(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 3 451 461 B1**

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention of the grant of the patent:
27.12.2023 Bulletin 2023/52

(21) Application number: **17788572.0**

(22) Date of filing: **21.03.2017**

(51) International Patent Classification (IPC):
H01R 13/28 *(2006.01)* ***H01R 13/05*** *(2006.01)*
H01R 13/193 *(2006.01)*

(52) Cooperative Patent Classification (CPC):
H01R 13/05; H01R 13/28; H01R 13/193

(86) International application number:
PCT/CN2017/077540

(87) International publication number:
WO 2017/185919 (02.11.2017 Gazette 2017/44)

(54) **CONDUCTIVE CONTACT ELEMENT AND ELECTRICAL CONNECTOR USING THE SAME**

ELEKTRISCH LEITFÄHIGER KONTAKT UND ELEKTRISCHER VERBINDER, DER DEN KONTAKT VERWENDET

CONTACT ÉLECTRIQUEMENT CONDUCTEUR ET CONNECTEUR ÉLECTRIQUE UTILISANT LE MÊME

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

(30) Priority: **29.04.2016 CN 201610276583**
29.04.2016 CN 201610276582
30.11.2016 CN 201611082714

(43) Date of publication of application:
06.03.2019 Bulletin 2019/10

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(56) References cited:
EP-A1- 2 551 963
CN-A- 102 738 621
CN-A- 104 167 620
CN-A- 105 428 939
CN-A- 105 958 247
CN-A- 105 977 678
JP-A- 2002 025 673
US-A- 3 259 869
US-A- 3 478 296
US-A1- 2008 274 654

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EP 3 451 461 B1

Description

BACKGROUND OF THE DISCLOSURE

Field of the Disclosure

[0001] The present disclosure relates to a conductive connection device, and more particularly to a conductive contact element and an electrical connector using the same.

Description of Related Art

[0002] The sheet contact element is widely used in high-speed differential data transmission due to its simple structure and is easy for characteristic impedance calculation. For example, Chinese Patent Publication No. CN105428939A, which was published on March 23, 2016, discloses a conductive contact element, an electrical connector, and an electrical connector assembly. The conductive contact element includes a male contact body. The male contact body includes a male contact segment, a front end of the male contact segment is provided with a male front contact portion protruding downward, and the male front contact portion includes a male lower bending segment and a male upper bending segment. A contact point is located at a transition position of the male lower bending segment and the male upper bending segment, wherein the male upper bending segment and a suitable female contact segment cooperate to achieve a guiding effect during insertion, avoiding that end portions of the male and female contact elements butt against each other and be damaged during insertion. However, in the insertion state, the male upper bending segment of the contact element is curved upward, resulting in short pile radiation effect and causing greater insertion loss. EP 2 551 963 A1 discloses a conductive contact element according to the preamble of claim 1, JP 2002 025673 A, US 3 478 296 A and US 3 259 869 A disclose further conventional contact elements.

SUMMARY OF THE DISCLOSURE

[0003] The present invention is directed to subject matter as defined in the appended set of claims.

[0004] As compared with the related art, there is no need to provide a guiding structure for avoiding the end portions of the conductive contact elements from butting against each other, thereby avoiding the short pile radiation effect and reducing the insertion loss.

[0005] The entire conductive contact element has a simple structure and takes up less space for the insertion.

[0006] By configuring the portion where the contact segment is connected to the second bending segment to be parallel with the base body, it is possible to reduce the space occupied by the conductive contact element in the direction perpendicular to the direction of insertion, so as to reduce the space of the insertion cavity in the connector, and thereby reducing the volume of the connector.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] The following first, second, fourth, fifth, sixth, seventh and eight embodiments are not according to the invention and are present for illustration purposes only, wherein the following third embodiment is according to the invention.

FIG. 1 is a schematic structural view of a first embodiment of a conductive contact element of the present disclosure.

FIG. 2 is a view showing a state of the conductive contact element in the first embodiment of the present disclosure at the time of insertion.

FIG. 3 is a schematic structural view of a second embodiment of the conductive contact element of the present disclosure.

FIG. 4 is a view showing a state of the conductive contact element in the second embodiment of the present disclosure at the time of insertion.

FIG. 5 is a schematic structural view of a third embodiment of the conductive contact element of the present disclosure.

FIG. 6 is a view showing a state of the conductive contact element in the third embodiment of the present disclosure at the time of insertion.

FIG. 7 is a view showing a state of the conductive contact element in a fourth embodiment of the present disclosure at the time of insertion.

FIG. 8 is a view showing a state of the conductive contact element in a fifth embodiment of the present disclosure at the time of insertion.

FIG. 9 is a view showing a state of the conductive contact element in a sixth embodiment of the present disclosure at the time of insertion.

FIG. 10 is a view showing a state of the conductive contact element in a seventh embodiment of the present disclosure at the time of insertion.

FIG. 11 is a view showing a state of the conductive contact element in an eighth embodiment of the present disclosure at the time of insertion.

DESCRIPTION OF EMBODIMENTS

[0008] Embodiments of the present disclosure will be further described below with reference to the accompanying drawings.

[0009] A first embodiment of the electrical connector of the present disclosure includes a connector housing and a conductive contact element disposed within the connector housing.

[0010] The electrical connector of the present disclosure achieves an electrically conductive connection by electrically contacting the conductive contact element with a suitable conductive contact element of the suitable

electrical connector, wherein the suitable conductive contact element is identical with the conductive contact element in terms of structure, except that the suitable conductive contact element and the conductive contact element are disposed in opposite directions in a direction perpendicular to the direction of insertion. Following description only focuses on details of the structure of the conductive contact element.

[0011] The structure of the conductive contact element is as shown in FIG. 1-FIG. 2, and includes a base body 10 extending in an insertion direction. A front segment of the base body 10 is connected to a first connecting segment 12 through a first bending segment 11. The first connecting segment 12 extends inclinedly and upwardly from a front end of the base body 10. A front end of the first connecting segment 12 is connected to a contact segment 14 through a second bending segment 13. As the name suggests, the contact segment is configured for electrically contacting the suitable conductive contact element. A front end of the contact segment 14 is provided with a front contact portion 140 for electrically contacting the suitable conductive contact element. The contact segment 14 is disposed in parallel with the base body 10. Certainly, in other embodiments, the contact segment may be disposed obliquely upward, but such configuration increases the space occupied by the conductive contact element in the direction perpendicular to the direction of insertion as compared with the solution of configuring the contact segment to be parallel with the base body. Alternatively, the contact segment may be disposed obliquely downward or curved downwardly and the front contact portion is disposed at the front end of the contact segment. However, as compared with the solution of configuring the contact segment to be parallel with the base body, when the front contact portion of the conductive contact element is in contact with a rear contact point of the suitable conductive contact element, the second bending segment of the conductive contact element is likely to be curved upward and deformed due to abutting pressure, which results in decrease of service life of the conductive contact element. If a certain angle is formed between the contact segment and the base body, the angle is not greater than 45°.

[0012] The first connecting segment 12 is further provided with a rear contact point 15 that is configured to be in electrical contact with a front contact portion of the suitable conductive contact element at a lower side surface close to one end of the base body 10. In this embodiment, the front contact portion is a circular arc-shaped surface disposed on a lower side surface of the front end of the contact segment, and the rear contact point 15 is a segment close to the base body of a lower inclined plane of the first connecting segment. By making the circular arc-shaped surface to be in electrical contact with the lower inclined plane of the first connecting segment of the suitable conductive contact element, it is possible to facilitate the conductive contact element to slide relative to the suitable conductive contact element during insertion, thereby reducing insertion resistance. In actual production, the circular arc-shaped surface may be formed through rounding a lower side of the front end of the contact segment. Of course, it is also possible to provide a circular arc-shaped projection that protrudes downward at the front end of the contact segment.

[0013] The first connecting segment is disposed inclinedly such that the conductive contact element is elastically deformed when being inserted into the suitable conductive contact element, and such elastic deformation enables the conductive contact element and the suitable conductive contact element to be in stable contact. Furthermore, the oblique arrangement of the first connecting segment also allows a certain distance to be formed between the front contact portion and the rear contact point in the direction perpendicular to the direction of insertion, and exactly, the distance is formed to be the insertion space (A) for the suitable conductive contact element to be inserted therein. The insertion space (A) allows the suitable conductive contact element to be inserted directly and allows the front contact portion of the suitable conductive contact element to be in direct contact with the rear contact point of the conductive contact element without causing the conductive contact element to butt against the suitable conductive contact element. In this way, there is no need to provide a guiding structure on the conductive contact element, thereby eliminating the short pile radiation effect and achieving the purpose of reducing the insertion loss.

[0014] The present disclosure also provides a second embodiment of the electrical connector, which differs from the first embodiment in the structure of the conductive contact element, specifically, in the structure of the front contact portion on the conductive contact element.

[0015] As shown in FIG. 3-FIG. 4, in the second embodiment, the front contact portion 140 disposed on the contact segment of the conductive contact element is an inclined surface disposed on the lower side of the front end of the contact segment and parallel to the oblique direction of the first connecting segment, such that the conductive contact element can be adhered to and in contact with a lower inclined surface of the first connecting segment of the suitable conductive contact element, i.e., rear contact point, through the inclined surface, thereby increasing conductive contact area of the conductive contact element and the suitable conductive contact element, and simultaneously, the conductive contact is more stable through planar adhesion contact.

[0016] The present disclosure also provides a third embodiment of the electrical connector that differs from the first embodiment in the structure of the conductive contact element.

[0017] As shown in FIG. 5-FIG. 6, in the third embodiment, the front contact portion disposed on the contact segment 14 of the conductive contact element is the inclined extending segment disposed at the front end of the contact segment and disposed in parallel with the first connecting segment. The portion where the contact

segment is connected to the second bending segment 13 is disposed in parallel with the base body. A lower side of the inclined extending segment has a conductive inclined surface 141 parallel to a lower side surface of the first connecting segment 12. Furthermore, the lower side of the inclined extending segment is further provided with a guiding inclined surface 142 at the front side of the conductive inclined surface 141, wherein the conductive inclined surface 141 is configured for electrically contacting the rear contact point of the suitable conductive contact element, and the guiding inclined surface 142 is for more effectively avoiding the conductive contact element from butting against and being stuck with the front end of the suitable conductive contact element during the insertion process. In this embodiment, since the front contact portion of the conductive contact element is disposed in an inclined manner, the probability of butting of the conductive contact element in the insertion process is relatively small. Therefore, the configuration that the guiding inclined surface is disposed at the front end of the conductive inclined surface completely overcomes the problem that the conductive contact element butts against the suitable conductive contact element. Meanwhile, since the front contact portion itself is inclined, there is no need for a length of the guiding inclined surface to be too long, thereby reducing occurrence of the short pile radiation effect and decreasing the insertion loss.

[0018] In the embodiment of the electrical connector, the guiding inclined surface is served as a guiding insertion surface. In other embodiments, the guiding insertion surface may also be an arc-shaped surface that extends upward gradually in the direction from the rear to the front and that is disposed at the lower side of the front end of the inclined extending segment.

[0019] In the embodiment of the electrical connector, the front contact portion is an inclined extending portion disposed at the front end of the contact segment and disposed in parallel with the first connecting segment. In other embodiments, the front contact portion may be disposed in parallel with the base body, that is, may extend forward along the front end of the contact segment. A lower side surface of the front contact portion includes a first portion disposed in parallel with the lower side surface of the first connecting segment as well as a second portion disposed on a front side of the inclined surface and inclined upward in the direction from the rear to the front, wherein the first portion serves as a front contact point that is in conductive contact with a rear contact portion of the suitable conductive connector, and the second portion serves as an insertion guiding surface.

[0020] The present disclosure also provides a fourth embodiment of the electrical connector, which differs from the first embodiment in the structure of the conductive contact element, specifically, in the form of the first connecting segment.

[0021] As shown in FIG. 7, in the fourth embodiment, the first connecting segment 12 of the conductive contact element is an arc-shaped segment. The base body 10 is connected to the arc-shaped first connecting segment 12 through the first bending segment 11, and the first connecting segment 12 is connected to the contact segment 14 through the second bending segment 13. Correspondingly, the rear contact point 15 of the rear contact portion is located on an arc-shaped inner side surface of the first connecting segment 12. A structural type of the conductive contact element is similar to that of the conductive contact element of the first embodiment, and difference between the two is that the second bending segment and the contact segment are not clearly distinguished.

[0022] The present disclosure also provides a fifth embodiment of the electrical connector, which differs from the first embodiment in the structure of the conductive contact element, specifically, structural types of the first connecting segment, the second bending segment, the contact segment, and configuration position of the rear contact portion.

[0023] As shown in FIG. 8, in the fifth embodiment, the first connecting segment 12 of the conductive contact element is an arc-shaped segment, the base body 10 is connected to the arc-shaped first connecting segment 12 through the first bending segment 11, the first connecting segment 12 is connected to the contact segment 14 through the second bending segment 13, and the rear contact portion is a part of the lower side surface of the base body 10. Correspondingly, the rear contact point 15 is provided on the lower side surface of the base body 10. After the insertion is completed, the contact segment 14 is in conductive contact with the base body of the suitable conductive contact element through the front contact portion 140 at its end. The conductive contact element of this type is similar to the conductive contact element of the first embodiment. The obvious difference between the two is that the first connecting segment, the second bending segment and the contact segment are smoothly transitioned, the distinction is not obvious, and the rear contact portion is located on the base body. When being in use, the conductive contact element occupies a larger insertion space. When assembly error of the conductive contact element is relatively large, the front contact portion is likely to butt against the first bending segment of the suitable conductive contact element and become stuck, and the insertion cannot be performed smoothly.

[0024] The present disclosure also provides a sixth embodiment of the electrical connector, which differs from the first embodiment in the structure of the conductive contact element, specifically, in the arrangement position of the rear contact portion and the structural type of the contact segment.

[0025] As shown in FIG. 9, in this embodiment, the rear contact portion is provided on the base body 10, and the rear contact point is a portion of the lower side surface of the base body 10. The contact segment 14 extends forward and downward from the second bending segment 13, and is in conductive contact with the rear contact

point of the suitable conductive contact element on the base body 10 through the front contact point at its front end.

[0026] The present disclosure also provides an embodiment of an electrical connector having a special structure. As shown in FIG. 10, as compared with the sixth embodiment, the base body 10 of the conductive contact element does not extend straight in a front-rear direction, but has a Z-shape having two horizontal edges and transition edge connecting the two horizontal edges. The rear contact portion is disposed on a lower horizontal edge of the Z-shaped base body 10, and an upper horizontal edge of the Z-shaped base body is higher than the front contact portion 140. The conductive connector of this type is relatively complicated. As compared with the above six embodiments, it is obvious that the shape of the base body has a relatively obvious change, and the similarity is that the two contact portions are disposed at the front and the rear of a suspended segment. The suspended segment is located at a front side of the base body for being in conductive contact with the suitable conductive contact element. The insertion space configured for the suitable conductive contact element to be inserted therein is provided on the rear contact portion and the front contact portion in the direction perpendicular to the direction of insertion. Certainly, in order to adapt to connectors with different structures, the shape of the base body may be other shapes, which are omitted herein.

[0027] The present disclosure also provides an eighth embodiment of the electrical connector. As shown in FIG. 11, in the embodiment, the conductive contact element includes the base body 10 extending straight in the front-rear direction, and the front segment of the base body 10 is connected with the first connecting segment 12 through the first bending segment 11 that is bent in an arc-shape. The first connecting segment 12 extends obliquely upward from the front end of the base body 10. The first connecting segment is linear-shaped, and the front end of the first connecting segment 12 is connected to the contact segment 14 through the second bending segment 13 that is bent in an arc-shape. The contact segment 14 extends forward and downward. As the name suggests, the contact segment is configured for electrically contacting the suitable conductive contact element. The front end of the contact segment 14 is provided with the front contact portion 140 for electrically contacting the suitable conductive contact element. The front contact portion is a spherical projection. The base body 10 is provided with the rear contact point 15 for electrically contacting the front contact portion of the suitable conductive contact element. When the conductive contact element and the suitable conductive contact element are inserted into each other, the front contact portion 140 of the conductive contact element is in conductive contact with the rear contact portion disposed on an upper side surface of the base body of the suitable conductive contact element that is disposed in an opposite manner. Correspondingly, the front contact portion of the suitable conductive contact element is in conductive contact with the rear contact portion on a lower side surface of the conductive contact element.

[0028] In the various embodiments described above, the first connecting segment is a straight edge disposed obliquely or an arc-shaped edge that is inclined upwardly, and the arrangement is mainly for forming the insertion space between the front contact portion and the rear contact portion. In other embodiments, the first connecting segment may have a plurality of bends, and may be a curved transition or a multi-segment polygonal structure, these do not greatly affect the technical problem to be solved by the present disclosure, and the disclosure provides no limitation to the specific shape of the first connecting segment.

[0029] The conductive contact element of the electrical connector of the present disclosure has a simple structure which is electrically contacted through two points when in use, and eliminates the short pile radiation effect, thereby reducing the insertion loss.

[0030] The embodiment of the conductive contact element of the present disclosure has the same structure as that of the conductive contact element in the embodiment of the above electrical connector, and related descriptions are omitted herein.

Claims

1. A conductive contact element, wherein the conductive contact element has a front contact portion (140) and a rear contact portion spaced apart from each other at front and rear and respectively configured to be in conductive contact with a suitable conductive contact element, the front contact portion (140) and the rear contact portion have an insertion space (A) in a direction perpendicular to the direction of insertion for the suitable conductive contact element to be inserted therein,

   wherein the conductive contact element comprises a base body (10) extending in a front-rear direction, a front end of the base body (10) is connected to a first connecting segment (12) inclined upwardly through a first bending segment (11), a front end of the first connecting segment (12) is connected to a contact segment (14) through a second bending segment (13), the front contact portion (140) is located on the contact segment (14), and the rear contact portion is located on the base body (10) or a lower side surface of the first connecting segment (12), and a front side of a front contact point of the front contact portion (140) is further provided with an insertion guiding surface (142) preventing the conductive contact element and the suitable conductive contact element from butting against

each other and becoming stuck during insertion; **characterized in that**,
the front contact portion (140) is an inclined extending segment disposed at a front end of the contact segment (14) and in parallel with the first connecting segment (12), the front contact point is a lower side surface of the inclined extending segment, and a rear contact point (15) of the rear contact portion is formed by a portion of the lower side surface of the first connecting segment (12).

2. The conductive contact element according to claim 1, wherein the insertion guiding surface (142) is an inclined surface or a curved surface provided on a lower side of a front end of the inclined extending segment and gradually extending upward in a direction from the rear to the front.

3. The conductive contact element according to any one of the previous claims, wherein a portion where the contact segment (14) is connected to the second bending segment (13) is disposed in parallel with the base body (10).

4. An electrical connector, comprising a connector housing and a conductive contact element according to any one of the preceding claims.

Patentansprüche

1. Leitfähiges Kontaktelement, wobei das leitfähige Kontaktelement einen vorderen Kontaktabschnitt (140) und einen hinteren Kontaktabschnitt aufweist, die vorne und hinten voneinander beabstandet und jeweils so konfiguriert sind, dass sie in leitfähigem Kontakt mit einem geeigneten leitfähigen Kontaktelement stehen, wobei der vordere Kontaktabschnitt (140) und der hintere Kontaktabschnitt einen Einsetzraum (A) in einer Richtung perpendikulär zur Einsetzrichtung aufweisen, damit das geeignete leitfähige Kontaktelement darin eingesetzt werden kann,

wobei das leitfähige Kontaktelement einen Basiskörper (10) aufweist, der sich in einer Vorne-Hinten-Richtung erstreckt, ein vorderes Ende des Basiskörpers (10) mit einem ersten Verbindungssegment (12) verbunden ist, das durch ein erstes Biegesegment (11) nach oben geneigt ist, ein vorderes Ende des ersten Verbindungssegments (12) über ein zweites Biegesegment (13) mit einem Kontaktsegment (14) verbunden ist, der vordere Kontaktabschnitt (140) an dem Kontaktsegment (14) angeordnet ist und der hintere Kontaktabschnitt an dem Basiskörper (10) oder einer unteren Seitenfläche des ersten Verbindungssegments (12) angeordnet ist, und eine Vorderseite eines vorderen Kontaktpunkts des vorderen Kontaktabschnitts (140) ferner mit einer Einsetzführungsfläche (142) versehen ist, die verhindert, dass das leitfähige Kontaktelement und das geeignete leitfähige Kontaktelement aneinander stoßen und beim Einsetzen stecken bleiben;
dadurch gekennzeichnet, dass
der vordere Kontaktabschnitt (140) ein sich schräg erstreckendes Segment ist, das an einem vorderen Ende des Kontaktsegments (14) und parallel zu dem ersten Verbindungssegment (12) angeordnet ist, der vordere Kontaktpunkt eine untere Seitenfläche des sich schräg erstreckenden Segments ist, und ein hinterer Kontaktpunkt (15) des hinteren Kontaktabschnitts durch einen Abschnitt der unteren Seitenfläche des ersten Verbindungssegments (12) ausgebildet ist.

2. Leitfähiges Kontaktelement nach Anspruch 1, wobei die Einsetzführungsfläche (142) eine geneigte Fläche oder eine gekrümmte Fläche ist, die an einer Unterseite eines vorderen Endes des sich schräg erstreckenden Segments vorgesehen ist und sich allmählich in einer Richtung von hinten nach vorne nach oben erstreckt.

3. Leitfähiges Kontaktelement nach einem der vorhergehenden Ansprüche, wobei ein Abschnitt, an dem das Kontaktsegment (14) mit dem zweiten Biegesegment (13) verbunden ist, parallel zum Basiskörper (10) angeordnet ist.

4. Elektrischer Verbinder, umfassend ein Verbindergehäuse und ein leitfähiges Kontaktelement nach einem der vorhergehenden Ansprüche.

Revendications

1. Élément de contact conducteur, dans lequel l'élément de contact conducteur a une partie de contact avant (140) et une partie de contact arrière espacées l'une de l'autre à l'avant et à l'arrière et respectivement configurées pour être en contact conducteur avec un élément de contact conducteur approprié, la partie de contact avant (140) et la partie de contact arrière ayant un espace d'insertion (A) dans une direction perpendiculaire à la direction d'insertion pour que l'élément de contact conducteur approprié puisse y être inséré,

dans lequel l'élément de contact conducteur comprend un corps de base (10) s'étendant dans une direction avant-arrière, une extrémité avant du corps de base (10) est reliée à un pre-

mier segment de connexion (12) incliné vers le haut à travers un premier segment de flexion (11), une extrémité avant du premier segment de connexion (12) est reliée à un segment de contact (14) à travers un deuxième segment de flexion (13), une extrémité avant du premier segment de connexion (12) est reliée à un segment de contact (14) par l'intermédiaire d'un deuxième segment de flexion (13), la partie de contact avant (140) est située sur le segment de contact (14), et la partie de contact arrière est située sur le corps de base (10) ou sur une surface latérale inférieure du premier segment de connexion (12), et

un côté avant d'un point de contact avant de la partie de contact avant (140) est en outre pourvu d'une surface de guidage d'insertion (142) empêchant l'élément de contact conducteur et l'élément de contact conducteur approprié de se heurter l'un contre l'autre et de se coincer pendant l'insertion ;

caractérisé en ce que,

la partie de contact avant (140) est un segment s'étendant de façon inclinée disposé à une extrémité avant du segment de contact (14) et en parallèle avec le premier segment de connexion (12), le point de contact avant est une surface latérale inférieure du segment s'étendant de façon inclinée, et un point de contact arrière (15) de la partie de contact arrière est formé par une partie de la surface latérale inférieure du premier segment de connexion (12).

2. Élément de contact conducteur selon la revendication 1, dans lequel la surface de guidage d'insertion (142) est une surface inclinée ou une surface incurvée fournie sur un côté inférieur d'une extrémité avant du segment s'étendant de façon inclinée et s'étendant progressivement vers le haut dans une direction allant de l'arrière vers l'avant.

3. Élément de contact conducteur selon l'une quelconque des revendications précédentes, dans lequel une partie où le segment de contact (14) est relié au deuxième segment de flexion (13) est disposée parallèlement au corps de base (10).

4. Connecteur électrique, comprenant un boîtier de connecteur et un élément de contact conducteur selon l'une quelconque des revendications précédentes.

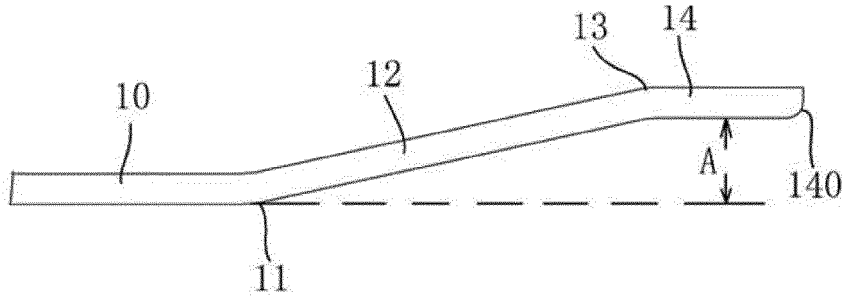

FIG. 1

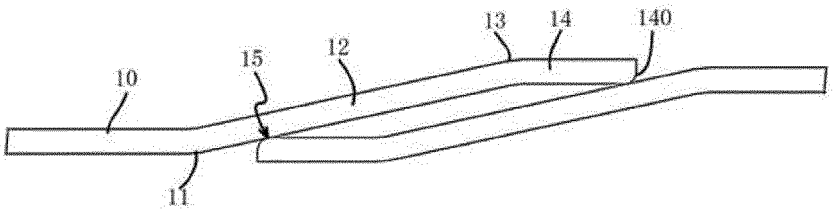

FIG. 2

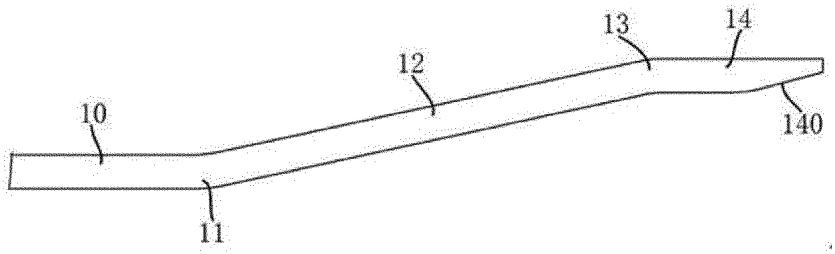

FIG. 3

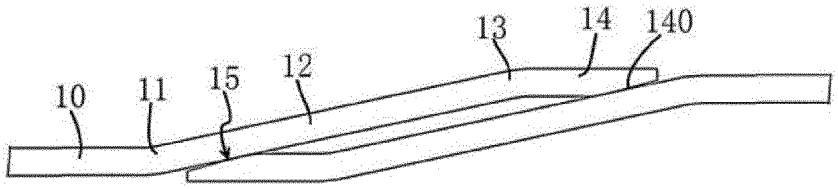

FIG. 4

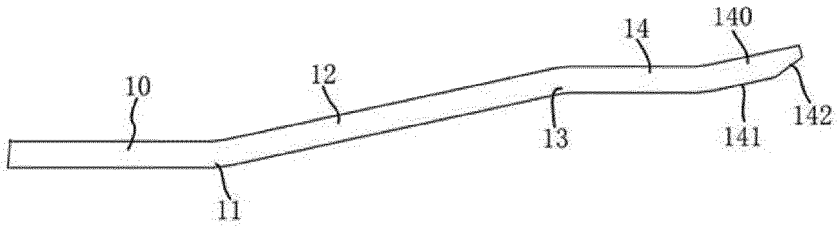

FIG. 5

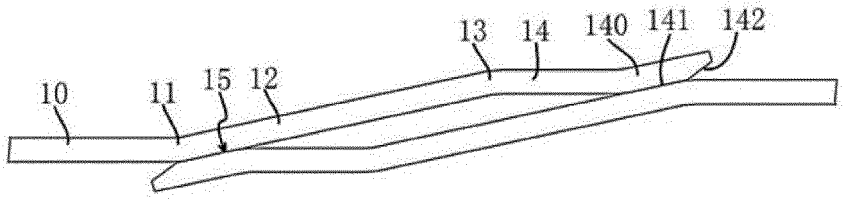

FIG. 6

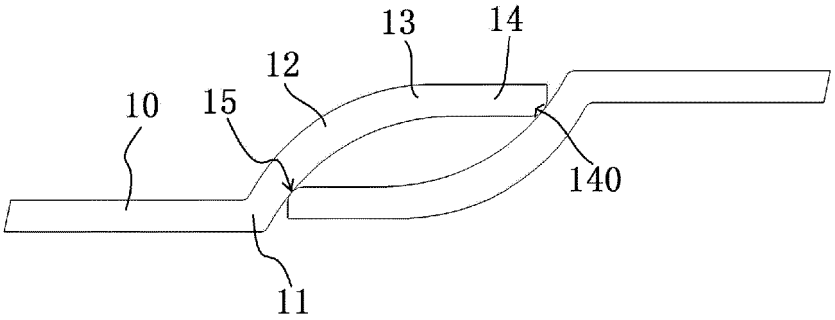

FIG. 7

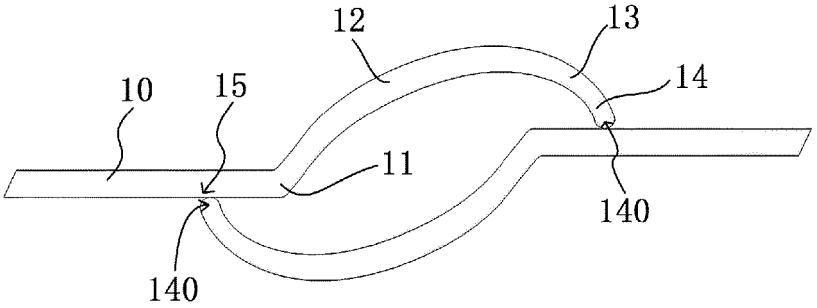

FIG. 8

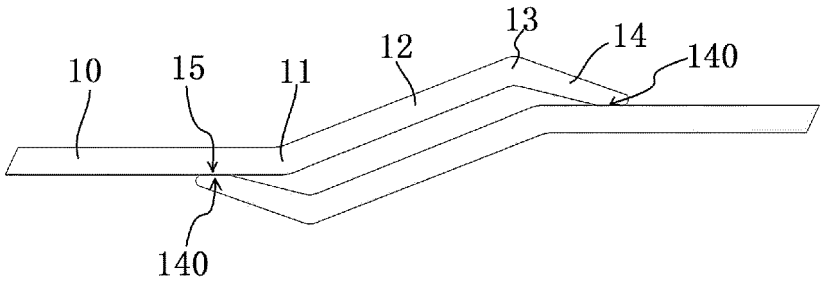

FIG. 9

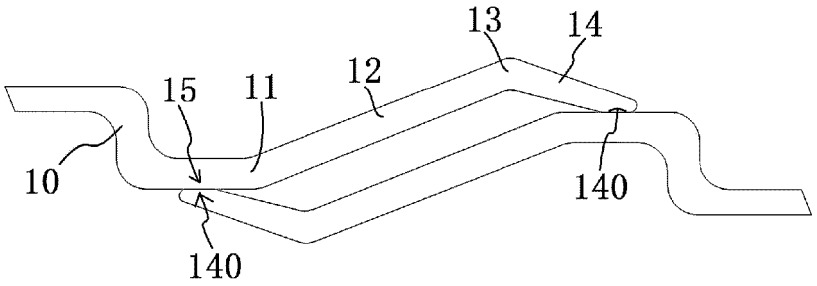

FIG. 10

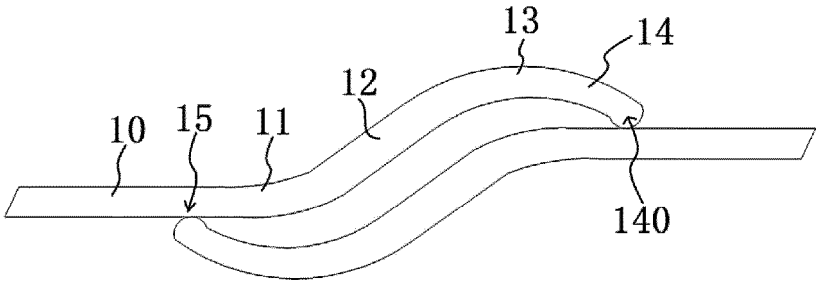

FIG. 11

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- CN 105428939 A **[0002]**
- EP 2551963 A1 **[0002]**
- JP 2002025673 A **[0002]**
- US 3478296 A **[0002]**
- US 3259869 A **[0002]**