



(12) Utility Model Patent



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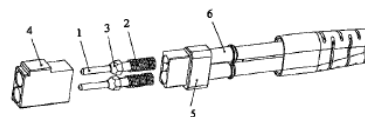
Drawings 3 pages

(54) Title of the Utility Model:

Dual-Core Optical Fiber Connector

(57) Abstract:

Embodiments of the present utility model provide a dual-core optical fiber connector, which comprises: a pair of ceramic ferrules, a pair of elastic elements, a casing, and a sleeve body; the pair of ceramic ferrules is respectively provided with one block piece, the pair of ceramic ferrules is further respectively sleeved by one elastic element, and the elastic element is blocked by the block piece; the sleeve body accommodates the pair of ceramic ferrules, the block pieces, and the elastic elements; a pair of optical fibers passes through the sleeve body, and optical fiber cores of the pair of optical fibers are respectively placed in tubular chambers of the ceramic ferrules; the pair of ceramic ferrules passes out of the inner chamber of the casing, and the inner chamber of the casing is sleeved with the sleeve body. The dual-core optical fiber connector provided by the embodiments of the present utility model has a small volume, is easy to assemble optical fibers, and saves system space to increase the number of optical fibers loaded in the system.



1. A dual-core optical fiber connector, comprising a pair of ceramic ferrules, a pair of elastic elements, a casing, and a sleeve body;

the pair of ceramic ferrules is respectively provided with one block piece, the pair of ceramic ferrules is further respectively sleeved by one elastic element, and the elastic element is blocked by the block piece; the sleeve body accommodates the pair of ceramic ferrules, the block pieces, and the elastic elements; a pair of optical fibers passes through the sleeve body, and optical fiber cores of the pair of optical fibers are respectively placed in tubular chambers of the ceramic ferrules; the pair of ceramic ferrules passes out of the inner chamber of the casing, and the inner chamber of the casing is sleeved with the sleeve body.

2. The dual-core optical fiber connector according to claim 1, characterized in that a positioning chamber is provided in the inner chamber of the casing for fixing the pair of ceramic ferrules.

3. The dual-core optical fiber connector according to claim 1 or 2, characterized in that a locking buckle handle for connecting to a device port is provided at the top part of the sleeve body, the locking buckle of the locking buckle handle is close to the casing, and the pivot point in the locking buckle handle that is fixedly connected to the sleeve body is away from the casing.

4. The dual-core optical fiber connector according to claim 3, characterized in that an opening is formed on the top surface of the casing, and after the locking buckle handle is connected to a device port, the opening accommodates the locking buckle of the handle.

5. The dual-core optical fiber connector according to claim 4, characterized in that at least one protrusion is provided on the sleeve body, at least one orifice is provided on the casing, the number of the protrusions matches the number of the orifices, and the protrusions are snapped into the orifices.

6. The dual-core optical fiber connector according to claim 4, characterized in that at least one protrusion with a square bottom is provided on the sleeve body, interconnected grooves are provided on the periphery of three sides of the protrusion bottom, respectively, the inner chamber of the casing is sleeved with the sleeve body, and the protrusion enters the gap in the elastic elements respectively fitting onto the pair of ceramic ferrules.

7. The dual-core optical fiber connector according to claim 5 or 6, further comprising a tail jacket fitting onto the pair of optical fibers and used for fixing the pair of optical fibers.

8. The dual-core optical fiber connector according to claim 7, characterized in that the elastic elements are springs.

Dual-Core Optical Fiber Connector

Field of the Utility Model

[0001] The present utility model relates to the field of communication technology, and in particular relates to a dual-core optical fiber connector.

Description of the Related Art

[0002] With the development of communication technology, optical fibers, which are small in diameter, have transmission capacity, and have rapid transmission, have become the mainstream in the communication industry as transmission links. In optical fiber transmission links, in order to meet the needs for flexible connection between modules, devices, and systems, it is necessary to use optical fiber connectors to achieve detachable connections between optical fibers and between optical fibers and devices.

[0003] An existing single-core optical fiber connector is shown in FIG. 1A and comprises a casing 1a, a ceramic ferrule 2a, a block piece 3a, an elastic element 4a, a sleeve body 5a, and a tail jacket 6a, wherein the inner chamber of the casing 1a is used to accommodate one ceramic ferrule 2a, block piece 3a, elastic element 4a, and sleeve body 5a. The optical fiber core of an optical fiber 7a is configured in the ceramic ferrule 2a and may serve as a connection core for disconnecting or coupling the optical fiber system. The pivot point of an unlocking handle 8a is located at the top of the casing 1a, and an elastic locking buckle 9a extends towards the sleeve body 5a.

[0004] In an optical fiber system using dual-core optical fibers for coupling connections, it is common to use two single-core optical fiber connectors to form a dual-core optical fiber connector, as shown in FIG. 1B.

[0005] Existing dual-core optical fiber connectors are bulky, which limits the number of optical fibers that can be loaded in an optical fiber system, making the optical fiber assembly inconvenient and increasing costs.

Summary of the Utility Model

[0006] Embodiments of the present utility model provide a dual-core optical fiber connector to solve the problem that a dual-core optical fiber connector, which is formed by using two single-core optical fiber connectors, is bulky, limits the number of loaded optical fibers, and makes the optical fiber assembly inconvenient.

[0007] Embodiments of the present utility model provide a dual-core optical fiber connector, comprising a pair of ceramic ferrules, a pair of elastic elements, a casing, and a sleeve body;

[0008] The pair of ceramic ferrules is respectively provided with one block piece, the pair of ceramic ferrules is further respectively sleeved by one elastic element, and the elastic element is blocked by the block piece; the sleeve body accommodates the pair of ceramic ferrules, the block pieces, and the elastic elements; a pair of optical fibers passes through the sleeve body, and optical fiber cores of the pair of optical fibers are respectively placed in tubular chambers of the ceramic ferrules; the pair of ceramic ferrules passes out of the inner chamber of the casing, and the inner chamber of the casing is sleeved with the sleeve body.

[0009] The dual-core optical fiber connector as described above, wherein a positioning chamber is provided in the inner chamber of the casing for fixing the pair of ceramic ferrules.

[0010] The dual-core optical fiber connector as described above, wherein a locking buckle handle for connecting to a device port is provided at the top part of the sleeve body, the locking buckle of the locking buckle handle is close to the casing, and the pivot point in the locking buckle handle that is fixedly connected to the sleeve body is away from the casing.

[0011] The dual-core optical fiber connector as described above, wherein an opening is formed on the top surface of the casing, and after the locking buckle handle is connected to a device port, the opening accommodates the locking buckle of the handle.

[0012] The dual-core optical fiber connector as described above, wherein at least one protrusion is provided on the sleeve body, at least one orifice is provided on the casing, the number of the protrusions matches the number of the orifices, and the protrusions are snapped into the orifices.

[0013] The dual-core optical fiber connector as described above, wherein at least one protrusion with a square bottom is provided on the sleeve body,

interconnected grooves are provided on the periphery of three sides of the protrusion bottom, respectively, the inner chamber of the casing is sleeved with the sleeve body, and the protrusion enters the gap in the elastic elements respectively fitting onto the pair of ceramic ferrules.

[0014] The dual-core optical fiber connector as described above, further comprising a tail jacket fitting onto the pair of optical fibers and used for fixing the pair of optical fibers.

[0015] The dual-core optical fiber connector as described above, wherein the elastic elements are springs.

[0016] The dual-core optical fiber connector provided by the embodiments of the present utility model uses the casing and the sleeve body that are in a sleeved connection with each other to accommodate optical fiber cores of two optical fibers. This optical fiber connector has a small volume, is easy to assemble optical fibers, and saves system space to increase the number of optical fibers loaded in the system.

Brief Description of the Drawings

[0017] To more clearly describe the technical solutions in the embodiments of the present utility model or the prior art, the accompanying drawings that need to be used in the description of the embodiments and the prior art will be briefly introduced below. Apparently, the accompanying drawings described below are some embodiments of the present utility model, and to those of ordinary skills in the art, other accompanying drawings may be obtained according to these accompanying drawings without creative effort.

[0018] FIG. 1A is a schematic diagram of a disassembled existing optical fiber connector;

[0019] FIG. 1B is a schematic diagram of the overall structure of an existing dual-core optical fiber connector;

[0020] FIG. 2A is a schematic diagram of an embodiment of a disassembled dual-core optical fiber connector according to the present utility model;

[0021] FIG. 2B is a schematic diagram of the overall structure of an embodiment of a dual-core optical fiber connector according to the present utility model;

[0022] FIG. 3A is a schematic diagram of another embodiment of a disassembled dual-core optical fiber connector according to the present utility model;

[0023] FIG. 3B is a schematic diagram of the overall structure of another embodiment of a dual-core optical fiber connector according to the present utility model; and

[0024] FIG. 3C is a schematic diagram of connection between another embodiment of a dual-core optical fiber connector according to the present utility model and an optical module.

Detailed Description of the Specific Embodiments

[0025] To make the objectives, technical solutions, and advantages of embodiments of the present utility model clearer, the technical solutions in the embodiments of the present utility model will be clearly and completely described below with reference to the accompanying drawings in the embodiments of the present utility model. Apparently, the described embodiments are some, rather than all, embodiments of the present utility model. All other embodiments obtained by those of ordinary skills in the art on the basis of the embodiments of the present utility model without creative effort fall within the scope of protection of the present utility model.

[0026] Referring to FIG. 2A and FIG. 2B, a dual-core optical fiber connector provided by an embodiment of the present utility model comprises a pair of ceramic ferrules 1, a pair of elastic elements 2, a casing 4, and a sleeve body 5;

[0027] Here, the pair of ceramic ferrules 1 is respectively provided with one block piece 3, the pair of ceramic ferrules 1 is further respectively sleeved by one elastic element 2, and the elastic element 2 is blocked by the block piece 3; the sleeve body 5 accommodates the pair of ceramic ferrules 1, the block pieces 3, and the elastic elements 2; a pair of optical fibers 6 passes through the sleeve body 5, and optical fiber cores of the pair of optical fibers 6 are respectively placed in tubular chambers of the ceramic ferrules 1; the pair of ceramic ferrules 1 passes out of the inner chamber of the casing 4, and the inner chamber of the casing 4 is sleeved with the sleeve body 5.

[0028] Here, the ceramic ferrule 1 is provided with the block piece 3, the ceramic ferrule 1 and the block piece 3 may be of an integrated structure or may be two independent parts, the block piece 3 is disposed at the middle of the ceramic ferrule 1, the elastic element 2 fits over the ceramic ferrule 1 and is disposed at one end of the ceramic ferrule 1 that is away from the casing 4, the elastic element 2 is blocked by the block piece 3, the block piece 3 limits the position of the elastic element 2, and the elastic element 2 may be a spring or other elements.

[0029] The casing 4 is sleeved with the sleeve body 5, and specifically, it may be that the casing 4 partially fits over the exterior of the sleeve body 5. After the casing 4 is sleeved with the sleeve body 5, the two jointly accommodate

the pair of ceramic ferrules 1, the block pieces 3, and the elastic elements 2. The pair of optical fibers 6 passes through the interior of the casing 4 and the sleeve body 5 that are in a sleeved connection, optical fiber cores of the optical fibers 6 are disposed in tubular chambers of the ceramic ferrules 1, and the pair of ceramic ferrules 1 passes out of the casing 4 and is connected to an external port of a device.

[0030] The dual-core optical fiber connector provided by this embodiment uses the casing and the sleeve body that are in a sleeved connection with each other to accommodate optical fiber cores of two optical fibers. This optical fiber connector has a small volume, is easy to assemble optical fibers, and saves system space to increase the number of optical fibers loaded in the system.

[0031] Referring to FIG. 3A and FIG. 3B, as a preferred embodiment, the casing 4 and the sleeve body 5 may have the following structure:

[0032] a positioning chamber 42 for fixing the pair of ceramic ferrules 1 may be provided in the inner chamber of the casing 4, so that after the pair of ceramic ferrules 1 enters the inner chamber of the casing 4, the position thereof is relatively fixed, and thus it is not easy for the connection between the pair of ceramic ferrules 1 and the external port of the device to become loose.

[0033] Furthermore, a locking buckle handle 7 for connecting to the external port of the device is provided at the top part of the sleeve body 5, the locking buckle 71 of the locking buckle handle 7 is close to the casing 4, and the pivot point 72 in the locking buckle handle 7 that is fixedly connected to the sleeve body 5 is away from the casing 4. The locking buckle handle 7 is a locking and unlocking mechanism for the connection between the dual-core optical fiber connector and an external structure of a device. An opening 8 may be formed on the top surface of the casing 4, and after the locking buckle handle 7 is connected to a device port, the opening 8 may accommodate the locking buckle 71 of the handle 7. When the locking buckle handle 7 is connected to a device port, the opening 8 may serve as a guide groove for the locking buckle 71, so as to increase the stroke of the locking buckle handle 7, and the height of the entire dual-core optical fiber connector can be decreased when the locking buckle 71 enters the opening 8. Referring to the schematic diagram of connection between the dual-core optical fiber connector and an optical module casing (device port) as shown in FIG. 3C, it should be noted that a through hole structure is provided on the optical module casing d for locking with the locking buckle 71 of the handle 7, and the connection with the optical module casing d can be broken simply by pressing the handle 7, thereby realizing unlocking.

[0034] To make the connection between the casing 4 and the sleeve body 5 tighter and more secure, at least one protrusion 51 may be provided on the sleeve body 5, at least one orifice 41 may be correspondingly provided on the casing 4, the number of the protrusions 51 matches the number of the orifices 41, and when the casing 4 is sleeved with the sleeve body 5, the casing 4 compresses the protrusion 51, such that the protrusion 51 is snapped into the orifice 41. In FIG. 3A and FIG. 3B, the protrusion 51 and the orifice 41 are respectively provided on the sides of the sleeve body 5 and the casing 4, which, however, is not used as a limitation.

[0035] To improve the strength of the casing 4, such that the connection between the casing 4 and the sleeve body 5 is tighter and more secure, the casing 4 may also be set to have a closed structure as another preferred structure. That is, no orifice 41 is provided, but a protrusion 51 with a square bottom is provided at the center of the side of the sleeve body 5, and the protrusion 51 is set to be an elastic element, which can be realized specifically by providing interconnected grooves on the periphery of three sides of the bottom of the protrusion 51, respectively. When the inner chamber of the casing 4 is sleeved with the sleeve body 5, the casing 4 compresses the protrusion 51, and the protrusion 51 enters the gap between the two elastic elements 2, which can further decrease the width of the entire dual-core optical fiber connector.

[0036] In addition, a tail jacket 9 may be further provided on the pair of optical fibers 6, which plays a role of fixing and protecting the optical fibers 6.

[0037] With regard to the dual-core optical fiber connector provided by this embodiments, the casing part fits over the exterior of the sleeve body. After the two are in the sleeved connection, their inner chambers jointly accommodate optical fiber cores of a pair of optical fibers. The optical fiber connector of this structure has a small volume and saves system space to increase the number of optical fibers loaded in the system. The casing and the sleeve body are connected by means of a snap-lock structure, which facilitates the assembly of optical fibers. In addition, the pivot point of the locking buckle mechanism in the dual-core optical fiber connector for connection with a device port is on the top of the sleeve body, the locking buckle is at one end close to the casing, and when connecting to the device port, the locking buckle enters the opening on the top of the casing, which can decrease the overall height of the dual-core optical fiber connector and further save the system space to increase the number of optical fibers loaded in the system.

[0038] Lastly, it should be noted that the embodiments above are used merely to describe, rather than to limit, the technical solutions of the present utility model; although the present utility model has been described in detail with

reference to the embodiments above, those of ordinary skills in the art should understand that they can still modify the technical solutions recorded in the various embodiments above or perform equivalent substitution on some technical features thereof, while these modifications or substitutions do not cause the essence of corresponding technical solutions to depart from the spirit and scope of the technical solutions of the various embodiments of the present utility model.

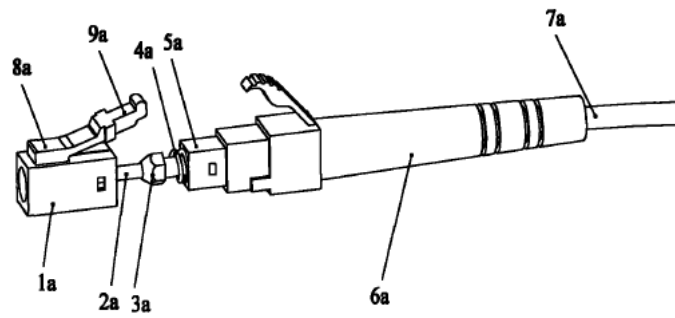


FIG. 1A

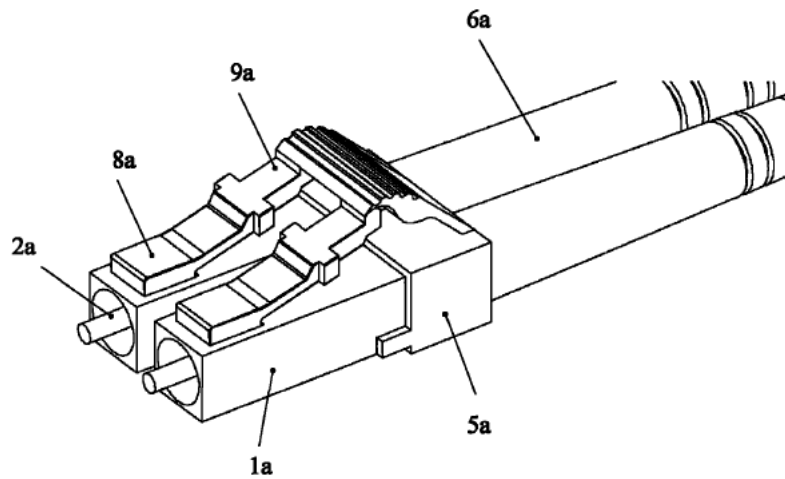


FIG. 1B

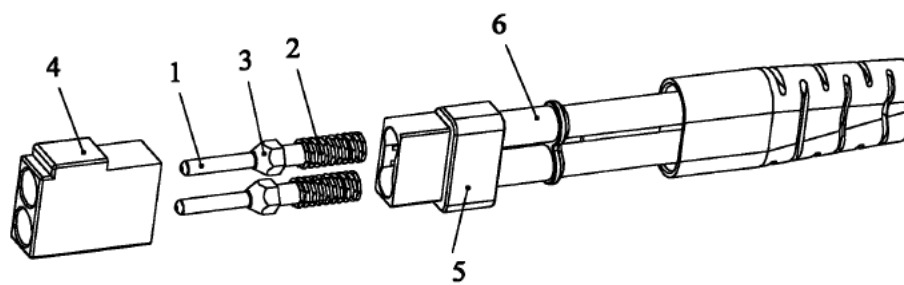


FIG. 2A

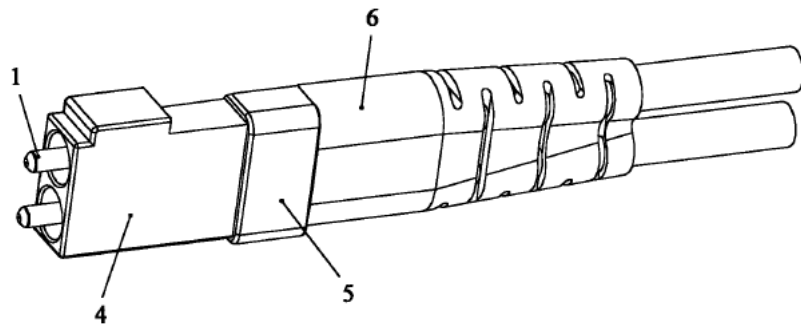


FIG. 2B

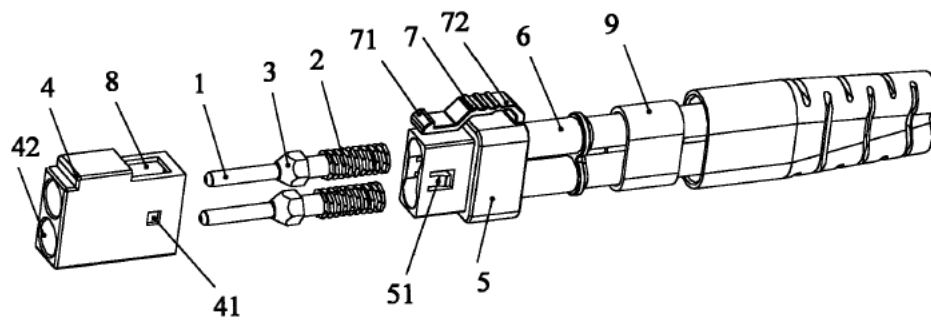


FIG. 3A

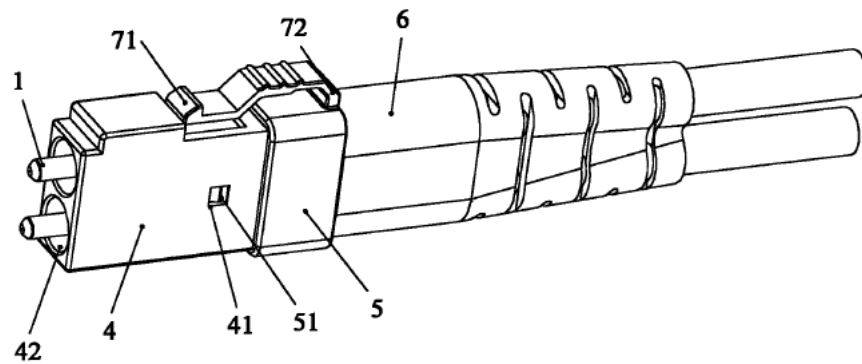


FIG. 3B

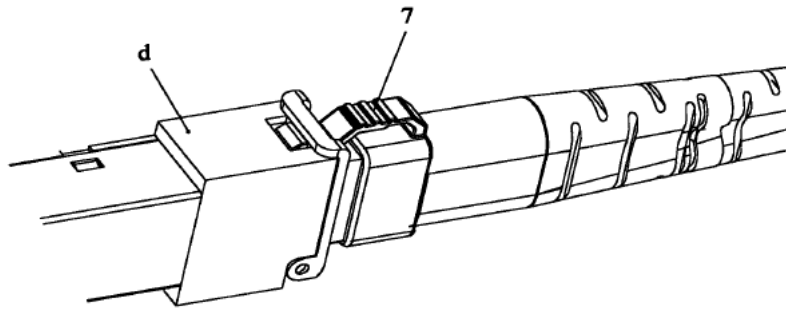


FIG. 3C



Certification of Accuracy of Translation

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I, Jian Zhang, hereby certify that the attached English translation is, to the best of my knowledge, a true and accurate translation of "CN201740886U.pdf." The translated text reflects the content, meaning and style of the original text and constitutes a true and accurate translation of the original document.

May 5, 2024

A handwritten signature in black ink, appearing to be "Jian Zhang", written above a horizontal line.

Jian Zhang



(12) 实用新型专利

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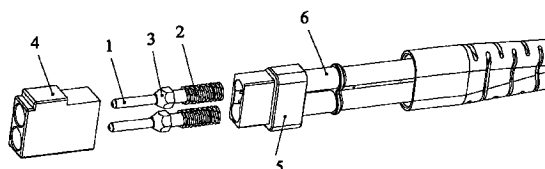
权利要求书 1 页 说明书 4 页 附图 3 页

(54) 实用新型名称

双芯光纤连接器

(57) 摘要

本实用新型实施例提供一种双芯光纤连接器,包括:一对陶瓷插芯、一对弹性元件、外壳和套管本体;所述一对陶瓷插芯上分别设有一阻挡片,所述一对陶瓷插芯上还分别套设一弹性元件,所述弹性元件被所述阻挡片阻挡;所述套管本体容置所述一对陶瓷插芯、所述阻挡片和所述弹性元件;一对光纤从所述套管本体中穿过,所述一对光纤的光纤芯分别置于所述陶瓷插芯的管腔中;所述一对陶瓷插芯从所述外壳内腔穿出,所述外壳内腔与所述套管本体套接。本实用新型实施例提供的双芯光纤连接器,体积小,易进行光纤组装,节省系统空间以增大系统的光纤装载数量。



1. 一种双芯光纤连接器,其特征在于,包括:一对陶瓷插芯、一对弹性元件、外壳和套管本体;

所述一对陶瓷插芯上分别设有一阻挡片,所述一对陶瓷插芯上还分别套设一弹性元件,所述弹性元件被所述阻挡片阻挡;所述套管本体容置所述一对陶瓷插芯、所述阻挡片和所述弹性元件;一对光纤从所述套管本体中穿过,所述一对光纤的光纤芯分别置于所述陶瓷插芯的管腔中;所述一对陶瓷插芯从所述外壳内腔穿出,所述外壳内腔与所述套管本体套接。

2. 根据权利要求1所述的双芯光纤连接器,其特征在于,所述外壳内腔中具有固定所述一对陶瓷插芯的定位腔体。

3. 根据权利要求1或2所述的双芯光纤连接器,其特征在于,所述套管本体上部设置一用于与设备接口连接的锁扣手柄,所述锁扣手柄的锁扣靠近所述外壳,所述锁扣手柄中与所述套管本体固定连接的支点远离所述外壳。

4. 根据权利要求3所述的双芯光纤连接器,其特征在于,所述外壳上部表面设置一开口,所述锁扣手柄与设备接口连接后,所述开口容纳所述手柄的锁扣。

5. 根据权利要求4所述的双芯光纤连接器,其特征在于,所述套管本体上设置至少一个凸起,所述外壳上设置至少一个孔口,所述凸起与所述孔口个数匹配,且所述凸起卡入所述孔口。

6. 根据权利要求4所述的双芯光纤连接器,其特征在于,所述套管本体上设置至少一个底部呈方形的凸起,所述凸起底部三条边外围分别设置有相互连通的凹槽,所述外壳内腔与所述套管本体套接,所述凸起进入所述一对陶瓷插芯上分别套设的弹性元件中的空隙。

7. 根据权利要求5或6所述的双芯光纤连接器,其特征在于,还包括套设在所述一对光纤上、用于固定所述一对光纤的尾护套。

8. 根据权利要求7所述的双芯光纤连接器,其特征在于,所述弹性元件为弹簧。

双芯光纤连接器

技术领域

[0001] 本实用新型实施例涉及通信技术领域,尤其涉及一种双芯光纤连接器。

背景技术

[0002] 随着通信技术的发展,直径小、传输容量且传输快速的光纤作为传输链路,已成为通信业界的主流。在光纤传输链路中,为了满足模块、设备和系统之间灵活连接的需要,需要采用光纤连接器完成光纤与光纤,光纤与设备间的可拆卸连接。

[0003] 现有的单芯光纤连接器如图 1A 所示,包括外壳 1a、陶瓷插芯 2a、挡片 3a、弹性元件 4a、套管本体 5a 和尾护套 6a,外壳 1a 的内腔用于接纳一个陶瓷插芯 2a、挡片 3a、弹性元件 4a 和套管本体 5a。光纤 7a 的光纤芯配置在陶瓷插芯 2a 中,可作为光纤系统断开或耦合的连接核心。解锁手柄 8a 的支点在外壳 1a 的上部,弹性锁扣 9a 向套管本体 5a 方向延伸。

[0004] 在以双芯光纤作为耦合连接的光纤系统中,通常采用两个单芯光纤连接器组成双芯光纤连接器,如图 1B 所示。

[0005] 现有的双芯光纤连接器,体积大,从而导致光纤系统的光纤装载数量受限,光纤组装不便且增加成本。

实用新型内容

[0006] 本实用新型实施例提供一种双芯光纤连接器,以解决采用两个单芯光纤连接器组成双芯光纤连接器体积大,光纤装载数量受限,光纤组装不便的问题。

[0007] 本实用新型实施例提供一种双芯光纤连接器,包括:一对陶瓷插芯、一对弹性元件、外壳和套管本体;

[0008] 所述一对陶瓷插芯上分别设有一阻挡片,所述一对陶瓷插芯上还分别套设一弹性元件,所述弹性元件被所述阻挡片阻挡;所述套管本体容置所述一对陶瓷插芯、所述阻挡片和所述弹性元件;一对光纤从所述套管本体中穿过,所述一对光纤的光纤芯分别置于所述陶瓷插芯的管腔中;所述一对陶瓷插芯从所述外壳内腔穿出,所述外壳内腔与所述套管本体套接。

[0009] 如上所述的双芯光纤连接器,所述外壳内腔中具有固定所述一对陶瓷插芯的定位腔体。

[0010] 如上所述的双芯光纤连接器,所述套管本体上部设置一用于与设备接口连接的锁扣手柄,所述锁扣手柄的锁扣靠近所述外壳,所述锁扣手柄中与所述套管本体固定连接的支点远离所述外壳。

[0011] 如上所述的双芯光纤连接器,所述外壳上部表面设置一开口,所述锁扣手柄与设备接口连接后,所述开口容纳所述手柄的锁扣。

[0012] 如上所述的双芯光纤连接器,所述套管本体上设置至少一个凸起,所述外壳上设置至少一个孔口,所述凸起与所述孔口个数匹配,且所述凸起卡入所述孔口。

[0013] 如上所述的双芯光纤连接器,所述套管本体上设置至少一个底部呈方形的凸起,

所述凸起底部三条边外围分别设置有相互连通的凹槽,所述外壳内腔与所述套管本体套接,所述凸起进入所述一对陶瓷插芯上分别套设的弹性元件中的空隙。

[0014] 如上所述的双芯光纤连接器,还包括套设在所述一对光纤上、用于固定所述一对光纤的尾护套。

[0015] 如上所述的双芯光纤连接器,所述弹性元件为弹簧。

[0016] 本实用新型实施例提供的双芯光纤连接器,采用相互套接的外壳和套管本体容纳两个光纤的光纤芯,该光纤连接器体积小,易进行光纤组装,节省系统空间以增大系统的光纤装载数量。

附图说明

[0017] 为了更清楚地说明本实用新型实施例或现有技术中的技术方案,下面将对实施例或现有技术描述中所需要使用的附图作一简单地介绍,显而易见地,下面描述中的附图是本实用新型的一些实施例,对于本领域普通技术人员来讲,在不付出创造性劳动性的前提下,还可以根据这些附图获得其他的附图。

[0018] 图 1A 为现有的光纤连接器拆分示意图;

[0019] 图 1B 为现有的双芯光纤连接器整体结构示意图;

[0020] 图 2A 为本实用新型一个双芯光纤连接器实施例的拆分示意图;

[0021] 图 2B 为本实用新型一个双芯光纤连接器实施例的整体结构示意图;

[0022] 图 3A 为本实用新型又一个双芯光纤连接器实施例的拆分示意图;

[0023] 图 3B 为本实用新型又一个双芯光纤连接器实施例的整体结构示意图;

[0024] 图 3C 为本实用新型又一个双芯光纤连接器实施例与光模块的连接示意图。

具体实施方式

[0025] 为使本实用新型实施例的目的、技术方案和优点更加清楚,下面将结合本实用新型实施例中的附图,对本实用新型实施例中的技术方案进行清楚、完整地描述,显然,所描述的实施例是本实用新型一部分实施例,而不是全部的实施例。基于本实用新型中的实施例,本领域普通技术人员在没有作出创造性劳动前提下所获得的所有其他实施例,都属于本实用新型保护的范围。

[0026] 参见图 2A 和图 2B,本实用新型一个实施例提供的双芯光纤连接器,包括:一对陶瓷插芯 1、一对弹性元件 2、外壳 4 和套管本体 5;

[0027] 其中,一对陶瓷插芯 1 上分别设有一阻挡片 3,一对陶瓷插芯 1 上还分别套设一弹性元件 2,弹性元件 2 被阻挡片 3 阻挡;套管本体 5 容置一对陶瓷插芯 1、阻挡片 3 和弹性元件 2;一对光纤 6 从套管本体 5 中穿过,一对光纤 6 的光纤芯分别置于陶瓷插芯 1 的管腔中;一对陶瓷插芯 1 从外壳 4 的内腔穿出,外壳 4 的内腔与套管本体 5 套接。

[0028] 其中,陶瓷插芯 1 上设有阻挡片 3,陶瓷插芯 1 和阻挡片 3 可以为一体结构,也可以是两个独立部件,阻挡片 3 位于陶瓷插芯 1 的中部,弹性元件 2 套设在陶瓷插芯 1 上,位于陶瓷插芯 1 上远离外壳 4 的一端,弹性元件 2 被阻挡片 3 阻挡,阻挡片 3 对弹性元件 2 的位置起限制作用,弹性元件 2 可为弹簧等元件。

[0029] 外壳 4 与套管本体 5 套接,具体可以为外壳 4 部分套接在套管本体 5 的外部,外壳

4 与套管本体 5 套接后,二者共同容置一对陶瓷插芯 1、阻挡片 3 和弹性元件 2。一对光纤 6 从套接的外壳 4 与套管本体 5 内部穿过,光纤 6 的光纤芯置于陶瓷插芯 1 的管腔中,一对陶瓷插芯 1 从外壳 4 中穿出,连接至设备的外部接口。

[0030] 本实施例提供的双芯光纤连接器,采用相互套接的外壳和套管本体容置两个光纤的光纤芯,该光纤连接器体积小,易进行光纤组装,节省系统空间以增大系统的光纤装载数量。

[0031] 参见图 3A 和图 3B,作为一个较佳的实施例,外壳 4 和套管本体 5 可以具有如下结构:

[0032] 外壳 4 的内腔中可设有固定一对陶瓷插芯 1 和定位腔体 42,以使一对陶瓷插芯 1 进入外壳 4 的内腔后,其位置相对固定,进而使一对陶瓷插芯 1 与设备的外部接口连接不易松动。

[0033] 进一步的,套管本体 5 上部可设置一用于与设备的外部接口连接的锁扣手柄 7,该锁扣手柄 7 的锁扣 71 靠近外壳 4,锁扣手柄 7 中与套管本体 5 固定连接的支点 72 远离外壳 4。该锁扣手柄 7 是双芯光纤连接器与设备外部结构连接的锁紧或解锁机构。外壳 4 上部表面可设置一开口 8,在锁扣手柄 7 与设备接口连接后,开口 8 可容纳锁扣手柄 7 的锁扣 71。开口 8 在锁扣手柄 7 与设备接口连接时可作为锁扣 71 的导向槽,以增大锁扣手柄 7 的行程,锁扣 71 进入开口 8 中可降低整个双芯光纤连接器的高度。参见图 3C 所示的该双芯光纤连接器与光模块壳体(设备接口)的连接示意图,需要说明的是,光模块壳体 d 上设置有与锁扣手柄 7 的锁扣 71 相卡合的通孔结构,按压锁扣手柄 7 即可断开与光模块壳体 d 的连接,实现解锁。

[0034] 为了使外壳 4 和套管本体 5 的连接更加紧密牢固,可在套管本体 5 上设置至少一个凸起 51,相应的在外壳 4 上设置至少一个孔口 41,凸起 51 与孔口 41 的个数匹配,当外壳 4 与套管本体 5 套接时,外壳 4 压缩凸起 51,使凸起 51 卡入孔口 41 中。图 3A 和图 3B 中凸起 51 和孔口 41 分别设置在套管本体 5 和外壳 4 的侧面,但并不以此作为限制。

[0035] 为了提高外壳 4 的强度,使外壳 4 与套管本体 5 的连接更加紧密牢固,作为另一种较佳的结构,外壳 4 也可以设置成闭口结构,即不设置孔口 41,在套管本体 5 侧面的中间部位上设置一底部呈方形的凸起 51,并将凸起 51 设置成一弹性部件,具体可以通过在凸起 51 底部三条边外围分别设置相互连通的凹槽来实现,当外壳 4 的内腔套接至套管本体 5 时,外壳 4 压缩凸起 51,凸起 51 进入 2 根弹性元件 2 中间的空隙,则可进一步降低整个双芯光纤连接器的宽度。

[0036] 另外,还可以在一对光纤 6 上设置一尾护套 9,对光纤 6 起到固定和保护的作用。

[0037] 本实施例提供的双芯光纤连接器,外壳部分套接在套管本体外部,二者套接后,内腔中共同容置一对光纤的光纤芯,该结构的光纤连接器体积小,节省系统空间以增大系统的光纤装载数量。外壳与套管本体采用卡扣结构连接,易进行光纤组装。另外,双芯光纤连接器中与设备接口连接的锁扣机构的支点在套管本体上部,锁扣在靠近外壳一端,与设备接口连接时,锁扣进入外壳上部的开口中,可降低双芯光纤连接器的整体高度,进一步节省系统空间以增大系统的光纤装载数量。

[0038] 最后应说明的是:以上实施例仅用以说明本实用新型的技术方案,而非对其限制;尽管参照前述实施例对本实用新型进行了详细的说明,本领域的普通技术人员应当理解:

其依然可以对前述各实施例所记载的技术方案进行修改,或者对其中部分技术特征进行等同替换;而这些修改或者替换,并不使相应技术方案的本质脱离本实用新型各实施例技术方案的精神和范围。

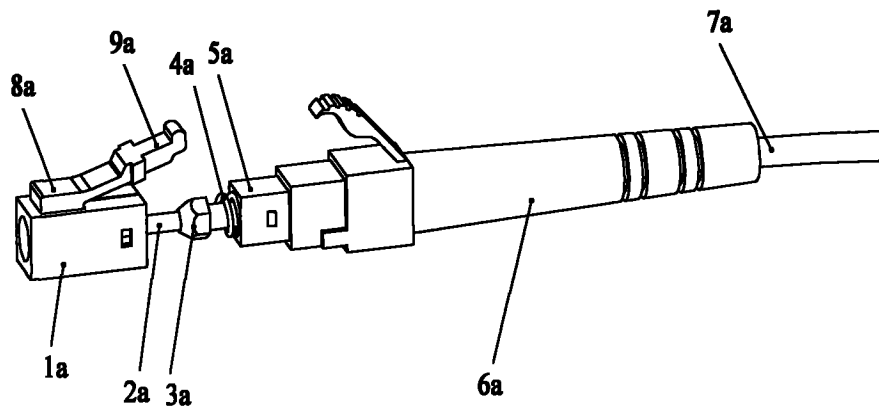


图 1A

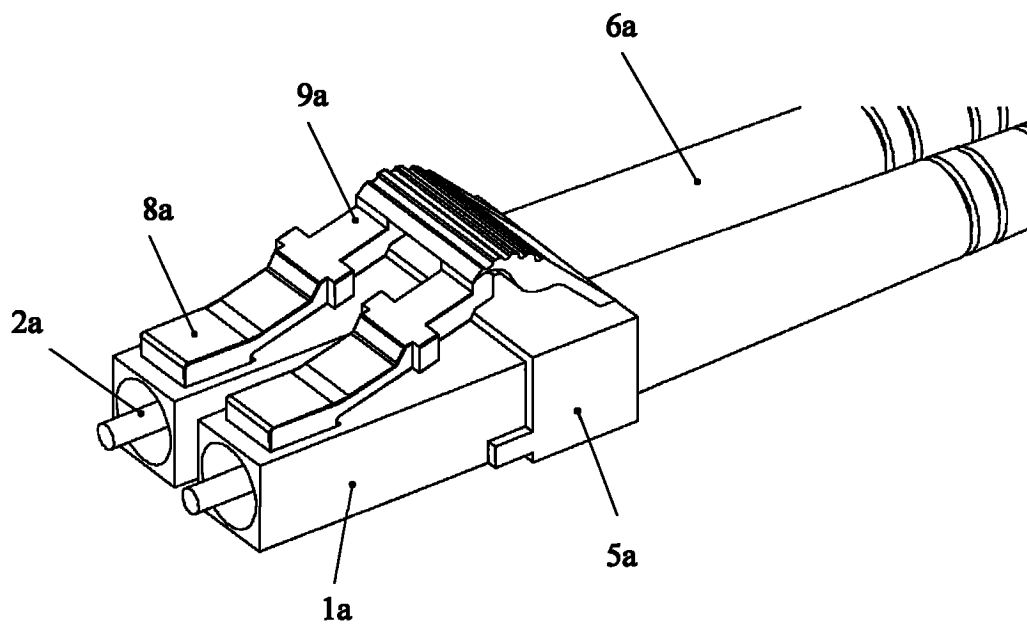


图 1B

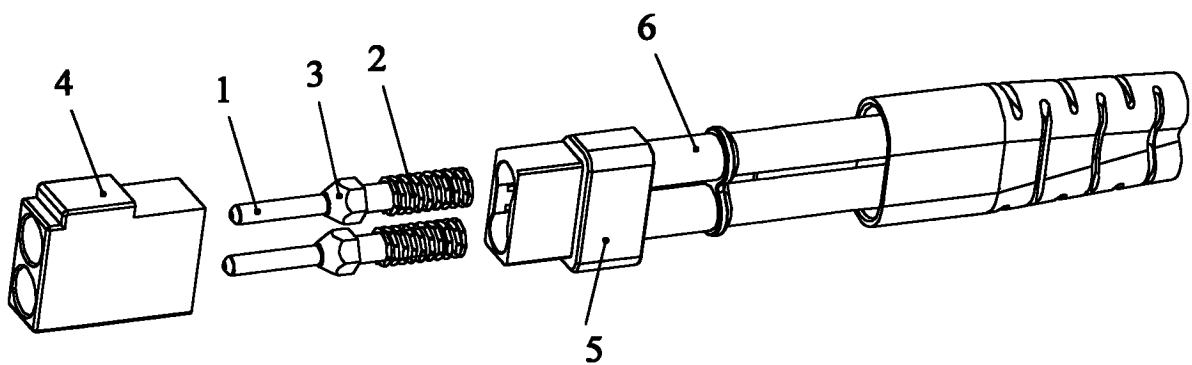


图 2A

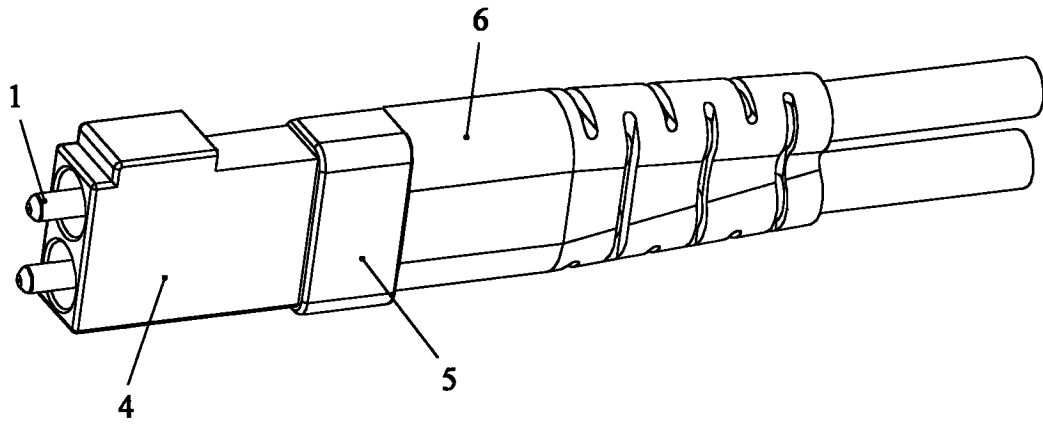


图 2B

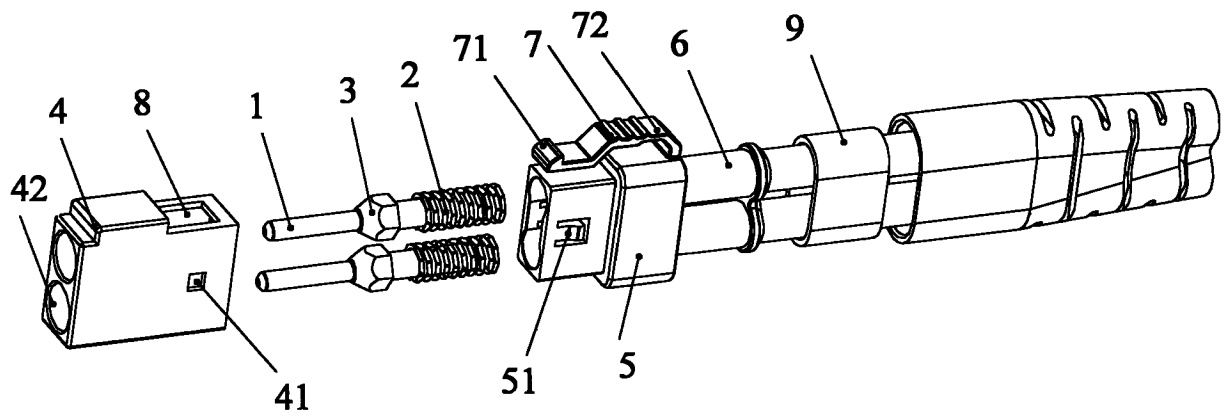


图 3A

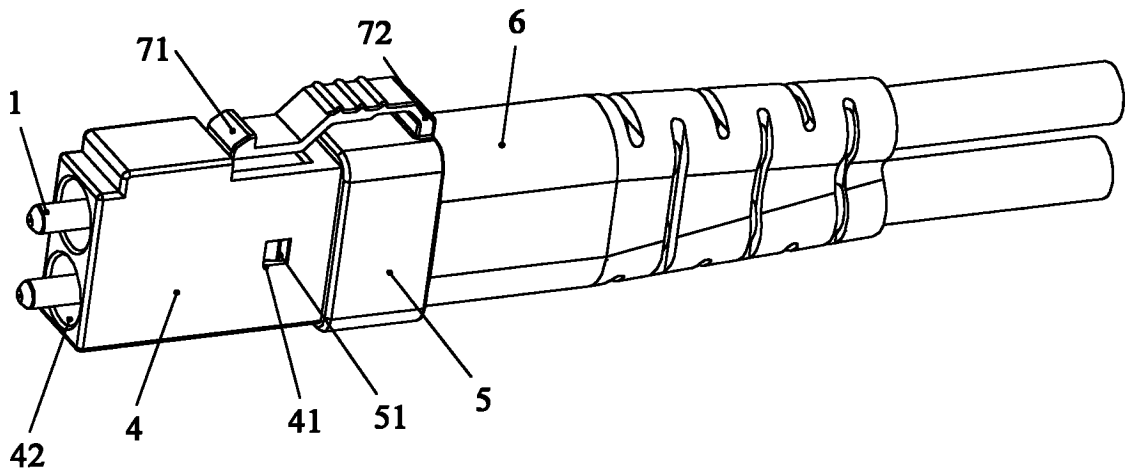


图 3B

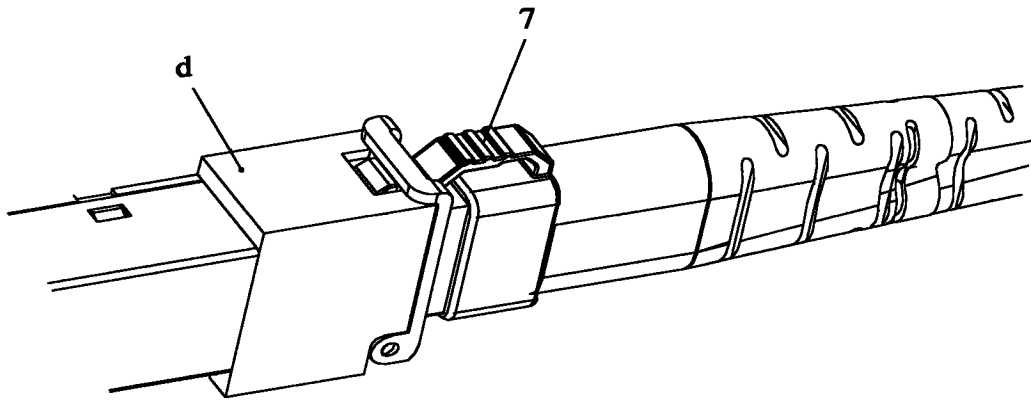


图 3C