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(71) Applicant: **FORD OTOMOTIV SANAYI A.S.** [TR/TR]; Akpinar Mahallesi Hasan Basri Caddesi No:2, 34885 Sancaktepe/Istanbul (TR).

(72) Inventors: **YILMAZ, Nurettin**; Ford Otomotiv Sanayi A.Ş., Akpınar Mahallesi Hasan Basri Caddesi No:2, 34885 Istanbul (TR). **DİNC, Serkan**; Ford Otomotiv Sanayi A.S., Akpınar Mahallesi Hasan Basri Caddesi No:2, 34885 Sancaktepe/Istanbul (TR). **TANER, Kaan**; Ford Otomotiv Sanayi A.S., Akpınar Mahallesi Hasan Basri Caddesi No:2, 34885 Sancaktepe/Istanbul (TR). **ERBIL, A. Egemen**; Ford Otomotiv Sanayi A.S., Akpınar Mahallesi Hasan Basri Caddesi No:2, 34885 Sancaktepe/Istanbul (TR).

(74) Agent: **ANKARA PATENT BUREAU LIMITED**; Bestekar Sokak No:10, Kavaklidere, 06680 Ankara (TR).

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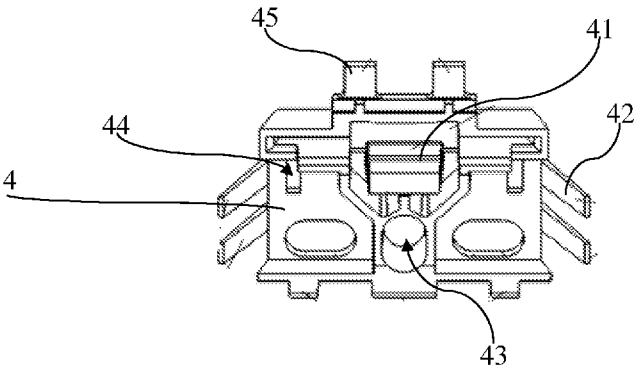

FIGURE 1

(57) Abstract: The present invention relates to a connector (1); which is used in vehicle connections and provides impermeability; and which essentially comprises at least one sheet metal surface (2), at least one plastic surface (3) which is designed to be positioned on the sheet metal surface (2), and is characterized by at least one flange (21) lying on the sheet metal surface (2), at least one flange groove (22) 10 which is drilled on the flange (21), at least one alignment protrusion (31) which is placed on the plastic surface (3), at least one plastic lug (32) which is placed on the plastic surface (3), at least one body (4) positioned between the sheet metal surface (2) and the plastic surface (3), at least one body lug (41) which is placed on the body (4) and is fitted into the flange groove (22), at least one support piece 15 (42) which is placed on the body (4) and which contacts the sheet metal surface (2), at least one alignment hole (43) which is drilled on the body (4) and through which the alignment protrusion (31) passes, at least one engagement hole (44) which is drilled on the body (4) and into which the plastic lug (32) fits.

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A CONNECTOR

Field of the Invention

The present invention relates to a connector which enables to eliminate water leakage risks by means of providing an alternative connection without drilling a hole on the sheet metal in cosmetic applications of plastic materials that are required to be mounted on the face to face connection line of the sheet metal.

Background of the Invention

In the roofs of the vehicles, the flow of water is intense and a conventional clip is used in the plastic applications in the roof area. In this type of applications, there is a risk of water leakage into the vehicle through the clip areas due to the surface tolerances of the sheet metal and plastic parts. In other words, in the state of the art, the clip applications used on the vehicles are realized as a hole and a clip that is inserted into this hole. These applications involve a risk of water and air leakage.

The United States patent document no. US2014062117, an application in the state of the art, relates to a fastener comprising soft and hard components. In the present invention, the fasteners which are arranged in certain intervals have flange-like protrusions.

The United States patent document no. US2012068488, an application in the state of the art, relates to a retaining clip for ditch molding. In the said invention, the molding can be mounted on the sheet metal plates without requiring a hole drilled thereon.

The French patent document no. FR2675547, an application in the state of the art, relates to a fastener for fixing a molded element into a groove. In the said invention, the molding can be mounted on the sheet metal plates without requiring a hole drilled thereon.

Problems Solved by the Invention

The objective of the present invention is to provide a connector, which enables to eliminate water leakage risks by means of providing an alternative connection without drilling a hole on the sheet metal in cosmetic applications of plastic materials that are required to be mounted on the face to face connection line of the sheet metal.

Another objective of the present invention is to provide a connector which enables the technician to connect the plastic part onto the sheet metal piece easily and rapidly.

Detailed Description of the Invention

A connector developed to fulfill the objectives of the present invention is illustrated in the accompanying figures, in which:

Figure 1. is a perspective view of the body.
Figure 2. is a perspective view of the connector.
Figure 3. is a perspective view of the body.

The components shown in the figures are given reference numbers as follows:

1. Connector
2. Sheet metal surface
21. 6. Flange
22. Flange groove
3. Plastic surface
31. Alignment protrusion
32. Plastic lug
4. Body
41. Body lug
42. Support piece
43. Alignment hole
44. Engagement hole
45. Sheet metal lug

The connector (1) which is used in vehicle connections and which provides impermeability essentially comprises:

- at least one sheet metal surface (2),
- at least one flange (21) lying on the sheet metal surface (2),
- at least one flange groove (22) which is drilled on the flange (21),
- at least one plastic surface (3) which is designed to be positioned on the sheet metal surface (2),
- at least one alignment protrusion (31) which is placed on the plastic surface (3),
- at least one plastic lug (32) which is placed on the plastic surface (3),
- at least one body (4) positioned between the sheet metal surface (2) and the plastic surface (3),
- at least one body lug (41) which is placed on the body (4) and is fitted into the flange groove (22),

- at least one support piece (42) which is placed on the body (4) and contacts the sheet metal surface (2),
- at least one alignment hole (43) which is drilled on the body (4) and through which the alignment protrusion (31) passes,
- at least one engagement hole (44) which is drilled on the body (4) and into which the plastic lug (32) fits.

In the connector (1) of the present invention, preferably there is a sheet metal surface (2) preferably used in the vehicle roof region. A flange (21) lies on the said sheet metal surface (2), preferably on the edge thereof, and a flange groove (22) is drilled on the flange (21). A plastic surface (3) is provided which is designed to be positioned on the sheet metal surface (2) and which is aligned so as to be parallel to the edge of the sheet metal (2). There is a plastic surface (3) designed to be positioned on the sheet metal surface (2). The plastic surface (3) is used to cover a point where a plurality of sheet metal surfaces (2) is connected. An alignment protrusion (31) is placed on the plastic surface (3). The alignment protrusion (31) is in the form of an upright rod extending from the plastic surface (3). A plastic lug (32) is placed on the plastic surface (3). A body (4) is positioned between the sheet metal surface (2) and the plastic surface (3) in order to cover the point where the sheet metal surfaces (2) are connected. There is provided a body lug (41) which is placed on the body (4) and is positioned so as to fit into the flange groove (22). Furthermore, a support piece (42) is placed on the body (4). The support piece (42) extends from the body (4) in the form of an upright rod contacting the sheet metal surface (2) and exerts a reverse force to allow the body lug (41) to hold tightly. An alignment hole (43) is drilled on the body (4) and the alignment protrusion (31) passes through the alignment hole (43) thereby fixing the plastic surface (3). An engagement hole (44) is drilled on the body (4) and the plastic lug (32) passes through this engagement hole (44). This way, the body (4) and the plastic surface (3) are enabled to be fastened to each other. Thus, a connector (1), which enables to eliminate water leakage risks by means of providing an alternative connection without drilling a hole on the sheet metal in

cosmetic applications of a plastic surface (3) that is required to be mounted on the face to face connection line of the sheet metal, is provided.

A connector (1) enables arrangement of a plastic surface (3) that covers the point where sheet metal surfaces (2) are placed on top of one another. For this purpose, the body lug (41) provided on the body (4) is fastened to the flange groove (21), and the support piece (42) on the body (4) exerts a reverse force to the surface that it holds so as to enable the body (4) to remain fixed on the sheet metal surface. In a preferred embodiment of the invention, the support piece (42) is a flexible piece. In a preferred embodiment of the invention, the support piece (42) is comprised of a spring. In a preferred embodiment of the invention, a support piece (42) is disposed on both opposite sides of the body (4) to ensure balance. A plastic surface (3) is attached onto the body (4) which is placed on the sheet metal surface (2). There is provided an alignment hole (43) on the body (4) to fasten the plastic surface (3), and the user positions the alignment protrusion (31) on the plastic surface (3) and the alignment hole (43) concentrically in order to place the plastic surface (3) properly. The alignment protrusion (31) is passed through the concentric alignment hole (43). After the alignment protrusion (31) is passed through the alignment hole (43), the plastic lug (32) on the plastic surface (3) is fitted into the engagement hole (44). Thus, a connector, which enables the technician to connect the plastic surface (3) onto the sheet metal surface (2) easily and rapidly, is provided.

In a preferred embodiment of the invention, at least one sheet metal lug (45) is provided which is placed on the body (4) to enable the connector (1) to hold onto the sheet metal surface (2) tightly. The sheet metal lug (45) is provided on the edges of the body (4) to enable the connector (1) to hold onto the sheet metal surfaces (2), which are in different positions; and it has a smaller form compared to the body lug (41). However, it faces the same surface with the body lug (41).

CLAIMS

1. A connector (1) which is used in vehicle connections and which provides impermeability, essentially **comprising**:

- at least one sheet metal surface (2),
- at least one plastic surface (3) which is designed to be positioned on the sheet metal surface (2), and **characterized by**
- at least one flange (21) lying on the sheet metal surface (2),
- at least one flange groove (22) which is drilled on the flange (21),
- at least one alignment protrusion (31) which is placed on the plastic surface (3),
- at least one plastic lug (32) which is placed on the plastic surface (3),
- at least one body (4) positioned between the sheet metal surface (2) and the plastic surface (3),
- at least one body lug (41) which is placed on the body (4) and is fitted into the flange groove (22),
- at least one support piece (42) which is placed on the body (4) and which contacts the sheet metal surface (2),
- at least one alignment hole (43) which is drilled on the body (4) and through which the alignment protrusion (31) passes,
- at least one engagement hole (44) which is drilled on the body (4) and into which the plastic lug (32) fits.

2. A connector (1) according to Claim 1, **comprising** the support piece (42) which is disposed on both opposite sides of the body (4) to ensure balance.

3. A connector according to Claim 1, **comprising** at least one sheet metal lug (45) which is placed on the body (4) to enable to hold onto the sheet metal surface (2) tightly.

FIGURE 1

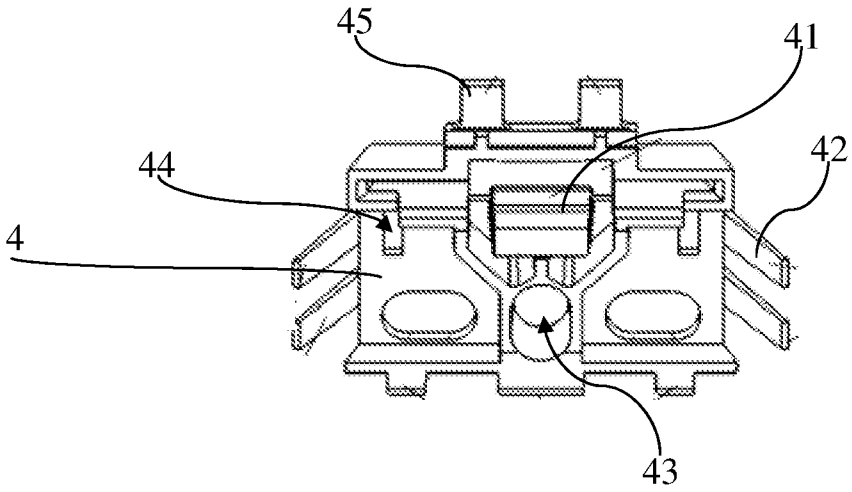

FIGURE 2

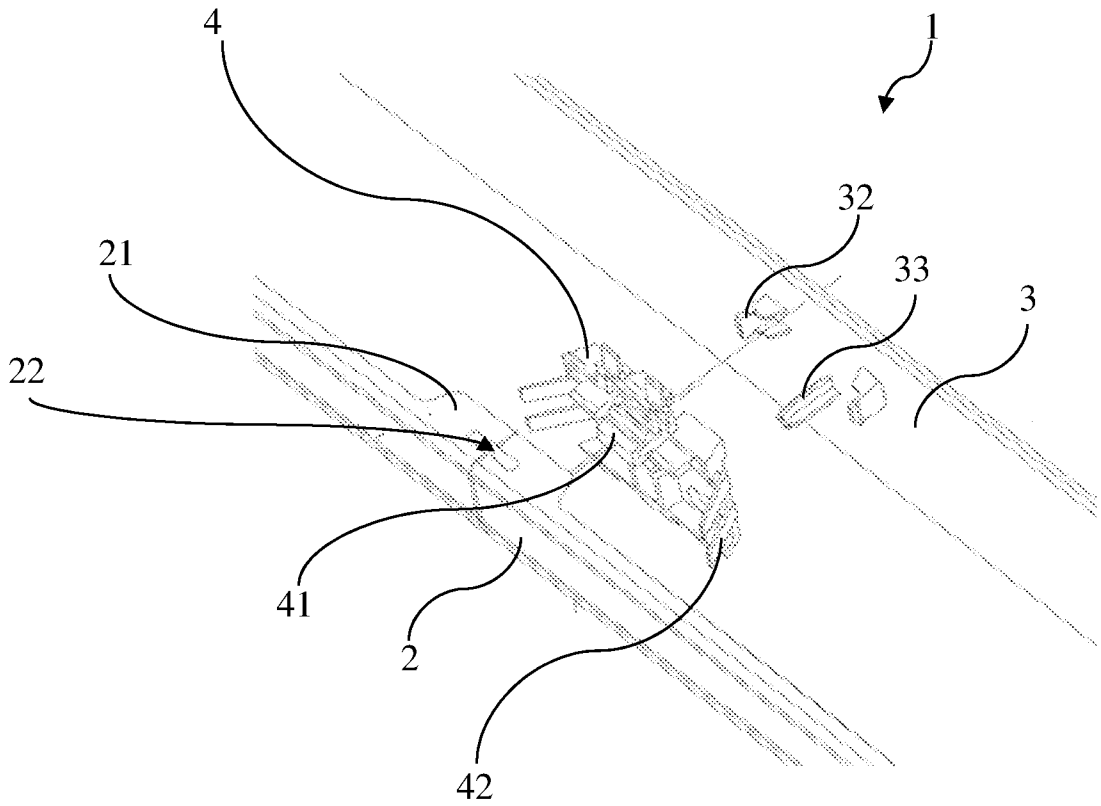

FIGURE 3