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**(54) ELECTRICAL CONNECTOR FOR LED FLEXIBLE EPOXY LIGHT STRIP**

(57) An electrical connector for LED flexible epoxy light bar, it is characterized in that it comprises a main body (2) and a lid buckled (4) with the said main body, the said body includes a plurality of conductive puncture portions(3); one side of the main body is connected to a plurality of wires(1), the said conductive puncture portions are connected with corresponding wires one by one, one end of the light bar (10) is held between said main

body and lid, the said conductive puncture portions pierces the copper wire plate (9) at one end of the corresponding light bar. This electrical connector requires only pressing the lid to achieve the connection between the light bar and wire, so it is easily installed, no any specialized tools required; in addition, the single point may carry 5A current; furthermore, it is compact, less area of land occupied; light weight, and easily hung up.

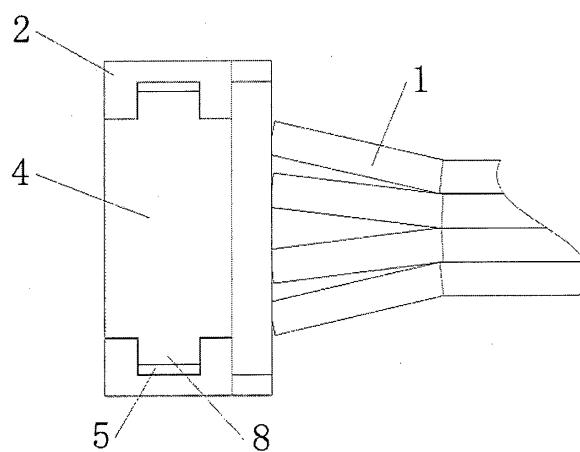


Figure 3

**Description****Technical field**

**[0001]** This utility model relates to an electrical connector, and more particularly to an electrical connector for LED flexible epoxy light bar.

**Background**

**[0002]** LED light bar connection in the prior art adopts traditional solder method, needs specialized tools (such as iron, tin wire, etc.), the light bar may be only installed by a professional technician, moreover, it will take a lot of time, thereby reduce the working efficiency and increase the cost.

**Utility model**

**[0003]** The purpose is to provide a simple structure, reliable performance, easy installation, and low cost electrical connector for LED flexible epoxy light bar.

**[0004]** In order to solve the above technical problems, the present utility model provides an electrical connector for LED flexible epoxy light bar, it is characterized in that it comprises a main body and a lid buckled with the said main body, the said body includes a plurality of conductive puncture portions; one side of the main body is connected to a plurality of wires, the said conductive puncture portions are connected with corresponding wires one by one, one end of the light bar is held between said main body and lid, the said conductive puncture portions pierces the copper wire at one end of the corresponding light bar.

**[0005]** Further, the said main body is provided with a slot, the said conductive puncture portion and copper wire plate are located in the slot.

**[0006]** Further, the lid comprises a resilient arm, the said main body is also provided with a fixing groove, the said resilient arm can be placed in the fixing groove.

**[0007]** Further, a projection may be formed at the end of the said resilient arm, the said projection is snapped in the opening of the said main body.

**[0008]** Further, the conductive puncture portion has a first portion and a second portion, the said copper wire plate is held between the first and the second portions.

**[0009]** This electrical connector requires only pressing the lid to achieve the connection between the light bar and wire, so it is easily installed, no any specialized tools required; in addition, the single point may carry 5A current; furthermore, it is compact, less area of land occupied; light weight, and easily hung up.

**Attached figures**

**[0010]**

Fig. 1 is an overall structural diagram of the electrical

connector.

Fig.2 is a front view of the electrical connector.

Fig.3 is a plan view of the electrical connector.

Fig.4 is a broken view of LED flexible epoxy light bar.

**Preferred embodiment**

**[0011]** Shown as Fig.1-4, the electrical connector of LED flexible epoxy light bar in the present utility model includes a main body 2 and the lid 4 buckled with said main body 2, wherein the main body 2 comprises a plurality of electrically conductive puncture portion 3; one side of the said main body 2 is connected to a plurality of the wire 1, the said conductive puncture portions 3 are connected with corresponding wires one by one, one end of the light bar 10 is held between said main body 2 and lid 4, the said conductive puncture portions 3 pierce the copper wire plate 9 at one end of the said corresponding light bar 10, thus form the electrical connection between said plurality of wires 1 and the said copper wire plate 9 at one end of light bar 10. Preferably, one end of the said LED light bar has the plurality of said copper wire plate 9. So, during installing, only need to put one end of light bar 10 to be connected into the said electrical connector, care to let the copper wire plate 9 of light bar 10 touch to the conductive puncture portion 3 of this electrical connector, and then close the lid and forcibly press down the lid 4, which shall automatically buckled on the top of the said electrical connector, and complete the installation. So, the electrical connection between light bar 10 and wire may be realized without welding.

**[0012]** Preferably, the said main body 2 is provided with a slot, the said electrically conductive puncturing portion 3 and the copper wire plate 9 are located in the slot so that securely fix the light bar 10 into the slot, and form reliable electrical connection between the copper wire plate 9 of light bar 10 and the conductive puncture portion 3.

**[0013]** Preferably, the lid 4 comprises a resilient arm 8, wherein the main body 2 is also provided with fixing grooves 5, the resilient arm 8 can be placed in the said fixing groove 5, said fixing grooves 5 may, on the one hand, guide the installing, on the other hand, limit the resilient arm 8. A projection 7 may be formed at the end of said resilient arm 8, which resiliently snap in the opening 6 of the said main body 2, thus securely fix the light bar 10.

**[0014]** Preferably, the conductive puncture portion 3 has a first portion and a second portion, the said copper wire plate 9 is held between the first and the second portions.

**[0015]** This electrical connector may realize the electrical connection between light bar and wire only be pressing the lid down, so it is easily installed, no any specialized tools required; in addition, its single point may

carry 5A current; furthermore, it is compact, less area of land occupied, light weight, and easily hung up.

### Claims

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1. An electrical connector for LED flexible epoxy light bar, it is **characterized in that** it comprises a main body and a lid buckled with the said main body, the said body includes a plurality of conductive puncture portions; one side of the main body is connected to a plurality of wires, the said conductive puncture portions are connected with corresponding wires one by one, one end of the light bar is held between said main body and lid, the said conductive puncture portions pierces the copper wire at one end of the corresponding light bar. 10
2. As electrical connector claimed in claim 1, it is **characterized in that** the said main body is provided with a slot, the said conductive puncture portion and copper wire plate are located in the slot. 20
3. As electrical connector claimed in claim 1 or 2, it is **characterized in that** the lid comprises a resilient arm, the said main body is also provided with a fixing groove, the said resilient arm can be placed in the fixing groove. 25
4. As electrical connector claimed in claim 3, it is **characterized in that** a projection may be formed at the end of the said resilient arm, the said projection is snapped in the opening of the said main body. 30
5. As electrical connector claimed in claim 3, it is **characterized in that** the conductive puncture portion has a first portion and a second portion, the said copper wire plate is held between the first and the second portions. 35

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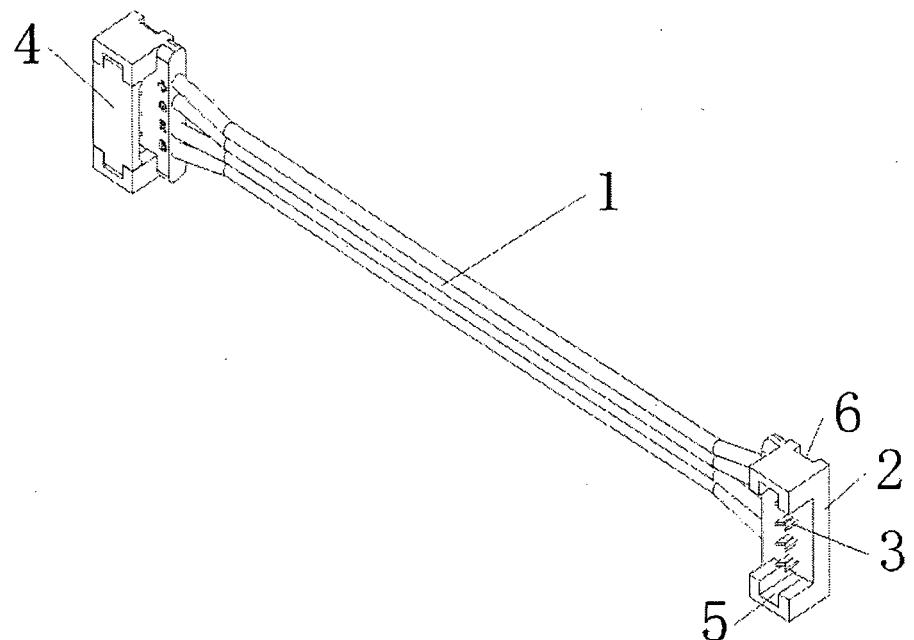


Figure 1

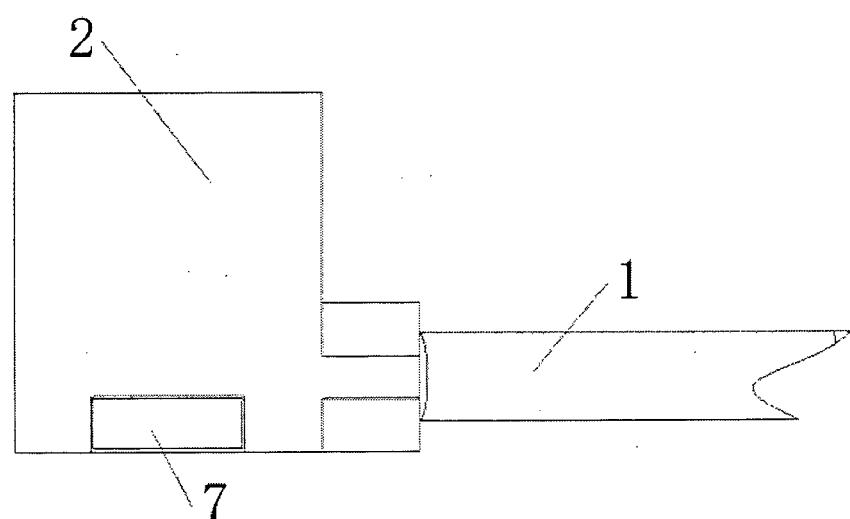


Figure 2

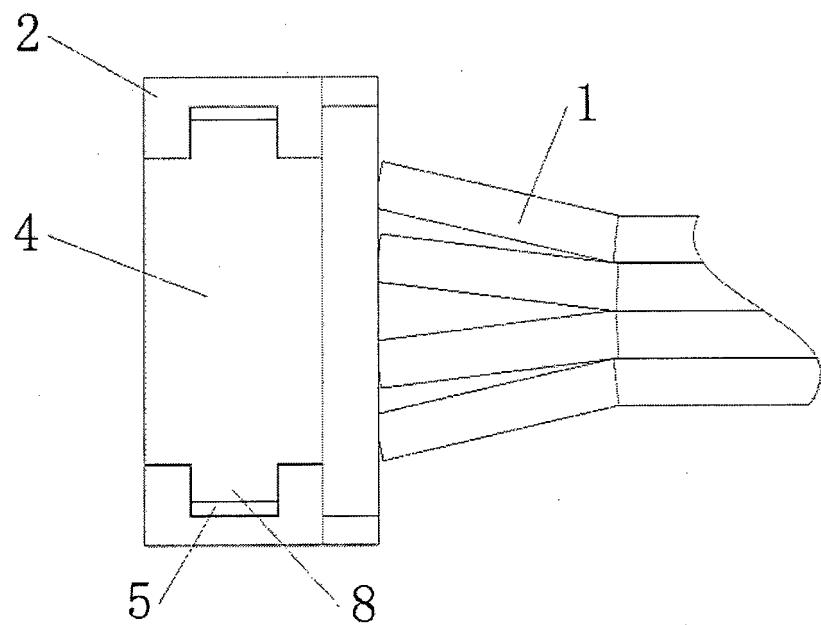


Figure 3

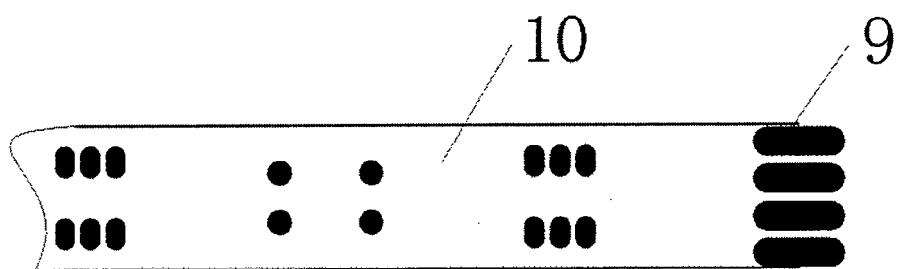


Figure 4

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2012/078454

## A. CLASSIFICATION OF SUBJECT MATTER

See the extra sheet

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC: H01R

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

CNKI, CNPAT, WPI, EPODOC: LED, lamp, strip, strap, band, tape, pierce, IDC, poke in, flexible, cover, wire, cable, copper

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
PX	CN202189899U (ZHANG, Yong) 11 Apr. 2012(11.04.2012) claims 1-5	1-5
X	CN101853988A (TYCO ELECTRONICS SHANGHAI CORP) 06 Oct. 2010(06.10.2010) description, paragraphs 0027-0038, figures 1-5	1-3, 5
A	CN201731363U (ZHONGSHAN CITY KESHUN TECHNOLOGY CO LTD) 02 Feb. 2011(02.02.2011) the whole document	1-5
A	WO0019565A2 (FRAMATOME CONNECTORS INT) 06 Apr. 2000(06.04.2000) the whole document	1-5

 Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:	“T” later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
“A” document defining the general state of the art which is not considered to be of particular relevance	“X” document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
“E” earlier application or patent but published on or after the international filing date	“Y” document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
“L” document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	“&” document member of the same patent family
“O” document referring to an oral disclosure, use, exhibition or other means	
“P” document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search 09 Aug. 2012(09.08.2012)	Date of mailing of the international search report 01 Nov. 2012(01.11.2012)
Name and mailing address of the ISA State Intellectual Property Office of the P. R. China No. 6, Xitucheng Road, Jimenqiao Haidian District, Beijing 100088, China Facsimile No. (86-10)62019451	Authorized officer Ni, Guangyong Telephone No. (86-10) 62411730

Form PCT/ISA/210 (second sheet) (July 2009)

**INTERNATIONAL SEARCH REPORT**  
Information on patent family members

International application No.  
PCT/CN2012/078454

Patent Documents referred in the Report	Publication Date	Patent Family	Publication Date
CN202189899U	11.04.2012	None	
CN101853988A	06.10.2010	None	
CN201731363U	02.02.2011	None	
WO0019565A2	06.04.2000	CA2249084A1	29.03.2000

Form PCT/ISA/210 (patent family annex) (July 2009)

**INTERNATIONAL SEARCH REPORT**

International application No.

PCT/CN2012/078454

**A. CLASSIFICATION OF SUBJECT MATTER**

H01R 4/24 (2006.01) i

H01R 13/514 (2006.01) i

H01R 12/67 (2011.01) i