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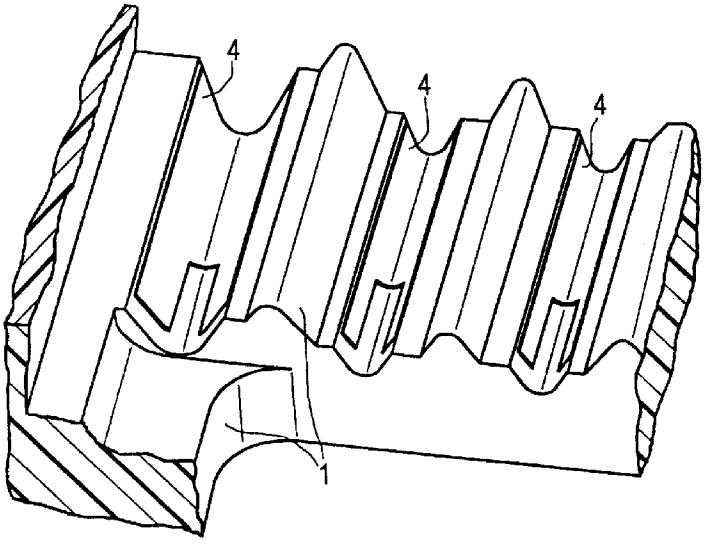
(54) **CONNECTEUR DE CABLE ENFICHABLE AVEC LANGUETTES DE CONTACT FIXEES DANS UN CORPS ISOLANT ET POURVUES DE CONNEXIONS SOUDEES**

(54) **CABLE PLUG-IN CONNECTOR WITH CONTACT TONGUES PROVIDED WITH SOLDERED CONNECTIONS AND SECURED IN AN INSULATING BODY**



(57) L'invention concerne un connecteur de câble enfichable, pourvu d'un corps isolant (1) et de plusieurs languettes de contact (2) électriques fixées dans ledit corps isolant (1). Les extrémités situées côté branchement des languettes de contact électriques servent d'éléments de contact établissant le contact électrique avec un contre-connecteur, et leurs extrémités opposées se présentent chacune sous la forme d'une connexion soudée (4) destinée à un conducteur de câble. La connexion soudée (4) doit présenter une section transversale en forme de V et, sa face dorsale étant opposée au conducteur du câble, être incorporée dans le corps isolant (1) par projection de matière plastique.

(57) This invention concerns a cable plug-in connector with an insulating body (1) and with several electrical tongues (2) secured in the insulating body (1). The plug-side ends of the electric contact tongues serve as the contact elements for establishing electrical contact with a counter-connector and their opposite ends are constructed as a soldered connection (4) for a cable conductor. The soldered connection (4) shall have a V-shaped cross section and, together with its back side which is turned away from the cable lead, be embedded in insulating material (1) by spraying with plastic.

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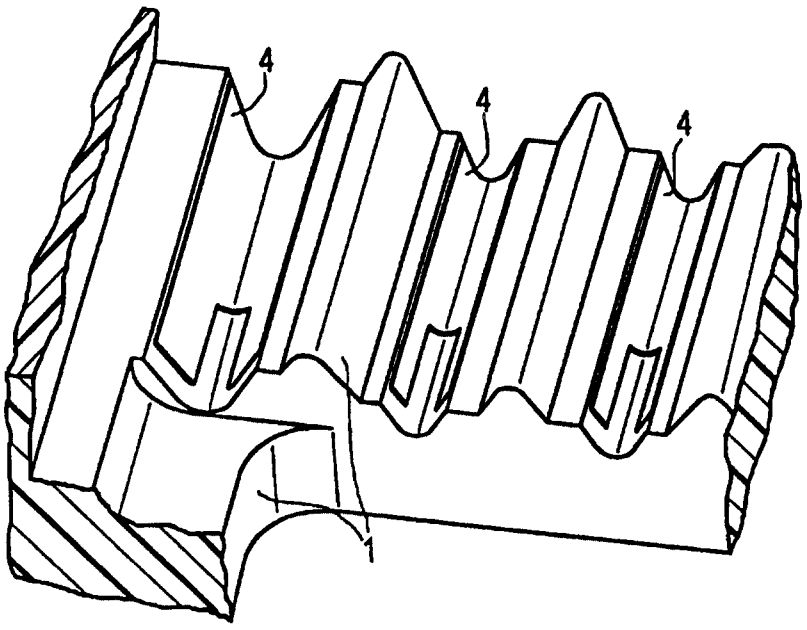
Mit internationalem Recherchenbericht.
Vor Ablauf der für Änderungen der Ansprüche zugelassenen Frist. Veröffentlichung wird wiederholt falls Änderungen eintreffen.

(54) **Title:** CABLE PLUG-IN CONNECTOR WITH CONTACT TONGUES PROVIDED WITH SOLDERED CONNECTIONS AND SECURED IN AN INSULATING BODY

(54) **Bezeichnung:** KABELSTECKVERBINDER MIT IN EINEM ISOLATIONSKÖRPER BEFESTIGTEN KONTAKTBAHNEN MIT LÖTANSCHLÜSSEN

(57) **Abstract**

This invention concerns a cable plug-in connector with an insulating body (1) and with several electrical tongues (2) secured in the insulating body (1). The plug-side ends of the electric contact tongues serve as the contact elements for establishing electrical contact with a counter-connector and their opposite ends are constructed as a soldered connection (4) for a cable conductor. The soldered connection (4) shall have a V-shaped cross section and, together with its back side which is turned away from the cable lead, be embedded in insulating material (1) by spraying with plastic.



(57) **Zusammenfassung**

Vorgeschlagen wird ein Kabelsteckverbinder mit einem Isolationskörper (1) und mit mehreren im Isolationskörper (1) befestigten elektrischen Kontaktbahnen (2), deren steckseitiges Ende jeweils als Kontaktelement zum Herstellen eines elektrischen Kontaktes mit einem Gegenstecker und deren entgegengesetztes Ende jeweils als Lötanschluß (4) für einen Kabelleiter ausgebildet ist. Der Lötanschluß (4) soll einen V-förmigen Querschnitt aufweisen und mit seiner vom Kabelleiter abgewandten Rückseite durch Umspritzen mit Kunststoff im Isolationskörper (1) eingebettet sein.

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TRANSLATION

Description

Cable connector having contact tracks which are fixed in an insulation body and have solder connections

The invention relates to a cable connector having an insulation body and having a plurality of electrical contact tracks which are fixed in the insulation body, whose end on the plug side is in each case designed as a contact element for producing an electrical contact with a mating connector, and whose opposite end is in each case designed as a solder connection for a cable conductor.

Such plug connectors have also been disclosed and are of interest, in particular, in the context of the standardized USB (Universal Serial Bus) concept which is the aim of a number of computer manufacturers. This new bus system relates in principle to the connections of peripherals to a PC no longer being carried out, as in the past, via individual parallel connections with separate and frequently different connector systems, but by the peripherals essentially being connected in serial to a common bus line which is directly connected to a printed circuit board (motherboard) in the PC via a standardized plug socket on the housing of the PC. The plug face of the printed circuit board plug socket (receptacle) has essentially already been defined by a specification and has four contact springs which are located in a plane alongside one another, are in the form of a strip and, when the bus plug is inserted, interact and produce the electrical contact with the four contact rails or tracks which are arranged in said plug and are located alongside one another. The contact springs are arranged in the female connector in an insulation body which essentially has a plastic tongue having a rectangular cross-section, and are bent in their rear region to form connecting legs which point away downwards and can be inserted into contact holes in the printed circuit board. The connector and mating connector are normally

provided with a metallic screening housing. Two latching hooks are provided in each case in the top region and bottom region of these screening plates, engage in cutouts on the screening housing of the matching mating connector, and produce the retaining forces when the plug is withdrawn and the earthing contact.

The solder connections of the previous cable connectors are normally designed as flat sheet-metal elements which project proud of the insulation body and are accordingly essentially not touched or supported by the insulation body. This known solution has both design and thermal disadvantages.

The present invention is based on the object of improving the known cable connector, with regard to the indicated disadvantages.

In the case of a cable connector of the type mentioned initially, this object is achieved in that the solder connection has a V-shaped cross-section, and its rear side, which faces away from the cable conductor, is embedded in the insulation body by extrusion coating with plastic.

The invention will be explained in more detail in the following text with reference to two exemplary embodiments and in conjunction with figures, in which:

Figure 1 shows a perspective partial view of a cable connector according to the invention, whose solder connections have not yet been provided with cable conductors,

Figure 2 shows a view from the rear side of the solder connections of the cable connector according to Figure 1, said solder connections not yet having been extrusion coated.

Figure 1 shows an insulation body 1 which is injection moulded from plastic material and in which, for example, four contact tracks 2, which are located alongside one another, are embedded (only three can be seen). The contact elements of the contact tracks have been omitted in the chosen illustration in the lower part of the figure.

The V-shape of the solder connections according to the invention is best seen in Figure 2. The V-shape of the solder connections has the advantage that a larger wetting area is available when soldering the cable conductors which must be inserted lengthwise into the solder connections 4 from above in Figure 1 and from below in Figure 2. The cable conductor is virtually completely surrounded by the solder tin. During the soldering process, the V-shape otherwise results in the cable conductor being prepositioned in an advantageous manner. The V-shape furthermore also makes it possible for the solder connection 4 to be embedded or extrusion coated easily during the injection moulding of the insulation body 1. As is best seen in Figure 1, it is directly possible to embed the solder connection 4 in the insulation body 1 to such an extent that the rear side, which faces away from the cable conductor, is completely surrounded by the plastic material. The embedding on the one hand provides better mechanical robustness and fixing of the contact tracks 2 in the insulation body 1. However, above all, the embedding results in relatively better heat transmission from the solder connection 4 to its environment during the soldering process. This is advantageous during production, for example in order to prevent the insulation body 1 from melting during the soldering process.

It is advantageous to provide a stepped lug 3 at the cable-side end of the solder connection 4 in order that the contact track end is anchored particularly firmly in the plastic material, so that this also produces additional security against any displacement caused, for example, by thermal stresses during the soldering process.

Patent Claim

1. Cable connector having an insulation body (1) and having a plurality of electrical contact tracks (2) which are fixed in the insulation body (1), whose end on the plug side is in each case designed as a contact element for producing an electrical contact with a mating connector, and whose opposite end is in each case designed as a solder connection (4) for a cable conductor, characterized in that the solder connection (4) has a V-shaped cross-section, and its rear side, which faces away from the cable conductor, is embedded in the insulation body (1) by extrusion coating with plastic.

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FIG 1

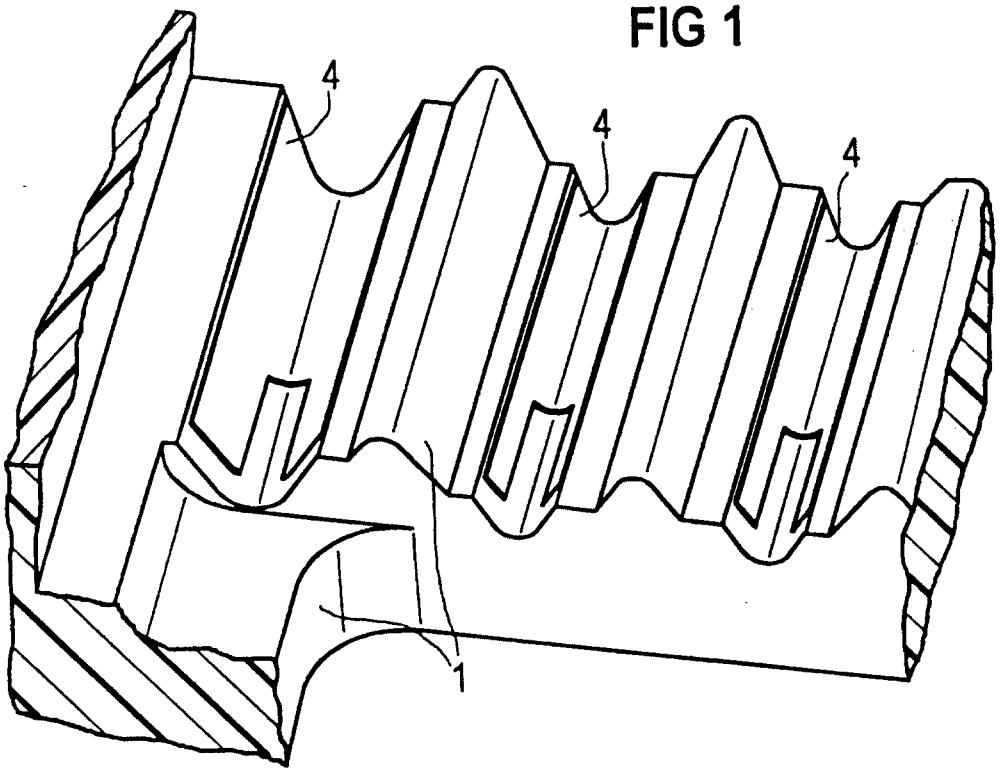
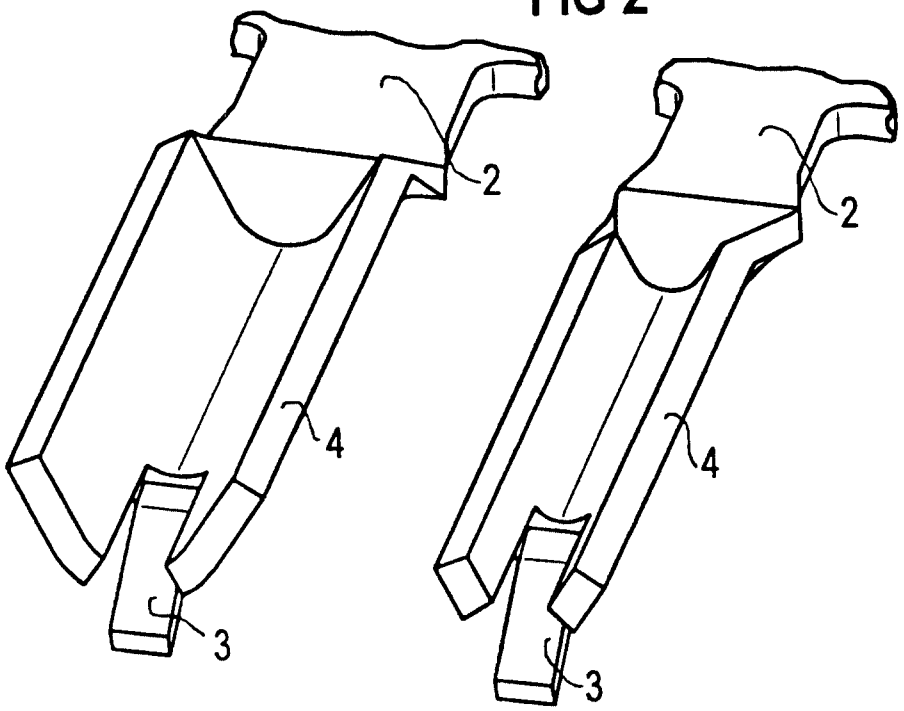
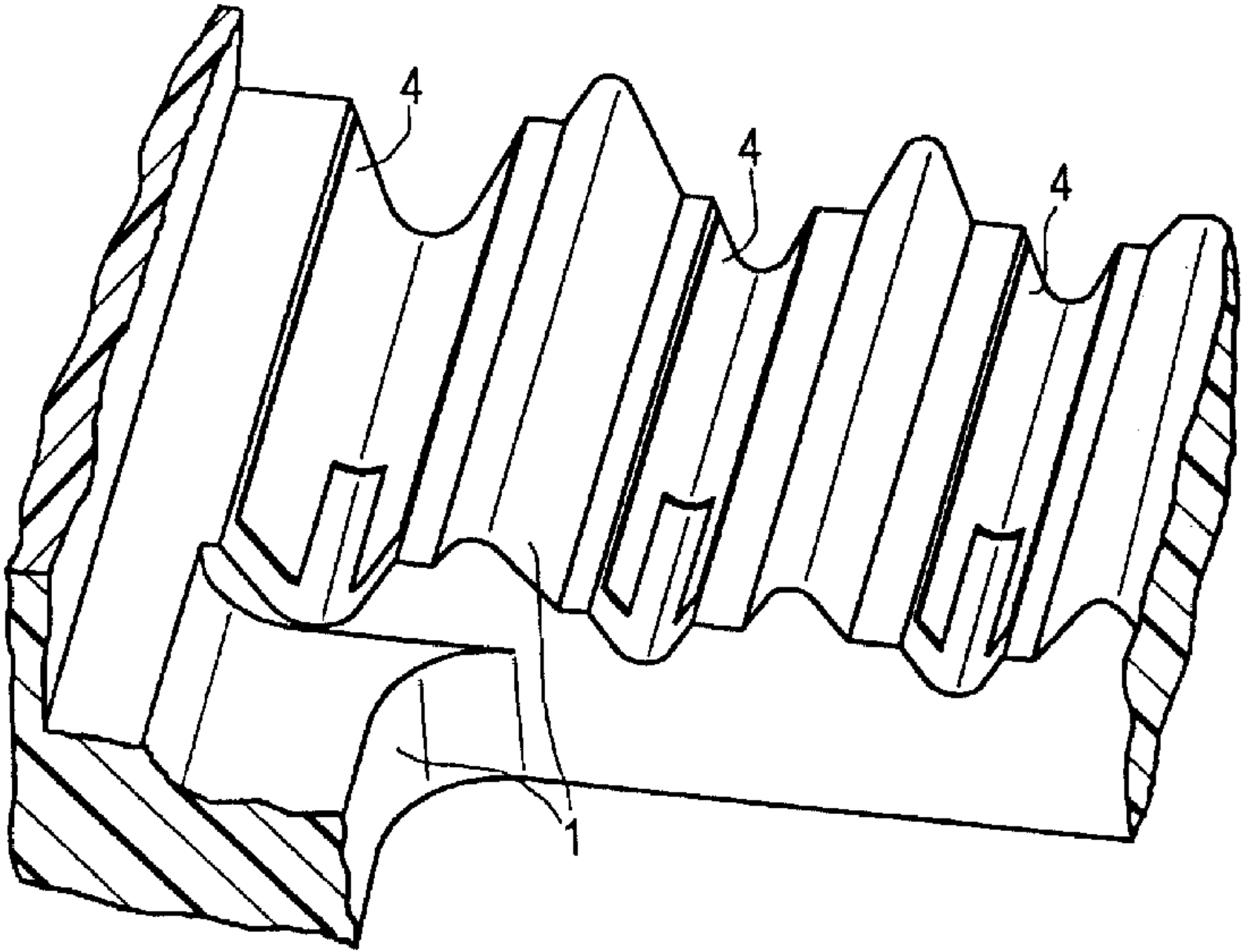


FIG 2

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