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[12] Detailed Explanation of New Utility Model Patent

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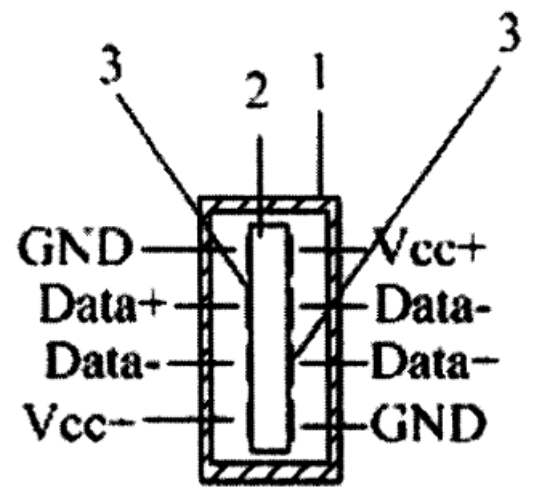
[22] Date of Application: June 20, 2007 [21] Application No.: 200720151606.0 [73] Patent Holder: Cheng Dan Address: Group 8, Xuanzhou Village, Xuanzhou Town, Hengshan County, Hunan Province, China; Postal code: 421311 [72] Inventor: Jiang Lufan	Scope of Patent Claims: 1 page; Detailed Explanation: 2 pages; Attached Drawings: 1 page
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[54] Title of New Utility Model

A Dual-Sided Pluggable USB Female Structure

[57] Abstract:

This new utility model discloses a USB female structure, comprising a metal shell and a plug core, with the position of the plug core located in the middle of the metal shell. Both sides of the plug core have four metal conductive contacts, which are arranged in reverse order on either side. By adopting this structure, it allows for the USB plug to be inserted into the USB female without needing to change the existing USB plug structure, enabling the USB plug to be inserted from both directions. This effectively avoids the inconvenience of having to reorient the USB plug when inserted in the wrong direction, thus facilitating user convenience.



1. A Dual-Sided Pluggable USB Female Structure, comprising a metal shell (1) and a plug core (2); wherein both sides of the plug core (2) have metal contacts (3), and the arrangement order of the aforementioned metal contacts is reversed, with the position of the plug core (2) located in the middle of the metal shell (1).

A Dual-Sided Pluggable USB Female Structure

Technical Field

This new utility model relates to a USB female structure, particularly a dual-sided pluggable USB female structure.

Background Technology

Currently, the USB (Universal Serial Bus) structures found on the market consist of a USB female and a USB male connector. The USB female is also known as a USB socket, which is generally installed on the computer chassis, while the USB male connector is typically installed on storage devices such as USB flash drives, MP3 players, or other computer peripherals.

The USB female consists of an external metal shell and a plug core. The plug core is located on one side of the metal shell, while the other side of the shell is a cavity designed to connect with the plug core of the USB male connector. Only the plug core facing into the cavity has four metal conductive contacts. This design aims to prevent incorrect insertion of the USB male connector, serving as a foolproof design.

Although the current USB structure incorporates foolproof functionality, users often find it difficult to insert the USB male connector directly into the USB female in one attempt. If the orientation is incorrect, the user must reverse the connector to fit it into the socket. This issue is especially pronounced when using rear USB sockets on a computer chassis, where the user may not have a clear view of the USB socket, making it challenging to accurately locate the socket position. Even if they can feel the location of the USB socket, if the orientation of the connector is incorrect, they will need to reverse the connector and search for the USB socket again, causing significant inconvenience for the user.

Content of Invention

This new utility model improves upon the existing USB female structures available in the market, specifically adopting the following technical solution:

The improved USB female consists of a metal shell and a plug core, with the position of the plug core located in the middle of the metal shell. Both sides of the plug core are composed of four metal conductive contacts, with the arrangement order of the contacts on each side being reversed. By adopting this structure, there is no need to change the existing USB male connector structure, allowing

the USB male connector to be inserted into the USB socket from both directions. This effectively avoids the hassle of needing to reverse the insertion direction when the USB male connector is incorrectly oriented, greatly facilitating user convenience.

Attached Drawings

The following further illustrates this new utility model with reference to the attached drawings.

Fig. 1 is a perspective view of this new utility model.

Fig. 2 is a top view of Fig. 1.

Specific Implementation Methods

Fig. 1 and Fig. 2 represent an optimal embodiment of this new utility model. Fig. 1 is a perspective view of the specific implementation methods of this new utility model. In this figure, 1 represents the metal shell, 2 represents the plug core, and 3 represents the metal contacts on the plug core. The plug core 2 is positioned at the center of the shell 1, allowing the USB male connector to be inserted into the shell from both the left and right directions. The effect once installed is shown in Fig. 2, which is a top view of Fig. 1. Both sides of the plug core 2 have metal contacts 3, with the arrangement order of the contacts on each side being reversed. One side has the arrangement order of power Vcc+, data- (data-), data+ (data+), and ground (GND), while the other side has the arrangement order of ground (GND), data+ (data+), data- (data-), and power Vcc+.

This new utility model can be applied to computer chassis, USB extension cables, and other devices equipped with a USB female connector.

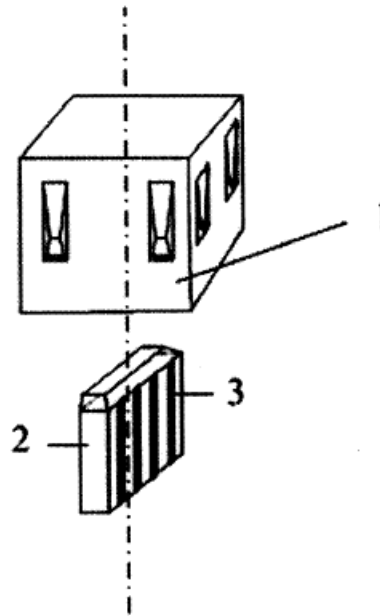


Fig. 1

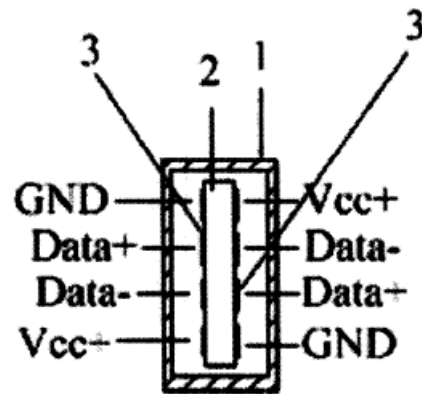


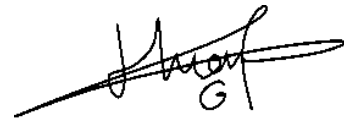
Fig. 2

Declaration of Dr. Huang Gao

1. I, Dr. Huang Gao, hereby certify that I am a professional translator fluent in both Chinese and English and I am competent to translate from Chinese into English.
2. I hereby certify that I prepared the foregoing translation of CN201113094Y and that it is, to the best of my knowledge and belief, a true and accurate English translation of this Chinese document.
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: 11/24/2025

Signed:

A handwritten signature in black ink, appearing to be 'Huang Gao', written over a horizontal line.

Dr. Huang Gao

[19] 中华人民共和国国家知识产权局

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[12] 实用新型专利说明书

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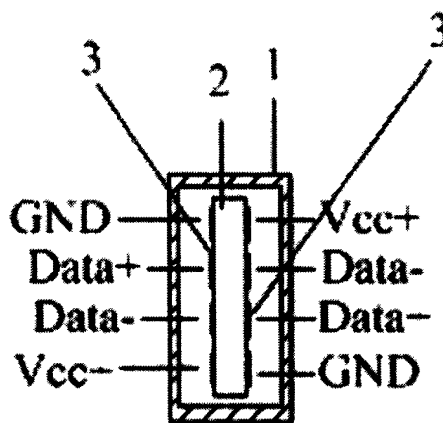
权利要求书 1 页 说明书 2 页 附图 1 页

[54] 实用新型名称

一种双面可插的 USB 母体结构

[57] 摘要

本实用新型公开了一种 USB 母体结构，包括金属外壳和插芯，插芯的位置位于金属外壳的中部，插芯的两面都有四条金属导电触线，插芯两面的触线排列顺序反向。采用这种结构，不需改变现有的 USB 插头结构，就能实现 USB 插头从正反方向都可以插入到 USB 母体中。能有效地避免 USB 插头插入方向不对时需要调换插入方向的麻烦，方便了用户的使用。



1、一种双面可插的 USB 接口母体结构，包括金属壳体（1）和插芯（2）；其特征在于，插芯（2）上两面都有金属触线（3），所述的金属触线排列顺序反向，插芯（2）的位置位于金属壳体（1）的中间。

一种双面可插的 USB 母体结构

技术领域

本实用新型涉及一种 USB 母体结构，尤其是一种双面可插的 USB 母体结构。

背景技术

目前市场上所见的 USB (universal serial bus) 结构由 USB 母体和 USB 插头组成。USB 母体也被称为 USB 插座，一般安装在电脑机体上，而 USB 插头一般安装在 U 盘、MP3 等存储设备或者其他的电脑外设上。

USB 母体由外部的金属壳体和插芯组成。插芯位于金属壳体的一个半侧，壳体的另一个半侧为空腔，用来与 USB 插头的插芯相连，仅朝壳体内空腔方向的插芯上有四条金属导电触线。这样做的目的是防止 USB 插头方向插反，即防呆设计。

虽然目前的 USB 结构有防呆功能，但是在插 USB 插头时，用户很难一次性将插头直接插到 USB 母体中，方向不对时，须将插头反向才能插到插座中，特别是使用电脑机箱的后置 USB 插座时，由于可能不能正视 USB 插座，而不能准确定位插座的位置，只能摸索着感触 USB 插座的位置所在，即便感触到了 USB 插座位置，可能由于插头方向不对，需将插头反向，再次去摸索 USB 插座的位置，给使用带来极大的不便。

发明内容

本实用新型针对目前市场上的 USB 母体结构做出改进，具体采用的技术方案是：

改进的 USB 母体由金属外壳和插芯构成，插芯的位置位于金属外壳的中部，插芯的两面都有四条金属导电触线组成，插芯两面的触线排列顺序反向。采用这种结构，不需改变现有的 USB 插头结构，就能 USB 插头从正反方向都可以插入到 USB 插座中。能有效地避免 USB 插头插入方向不对时需要调换插入方向的麻烦，极大地方便了用户的使用。

附图

下面结合附图进一步说明本实用新型。

图1为本实用新型的立体图。

图2为图1的俯视图。

具体实施方式

图1和图2为本实用新型较佳的实施例。图1为本实用新型具体实施方式的立体视图。1为金属壳体，2为插芯，3为插芯上的金属触线。插芯2装入壳体1的中心位置，使得USB插头可以从左右两个方向均可插入到壳体内，装入后效果如图2所示，图2为图1的俯视图。插芯2上两个面都有金属触线3，两面触线的排列顺序相反，一面排列顺序为电源Vcc+、数据-（data-）、数据+（data+）和接地线（GND），另一面触线的排列顺序为接地线（GND）、数据+（data+）、数据-（data-）和电源Vcc+。

本实用新型可以应用到电脑机体、USB延长线以及其他的带有USB母体的设备上。

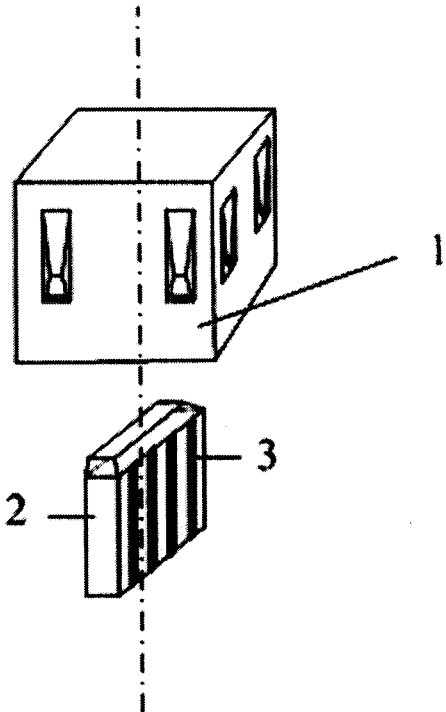


图1

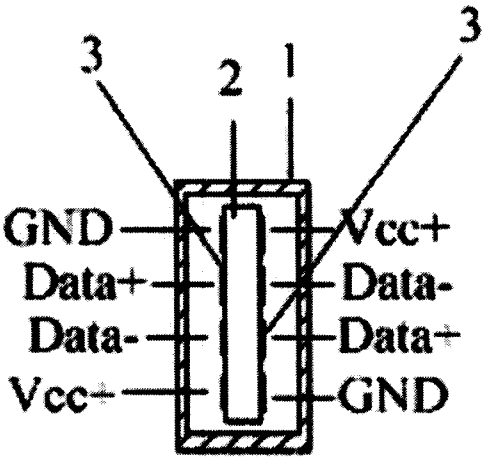


图2