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(54) CONNECTION ASSEMBLY FOR FUSE BASE CONNECTION TERMINAL

(57) A connection assembly for a fuse base connection terminal (2) comprises a base (1) and a connection terminal (2) arranged on the base (1). A connection hole (21) is arranged on the connection terminal (2). The connection assembly also comprises a support piece (3) plugged into the connection terminal (2). The support piece (3) comprises an accommodation groove (31) used for accommodating a nut (4) or a bolt (5). A side surface of the accommodation groove (31) is provided with an opening (32). A bottom of the accommodation groove (31) is provided with a through hole (37). A position corresponding to the support piece (3) on the base (1) is provided with a bolt mounting hole (11). The bolt mounting hole (11), the connection hole (21) and the through hole (37) are on the same axis. Because the support piece (3) that can be plugged into the connection terminal (2) is arranged and the nut (4) or the bolt (5) can be put into the support piece (3), a user is free to choose to put the nut (4) or the bolt (5) into the support piece (3) to connect of the connection terminal (2) to a cable.

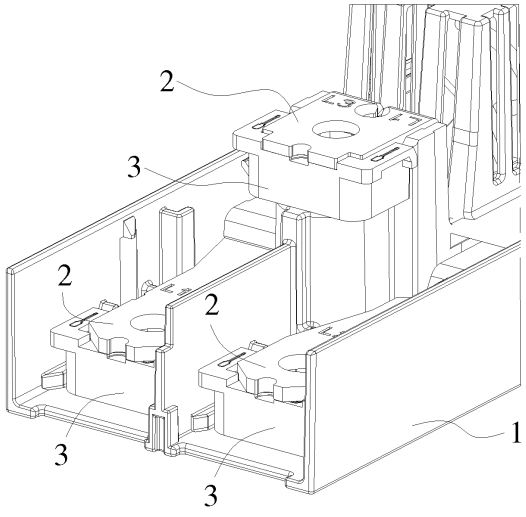

Fig. 2

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Description

Technical field

[0001] The present invention relates to a fuse base, and in particular, to a connection assembly for a fuse base connection terminal.

Background

[0002] There are two known ways to connect a fuse base connection terminal to a cable. One is to inlay a nut 2' to a connection terminal 1', as shown in Fig. 1 A. The other is to secure a bolt 3' to the connection terminal 1', as shown in Fig. 1 B. However, as for the two known connecting ways, a user cannot choose to use both of them, instead can only choose to use one of them.

[0003] Therefore, there is a need to design a connection assembly for a fuse base connection terminal for a user's free choice.

Summary

[0004] An object of the invention is to overcome the deficiency in prior art, so as to provide a connection assembly for a fuse base connection terminal for user's free choice.

[0005] The technical solution of the invention provides a connection assembly for a fuse base connection terminal, comprising a base and a connection terminal arranged in the base, wherein a connection hole is provided on the connection terminal, the connection assembly further comprises a support piece connected with the connection terminal by insertion, wherein the support piece comprises an accommodation groove for receiving a nut or a bolt, wherein the accommodation groove is provided with an opening on its side surface and provided with a through hole on its bottom, wherein a bolt mounting hole is arranged in the base at a location corresponding to the support piece, and the bolt mounting hole, the connection hole, and the through hole are arranged in line.

[0006] Preferably, the accommodation groove is of hexagon.

[0007] Preferably, the width of the opening is larger than that of two adjacent side surfaces of the accommodation groove.

[0008] Preferably, a limit projection is arranged on a bottom of the opening.

[0009] Preferably, two tabs are symmetrically arranged on the support piece, and a step is formed between the tabs and the accommodation groove for being connected with the connection terminal by snap fit.

[0010] Preferably, each of the tabs comprises a stopper, and the connection terminal comprises a notch to cooperate with the stopper, such that the stopper snaps into the notch for limiting the location at which a support piece is inserted into the connection terminal.

[0011] Preferably, the support piece further comprises an elastic catch for being connected to the base at a location corresponding to the connection terminal.

[0012] By adopting the above mentioned technical solution, following beneficial effects can be achieved: due to the arrangement of a support piece that can be connected with a connection terminal by insertion, a nut or a bolt can be placed into the support piece. A user can freely choose to place the nut or the bolt into the support piece, so as to achieve connection of the connection terminal and a cable.

Brief description of the drawings

[0013]

Fig. 1 A is a structural diagram of prior art connection of a connection terminal and a nut.

Fig. 1 B is a structural diagram of prior art connection of a connection terminal and a bolt.

Fig. 2 is a structural diagram of a connection assembly for a fuse base connection terminal according to an embodiment of the invention.

Fig. 3 is an exploded diagram of the connection assembly for the fuse base connection terminal according to an embodiment of the invention.

Fig. 4 is a structural diagram of a support piece according to an embodiment of the invention.

Fig. 5 is an exploded diagram of connection of the connection assembly for the fuse base connection terminal and a nut according to an embodiment of the invention.

Fig. 6 is a structural diagram of connection of the connection assembly for the fuse base connection terminal and a bolt according to an embodiment of the invention.

List of reference sign

[0014]

1'	-connection terminal
2'	-nut
3'	-bolt
1	-base
2	-connection terminal
3	-support piece

4 -nut

5 -bolt

11 -bolt mounting hole

21 -connection hole

22 -notch

31 -accommodation groove

32 -opening

33 -limit projection

34 -tab

35 -step

36 -elastic catch

37 -through hole

341 -stopper

Detailed description of the embodiments

[0015] Embodiments of the invention are described below in connection with the accompanying drawings.

[0016] As shown in Fig. 2, a connection assembly for a fuse base connection terminal comprises a base 1 and a connection terminal 2, wherein the connection terminal 2 is provided within the base 1 and is provided with a connection hole 21. The connection assembly also comprises a support piece 3 connected with the connection terminal 2 by insertion. The support piece 3 comprises an accommodation groove 31 for receiving a nut 4 or a bolt 5, wherein the accommodation groove 31 is provided with an opening 32 in its side surface, and with a through hole 37 in its bottom. A bolt mounting hole 11 is arranged on the base 1 at a location corresponding to the support piece 3. All of the three component: the bolt mounting hole 11, the connection hole 21, and the through hole 37 are arranged in line. Fig. 2 shows a state wherein the support piece 3 is connected with the connection terminal 2 by insertion. Fig. 3 shows a state wherein the support piece 3 is detached from the connection terminal 2.

[0017] When a user needs a connection terminal for a nut, he/she first pulls the support piece 3 out of the connection terminal 2; then places the nut 4 into the support piece 3, as shown in Fig. 5; finally, pushes the support piece 3 along with the nut 4 into the connection terminal 2. The nut 4 can be inserted into the accommodation groove 31 along a vertical direction in Fig. 5, or can pass through the opening 32 into the accommodation groove 31 along a horizontal direction in Fig. 5.

[0018] When a user needs a connection terminal for a blot, he/she first pulls the support piece 3 out of the connection terminal 2; then inserts the bolt 5 through the bolt mounting hole 11 of the base 1 into the connection hole 21 of the connection terminal 2, as shown in Fig. 6; finally, pushes the support piece 3 into the connection terminal 2, and secures the bolt 5. A head of the bolt 5 passes through the opening 32 into the accommodation groove 31, when the support piece 3 is being pushed.

[0019] By means of the support piece which can be connected with the connection terminal by insertion, the nut or the bolt can be placed into the support piece. A user can freely choose to place the nut or the bolt into the support piece, to achieve connection of the connection terminal and a cable. The support piece serves to receive the nut or the bolt, and secure the nut or the bolt to the connection terminal.

[0020] In this embodiment, the through hole 37 is arranged in the bottom of the support piece 3, as shown in Fig. 4. When the accommodation groove 31 of the support piece 3 is used to receive the nut, the bolt for connecting the cable passes successively through the connection hole 21, the nut 4, and the through hole 37, so as to fasten the cable to the connection terminal 2.

[0021] In this embodiment, the accommodation groove 31 is of hexagon. The accommodation groove 31 is the same as the heads of the nut 4 and the bolt 5 in terms of shape, but somewhat larger than the heads of the nut 4 and the bolt 5. The hexagonal accommodation groove 31 can serve to prevent the nut and bolt from moving in the accommodation groove 31.

[0022] Preferably, the accommodation groove can possess other shapes and still falls into the protection scope of the invention, as long as it serves to receive the nut and the bolt.

[0023] In this embodiment, as shown in Fig. 4, the width of the opening 32 of the hexagonal accommodation groove 31 is larger than that of two adjacent side surfaces of the accommodation groove 31. The opening 32 facilitates receiving of the nut 4 and the bolt 5 into the accommodation groove 32. Especially for the bolt 5, since there is the opening 32 whose width is larger than that of the two adjacent side surfaces of the hexagonal accommodation groove 32, the head of the bolt 5 can pass through the opening 32 smoothly after the bolt 5 is inserted to the connection terminal 2, and thus the support piece 3 can be inserted to the connection terminal 2 along a horizontal direction in Fig. 6.

[0024] In this embodiment, as shown in Fig. 4, a limit projection 33 is arranged on the bottom of the opening 32. The height of the limit projection 33 is higher than the bottom of the accommodation groove 31. The limit projection 33 is used to limit the location at which the nut 4 is placed in the accommodation groove 31, preventing the nut 4 from sliding out of the accommodation groove 31. The location of the bolt 5 does not need to be limited by the limit projection 33, since the bolt 5 is inserted into the through hole 21, and thus the location of the bolt 5 is limited by the through hole 21.

[0025] In the embodiment, as shown in Fig. 4, two tabs 34 are asymmetrically arranged on the support piece 3, and a step 35 is formed between the tabs 34 and the accommodation groove 32 for being connected with the connection terminal 2 by snap fit. As shown in Fig. 2, after the support piece 3 is connected with the connection terminal 2 by insertion, the step 35 contacts with the bottom surface of the connection terminal 2, with the tabs 34 being located on two sides of the connection terminal 2. The step 35 can serve to prevent the support piece 3 from turning over.

[0026] Preferably, as shown is Fig. 4, each of the tabs 34 comprises a stopper 341 which is used to limit the location at which the support piece 3 is inserted to the connection terminal 2. A notch 22 (see Fig. 3) is formed on the connection terminal 2 to cooperate with the stopper 341, such that the stopper 341 snaps into the notch 22.

[0027] In this embodiment, as show in Fig. 4, the support piece 3 also comprises elastic catches 36 for being connected to the base 1 at a location corresponding to the connection terminal 2. The elastic catches 36 in this embodiment are formed on two sides of the opening 32. Preferably, the elastic catches 36 can be formed on two sides of the support piece 3 or other locations, and still falls into the protection scope of the invention, as long as the elastic catch 36 can serve to be connected to the base 1 for securing the support piece 3.

[0028] The content set forth above merely comprises the principle and preferred embodiments of the invention. It should be noted that, for those skilled in the art, various modifications can be made to the present invention based on the principle of the invention, and the modifications should be considered as falling into the protection scope of the invention.

Claims

1. A connection assembly for a fuse base connection terminal, comprising a base (1) and a connection terminal (2) arranged in the base (1), wherein a connection hole (21) is provided on the connection terminal (2), **characterized in that**, the connection assembly further comprises a support piece (3) connected with the connection terminal (2) by insertion, wherein the support piece (3) comprises an accommodation groove (31) for receiving a nut (4) or a bolt (5), wherein the accommodation groove (31) is provided with an opening (32) on its side surface and provided with a through hole (37) on its bottom, wherein a bolt mounting hole (11) is arranged in the base (1) at a location corresponding to the support piece (3), and the bolt mounting hole (11), the connection hole (21), and the through hole (37) are arranged in line.

2. The connection assembly for the fuse base connection terminal according to claim 1, **characterized in that**, the accommodation groove (31) is of hexagon.

3. The connection assembly for the fuse base connection terminal according to claim 2, **characterized in that**, the width of the opening (32) is larger than that of two adjacent side surfaces of the accommodation groove (31).

4. The connection assembly for the fuse base connection terminal according to claim 1, **characterized in that**, a limit projection (33) is arranged on a bottom of the opening (32).

5. The connection assembly for the fuse base connection terminal according to claim 1, **characterized in that**, two tabs (34) are symmetrically arranged on the support piece (3), and a step (35) is formed between the tabs (34) and the accommodation groove (31) for being connected with the connection terminal (2) by snap fit.

6. The connection assembly for the fuse base connection terminal according to claim 5, **characterized in that**, each of the tabs (34) comprise a stopper (341), and the connection terminal comprises a notch (22) to cooperate with the stopper (341), such that the stopper (341) snaps into the notch (22) for limiting a location at which the support piece (3) is inserted into the connection terminal (2).

7. The connection assembly for the fuse base connection terminal according to anyone of claims 1-6, **characterized in that**, the support piece (3) further comprises an elastic catch (36) for being connected to the base (1) at a location corresponding to the connection terminal (2).

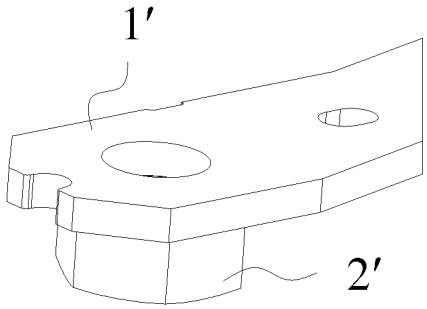

Fig. 1A

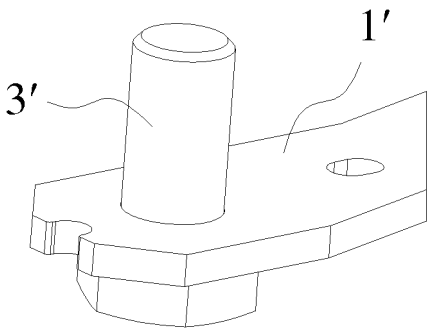

Fig. 1B

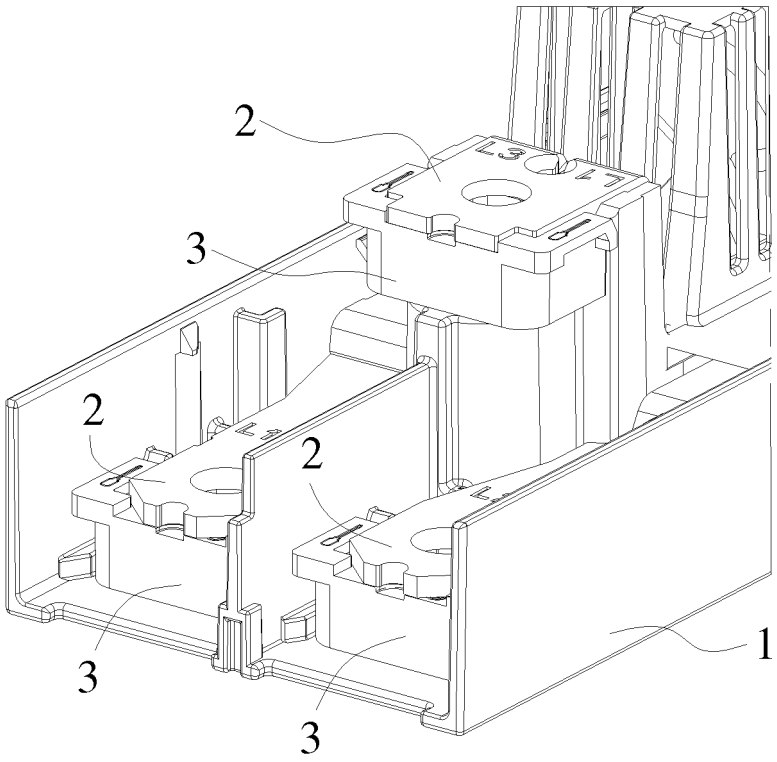

Fig. 2

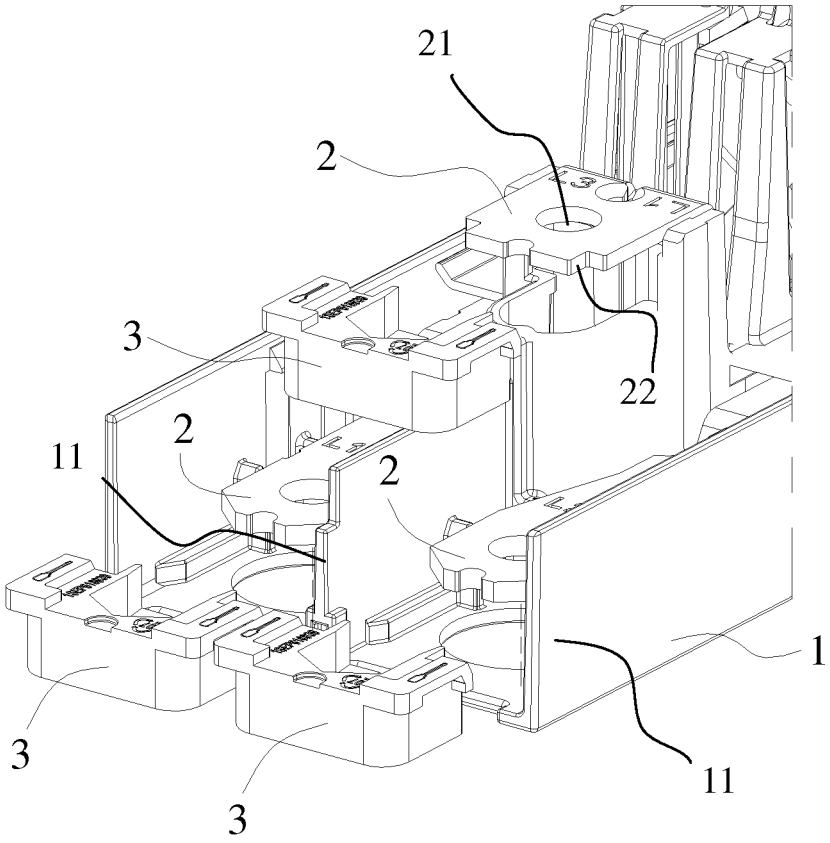

Fig. 3

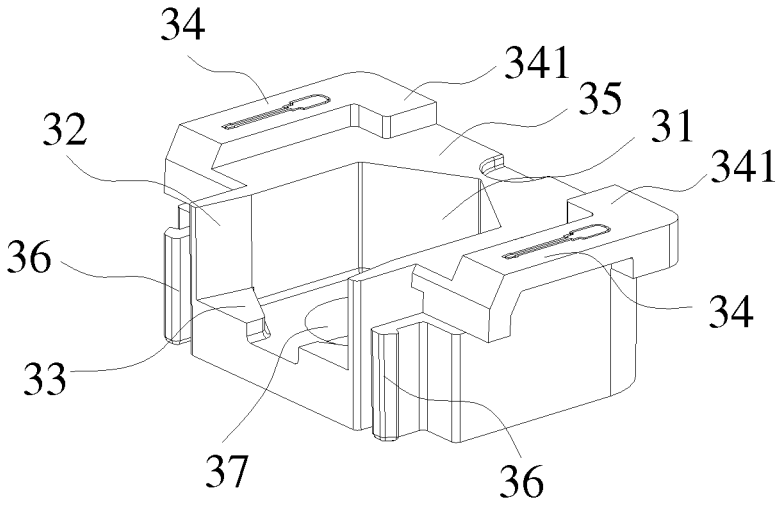

Fig. 4

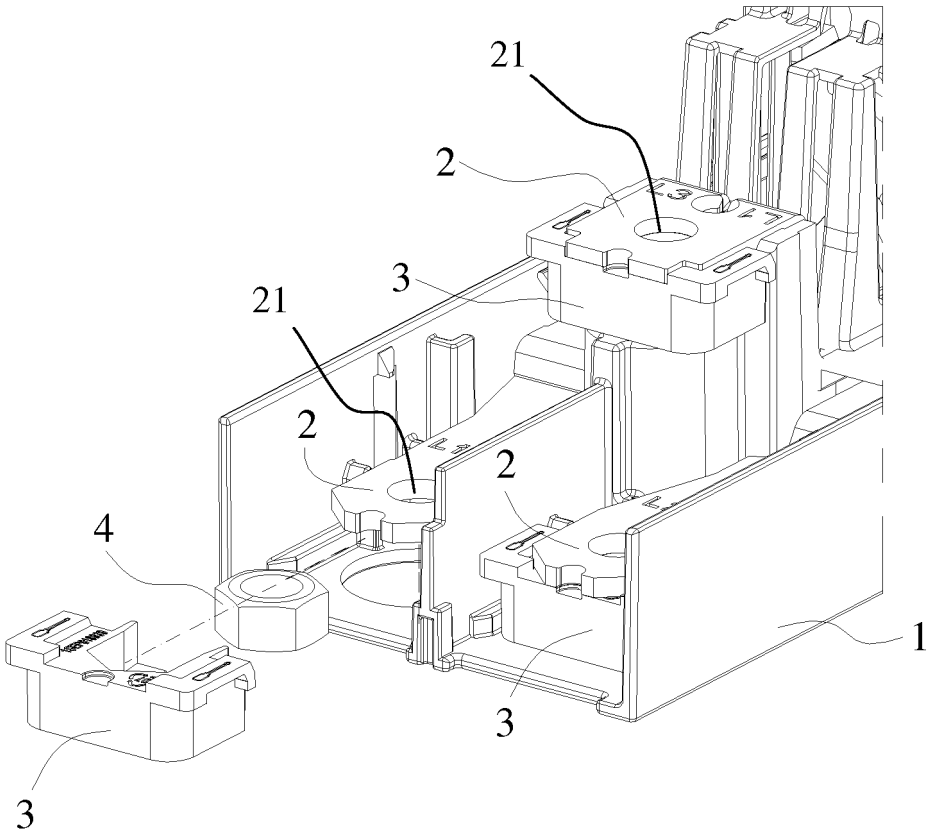

Fig. 5

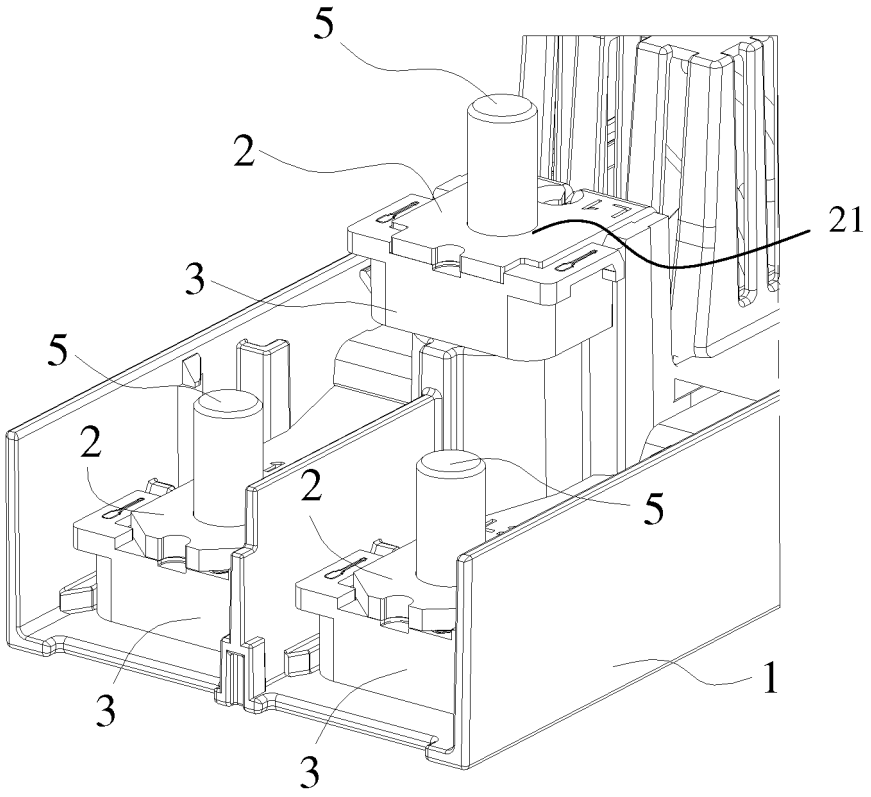

Fig. 6

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2015/075058

A. CLASSIFICATION OF SUBJECT MATTER

H01H 85/20 (2006.01) i; H01H 85/43 (2006.01) i
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)

H01H, 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)

EPODOC, WPI, CNPAT, CNKI: foundation, nut, bolt, amphenol connector, base, fuse, support, screw, groove, insert

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
PX	CN 203839324 U (ABB AS) 17 September 2014 (17.09.2014) claims 1 to 7	1-7
A	CN 103477413 A (YAZAKI CORPORATION) 25 December 2013 (25.12.2013) description, paragraphs [0026] to [0031], and figure 2	1-7
A	CN 102664317 A (SHENZHEN SUCCEED ELECTRONIC TECHNOLOGY CO., LTD.) 12 September 2012 (12.09.2012) the whole document	1-7
A	CN 1697105 A (FUJI ELECTRIC FA COMPONENTS) 16 November 2005 (16.11.2005) the whole document	1-7
A	JP 2010073516 A (YAZAKI CORPORATION) 02 April 2010 (02.04.2010) the whole document	1-7
A	US 2002134572 A1 (YAZAKI CORPORATION) 26 September 2002 (26.09.2002) the whole document	1-7

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

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Date of the actual completion of the international search	Date of mailing of the international search report
13 May 2015	19 June 2015

Name and mailing address of the ISA	Authorized officer
State Intellectual Property Office of the P. R. China No. 6, Xitucheng Road, Jimenqiao Haidian District, Beijing 100088, China Facsimile No. (86-10) 62019451	ZOU, Aimin Telephone No. (86-10) 010-62413495

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

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
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