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(54) **CABLE CONNECTOR**

(57) A cable connector used for multiple cables (100) includes a sleeve (1), a plastic core (2) and insert pins (3). The sleeve (1) is defined with an axial direction (L1). The plastic core (2) is received in the sleeve (1) and composed of multiple blocks (21) divided along the axial di-

rection (L1). Each block (21) has a through hole (22). An end of each insert pin (3) is fixed to one of the cables (100). Another end thereof is inserted into one of the through holes (22).

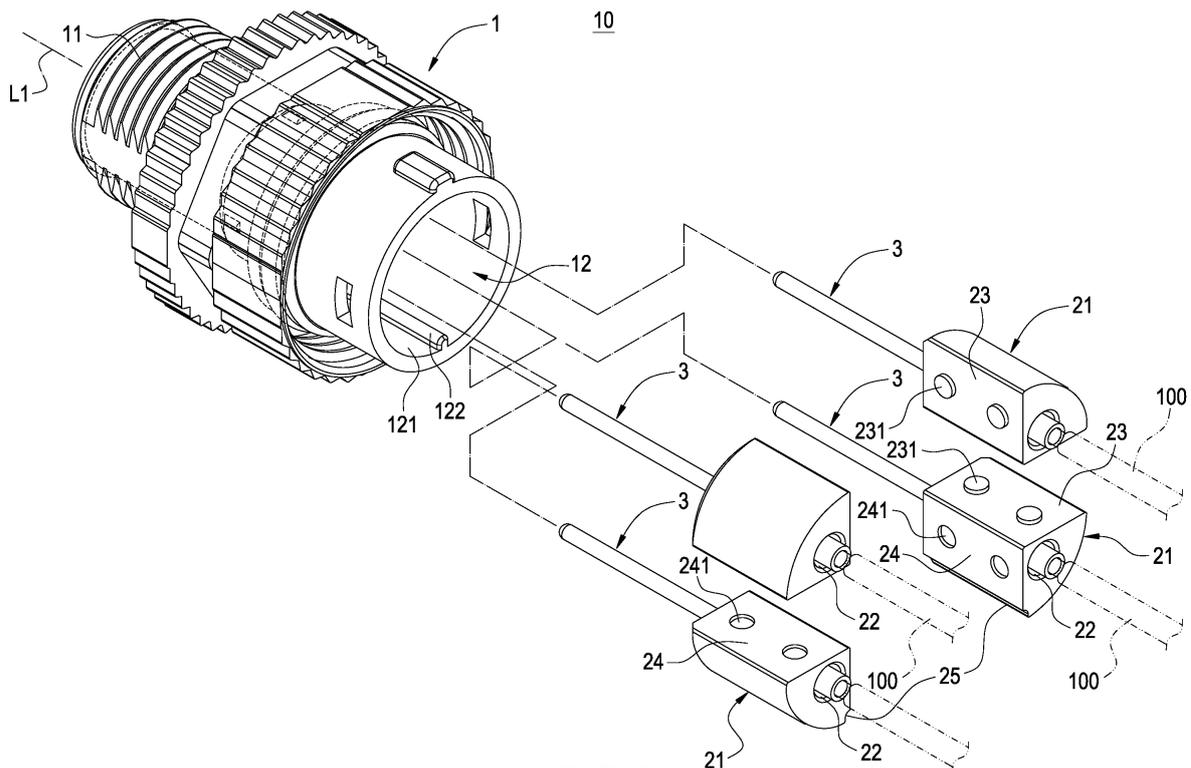


FIG.2

Description

BACKGROUND OF THE INVENTION

Technical Field

[0001] The invention relates to connectors, particularly to cable connectors.

Related Art

[0002] A conventional cable connector includes a sleeve, insert pins and cables. The sleeve has insert holes. Wires in the cables are separately connected to the insert pins by soldering or pressing first, and then the insert pins are separately inserted into the insert holes. Thus, a cable connector is assembled.

[0003] However, the abovementioned cable connector has drawbacks as follows. Distances between the inset holes are too short to be easily inserted because of a narrow working space. Also, the insert pins which have been inserted tend to be pulled to cause bad contact or broken soldering when inserting. This decreases the yield rate of the cable connectors.

[0004] Accordingly, how to increase the yield rate of cable connectors and rapidly easily assemble a cable connector is a primary issue to be solved.

SUMMARY OF THE INVENTION

[0005] The invention provides a cable connector, which separately inserts insert pins to blocks first and then combines the blocks to form a plastic core to be received in a sleeve. This can make the cable connector have advantages of rapidly easily assembling, saving labor and increase of yield rate.

[0006] In the embodiment of the invention, the invention provides a cable connector used for multiple cables. The cable connector includes a sleeve, a plastic core and insert pins. The sleeve is defined with an axial direction. The plastic core is received in the sleeve and composed of multiple blocks divided along the axial direction. Each block has a through hole. An end of each insert pin is fixed to one of the cables. Another end thereof is inserted into one of the through holes.

[0007] According to the above mentioned, a side of each block is extended with protrusions and another side thereof is formed with cavities for receiving the protrusions so that the blocks can be firmly combined to be the plastic core. The sleeve is formed with a rib. Adjacent two of the blocks are jointly formed with a trench for receiving the rib so as to make the plastic core firmly received in the receiving room of the sleeve. As a result, the cable connector has great assembling firmness.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008]

FIG. 1 is a schematic view of the insert pin and the through hole of the invention;

FIG. 2 is an exploded view of the cable connector of the invention;

FIG. 3 is another exploded view of the cable connector of the invention;

FIG. 4 is an assembled view of the cable connector of the invention;

FIG. 5 is a cross-section view of the cable connector of the invention;

FIG. 6 is still another exploded view of the cable connector of the invention; and

FIG. 7 is another assembled view of the cable connector of the invention.

DETAILED DESCRIPTION OF THE INVENTION

[0009] Please refer to FIGS. 1-7. The invention provides a cable connector used for multiple cables 100. The cable connector 10 includes a sleeve 1, a plastic core 2 and insert pins 3.

[0010] As shown in FIGS. 2-7, the sleeve 1 is defined with an axial direction L1. An end of the sleeve 1 has a connecting portion 11, and the other end thereof is formed with a receiving room 12 and a partition plate 13 between the connecting portion 11 and the receiving room 12. The partition plate 13 is formed with via holes 131. The sleeve 1 has an inner wall 121 in the receiving room 12. The inner wall 121 is extended with a rib 122.

[0011] As shown in FIGS. 1-7, the plastic core 2 is axially received in the sleeve 1. The plastic core 2 is composed of multiple blocks 21 divided along the axial direction L1. Each block 21 has a through hole 22.

[0012] The plastic core 2 is defined with a central line L2. The blocks 21 are radially arranged around the central line L2. Each block 21 has a first side 23 and a second side 24, which are located beside the central line L2. Each first side 23 is extended with one or more protrusions 231. Each second side 24 is formed with one or more cavities 241 for receiving the protrusions 231 so that the blocks 21 can be firmly combined to be the plastic core 2. Adjacent two of the blocks 21 are jointly formed with a trench 25 for receiving the rib 122 so as to make the plastic core 2 firmly received in the receiving room 12 of the sleeve 1. As a result, the cable connector 10 has great assembling firmness.

[0013] As shown in FIGS. 1-6, an end of each insert pin 3 is fixed to one of the cables 100 and another end thereof is inserted into one of the through holes 22 so as to make the insert pins 3 exposed in the connecting portion 11. In detail, in this embodiment, the insert pins 3 are male pins, the cable connector 10 is a male cable connector, and the connecting portion 11 is used for connecting with a female cable connector, but not limited to this. Contrarily, the insert pins 3 may be female pins, the cable connector 10 is a female cable connector, and the connecting portion 11 is used for connecting with a male cable connector

[0014] As shown in FIGS. 6-7, the cable connector 10 of the invention further includes a hollow cylinder 4 and a binding ring 5. The hollow cylinder 4 is screwed to the sleeve 1. The hollow cylinder 4 covers the receiving room 12 and is passed by the cables 100. An end of the hollow cylinder 4, which is away from the sleeve 1, has a flexible binder 41 around the cables 100. The binding ring 5 is screwed to the hollow cylinder 4 to make the binding ring 5 annularly connect to the flexible binder 41 to bind the cables 100. This can prevent moisture from infiltrating the cable connector 10 through the gap between the sleeve 1 and the hollow cylinder 4 or the distal end of the hollow cylinder 4 (the binding ring 5) so as to make the cable connector 10 water-resistant.

[0015] As shown in FIGS. 2-7, when using the cable connector 10, connect an end of each insert pin 3 to one of the cables 100 and insert another end into one of the through holes 22. In other words, each insert pin 3 is assembled with one of the blocks 21 first and then combine the blocks 21 into the plastic core 2. Finally, put the plastic core 2 with the insert pins 3 in the sleeve 1. Thus, the insert pins 3 and the blocks 21 are separately assembled, so the problem of inconvenient insertion resulting from a narrow working space of conventional connectors does not exist any longer. Also, combine the blocks 21 into the plastic core 2 and put the plastic core 2 with the insert pins 3 in the sleeve 1, so the cable connector has advantages of rapidly easily assembling, saving labor and increase of yield rate.

Claims

1. A cable connector (10) used for multiple cables (100), comprising:

a sleeve (1) defined with an axial direction (L1);
 a plastic core (2), received in the sleeve (1), composed of multiple blocks (21) divided along the axial direction (L1), and each block (21) having a through hole (22); and
 insert pins (3), an end of each insert pin (3) being fixed to one of the cables (100), and another end thereof being inserted into one of the through holes (22).

2. The cable connector of claim 1, wherein the plastic core (2) is defined with a central line (L2), and the blocks (21) are radially arranged around the central line (L2).

3. The cable connector of claim 2, wherein each block (21) has a first side (23) and a second side (24), which are located beside the central line (L2), each first side (23) is extended with at least one protrusion (231), each second side (24) is formed with at least one cavity (241) for receiving the protrusion (231).

4. The cable connector of claim 3, wherein an end of the sleeve (1) has a connecting portion (11), another end thereof is formed with a receiving room (12) and a partition plate (13) between the connecting portion (11) and the receiving room (12), the partition plate (13) is formed with via holes (131), the plastic core (2) is received in the receiving room (11), and each insert pin (3) is inserted into one of the via holes (131).

5. The cable connector of claim 4, wherein the sleeve (1) has an inner wall (121) in the receiving room (12), the inner wall (121) is extended with a rib (122), and adjacent two of the blocks (21) are jointly formed with a trench (25) for receiving the rib (122).

6. The cable connector of claim 5, further comprising a hollow cylinder (4) screwed to the sleeve (1), wherein the hollow cylinder (4) covers the receiving room (12) and is passed by the cables (100).

7. The cable connector of claim 6, further comprising a binding ring (5), wherein an end of the hollow cylinder (4), which is away from the sleeve (1), has a flexible binder (41) around the cables (100), the binding ring (5) is screwed to the hollow cylinder (4), the binding ring 5 annularly connects to the flexible binder (41) to make the flexible binder bind the cables (100).

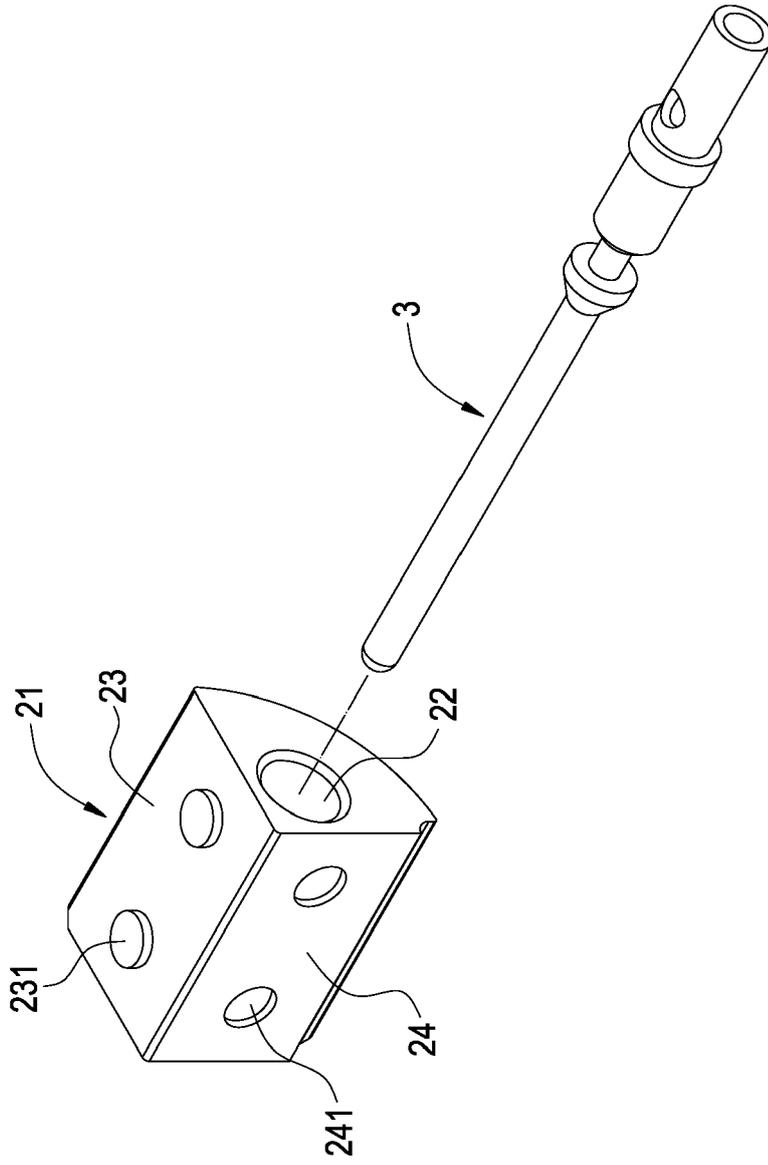


FIG.1

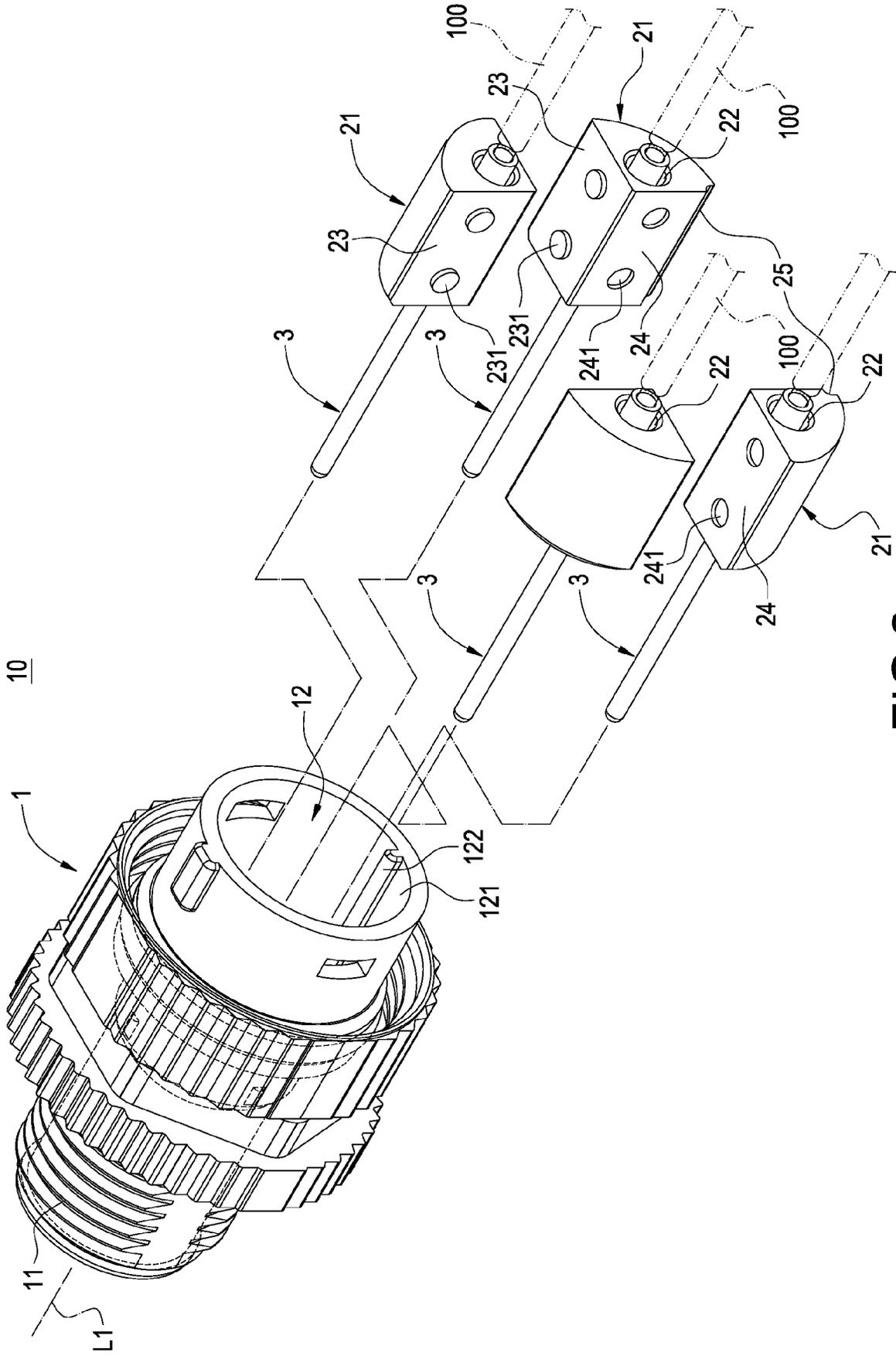


FIG.2

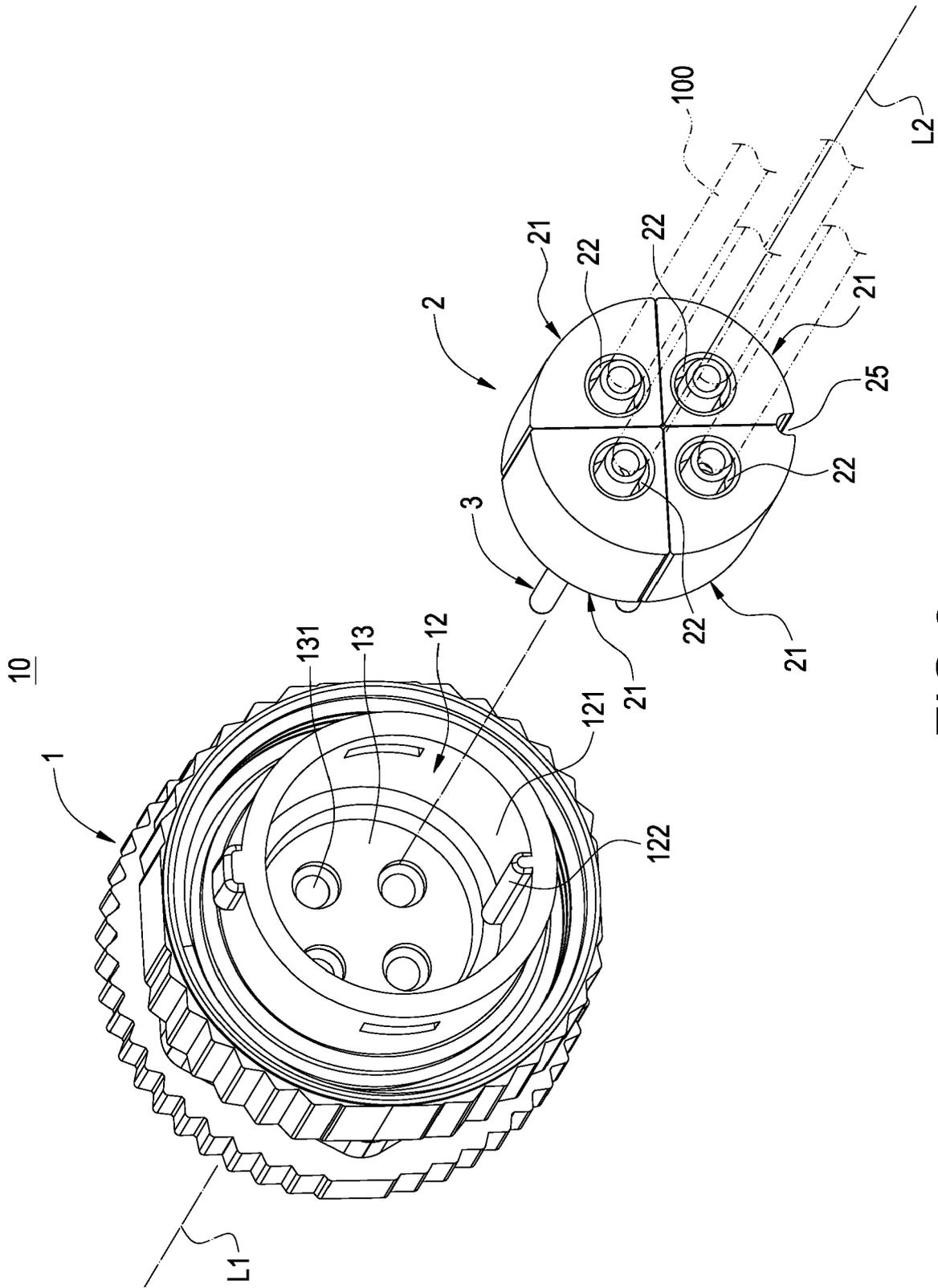


FIG.3

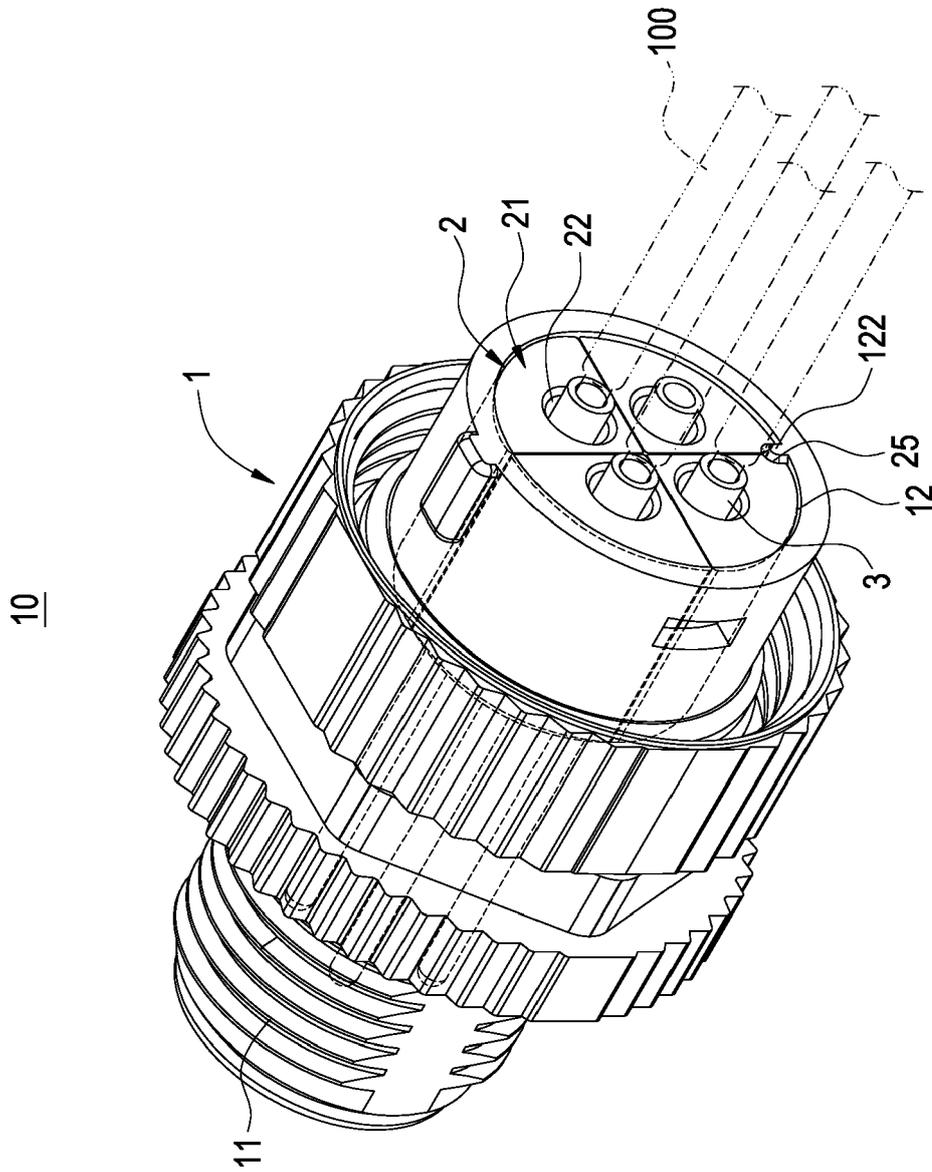


FIG.4

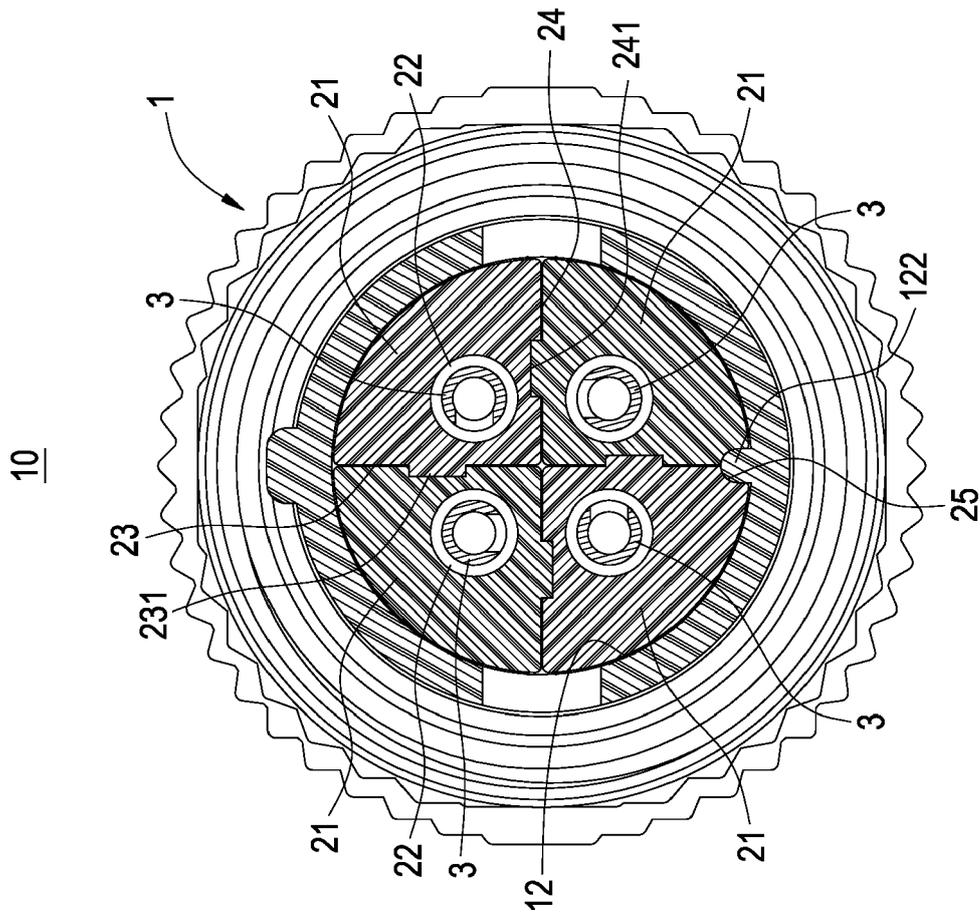


FIG.5

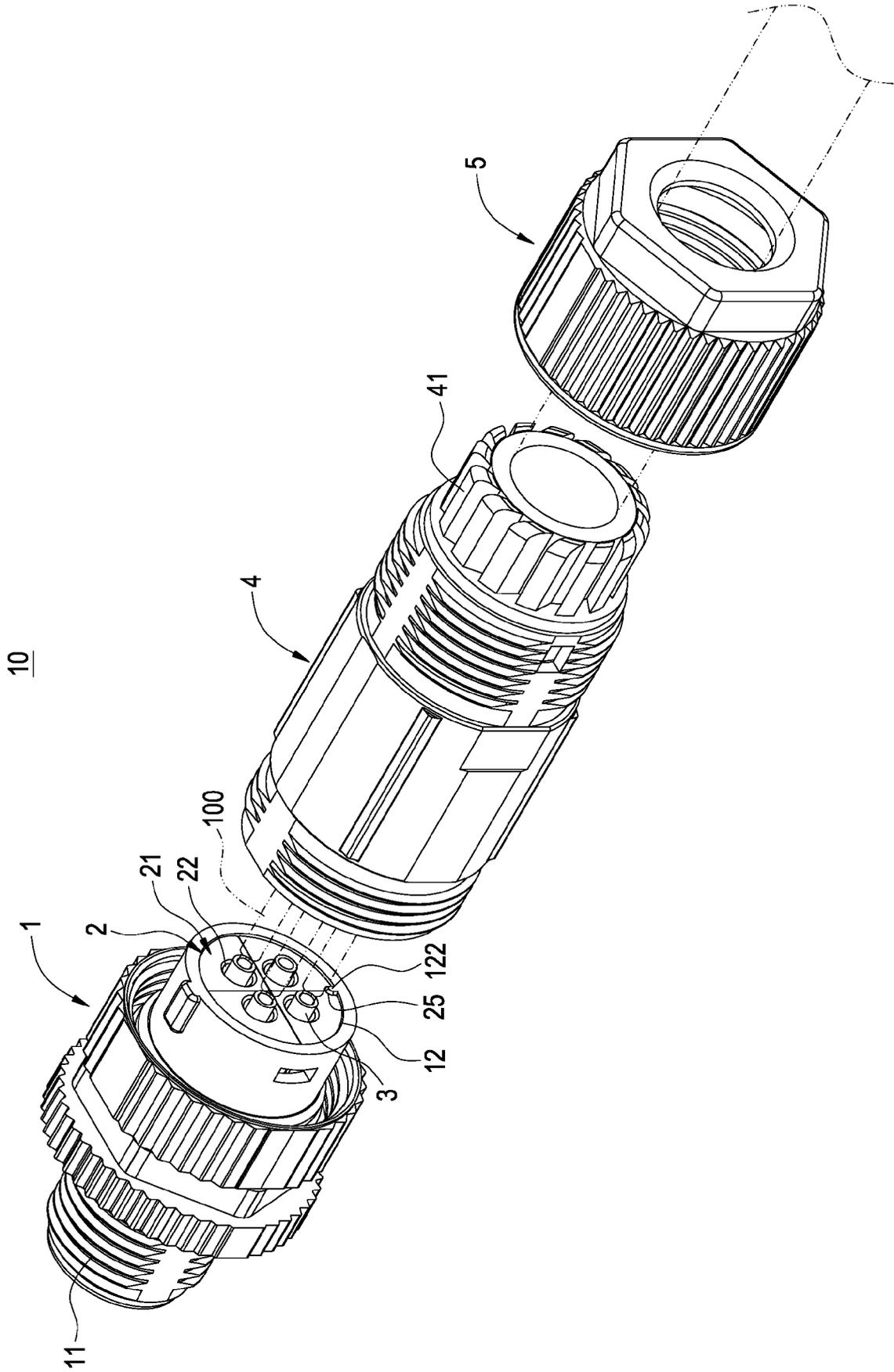


FIG.6

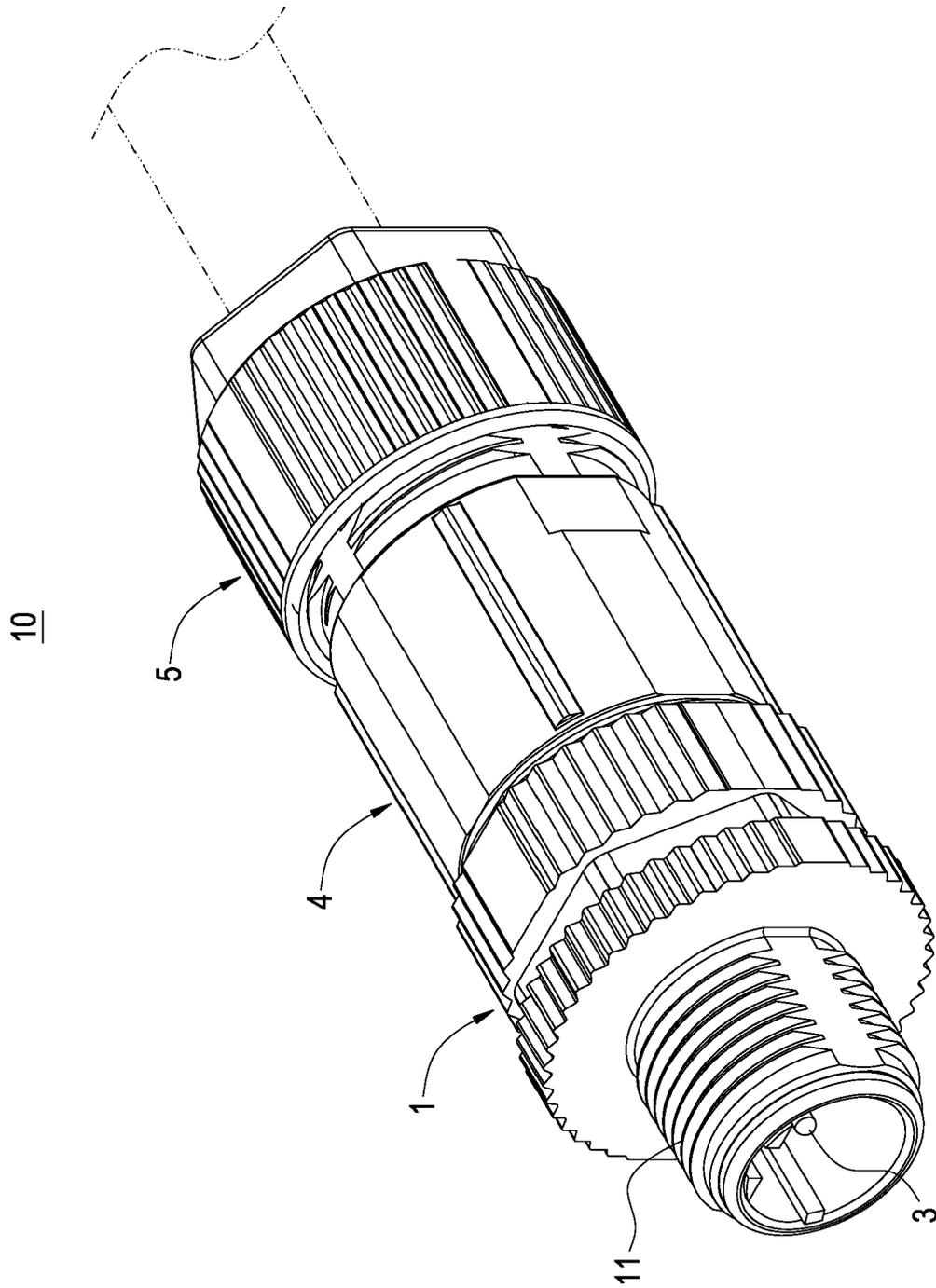


FIG. 7



EUROPEAN SEARCH REPORT

Application Number
EP 19 18 5259

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X	EP 2 985 840 A1 (TYCO ELECTRONICS SHANGHAI CO [CN]) 17 February 2016 (2016-02-17)	1-3	INV. H01R13/518
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A	* figures 1,3,5,9 * * column 3, line 37 - column 4, line 55 *	4-7	H01R13/502 H01R13/504 H01R13/506
A	FR 2 539 924 A1 (BONHOMME F R [FR]) 27 July 1984 (1984-07-27)	1-7	
	* page 5, line 3 - page 7, line 11 * * figures 2,3,5 *		
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	* figures 1,2a,2b * * page 6, line 6 - page 8, line 10 *		
			TECHNICAL FIELDS SEARCHED (IPC)
			H01R
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
The Hague		2 October 2019	Braga, João
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone		T : theory or principle underlying the invention	
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EPO FORM 1503 03/02 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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02-10-2019

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