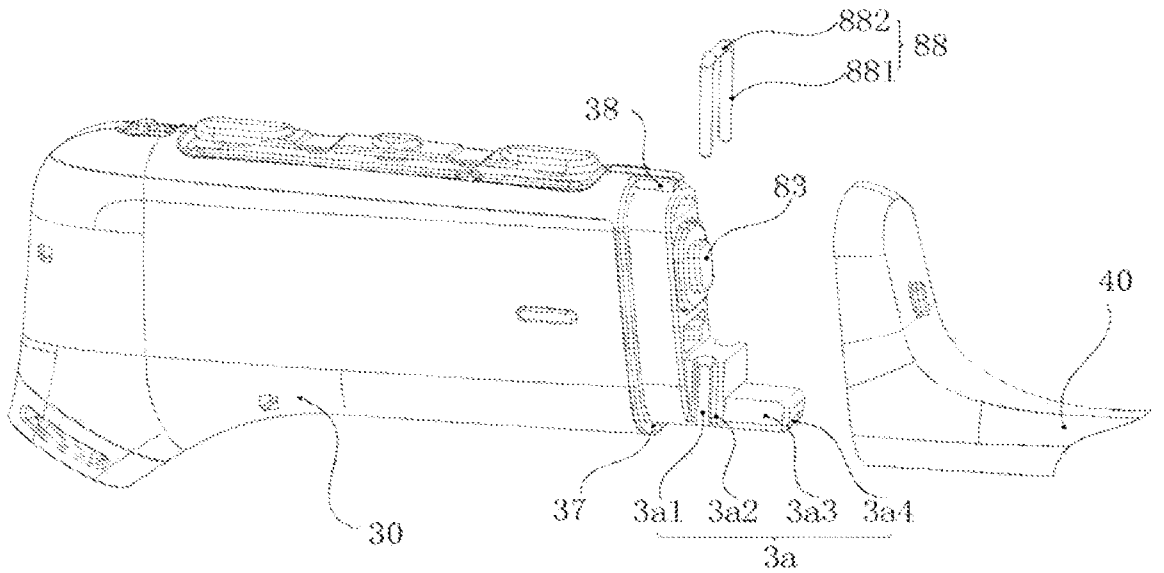



图23

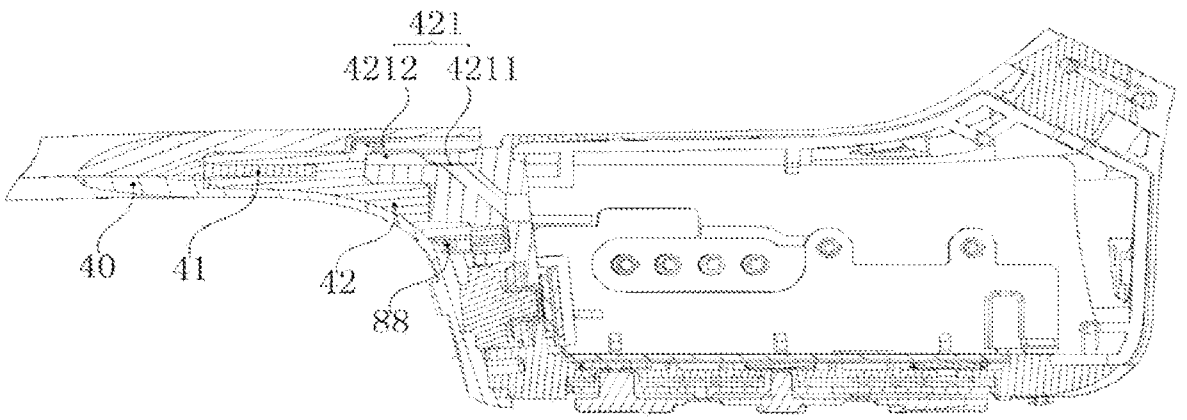



图24



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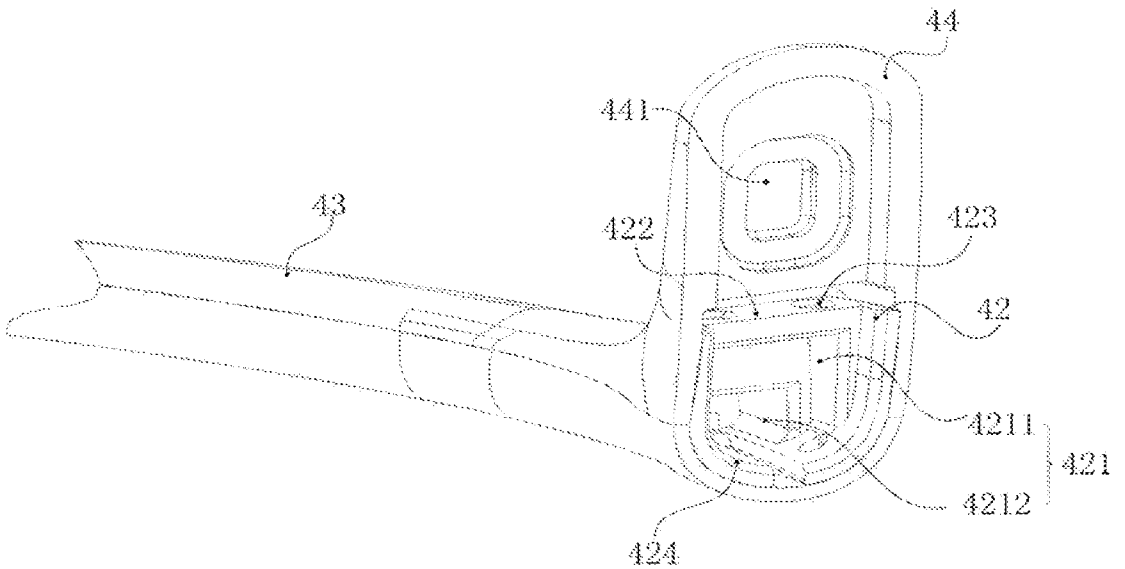



图25



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(51)Int.Cl.
*H04R 9/06*(2006.01)
*H04R 9/02*(2006.01)

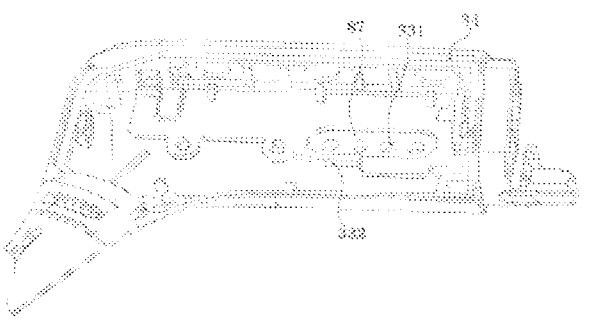
权利要求书2页 说明书19页 附图14页

(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、导电柱及辅助片，电路壳体的主侧壁上设置有至少一个安装孔；导电柱插安装孔内；辅助片包括板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。通过上述方式，本申请有利于生产的顺利进行，提高生产效率以及骨传导扬声装置的良率。



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1.一种骨传导扬声装置，其特征在于，包括：

电路壳体，所述电路壳体的主侧壁上设置有至少一个安装孔；

导电柱，所述导电柱插置于所述安装孔内；

辅助片，所述辅助片包括板体，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。

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第一条状凸肋，进而利用所述第一条状凸肋和所述辅助片配合使得所述胶槽呈闭合设置。

3.根据权利要求2所述的骨传导扬声装置，其特征在于，所述第一条状凸肋进一步延伸成与所述板体的侧边缘抵接，进而对所述板体进行定位。

4.根据权利要求1所述的骨传导扬声装置，其特征在于，所述骨传导扬声装置进一步包括设置于所述电路壳体内的按键电路板，所述辅助片进一步包括相对于所述板体凸出设置的压持脚，所述压持脚用于将所述按键电路板压持于与所述电路壳体的主侧壁连接的辅侧壁的内表面上。

5.根据权利要求4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设置在所述电路壳体内的主控电路板，所述主控电路板与所述主侧壁间隔设置并支撑于至少部分所述压持脚上。

6.根据权利要求1所述的骨传导扬声装置，其特征在于，所述板体上进一步设置有定位孔，所述主侧壁的内表面上一体成型有与所述定位孔对应的定位柱，所述定位柱插置于所述定位孔内。

7.根据权利要求6所述的骨传导扬声装置，其特征在于，所述板体的侧边缘形成有至少两个凸耳，所述定位孔设置于所述凸耳上。

8.根据权利要求1所述的骨传导扬声装置，其特征在于，所述板体上进一步设置有条状定位槽，所述条状定位槽的一端与所述板体的侧边缘连接并垂直设置，所述主侧壁的内表面上一体成型有与所述条状定位槽对应的第二条状凸肋，所述第二条状凸肋嵌入于所述条状定位槽内以对所述板体进行定位。

9.根据权利要求2所述的骨传导扬声装置，其特征在于，所述导电柱包括插置于所述安装孔内的柱状本体，所述柱状本体的外周面上设置定位凸台，所述定位凸台与所述主侧壁卡接，进而将所述导电柱固定于所述安装孔。

10.根据权利要求9所述的骨传导扬声装置，其特征在于，所述柱状本体沿所述柱状本体相对于所述安装孔的插入方向划分为第一柱状本体和第二柱状本体，其中所述第一柱状本体垂直于所述插入方向的横截面大于所述第二柱状本体垂直于所述插入方向的横截面，所述定位凸台设置于所述第二柱状本体上，所述安装孔沿所述插入方向划分为横截面与所述第一柱状本体和第二柱状本体对应的第一孔段和第二孔段，进而在所述第一孔段和第二孔段的连接处形成一环形台面，当所述柱状本体插置于所述安装孔内时，所述第一柱状本体支撑于所述环形台面上，所述定位凸台卡接于所述主侧壁的内表面上。

11.根据权利要求10所述的骨传导扬声装置，其特征在于，所述柱状本体沿轴向设置有容置腔，所述容置腔的开口端于所述第二柱状本体朝向所述电路壳体内部的端面上，所述导电柱进一步包括设置于所述容置腔内的弹簧以及导电触头，所述触头的一端与所述弹簧



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抵接，另一端从所述容置腔的开口端外露，所述骨传导扬声装置进一步包括设置于所述电路壳体内部的主控电路板，所述主控电路板上设置有与所述导电柱位置对应的触点，所述弹簧将所述导电触头弹性压持于所述触点上。



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# 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] 骨传导扬声装置的壳体上安装有连接内部电路和外部电路的导电柱，在该导电柱靠近壳体内部一侧设置有一胶槽，以通过在胶槽中施加密封胶来对导电柱对应的安装孔进行密封等。相应地，可以在成型阶段在壳体内部对应位置处一体成型一胶槽。

[0004] 然而，在壳体成型阶段，安装孔附近往往还具有其它结构，这些结构在成型时所对应的模具可能需要从壳体的内部退出，而此时若直接在壳体内部一体成型对应的胶槽，则该胶槽对应侧壁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。

## 发明内容

[0005] 本申请主要解决的技术问题是提供一种骨传导扬声装置，能够有利于生产的顺利进行，提高生产效率以及骨传导扬声装置的良率。

[0006] 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，所述电路壳体的主侧壁上设置有至少一个安装孔；导电柱，所述导电柱插置于所述安装孔内；辅助片，所述辅助片包括板体，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。

[0007] 本申请的有益效果是：区别于现有技术的情况，本申请中辅助片与电路壳体分别为独立的结构，在二者分别成型后，可通过将辅助片安装于电路壳体的内部而与电路壳体的主侧壁共同构成一胶槽，从而在电路壳体的成型阶段不会因为胶槽的设置而阻挡部分结构的模具从电路壳体的内部退出，从而有利于生产的顺利进行，提高生产效率以及骨传导扬声装置的良率。

## 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；



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[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。

[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。



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