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Donald W. Hanley, CEO



(12) 实用新型专利

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(73) 专利权人 东莞市刘氏电子有限公司

地址 523000 广东省东莞市虎门镇龙眼社区
九路 53 号二楼厂房

(72) 发明人 刘庚水

(74) 专利代理机构 广州市南锋专利事务有限
公司 44228

代理人 罗晓聪

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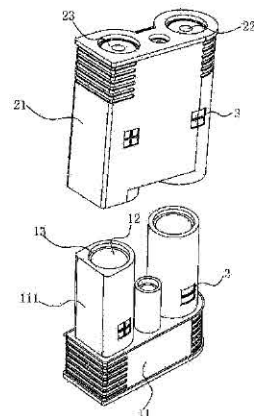
权利要求书1页 说明书3页 附图3页

(54) 实用新型名称

一种启动电源插头

(57) 摘要

本实用新型公开一种启动电源插头,包括:一公座及与之配合的母座,所述的公座包括:第一基座,第一基座上成型有三个第一插孔,于第一插孔内均设置有第一端子;所述的母座包括:第二基座,第二基座上成型有与第一插孔相对应插接的三个第二插孔,第二插孔内设置有第二端子;第一端子与第二端子对应连接。本实用新型上的公座和母座均采用三插孔结构,能承受较大的供电电流,适用于航模,无人飞机,智能应急汽车启动电源夹子,通信设备,仪器仪表,工业自动化控制等领域;本实用新型安全可靠,过电流大,电阻值低,使用寿命长,应用于智能汽车应急启动电源上,能非常有效地做到保护电池,防止电池在汽车打火过程中发生超载引起防爆炸。



1. 一种启动电源插头,包括:一公座及与之配合的母座,其特征在于:所述的公座包括:第一基座,第一基座上成型有三个第一插孔,于第一插孔内均设置有第一端子;所述的母座包括:第二基座,第二基座上成型有与第一插孔相对应插接的三个第二插孔,第二插孔内设置有第二端子;第一端子与第二端子对应连接。

2. 根据权利要求1所述的一种启动电源插头,其特征在于:所述的第一基座上成型有三个相互独立的套筒,套筒内形成所述的第一插孔。

3. 根据权利要求1所述的一种启动电源插头,其特征在于:所述的第一端子为空心柱状,第一端子紧贴第一插孔的孔壁安装。

4. 根据权利要求1所述的一种启动电源插头,其特征在于:所述的第二端子为剖沟型端子。

5. 根据权利要求2所述的一种启动电源插头,其特征在于:所述的三个套筒呈直线分布,位于两端的套筒中,其中一个为圆柱状,另一个为半方圆状。

6. 根据权利要求5所述的一种启动电源插头,其特征在于:所述的第一插孔中,位于两端的为大插孔,中间为小插孔。

7. 根据权利要求1所述的一种启动电源插头,其特征在于:所述的第一基座和第二基座其表面均设置有正负极指示标识。

一种启动电源插头

技术领域：

[0001] 本实用新型涉及插头技术领域，特指一种启动电源插头。

背景技术：

[0002] 当手机、IPAD 等电子产品在电量耗尽时，我们可以使用充电宝对其进行供电，充电宝是一种移动充电设备，能过及时地对电子产品进行供电，同理，在一些大型的电子设备，如：电池，航模，无人飞机，智能应急汽车等，都是大功率的，在需要使用应急电源时，充电宝根本无法对其进行供电，原因并非是充电宝的电容量少，主要原因是充电宝或者其它的供电设备其输出的电流一般都是 1A 和 2.1A 的，但是，一般电器在启动的时候的瞬时电流都会比正常工作电流大很多，汽车在启动的时候瞬时电流会达到 100A 以上，一般的充电宝和供电设备是不能输出如此大的电流。

[0003] 因此，本人提出一种启动电源插头，该插头可以承受较大的电流，可以通过该插头将供电设备和大型电器连接，实现供电。

实用新型内容：

[0004] 本实用新型的目的在于克服现有技术的不足，提供一种启动电源插头。

[0005] 为了解决上述技术问题，本实用新型采用了下述技术方案：一种启动电源插头，包括：一公座及与之配合的母座，所述的公座包括：第一基座，第一基座上成型有三个第一插孔，于第一插孔内均设置有第一端子；所述的母座包括：第二基座，第二基座上成型有与第一插孔相对应插接的三个第二插孔，第二插孔内设置有第二端子；第一端子与第二端子对应连接。

[0006] 进一步而言，上述技术方案中，所述的第一基座上成型有三个相互独立的套筒，套筒内形成所述的第一插孔。

[0007] 进一步而言，上述技术方案中，所述的第一端子为空心柱状，第一端子紧贴第一插孔的孔壁安装。

[0008] 进一步而言，上述技术方案中，所述的第二端子为剖沟型端子。

[0009] 进一步而言，上述技术方案中，所述的三个套筒呈直线分布，位于两端的套筒中，其中一个为圆柱状，另一个为半方圆状。

[0010] 进一步而言，上述技术方案中，所述的第一插孔中，位于两端的为大插孔，中间为小插孔。

[0011] 进一步而言，上述技术方案中，所述的第一基座和第二基座其表面均设置有正负极指示标识。

[0012] 采用上述技术方案后，本实用新型与现有技术相比较具有如下有益效果：

[0013] 1、本实用新型上的公座和母座均采用三插孔结构，能承受较大的供电电流，适用于航模，无人飞机，智能应急汽车启动电源夹子，通信设备，仪器仪表，工业自动化控制等领域；

[0014] 2、本实用新型上公座的套筒呈圆柱状和半方圆状结构,能过防止公座和母座间安装错误,另外,于公座和母座上还设置有正负极指示标识;

[0015] 3、本实用新型安全可靠,过电流大,电阻值低,使用寿命长;同时,此种三插启动电源插头,如应用于智能汽车应急启动电源上,能非常有效地做到保护电池,防止电池在汽车打火过程中发生过载引起防爆。

附图说明:

[0016] 图 1 是本实用新型中公座的立体图;

[0017] 图 2 是本实用新型中母座的立体图;

[0018] 图 3 是本实用新型中公座和母座的结合图。

具体实施方式:

[0019] 下面结合具体实施例和附图对本实用新型进一步说明。

[0020] 一种启动电源插头,包括:一公座 1 及与之配合的母座 2,公座 1 和母座 2 之间相互插接。

[0021] 具体而言,见图 1 所示,所述的公座 1 包括:第一基座 11,第一基座 11 上成型有三个第一插孔 12,于第一插孔 12 内均设置有第一端子 13;第一基座 11 上成型有三个相互独立的套筒 111,套筒 111 内形成所述的第一插孔 12,第一端子 13 为空心柱状,第一端子 13 紧贴第一插孔 12 的孔壁安装。三个套筒 111 呈直线分布,位于两端的套筒 111 中,其中一个为圆柱状,另一个为半方圆状,能过防止公座 1 和母座 2 间插接错误。第一插孔 12 中,位于两端的为大插孔,中间为小插孔。

[0022] 见图 2 所示,母座 2 包括:第二基座 21,第二基座 21 上成型有与第一插孔 12 相对应插接的三个第二插孔 22,第二插孔 22 内设置有第二端子 13;第二端子 13 为剖沟型端子,第一端子 13 与第二端子 12 对应连接。

[0023] 第一基座 11 和第二基座 21 其表面均设置有正负极指示标识 3。

[0024] 下面以汽车应急启动为例,对本实用新型的使用方法进行说明。

[0025] 通常市场上常见电源插头为 2 个端子,分别接电源的正负极,而本实用新型在原有的 2 个端子的基础上增加了第 3 个端子,该端子位于正负 2 个大端子的之间,略小。其主要作用:可以利用其在用电设备和电源之间进行通信,传递数据。

[0026] 如图 3 所示,使用时,将公座 1 和母座 2 对应连接,公座 1 与汽车电瓶通过电瓶夹连接,母座 2 与供电设备的输出线连接。由于汽车电瓶夹输出线要比供电设备的输出线粗,因此,公座 1 的接线口会设置比母座 2 的接线口大。由于汽车应急启动时,因为电流非常大,电池就会发热,如果启动时间过长或多次启动,就会造成电池过热。过热的后果轻则电池鼓胀报废,重则电池冒烟燃烧爆炸,因此,在原有的两个基础上增加第三个端子,通过第三个端子与智能汽车应急启动电源连接,能过通过第三个端子将温度数据传递至智能汽车应急启动电源,连接后,按下供电设备的开关,让电源接通,使用者可直接地观测电池温度,接通后启动汽车即可,启动完成后电瓶夹从电瓶上取下,以防对供电设备本体造成不利影响。

[0027] 当然,以上所述仅为本实用新型的具体实施例而已,并非来限制本实用新型实施范围,凡依本实用新型申请专利范围所述构造、特征及原理所做的等效变化或修饰,均应包

括于本实用新型申请专利范围内。

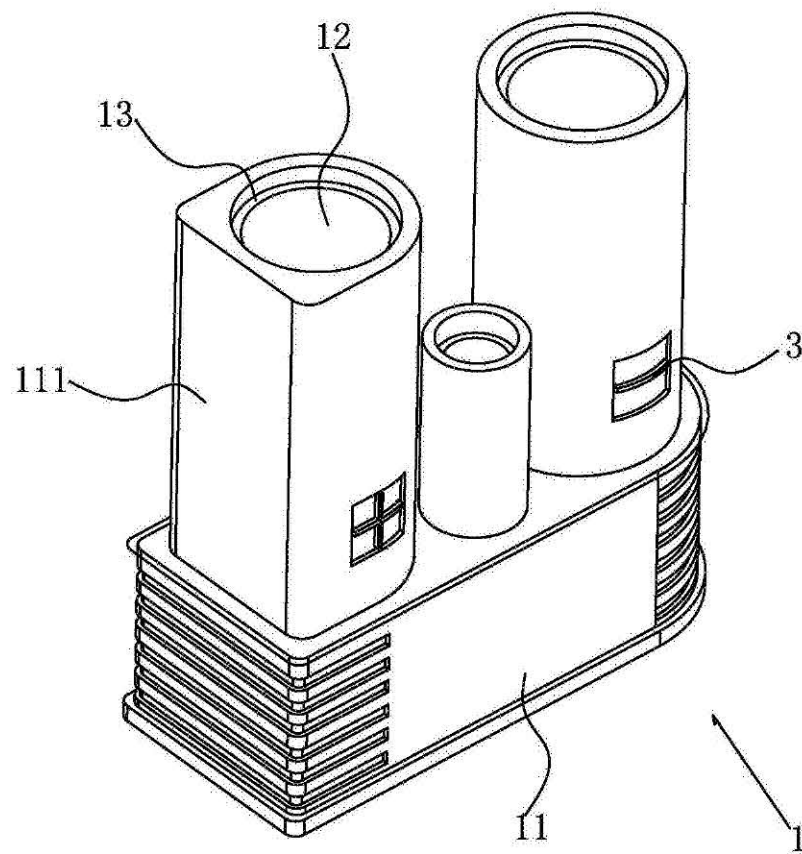


图 1

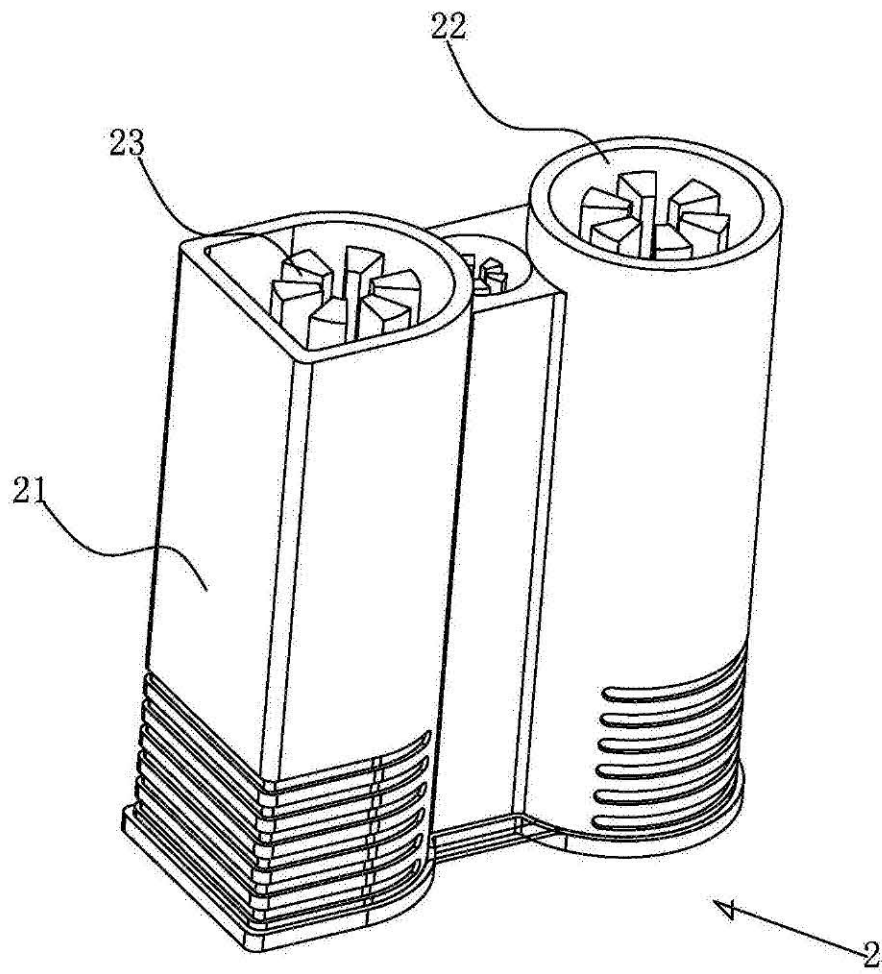


图 2

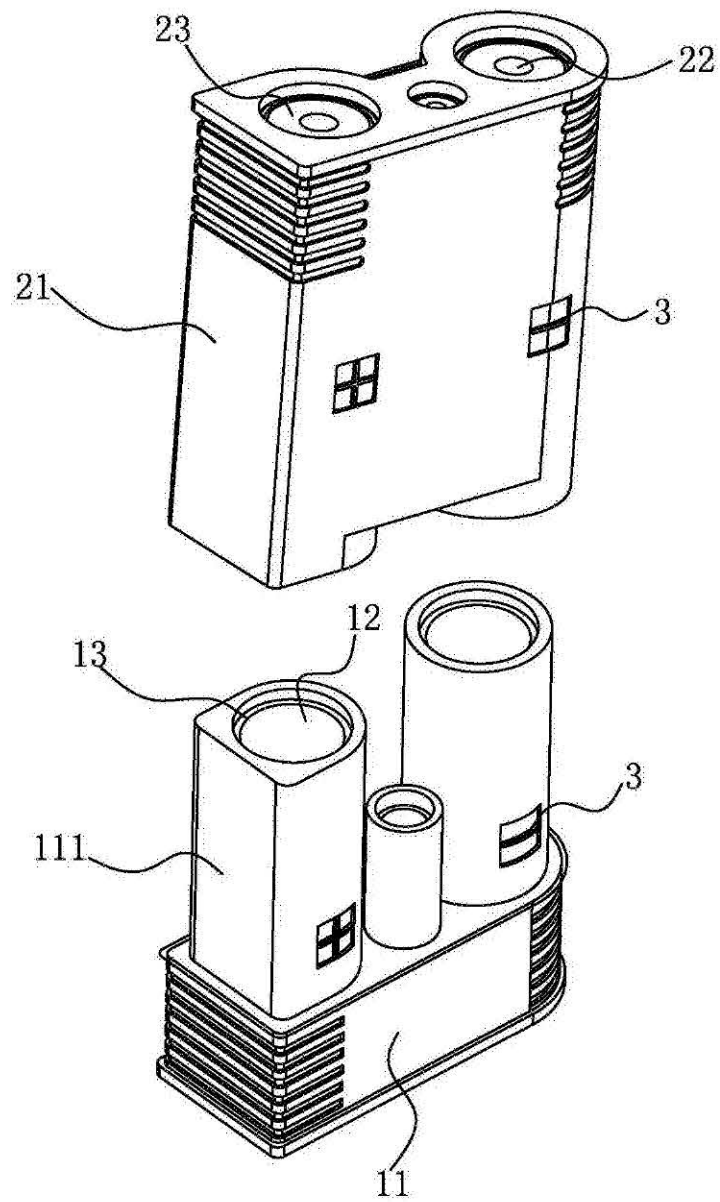


图 3



Certificate of Utility Model Patent

State Intellectual Property Office of the People's Republic of China

Certificate No. 4872813



Local Taxation Bureau,
Haidian District, Beijing Municipality
State Intellectual Property Office
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(Sealed)

Certificate of Utility Model Patent

Name of Utility Model : **A Starter Power Supply Plug**

Inventor : **LIU Geng-Shui**

Patent Number : **ZL 2015 2 0489045.X**

Patent Application Date : **July 7th, 2015**

Patentee : **Dongguan Liu Shi Electronics Co., Ltd.**

Publication Date : **December 23rd, 2015**

The above-enumerated Utility Model, having been preliminarily examined pursuant to the Patents Act of the People's Republic of China, is hereby granted patent rights, issued with this Patent Certificate, and registered in the Patent Register accordingly. The patent rights shall become effective from the date of publication thereof.

The Patent Duration for this Patent shall be **ten (10)** years commencing from the date of application therefor. The Patentee shall pay annual fees in accordance with the Patents Act and the Detailed Rules for the Implementation thereof. The annual maintenance fees for this Patent shall be paid by **July 7th** each year. In the event of failure to pay annual fee in accordance with the aforesaid provisions, the Patent Rights granted shall be terminated with effect from the date of maturity of the period for payment of annual fees.

This Patent Certificate records the legal status of the patent at the time of its registration. Transfer, pledge, invalidation, termination, restoration of patent rights, and changes to the Patentee's name, nationality, address, etc shall be recorded in the Patent Register.

Director General : SHEN Chang-Yu (signed)
SHEN Chang-Yu

State Intellectual Property Office of
the People's Republic of China
(Sealed)

December 23rd, 2015



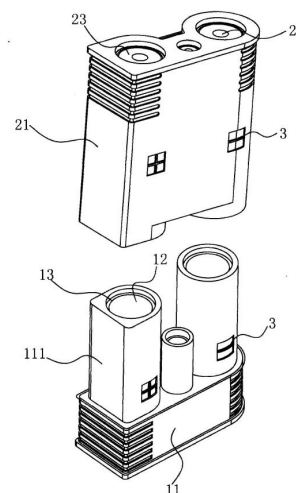
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[22]	Date of Application:	July 7, 2015		Agent:	<u>LUO</u> Xiao-Cong
[73]	Patentee:	Dongguan Liu Shi Electronics Co., Ltd.			
	Address of Patentee:	Level 2 Factory, 53 Longyan Community 9th Road, Humen Township, Dongguan City 523000, Guangdong Province			
[72]	Inventor:	<u>LIU</u> Geng-Shui			

[54] Name of Utility Model: **A Starter Power Supply Plug**

[57] Abstract:

The present utility model discloses a starter power supply plug, the starter power supply plug comprising: a plug and a receptacle mating therewith, wherein the plug comprises: a first base, the first base having three first holes formed thereon, each of the holes having a first terminal; the receptacle comprises: a second base, the second base having three second holes formed thereon and correspondingly connected with the three first holes, each of the second holes having a second terminal; the first terminal and the second terminal being correspondingly connected with each other. Both the plug and receptacle of the present utility model have a three-hole structure capable of withstanding a larger electric current and suitable for use in the fields of model airplanes, drones, intelligent emergency automotive battery jump starter clamps, communication devices, instruments and meters, industrial automation controls, etc; the present utility model is highly safe and reliable, capable of withstanding larger over-current, has low resistance and long lifespan. In addition, when used on an intelligent emergency automotive jump starter power supply, the starter power supply plug is capable of protecting the battery very effectively to prevent overloading induced explosion of the battery during automotive ignition.



Claims

What is claimed is:

1. A starter power supply plug comprising a plug and a receptacle mating therewith, characterized in that the plug comprises: a first base, the first base having three first holes formed thereon, each of the holes having a first terminal; the receptacle comprises: a second base, the second base having three second holes formed thereon and correspondingly connected with the three first holes, each of the second holes having a second terminal; the first terminal and the second terminal being correspondingly connected with each other.

2. The starter power supply plug as defined in claim 1, characterized in that: the first base has three sleeves formed thereon independently of one another, the first holes being formed in the sleeves respectively.

3. The starter power supply plug as defined in claim 1, characterized in that: the first terminal is hollowly cylindrical in shape and the first terminal is mounted closely against the wall of the first hole.

4. The starter power supply plug as defined in claim 1, characterized in that: the second terminal is a slotted terminal.

5. The starter power supply plug as defined in claim 2, characterized in that: the three sleeves are linearly distributed; among the two sleeves located at the ends, one is cylindrical in shape and the other is semi-square semi-circular in shape.

6. The starter power supply plug as defined in claim 5, characterized in that: among the first holes, the two located at the ends are larger holes and the one located at the center is a

smaller hole.

7. The starter power supply plug as defined in claim 1, characterized in that: the surfaces of both the first base and the second base are provided with indication signs of anode/cathode.

Description

A Starter Power Supply Plug

FIELD

[0001] The present utility model relates to the technical field of plugs and, more particularly, to a starter power supply plug.

BACKGROUND

[0002] When the power of a mobile phone, iPad or other electronic product is depleted, we can use a power bank to charge it. Power bank is a portable charging equipment capable of charging an electronic product in a timely manner. Similarly, in some large electronic equipment such as batteries, model planes, drones, intelligent emergency automotive battery jump starters are high-powered, and a power bank cannot possibly provide them with power when emergency power supply is needed. The reason for that is not that the power banks have low capacitance, but primarily the reason is that the output current of a power bank or other power supply equipment is usually 1A or 2.1A, but the transient current of a common electrical appliance during startup is much larger than the normal operating current thereof and the transient current of an automotive during startup would be above 100A. An ordinary power bank or power supply equipment is not able to provide such a large current output.

[0003] Therefore, the inventor proposes a starter power supply plug capable of withstanding a larger electric current, through which power supply equipment and large electrical appliances can be connected to realize power supply.

SUMMARY OF THE UTILITY MODEL

[0004] The present utility model aims to overcome the deficiencies of prior art by providing a starter power supply plug.

[0005] To this end, the present utility model adopts the following technical solution: a starter power supply plug comprising: a starter power supply plug comprising a plug and a receptacle mating therewith, characterized in that the plug comprises: a first base, the first base having three first holes formed thereon, each of the holes having a first terminal; the receptacle comprises: a second base, the second base having three second holes formed thereon and correspondingly connected with the three first holes, each of the second holes having a second terminal; the first terminal and the second terminal being correspondingly connected with each other.

[0006] Further, in the above technical solution, the first base has three sleeves formed thereon independently of one another, the first holes being formed in the sleeves respectively.

[0007] Further, in the above technical solution, the first terminal is hollowly cylindrical in shape such that the first terminal is mounted closely against the wall of the first hole.

[0008] Further, in the above technical solution, the second terminal is a slotted terminal.

[0009] Further, in the above technical solution, the three sleeves are linearly distributed; among the two sleeves located at the ends, one is cylindrical in shape and the other is semi-square semi-circular in shape.

[0010] Further, in the above technical solution, among the first holes, the two located at the ends are larger holes and the one located at the center is a smaller hole.

[0011] Further, in the above technical solution, the surfaces of both the first base and the second base are provided with indication signs of anode/cathode.

[0012] With the aforementioned technical solution, the present utility model has the following beneficial effects compared to prior art:

[0013] (1) Both the plug and receptacle of the present utility model have a three-hole structure capable of withstanding a larger electric current and suitable for use in the fields of

model airplanes, drones, intelligent emergency automotive battery jump starter clamps, communication devices, instruments and meters, industrial automation controls, etc;

[0014] (2) Since the sleeves on the plug of the present utility model are cylindrical in shape and semi-square semi-circular in shape respectively, error can be prevented in the connection between the plug and the receptacle. In addition, both the first base and the second base are provided with indication signs of anode/cathode;

[0015] (3) The present utility model is highly safe and reliable, capable of withstanding larger over-current, has low resistance and long lifespan. In addition, when used on an intelligent emergency automotive jump starter power supply, this three-hole starter power supply plug is capable of protecting the battery very effectively to prevent overloading induced explosion of the battery during automotive ignition.

BRIEF DESCRIPTION OF THE DRAWINGS

[0016] Figure 1 is an isometric view of a plug of the present utility model.

[0017] Figure 2 is an isometric view of a receptacle of the present utility model.

[0018] Figure 3 is a combined view of the plug and receptacle of the present utility model.

DETAILED DESCRIPTION

[0019] The present utility model is described below in further detail with reference to preferred embodiments and the accompanying drawings.

[0020] A starter power supply plug comprising: a plug 1 and a receptacle 2 mating therewith, the plug 1 and the receptacle 2 being connected with each other.

[0021] As shown in Figure 1, the male plug 1 comprises: a first base 11, the first base 11 having three first holes 12 formed thereon, each of the holes 12 having a first terminal 13; the first base 11 has three sleeves 111 formed thereon independently of one another, the first

holes 12 being formed in the sleeves 111 respectively; the first terminal 13 is hollowly cylindrical in shape such that the first terminal 13 is mounted closely against the wall of the first hole 12. The three sleeves 111 are linearly distributed; among the two sleeves 111 located at the ends, one is cylindrical in shape and the other is semi-square semi-circular in shape so that error can be prevented in the connection between the plug 1 and the receptacle 2. Among the first holes 12, the two located at the ends are larger holes and the one located at the center is a smaller hole.

[0022] As shown in Figure 2, the receptacle 2 comprises: a second base 21, the second base 21 having three second holes 22 formed thereon and correspondingly connected with the three first holes 12, each of the second holes 22 having a second terminal 23; the first terminal 13 and the second terminal 23 being correspondingly connected with each other.

[0023] The surfaces of both the first base 11 and the second base 21 are provided with indication signs 3 of anode/cathode.

[0024] The usage method of the present utility model is described below with jump start of a motor vehicle taken as an example.

[0025] Power supply plugs commonly seen on the market usually have two (2) terminals connected to the anode and cathode of a power supply. In the present utility model, a slightly smaller third terminal is added between the two larger terminals. The third terminal is used primarily for communication of data between the powered equipment and the power supply.

[0026] As shown in Figure 3, when in use the plug 1 and the receptacle 2 are correspondingly connected, with the plug 1 connected to an automotive battery through a battery clamp and the receptacle 2 connected to an output line of a power supply equipment. As the output line of the automotive battery is thicker than the output line of the power supply equipment, the connecting wire of the plug 1 will be larger than the wiring port of the receptacle 2. Because the power supply lithium battery is heated up during automotive emergency jump start due to large electric current, the battery will be overheated if the startup time is too long

or multiple jump starts are performed. Overheating will either result in swollen and scrapped battery at the very least, or smoke release, combustion and explosion of battery in a worst-case scenario. Therefore, with a third terminal added to enable connection between the third terminal and an intelligent emergency automotive battery jump starter power supply, temperature data can be transmitted to the intelligent emergency automotive battery jump starter power supply through the third terminal. After connection, the switch of the power supply equipment is turned on with the user being able to directly detect the battery temperature, after which the automotive is started. After startup, the battery clamps are removed from the battery to prevent any adverse impact on the power supply equipment.

[0027] Of course, the foregoing merely provides preferred embodiments of the present utility model which are not intended to limit the scope of the present utility model, and equivalent alteration or modification to the present utility model without departing from the structure, features and principles thereof shall fall within the scope of the present utility model.

Drawings

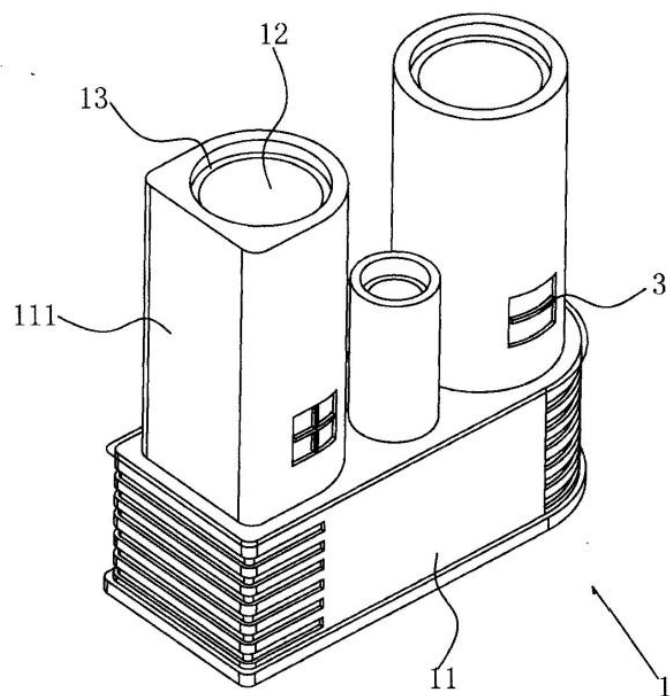


Figure 1

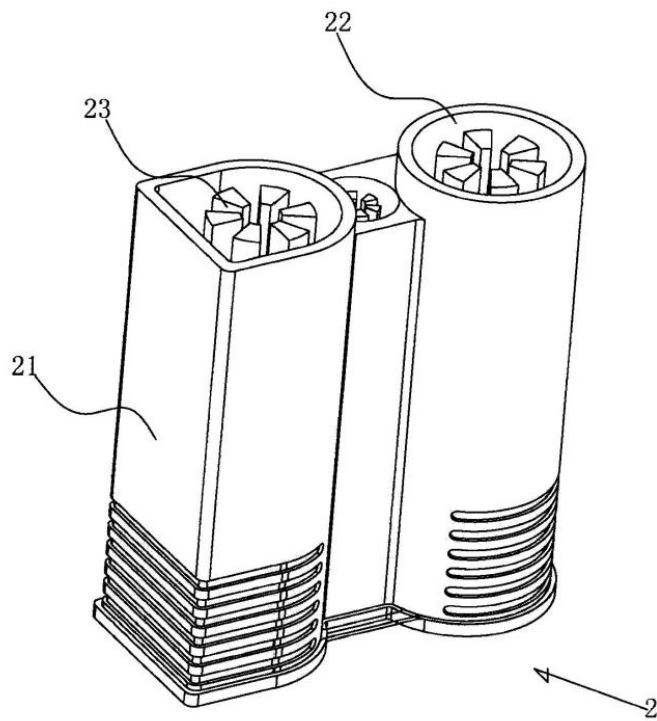


Figure 2

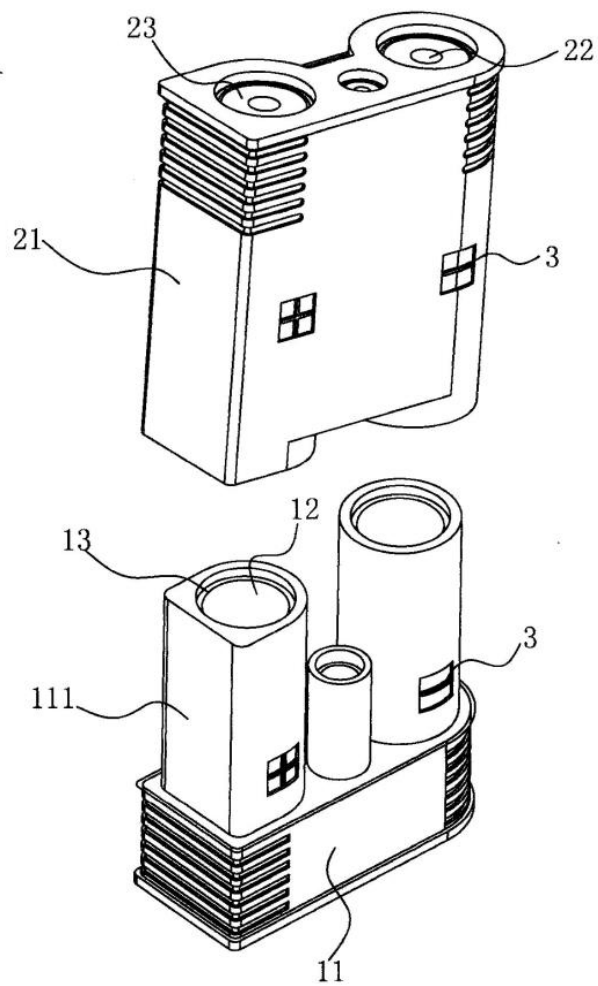


Figure 3