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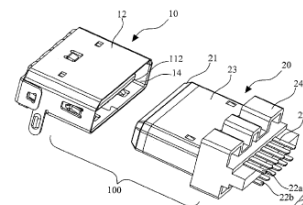
[22] Date of Application: March 22, 2008 [21] Application Number: 200820009873.9 [73] Patent Holder: Shihuh Chi Precision Industry Co., Ltd. Address: No. 1-1, Lane 220, Zhongzheng Road, Shulin Town, Taipei County, Taiwan, China [72] Inventor: Chang Yuming	[74] Patent Agency: Xiamen Xinhua Patent and Trademark Agency Co., Ltd. Patent Attorney: Peng Changjiu Scope of Patent Claims: 2 pages; Detailed Explanation: 5 pages; Accompanying Diagrams: 4 pages
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[54] Title of New Utility Model

Electrical Connector Assembly and Its Socket Connector and Plug Connector

[57] Abstract

This new utility model relates to an electrical connector assembly and its socket connector and plug connector. The socket connector comprises an insulating seat, a shielding metal shell, and multiple electrical signal terminals. The insulating seat comprises a main body and a tongue piece, with the shielding metal shell covering the main body and forming an interface with the tongue piece. The electrical signal terminal(s) include pin parts and mating parts, all of the pin parts are vertically embedded in the tail end of the main body and extend outward from the main body, while all the mating parts are divided into two groups and fixedly positioned in the upper and lower terminal grooves of the tongue piece, respectively. The plug connector has a receptacle and multiple conductive terminals embedded within the receptacle. This receptacle is equipped with a socket interface, and the multiple conductive terminals are also divided into two groups corresponding to the mating parts, with each group's contact parts suspended within the upper and lower walls of the socket interface. Thus, the structure forms a more stable connection by the mating of the socket connector and the plug connector, making installation convenient and ensuring smooth, stable electrical signal transmission and a long service life.



1. An electrical connector assembly, which comprises:

A socket connector, which comprises an insulating seat, a shielding metal shell, and multiple electrical signal terminals, wherein the insulating seat comprises a main body and a tongue piece integrally extending from the main body; the shielding metal shell covers the main body and forms an interface with the tongue piece; the aforementioned electrical signal terminal includes a pin part that is soldered to a circuit board and a mating part that is formed by bending the pin part to horizontal direction, wherein all of the pin parts are vertically embedded in the tail end of the main body and extend outward from the main body, and all mating parts are divided into two groups and fixedly positioned in the upper and lower terminal grooves of the tongue piece, respectively;

A plug connector, which has a receptacle and multiple conductive terminals embedded within the receptacle; this receptacle is equipped with a socket interface, and the multiple conductive terminals corresponding to the aforementioned mating parts are also divided into two groups, with each group's contact parts suspended within the upper and lower walls of the socket interface;

Wherein, when the plug connector and socket connector are in a mating state, the receptacle is inserted along the interface, causing the tongue piece to extend into the socket interface, and the contact parts of the conductive terminals electrically connect with the mating parts of the electrical signal terminals.

2. The electrical connector assembly according to Claim 1, wherein: the rear end of the insulating seat has a hollow portion, and each bend in the aforementioned electrical signal terminals is located within the hollow portion, and a tail plug is provided at the rear end of the hollow portion.

3. The electrical connector assembly according to Claim 1, wherein: the receptacle is equipped with a rear plug for fixing the conductive terminals' wire connection ends.

4. The electrical connector assembly according to Claim 1, wherein: the front ends of the upper and lower inner walls of the aforementioned socket interface curve inward to form a hook-shaped portion, and the free end of the aforementioned contact portions extends into this hook-shaped portion.

5. A socket connector of an electrical connector assembly, which comprises:

An insulating seat, which comprises a main body and a tongue piece integrally extending from the main body;

A shielding metal shell, which covers the main body and forms an interface with the tongue piece; and multiple electrical signal terminals, each of which comprises a pin part that is soldered to a circuit board and a mating part that is formed by bending the pin part to horizontal direction; wherein all of the pin parts are vertically embedded in the tail end of the main body and extend outward from the main body, and all mating parts are divided into two groups and fixedly positioned in the upper and lower terminal grooves of the tongue piece, respectively.

6. The socket connector of the electrical connector assembly according to Claim 5, wherein: the rear end of the insulating seat has a hollow portion, where each bending point of the electrical signal terminals is located within the hollow portion, and a tail plug is provided at the rear end of the hollow portion.
7. A plug connector of an electrical connector assembly, which comprises:
 - A receptacle equipped with a socket interface;
 - Multiple conductive terminals, which are embedded within the receptacle, respectively; the multiple conductive terminals are divided into two groups, and the contact parts of each group of conductive terminals are suspended within the upper and lower walls of the socket interface.
8. The plug connector of the electrical connector assembly according to Claim 7, wherein: the receptacle is equipped with a rear plug for fixing the wire connection ends of the conductive terminals.
9. The plug connector of the electrical connector assembly according to Claim 7, wherein: the front ends of the upper and lower inner walls of the aforementioned socket interface curve inward to form a hook-shaped portion, and the free end of the aforementioned contact portions extends into this hook-shaped portion.
10. The plug connector of the electrical connector assembly according to Claim 7, wherein: the front part of the receptacle is covered with a shielding shell.

Electrical Connector Assembly and Its Socket Connector and Plug Connector**Technical Field**

This utility model relates to the technical field of connecting accessories for game consoles and electric guitars, particularly to an electrical connector assembly along with its socket connector and plug connector.

Background Technology

With the continuous development of the IT industry, various transmission interfaces are applied in products connected to computers. Today, with the arrival of the post-PC era, how to open up emerging products outside the PC industry is a significant part of development strategy; for instance, the gradual rise of the game console market, especially the rapid emergence of home entertainment systems like Home Computers, X-Box, PS2, and other new game consoles, as well as the related electric guitar market, will become the next wave of dominant players in the PC market. Consequently, the game console connector industry used for signal transmission has also brought about a huge market. It is well known that game console connectors are electrical plug connectors, where conventional technology mostly employs probe-type spring contacts to provide connections to the main unit. However, these connectors can be inconvenient to install, time-consuming, and labor-intensive during assembly; especially under conditions of vibration or other impacts, the spring contacts may pop open a certain distance, leading to disconnection of the contact source. This makes the electrical signals susceptible to interference and obstruction during transmission, resulting in poor signal transmission and a shorter service life.

Content of Utility New Model

This utility model addresses the deficiencies present in conventional technology and aims to provide an electrical connector assembly, which consists of a socket connector and a plug connector that form a more solid connection structure when mated. This facilitates easy installation, ensures smooth electrical signal transmission, and extends service life.

Another objective of this utility model is to provide a socket connector and plug connector for an electrical connector assembly that make full use of space by rationally arranging terminal positions, ensuring a compact structure that guarantees the stability of electrical signal transmission.

In order to achieve the objectives, this utility model adopts the following technical solutions:

This utility model proposes an electrical connector assembly, which comprises:

A socket connector, which comprises an insulating seat, a shielding metal shell, and multiple electrical signal terminals, wherein the insulating seat comprises a main body and a tongue piece integrally extending from the main body; the shielding metal shell covers the main body and forms an interface with the tongue piece; the aforementioned electrical signal terminals include a pin part that is soldered to a circuit board and a mating part that is formed by bending the pin part to horizontal direction, wherein all of the pin parts are vertically embedded in the tail end of the main body and extend outward from the main body, and all mating parts are divided into two groups and fixedly positioned in the upper and lower terminal grooves of the tongue piece, respectively;

A plug connector, which has a receptacle and multiple conductive terminals embedded within the receptacle; this receptacle is equipped with a socket interface, and the multiple conductive terminals corresponding to the mating parts are also divided into two groups, with each group's contact parts suspended within the upper and lower walls of the socket interface;

Wherein, when the plug connector and socket connector are in a mating state, the receptacle is inserted along the interface, causing the tongue piece to extend into the socket interface, and the contact parts of the conductive terminals electrically connect with the mating parts of the electrical signal terminals.

The rear end of the aforementioned insulating seat has a hollow portion, where each bending point of the electrical signal terminal is located within the hollow portion, and a tail plug is provided at the rear end of the hollow portion.

The receptacle is equipped with a rear plug for fixing the conductive terminals' wire connection ends.

The front ends of the upper and lower inner walls of the aforementioned socket interface curve inward to form a hook-shaped portion, and the free end of the aforementioned contact portions extends into this hook-shaped portion.

This utility model proposes a socket connector for an electrical connector assembly, which comprises:

An insulating seat, which comprises a main body and a tongue piece integrally extending from the main body;

A shielding metal shell, which covers the main body and forms an interface with the tongue piece; and

Multiple electrical signal terminals, each of which comprises a pin part that is soldered to a circuit board and a mating part that is formed by bending the pin part to horizontal direction; wherein all of the pin parts are vertically embedded in the tail end of the main body and extend outward from the main body, and all mating parts are divided into two groups and fixedly positioned in the upper and lower terminal grooves of the tongue piece, respectively.

The rear end of the insulating seat has a hollow portion, where each bending point of the electrical signal terminal is located within the hollow portion, and a tail plug is provided at the rear end of the hollow portion.

This utility model proposes a plug connector for an electrical connector assembly, which comprises:

A receptacle equipped with a socket interface; and

Multiple conductive terminals, which are embedded within the receptacle; the multiple conductive terminals are divided into two groups, and the contact parts of each group of the conductive terminals are suspended within the upper and lower walls of the socket interface.

The receptacle is equipped with a rear plug for fixing the wire connection ends of the conductive terminals.

The front ends of the upper and lower inner walls of the socket interface curve inward to form a hook portion, into which the free ends of the contact parts extend.

The front part of the receptacle is covered with a shielding shell.

Compared with conventional technology, the advantage of this utility model lies in its more secure connection structure formed by the mating of a socket connector and a plug connector. This makes installation convenient, allows for smooth electrical signal transmission, and ensures a long service life. Furthermore, the distribution of multiple electrical signal terminals within the upper and lower terminal grooves of the tongue piece forms the socket connector, while the arrangement of multiple conductive terminals' contact portions within the upper and lower walls of the same socket interface forms the plug connector. This fully and efficiently utilizes internal space and reasonably arranges terminal positions, resulting in a compact structure while maximizing the number of terminals so as to strive to ensure the stability of electrical signal transmission and provide multifunctionality.

Explanation of the Attached Figures

Fig. 1 is a schematic diagram showing the pre-mating state of the electrical connector assembly of this utility model.

Fig. 2 is a schematic diagram showing the post-mating state of the electrical connector assembly of this utility model.

Fig. 3 is a schematic view of the socket connector of this utility model without the shielding metal shell.

Fig. 4 is a schematic view of the plug connector of this utility model without the shielding metal shell.

Fig. 5 is a cross-sectional schematic view of the socket connector of this utility model.

Fig. 6 is a cross-sectional schematic view of the plug connector of this utility model.

Fig. 7 is a cross-sectional schematic view of the mating state of the electrical connector assembly of this utility model.

Explanation of the Reference Numerals in the Attached Figures:

10: Socket Connector; 11: Insulating Seat; 111: Main Body Portion; 112: Tongue Piece; 113: Hollow Portion; 112a: Upper Terminal Groove; 112b: Lower Terminal Groove; 12: Shielding Metal Shell; 13: Electrical Signal Terminal; 131: Pin Part; 132: Mating Part; 132a, 132b: Terminal Mating Part; 14: Mating Interface; 15: Tail Plug;

20: Plug Connector; 21: Receptacle; 211: Socket Interface; 211a: Upper Wall; 211b: Lower Wall; 211c: Hook Portion; 22: Conductive Terminal; 22a, 22b: Terminals; 221a, 221b: Contact Portions; 221c: Free End; 222: Wire Connection End; 23: Shielding Metal Shell; 24: Rear Plug

Specific Implementation Methods

The following further describes this utility model in conjunction with the attached figures and specific implementation methods.

Referring to Fig. 1 to Fig. 7, this utility model proposes an electrical connector assembly 100, which comprises a socket connector 10 and a plug connector 20, wherein:

The socket connector 10 comprises an insulating seat 11, a shielding metal shell 12, and multiple electrical signal terminals 13. This embodiment is explained using a 12-pin terminal as an example. The insulating seat 11 consists of a main body portion 111 and a tongue piece 112 that integrally extends from the main body portion 111. The shielding metal shell 12 covers the main body portion 11 and forms a mating interface 14 with the tongue piece 112. The aforementioned electrical signal terminal 13 include a pin part 131 that is soldered to a circuit board and a mating part 132 that is formed by bending the pin part 131 to horizontal direction 131. All pin parts 131 are vertically embedded in the tail end of the main body 111 and extend outward from the main body 111, while all mating parts 132 are divided into two groups; each group comprises the 6-pin terminal mating part 132a and 132b. The terminal mating part 132a is fixedly positioned in the upper terminal groove 112a of the tongue piece 112, while the terminal mating part 132b is fixedly positioned in the lower terminal groove 112b of the tongue piece 112. The rear end of the insulating seat 11 has a hollow portion 113, where each bending point of the electrical signal terminals 13 is located, and the hollow portion 113 has a tail plug 15 at its rear end.

The plug connector 20 has a receptacle 21 and multiple conductive terminals 22 embedded within the receptacle 21. In this embodiment, the number of conductive terminals 22 corresponds to the number of electrical signal terminals, hence it is also explained using a 12-pin configuration. The receptacle 21 is equipped with a socket interface 211, and the front part of the receptacle 21 is covered with a shielding metal shell 23 to achieve shielding effects when mated with the socket connector 10.

The 12-pin conductive terminals 22 correspond to the mating parts 132 of the electrical signal terminals 13 and are also divided into two groups, each consisting of 6-pin terminals 22a and 22b. The contact portion 221a of terminal 22a is suspended in the upper wall 211a of the socket interface 211, while the contact portion 221b of terminal 22b is suspended in the lower wall 211b of the socket interface 211. A rear plug 24 is provided on the receptacle 21 to secure the wire connection ends 222 of the conductive terminals 22. The front ends of the upper and lower inner walls 211a and 211b of the socket interface 211 curve inward to form a hook-shaped portion 211c, into which the free ends 221c of the contact portions 221a and 221b extend.

When the plug connector 20 and the socket connector 10 are in a mated state, the receptacle 21 is inserted along the mating interface 14, at which point the tongue piece 112 extends into the socket interface 211, and the contact portions 221a and 221b of the conductive terminals 22 are electrically connected to the terminal mating parts 132a and 132b of the electrical signal terminals 13, thereby achieving electrical signal continuity.

The focus of this utility model design is to create a more robust combined structure formed by the mating of a socket connector and a plug connector, making installation convenient, ensuring smooth transmission of electrical signals, and extending service life. Furthermore, the arrangement of terminal positions in the socket and plug connectors is designed to maximize internal space utilization, resulting in a compact structure while increasing the number of terminals to ensure stability in electrical signal transmission and provide multifunctionality.

The above-mentioned is merely a preferred embodiment of this utility model and does not limit the technical scope of this utility model in any way. For example, the number of electrical signal terminals and conductive terminals can be more than or fewer than 12 pins without limitation. Therefore, any slight modifications, equivalent changes, and adaptations made according to the technical essence of this utility model based on the above embodiments still fall within the scope of the technical solution of this utility model.

Figures

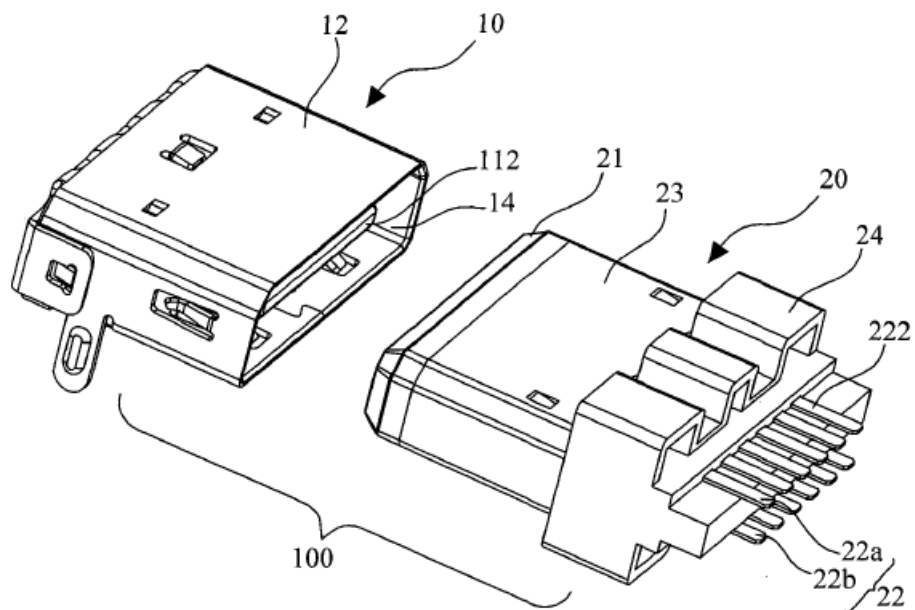


Fig. 1

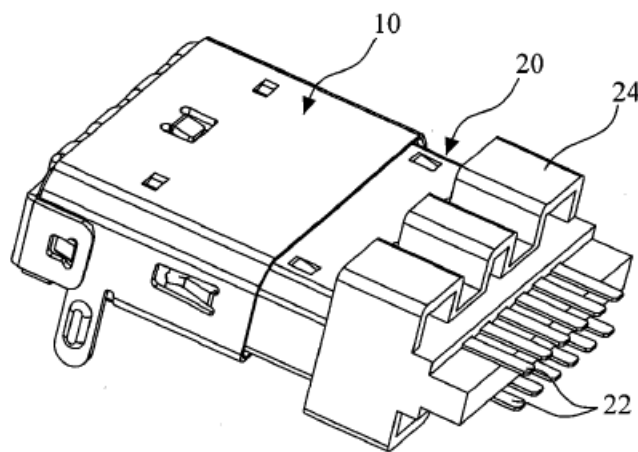


Fig. 2

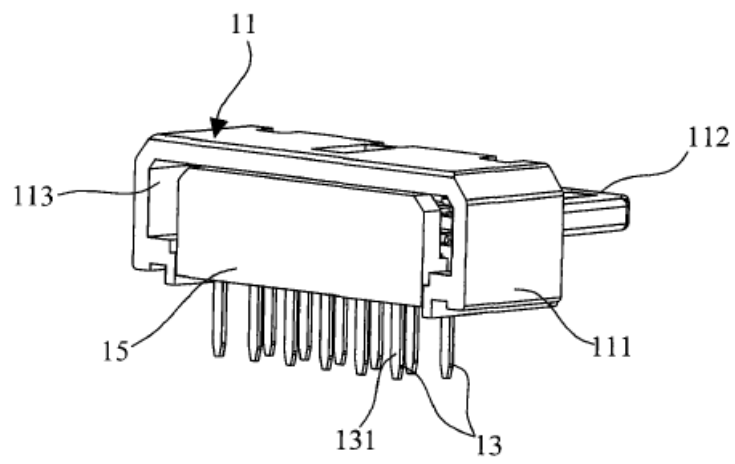


Fig. 3

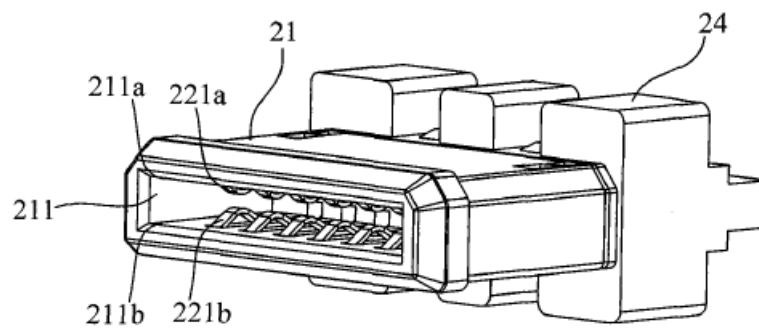


Fig. 4

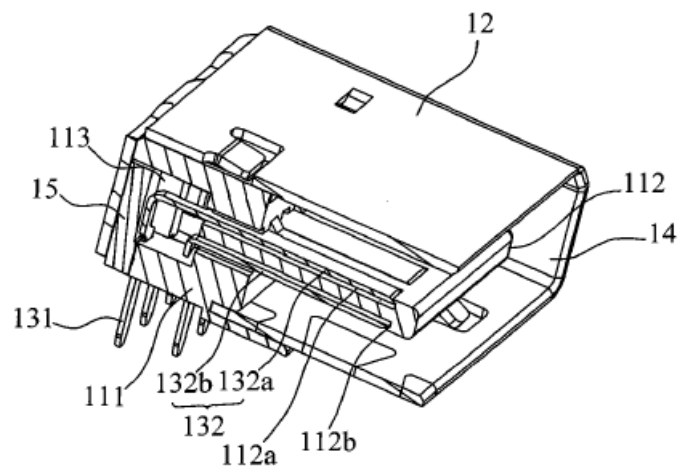


Fig. 5

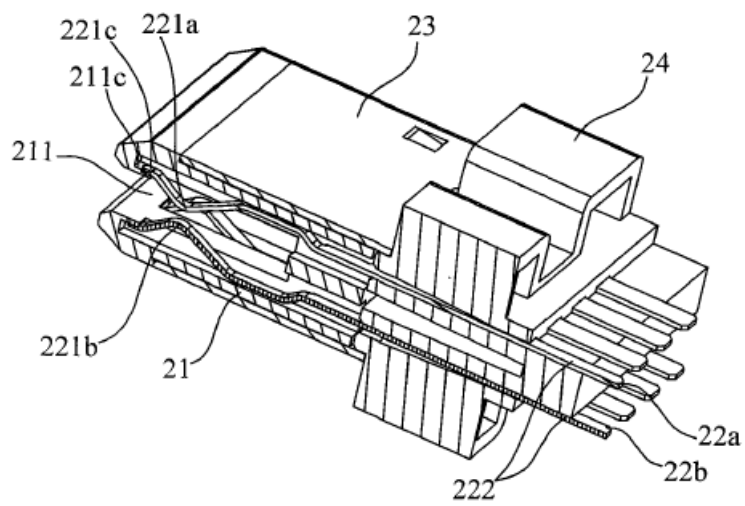


Fig. 6

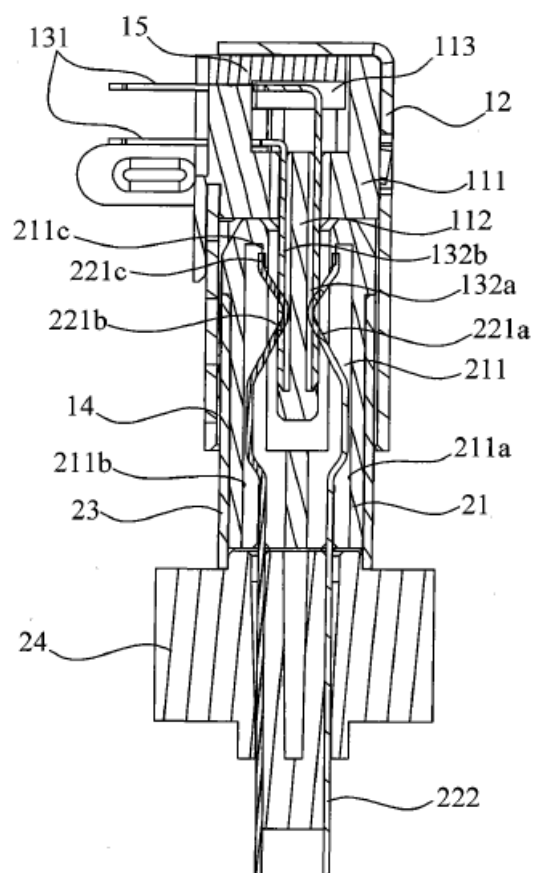


Fig. 7

Affidavit of Ms. Mei Shi

1. I, Mei Shi, hereby certify that I am a professional translator, am fluent in both Chinese and English, and am competent to translate from Chinese into English.
2. To the best of my knowledge and belief, I attest that the foregoing translation is a true, accurate, and complete English translation of CN201204344Y.
3. I acknowledge that willful false statements and the like are punishable by fine and/or imprisonment.
4. All statements made herein of my own knowledge are true and all statements made on information and belief are believed to be true.
5. I declare under penalty of perjury that all statements made herein of my own knowledge are true and all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like are punishable by fine or imprisonment, or both, under 18 U.S.C. § 1001.

Executed on: 11/25/2025

Signed: Meihua Shi

Ms. Meihua Shi

[19] 中华人民共和国国家知识产权局



[12] 实用新型专利说明书

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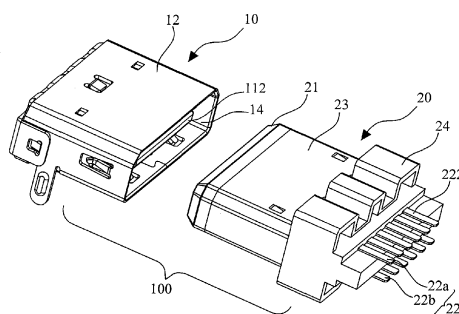
权利要求书 2 页 说明书 5 页 附图 4 页

[54] 实用新型名称

电连接器组合及其插座连接器和插头连接器

[57] 摘要

本实用新型涉及一种电连接器组合及其插座连接器和插头连接器，其中插座连接器包括绝缘座、屏蔽金属壳及复数个电信号端子，该绝缘座包括主体部及舌片，屏蔽金属壳罩覆于主体部且与舌片形成对接口；电信号端子包括插脚部和对接部，所有的插脚部垂直嵌设于主体部尾部且伸出该主体部外，而所有对接部则均分成两组且分别固设于舌片的上、下端子槽内；插头连接器具有插接座以及复数个嵌设于插接座中的导电端子，该插接座设有一插接口，该复数个导电端子对应上述对接部亦分成两组，每组导电端子的接触部悬于该插接口内的上、下壁；故系由一插座连接器与一插头连接器对插形成更加稳固结合之构造，如此安装方便，且电信号传输顺畅、稳定，使用寿命长。



1、一种电连接器组合，其特征在于：包括

一插座连接器，包括一绝缘座、一屏蔽金属壳及复数个电信号端子，其中，该绝缘座包括一主体部以及一由主体部一体延伸而的舌片，上述屏蔽金属壳罩覆于该主体部且与舌片形成对接口；上述电信号端子包括一与电路板焊接的插脚部和一由插脚部弯折成水平方向的对接部，其中所有的插脚部垂直嵌设于主体部尾部且伸出该主体部外，而所有对接部则均分成两组且分别固设于舌片的上、下端子槽内；

一插头连接器，其具有一插接座以及复数个嵌设于插接座中的导电端子，该插接座设有一插接口，该复数个导电端子对应上述对接部亦分成两组，每组导电端子的接触部悬于该插接口内的上、下壁；

其中，当插头连接器与插座连接器对插状态下，插接座沿对接口插入，此时舌片伸入插接口中且导电端子的接触部与电信号端子的对接部电性连接。

2、根据权利要求 1 所述的电连接器组合，其特征在于：上述绝缘座尾部开设有一镂空部，上述每一电信号端子弯折处位于该镂空部内，且该镂空部后端设有一尾塞。

3、根据权利要求 1 所述的电连接器组合，其特征在于：上述插接座上设有一用以固定导电端子的线连接端的后塞。

4、根据权利要求 1 所述的电连接器组合，其特征在于：上述插接口的上、下内壁前端向内弯折有一倒勾部，上述接触部的自由端伸入该倒勾部中。

5、一种电连接器组合的插座连接器，其特征在于：包括

一绝缘座，包括一主体部以及一由主体部一体延伸而的舌片；

一屏蔽金属壳，其壳罩覆于该主体部且与舌片形成对接口；以及复数个电信号端子，每一电信号端子包括一与电路板焊接的插脚

部和一由插脚部弯折成水平方向的对接部;其中所有的插接部垂直嵌设于主体部尾部且伸出该主体部外,而所有对接部则均分成两组且分别固设于舌片的上、下端子槽内。

6、根据权利要求5所述的电连接器组合的插座连接器,其特征在于:上述绝缘座尾部开设有一镂空部,上述每一电信号端子弯折处位于该镂空部内,且该镂空部后端设有一尾塞。

7、一种电连接器组合的插头连接器,其特征在于:包括
一插接座,其设有一插接口;以及

复数个导电端子,分别嵌设于插接座中;该复数个导电端子均分成两组,且每组导电端子的接触部悬于插接口内的上、下壁。

8、根据权利要求7所述的电连接器组合的插头连接器,其特征在于:上述插接座上设有一用以固定导电端子的线连接端的后塞。

9、根据权利要求7所述的电连接器组合的插头连接器,其特征在于:上述插接口的上、下内壁前端向内弯折有一倒勾部,上述接触部的自由端伸入该倒勾部中。

10、根据权利要求7所述的电连接器组合的插头连接器,其特征在于:上述插接座前部包覆有屏蔽壳。

电连接器组合及其插座连接器和插头连接器

技术领域

本实用新型涉及游戏机、电吉他之连接配件领域技术，尤其是指一种电连接器组合及其插座连接器和插头连接器。

背景技术

随着 IT 产业持续发展下，各种传输介面应用于与电脑连接器的产品上。当今，伴随着后 PC 时代的来临，如何开辟 PC 产业以外的新兴产品亦是发展策略相当重要一环，例如游戏机市场的逐渐兴起，特别是家用娱乐的 Home Computer 迅速崛起，X-Box、PS2 等新兴游戏机以及相关的电吉它市场将成为下一波 PC 市场新霸主，而用以传输信号用的游戏机连接器产业也随之带来巨大市场。众所周知，游戏机连接器是一种电性插接头，在习用技术中该连接器多数系以探针式弹片接触，以提供连接主机之用，然而其安装不便，组装过程中费时、费力；特别是在震动或其它撞击情况下，弹片会弹开一定距离而导致接触源断开，如此电信号在传输过程中易受干扰和阻碍，进而造成信号传输不顺畅，且使用寿命亦会缩短。

实用新型内容

本实用新型系鉴于上述习用技术所存在之缺失，主要目的在于提供一种电连接器组合，其系由一插座连接器与一插头连接器对插形成更加稳固结合之构造，如此安装方便，且电信号传输顺畅，使用寿命长。

本实用新型另一目的在于提供一种电连接器组合的插座连接器和插头连接器，其系由充分利用空间而合理布置端子位置，其结构紧

凑，可保证电信号传输之稳定性。

为实现上述之目的，本实用新型采取如下技术方案：

本实用新型提出一种电连接器组合，其包括：

一插座连接器，包括一绝缘座、一屏蔽金属壳及复数个电信号端子，其中，该绝缘座包括一主体部以及一由主体部一体延伸而的舌片，上述屏蔽金属壳罩覆于该主体部且与舌片形成对接口；上述电信号端子包括一与电路板焊接的插脚部和一由插脚部弯折成水平方向的对接部，其中所有的插接部垂直嵌设于主体部尾部且伸出该主体部外，而所有对接部则均分成两组且分别固设于舌片的上、下端子槽内；

一插头连接器，其具有一插接座以及复数个嵌设于插接座中的导电端子，该插接座设有一插接口，该复数个导电端子对应上述对接部亦分成两组，每组导电端子的接触部悬于该插接口内的上、下壁；

其中，当插头连接器与插座连接器对插状态下，插接座沿对接口插入，此时舌片伸入插接口中且导电端子的接触部与电信号端子的对接部电性连接。

上述绝缘座尾部开设有一镂空部，上述每一电信号端子弯折处位于该镂空部内，且该镂空部后端设有一尾塞。

上述插接座上设有一用以固定导电端子的线连接端的后塞。

上述插接口的上、下内壁前端向内弯折有一倒勾部，上述接触部的自由端伸入该倒勾部中。

本实用新型提出一种电连接器组合的插座连接器，其包括：

一绝缘座，包括一主体部以及一由主体部一体延伸而的舌片；

一屏蔽金属壳，其壳罩覆于该主体部且与舌片形成对接口；以及

复数个电信号端子，每一电信号端子包括一与电路板焊接的插脚部和一由插脚部弯折成水平方向的对接部；其中所有的插接部垂直嵌设于主体部尾部且伸出该主体部外，而所有对接部则均分成两组且分别固设于舌片的上、下端子槽内。

上述绝缘座尾部开设有一镂空部,上述每一电信号端子弯折处位于该镂空部内,且该镂空部后端设有一尾塞。

本实用新型提出一种电连接器组合的插头连接器,其包括:

一插接座,其设有一插接口;以及

复数个导电端子,分别嵌设于插接座中;该复数个导电端子均分成两组,且每组导电端子的接触部悬于插接口内的上、下壁。

上述插接座上设有一用以固定导电端子的线连接端的后塞。

上述插接口的上、下内壁前端向内弯折有一倒勾部,上述接触部的自由端伸入该倒勾部中。

上述插接座前部包覆有屏蔽壳。

本实用新型与习用技术相比,其优点在于系由一插座连接器与一插头连接器对插形成更加稳固结合之构造,如此安装方便,且电信号传输顺畅,使用寿命长。再者,将复数个电信号端子分布于舌片的上、下两端子槽内形成的插座连接器,以及将复数个导电端子的接触部分布于同一插接口内的上、下壁形成的插头连接器,其完全充分利用内部空间而合理布置端子位置,使结构紧凑,且又尽可能地通过增设端子数来确保电信号传输之稳定性以及提供多功能性效果。

附图说明

图1是本实用新型电连接器组合之对接前状态示意图;

图2是本实用新型电连接器组合之对接后状态示意图;

图3是本实用新型电连接器组合的插座连接器除去屏蔽金属壳示意图;

图4是本实用新型电连接器组合的插头连接器除去屏蔽金属壳示意图;

图5是本实用新型电连接器组合的插座连接器之剖视示意图;

图6是本实用新型电连接器组合的插头连接器之剖视示意图;

图 7 是本实用新型电连接器组合的对接状态之剖视示意图。

附图标号说明：

10、插座连接器 11、绝缘座 111、主体部 112、舌片 113、
镂空部 112a、上端子槽 112b、下端子槽 12、屏蔽金属壳 13、
电信号端子 131、插脚部 132、对接部 132a、132b、端子对接部
14、对接口 15、尾塞

20、插头连接器 21、插接座 211、插接口 211a、上壁 211b、
下壁 211c、倒勾部 22、导电端子 22a、22b、端子 221a、221b、
接触部 221c、自由端 222、线连接端 23、屏蔽金属壳 24、后
塞

具体实施方式

下面结合附图与具体实施方式对本实用新型作进一步描述。

请参阅图 1 至图 7 所示，本实新型提出一种电连接器组合 100，
包括一插座连接器 10 和一插头连接器 20，其中：

插座连接器 10，包括一绝缘座 11、一屏蔽金属壳 12 及复数个电
信号端子 13，本实施例以 12Pin 端子为例加以说明。其中，该绝缘
座 11 包括一主体部 111 以及一由主体部 111 一体延伸而的舌片 112，
上述屏蔽金属壳 12 罩覆于该主体部 11 且与舌片 112 形成对接口 14；
上述电信号端子 13 包括一与电路板焊接的插脚部 131 和一由插脚部
131 弯折成水平方向的对接部 132，其中所有的插脚部 131 垂直嵌设
于主体部 111 尾部且伸出该主体部 111 外，而所有对接部 132 则均分
成两组，每组分别为 6Pin 端子对接部 132a、132b，且端子对接部 132a
系固设于舌片 112 的上端子槽 112a 内，端子对接部 132b 系固设于舌
片 112 的下端子槽 112b 内；上述绝缘座 11 尾部开设有一镂空部 113，
上述每一电信号端子 13 弯折处位于该镂空部 113 内，且该镂空部 113
后端设有一尾塞 15。

插头连接器 20, 其具有一插接座 21 以及复数个嵌设于插接座 21 中的导电端子 22, 本实施例中导电端子 22 个数对应上述电信号端子个数, 故亦以 12Pin 进行说明; 该插接座 21 设有一插接口 211, 且在插接座 21 前部包覆有屏蔽金属壳 23, 以对插上述插座连接器 10 时达屏蔽效果。该 12Pin 导电端子 22 对应上述电信号端子 13 的对接部 132 亦分成两组, 每组 6Pin 端子 22a、22b, 其中端子 22a 的接触部 221a 悬于该插接口 211 内的上壁 211a, 而端子 22b 的接触部 221b 则悬于该插接口 211 内的下壁 211b; 上述插接座 21 上设有一后塞 24, 该后塞 24 用以固定导电端子 22 的线连接端 222。上述插接口 211 的上、下内壁 211a、211b 前端向内弯折有一倒勾部 211c, 上述接触部 221a、221b 的自由端 221c 伸入该倒勾部 211c 中。

其中, 当插头连接器 10 与插座连接器 20 在对插状态下, 插接座 21 沿对接口 14 插入, 此时舌片 112 伸入插接口 211 中, 且各导电端子 22 的接触部 221a、221b 与电信号端子 13 的各端子对接部 132a、132b 电性连接, 进而实现电信号连通之目的。

本实用新型设计重点在于系由一插座连接器与一插头连接器对插形成更加稳固结合之构造, 如此安装方便, 且电信号传输顺畅, 使用寿命长。并且, 上述插座连接器、插头连接器中系为充分利用其内部空间而合理布置端子位置, 使结构紧凑, 且又尽可能地通过增设端子数来确保电信号传输之稳定性以及提供多功能性效果。

以上所述, 仅是本实用新型结构较佳实施例而已, 并非对本实用新型的技术范围作任何限制, 例如上述电信号端子以及导电端子的个数还可以是多于或少于 12Pin, 在此不加以限制; 故凡是依据本实用新型的技术实质对以上实施例所作的任何细微修改、等同变化与修饰, 均仍属于本实用新型技术方案的范围。

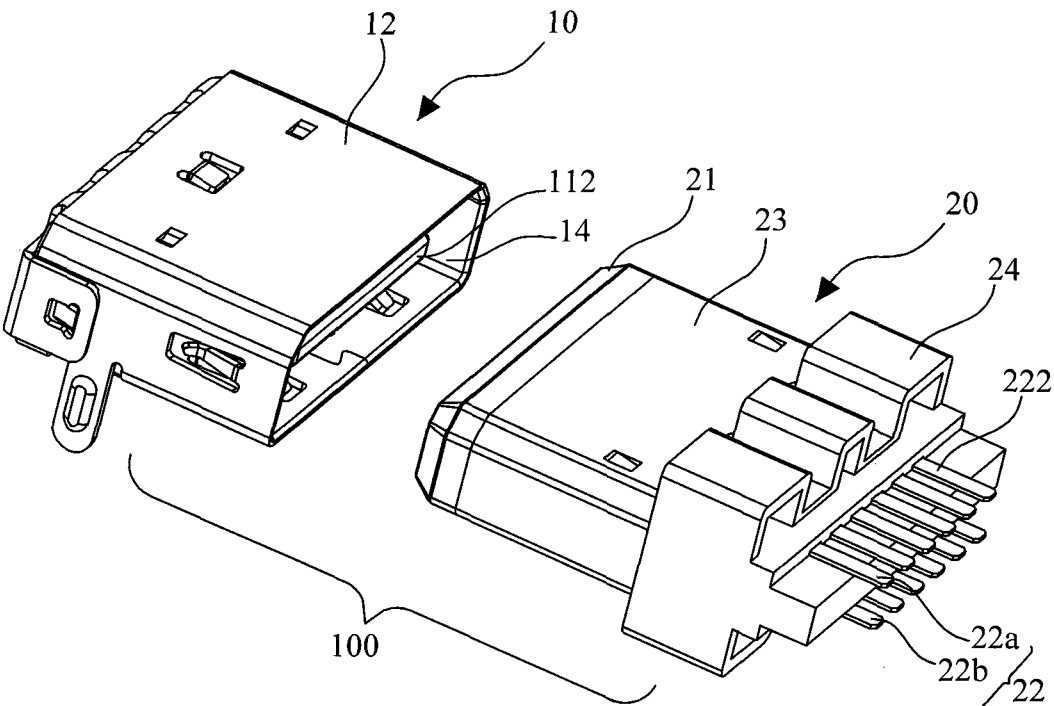


图1

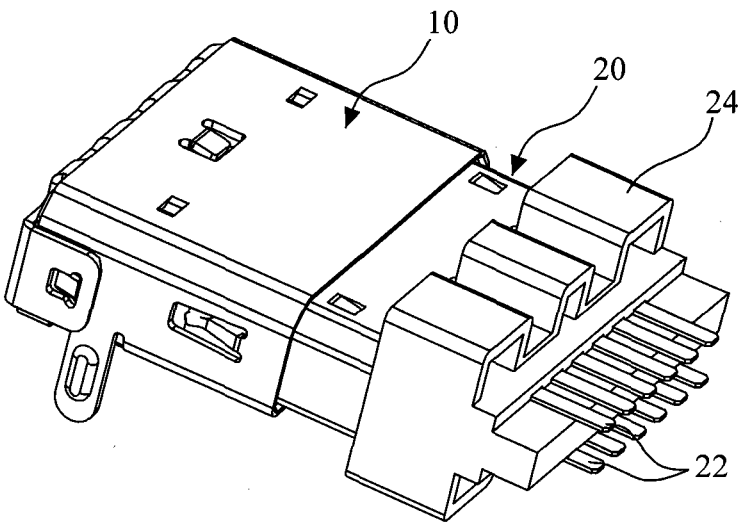


图2

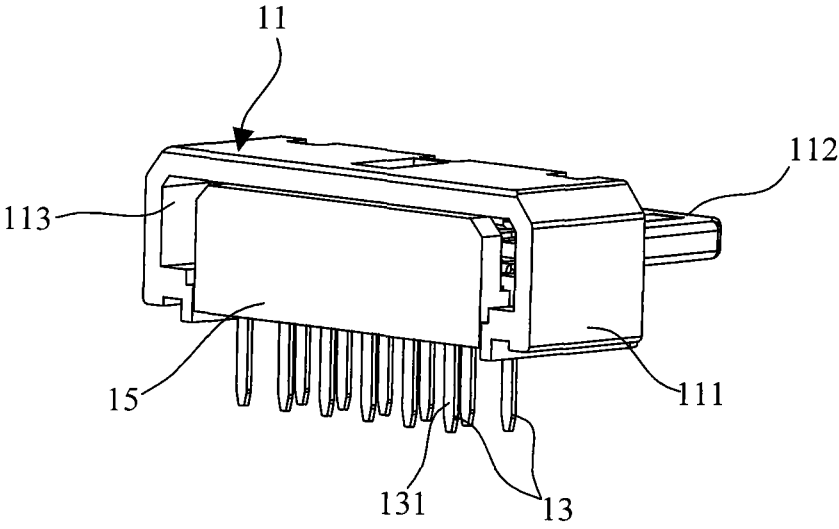


图3

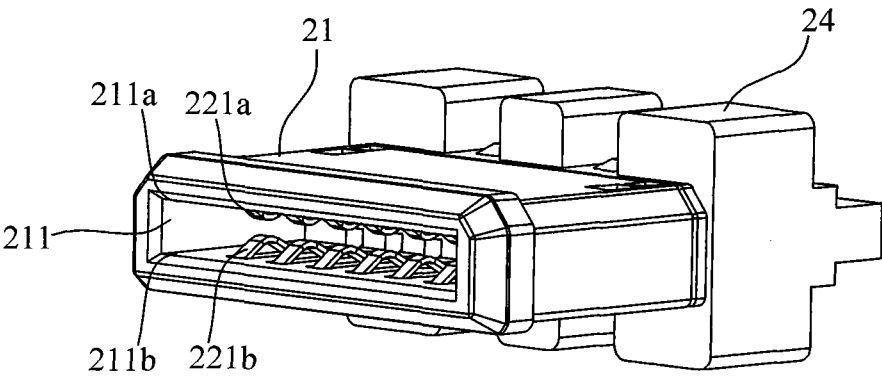


图4

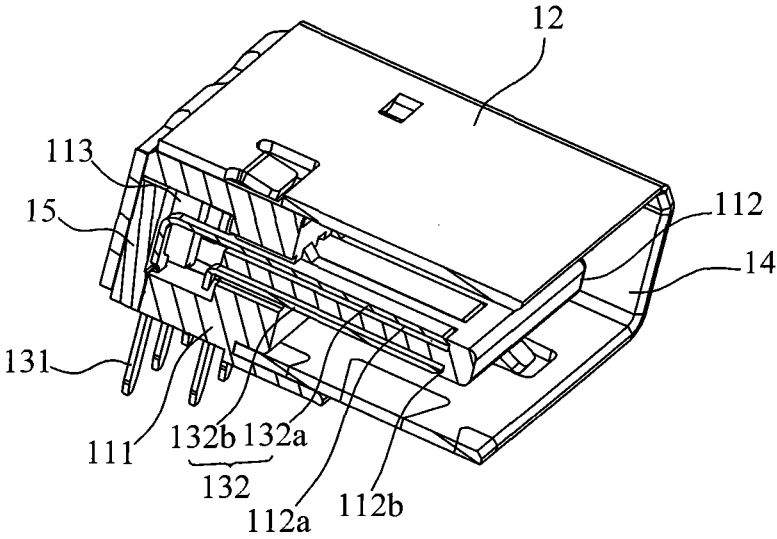


图5

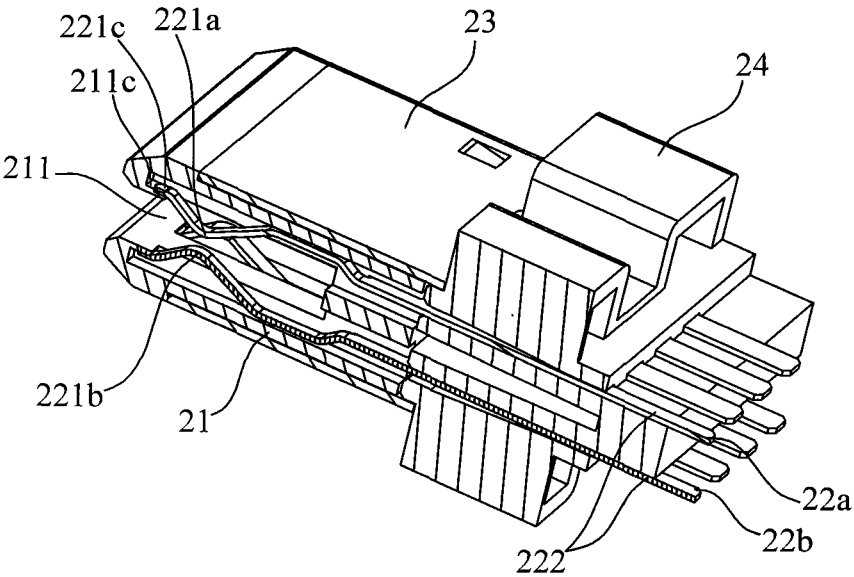


图6

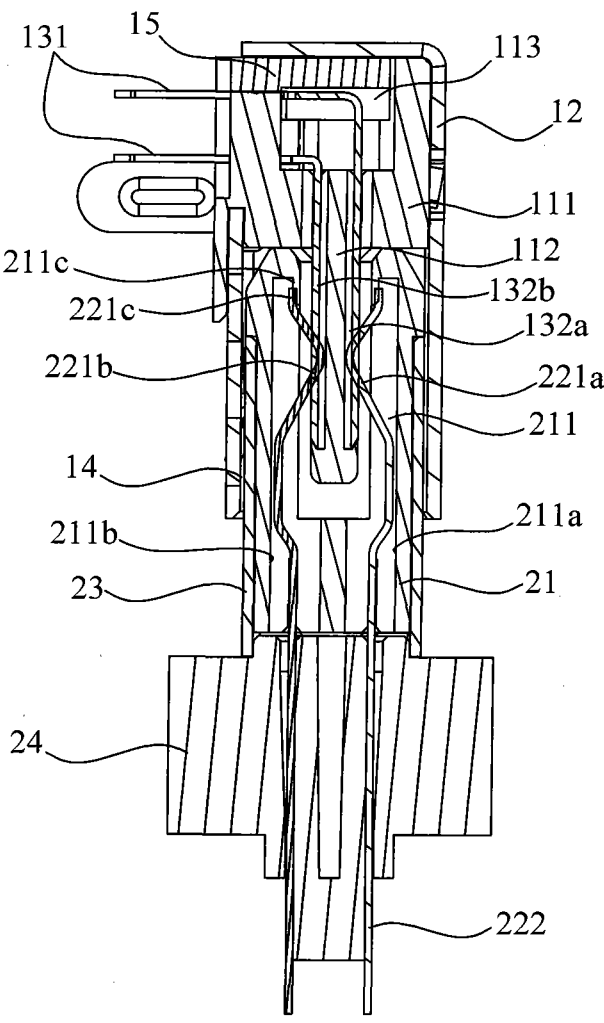


图7