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Description

This invention relates to an electrical connector and to a contact receptacle for such a connector and is particularly concerned with so-called cluster block connectors utilised in effecting releasable electrical connection to hermetically sealed motors of refrigerator units.

Generally, electrical connection through a hermetically sealed enclosure is effected through a cluster of three conductive pins mounted in a ceramic disc secured within a metal annulus which is welded to the hermetic container at an aperture. Releasable connection to the pins is effected by a connector having pin-receptacle contacts suitably arranged to engage the pins. Difficulties are presented in that access to the pins is generally restricted and, due to the nature of the motor and compressor unit, the connection is subject to vibration and adverse atmospheric environment.

Commonly used connectors are adapted for axial connection with the pins but this requires access space above the pins.

Applicants GB—A—1 100 738 disclose a connector adapted for axial engagement with a cluster of three conductive pins and which has the following features, a slab-like insulating housing having a plurality of through passageways open at opposite ends of the housing and having pin receiving apertures at a side face of the housing communicating with respective passageways, each passageway containing an electrical contact receptacle having a receptacle portion registering with the pin-receiving aperture and a conductor terminating portion connected to a conductor wire extending from an open end of the passageway, the pin receiving apertures extending laterally to one of the open ends of each passageway opposite the end through which the conductor wire extends, and the receptacle portions of the contact receptacles each comprise a pair of resilient arms extending lengthwise of the associated passageway for receipt of a pin through the associated aperture between them.

This prior proposal requires that the wire connecting section of the receptacle in the middle passageway extends in an opposite sense to those in the outer passageways and the block is formed externally with a gripping means on a side edge so that a wire connected to a receptacle and extending from the block in one direction, can be bent around the side edge to be held in the wire gripping means to extend in an opposite direction. Each contact receptacle comprises a floor or base portion formed with a central aperture to allow passage of an end portion of a pin contact.

It is an object of the invention to provide a connector capable of axial or lateral engagement with the pins and to provide an improved contact receptacle for use in such a connector.

An electrical connector according to the present invention comprises a slab-like insulating housing having a plurality of through passageways

open at opposite ends of the housing and having pin receiving apertures at a side face of the housing communicating with respective passageways, each passageway containing an electrical contact receptacle having a receptacle portion registering with the pin-receiving aperture and a conductor terminating portion connected to a conductor wire extending from an open end of the passageway, the pin receiving apertures extending to one of the open ends of each passageway opposite the end through which the conductor wire extends, and the receptacle portions of the contact receptacles each comprise a pair of resilient arms extending lengthwise of the associated passageway for receipt of a pin through the associated aperture between them characterised in that the pin receiving apertures extend laterally to open ends of the passageways at the same end of the housing, the conductor wires extending through open ends at the opposite end of the housing, the arms at facing free end portions having opposed contact surfaces which diverge towards adjacent open ends of the passageways whereby the connector may engage complementary pins laterally or axially.

It is known from US—A—3 676 829 to provide a contact receptacle formed with divergent end portions on opposed contact arms defining a flared entry.

In one embodiment, the housing at one of the passageways is formed with a resilient latch arm extending rearwardly from a forward end at which it is integrally formed with a bridge extending over the passageway, the free end of the arm projecting into the passageway through a slot and having a rear facing shoulder adapted to engage the head of a pin extending transversely of the passageway to resist lateral disengagement of the connector.

Suitably the housing is formed at its forward end with a pair of side extensions which are chamfered on the facing surfaces to provide a rearwardly convergent pin-guide.

In a connector for a three pin arrangement, the housing is suitably provided with three passageways, the outer pair being located further from the apertured side face than is the central passageway, whereby the central contact receptacle is arranged to engage a complementary pin further from the free end of the pin than the receptacles of the outer pair are arranged to engage their associated pins. Suitably the outer pair of passageways are adapted to accommodate their contact receptacles in inverted relationship to that of the central passageway.

The invention further includes a contact receptacle for such a connector comprising a receptacle portion extending forwardly from a wire connecting section and being stamped and formed from sheet metal stock, the receptacle section being of fork-like form having a pair of resilient arms extending forwardly from a plate-like mounting section, characterised in that the arms are free ended and are of double metal thickness formed by folds extending along outer sides of

the arms, flanges being folded up between the arms from the underside layer at the forward free ends of the arms to define opposed contact faces, the flanges being formed with forward divergent portions presenting a flared lateral entry.

Suitably the flanges are supported on their remote sides by support flanges turned up from the upper layers of the arms.

Transversely of the arms the contact flanges are suitably dished to present arcuately convex facing contact surfaces.

To facilitate the folding of the arms, the outer sides are suitably apertured along the fold.

For retention purposes in the complementary housing the contact is formed between the arms with a resilient detent turned back from a forward end of the plate-like mounting section, and a pair of ears extend upwardly from opposite sides of the mounting section to provide shoulders opposed to the detent.

The invention will now be described, by way of example, with reference to the accompanying partly diagrammatic drawings in which:—

Figure 1 is a perspective view of a connector housing and a contact receptacle arranged for insertion into a housing passageway;

Figure 2 is a plan view of the housing of Figure 1;

Figure 3 is an underside view of the housing of Figure 1;

Figure 4 is a sectional elevation taken on the line 4—4 of Figure 2, viewed in the direction of the arrows, and with a contact receptacle in position;

Figure 5 is a sectional elevation taken on the line 5—5 of Figure 2, viewed in the direction of the arrows and with a contact receptacle in position;

Figure 6 is an end view taken from the right hand of Figure 4, but with the contact removed;

Figure 7 is an end view taken from the left hand of Figure 4, but with the contact removed;

Figure 8 is a sectional elevation corresponding to Figure 4 but with the connector engaging a pin cluster mounted in the wall of an hermetic enclosure;

Figure 9 is a plan view of a contact receptacle corresponding to that of Figure 1 but prior to connection to a conductor wire;

Figure 10 is a side elevation of the contact receptacle of Figure 9; and

Figure 11 is a section taken on the line 11—11 viewed in the direction of the arrows.

The connector of Figure 1 comprises a slab-like insulating housing 1 as shown in Figures 2 to 7 adapted to receive three contact receptacles 2 shown in greater detail in Figures 9 to 11.

The housing 1 is suitably moulded from a resilient insulating material, and comprises a generally rectangular slab-like body 3 having three parallel, open-ended passageways 4 extending between opposite ends, and formed at a forward end with a pair of side extensions 5. On its underside, as seen in Figure 3, the body is formed with slots 6 and 7 extending rearwardly from the forward end, the slots communicating with respective passageways 4 to define pin-entry

apertures. The central slot 6 extends rearwardly further than the side slots 7. On its upper side as seen in Figures 1, 2 and 4, the body 3 is formed with a central resilient latch arm 8 extending rearwardly from a bridge 9 at the forward end of the body. The latch arm 8 projects into a slot 10 communicating with the central passageway 4 and terminates at its rear end forwardly of but generally opposite the rear end of the slot 6. At its free rear end the latch arm 8 is formed with a downwardly projecting shoulder portion 11 and an upwardly extending ear portion 12, the shoulder portion 11 presenting a rear facing shoulder spaced forwardly of the rear end of slot 10 and the ear portion 12 projecting outwardly of the slot 10. A groove 13 extends rearwardly from the rear of slot 10 in the upper surface of the body 3, to the rear end of the body 3.

As seen in the end views of Figures 6 and 7, the passageways 4 are of generally T-section having a broad stem portion and a thin head portion, the T-section of the central passageway 4 being inverted and positioned below the outer passageways 4. Towards its rear end, each passageway 4 is formed with a contact retaining shoulder 14 facing forwardly, the shoulder in the central passageway being in the roof of the passageway and those of the outer passageways 4 in the floor.

As seen in Figures 1 to 3, the forward side extensions 5 are chamfered on their facing sides at 15 to define a rearwardly convergent path to the outer sides of the outer slots 7, and, as seen in Figure 3, the forward wall of the body 3 bordering the slot 6 at its forward end is formed with convergent surfaces 16 defining a guide into the slot 6.

The contact receptacle 2, as seen in Figure 1, comprises a receptacle portion 17 extending forwardly from a wire connecting section 18, and is suitably stamped and formed from sheet metal. The receptacle section 17 is of fork-like form having a pair of resilient arms 19 extending forwardly in spaced parallel manner from a plate-like mounting section 20, with the wire connecting section 18 extending from a rear of the section 20. The wire connecting section and the mounting section 20 are of single metal thickness but the arms 19 are of double metal thickness. At a forward end the section 20 is formed between the arms 19 with an upwardly and rearwardly extending latching detent 21, and rearwardly of the detent 21 at opposite sides ears 22 are folded up to present forward facing shoulders 23 opposed to the latching detent 21. The wire connecting section comprises a conventional wire crimp ferrule 24 and insulation support ferrule 25, initially of U-form as shown in Figures 9 and 10, and secured by crimping to the core and insulation of insulated conductor wire 26.

The arms 19 comprising a double metal thickness are formed by folding at outer sides of the arms to define an underside metal layer, and to facilitate the folding, apertures 27 are formed at central portions of the fold lines. At the forward ends of the arms, flanges 28 are folded up from

the underside layer, as seen most clearly in Figure 11, to define opposed contact surfaces 29. Smaller flanges 30 are folded up from the inner edges of the upper metal layer to support the rear sides of the flanges 28. The flanges 28 at their forward ends 31 are folded outwardly in divergent manner, as seen most clearly in Figure 9, to provide a convergent pin-entry into the contact zone between the opposed contact faces 29. The flanges 28, as seen in Figure 11, are also dish-shaped, or embossed to present arcuately convex facing contact surfaces with a convergent pin-entry from the lower side or from the upper side.

The contact receptacle 2 as shown in Figures 9 and 10 is shown prior to connection to a conductor wire, and the terminal extends laterally from a carrier strip 36 integrally joined to the insulation support ferrule 25 by a severable neck portion 37. Suitably contact receptacles are formed in strip with a plurality of terminals extending laterally at regular intervals from a continuous carrier strip 36 so that they may be applied to respective conductor wires in a terminating machine.

As seen in Figure 4, the contact receptacle 2 is inserted into the central passageway from its rear end in the orientation shown in Figure 1, i.e. with the section 20 engaging the floor of the passageway and the latch 21 projecting upwardly, until the latch 14 engages the forward shoulder 14 to resist withdrawal of the contact rearwardly. The ears 22 register on opposite sides of the shoulder and the forward facing shoulders 23 engage complementary shoulders in the housing to resist further forward movement. The contact surfaces 29 on flanges 38 are positioned above the rear end of the pin-entry slot 6 to admit upward entry of a pin between the contact surfaces as shown in Figure 8.

The contact receptacles 2 for the outer passageways 4 are inserted in inverted position with the plate section 20 uppermost and the latch ears 21 projecting downwardly to engage the shoulders 14 on the floors of the passageways as shown in Figure 5.

In the assembly of Figure 8 a cluster member 32 comprises a triangular array of three parallel spaced pins 33 extending through and on opposite sides of a ceramic disc mounted in a metal annulus 34 secured by welding in an aperture of an hermetic vessel 35 to provide an hermetic seal. The connector comprising the housing 1 containing three contact receptacles 2 as described above is assembled to the pins 33 to effect secure electrical connection by moving the connector from the right towards the cluster of pins 33, initially to engage two outer pins 33 between the extensions 5 with the central pin registering with the entrance to the slot 6. The chamfered surfaces 15 and 16 serve to guide the pins 33 into the slots 7 and 6 as the connector is moved towards the pins. The pins engage the convergent entry surfaces 31 of the contact receptacles to flex the arms 14 apart until the pins are engaged between opposed contact faces 29 of the contact receptacles 2. The rear ends of the slots 6, 7 and 10

define stops limiting relative lateral movement of the connector and the pins 33 in this assembly operation and serve to ensure that the pins 33 are properly located with regard to the contact surfaces 29. The pin 33 in the central slot 6, during the above assembly operation, engages the underside of the shoulder portion 11 of the latch arm 8, camming it upwardly until the pin 33 passes the shoulder portion 11 which relaxes downwardly to engage a side of the pin opposite the rear end of slot 10. This shoulder portion 11 thus resists relative lateral movement between the connector and the pins 33 in an opposite direction.

In order to release the connector in an opposite direction to that described in the assembly, i.e. left to right, it is necessary to lift the ear 12 to disengage the shoulder portion 11 from the central pin. The groove 13 provides access for a tool should space above the connector be restricted.

Where space is not restricted above the connector, it may be engaged with or disengaged from the pins 33 in conventional axial manner, the arcuately convex contact surfaces 29, seen in Figure 11, facilitating entry of a pin 33 between the contact surfaces whether the contact receptacle is in the Figure 11 orientation, as in the central passageway 4, or in inverted orientation as in the outer passageways 4.

By virtue of the double thickness of the arms 19 of the contact receptacles 2, and the arrangement of the general plane of the sheet metal in the direction of flexure, the receptacles are stiff in flexure and not only provide high contact force on the pins, but are also resistant to adverse vibration in their operational environment. The contact design results in a low height as seen in side elevation and this, together with the inverted arrangement of the central contact relative to the outer contacts, enables a connector of low height to be provided. This is advantageous in the restricted space normally available in installations of the kind for which the connector is intended.

In order further to secure the connector against inadvertent release from the pin cluster, the central pin is suitably provided with an enlarged head, for example by welding, soldering or otherwise bonding a disc-like cap on the pin. In use, as in Figure 8, the disc-like cap engages the upper side of the receptacle to inhibit axial withdrawal of the connector from the cluster of pins. It will be understood that in such an arrangement, axial mating of the connector with the pins is precluded.

Claims

1. An electrical connector comprising a slab-like insulating housing (1, 3) having a plurality of through passageways (4) open at opposite ends of the housing and having pin receiving apertures (6, 7) at a side face of the housing communicating with respective passageways (4), each passageway (4) containing an electrical contact receptacle (2) having a receptacle portion (17) registering

with the pin-receiving (6, 7) aperture and a conductor terminating portion (18) connected to a conductor wire (26) extending from an open end of the passageway (4), the pin receiving apertures (6, 7) extending laterally to one of the open ends of each passageway (4) opposite the end through which the conductor wire (26) extends, and the receptacle portions (17) of the contact receptacles (2) each comprise a pair of resilient arms (19) extending lengthwise of the associated passageway (4) for receipt of a pin (33) through the associated aperture (6, 7) between them, characterised in that the pin receiving apertures (6, 7) extend laterally to open ends of the passageways (4) at the same end of the housing (1, 3) the conductor wires (26) extending through open ends at the opposite end of the housing (1, 3), the arms (19) at facing free end portions having opposed contact surfaces (29) which diverge towards adjacent open ends of the passageways (4) whereby the connector may engage complementary pins (33) laterally or axially.

2. A connector as claimed in claim 1, characterised in that the housing (1, 3) at one of the passageways (4) is formed with a resilient latch arm (8) extending rearwardly from a forward end at which it is integrally formed with a bridge (9) extending over the passageway (4), the free end (11) of the arm projecting into the passageway (4) through a slot (10) and having a rear facing shoulder adapted to engage the head of a pin (33) extending transversely of the passageway (Figure 8) to resist lateral disengagement of the connector.

3. A connector as claimed in claim 2, characterised in that the housing (1, 3) is formed at its forward end with a pair of side extensions (5) which are chamfered on the facing surfaces (15) to provide a rearwardly convergent pin-guide.

4. A connector as claimed in claim 1, characterised in that the housing (1, 3) is provided with three passageways (4), the outer pair being located further from the apertured side face than is the central passageway (4), whereby the central contact receptacle (2) is arranged to engage a complementary pin (33) further from the free end of the pin (33) than the receptacles (2) of the outer pair are arranged to engage their complementary pins.

5. A connector as claimed in claim 4, characterised in that the outer pair of passageways (4) are adapted to accommodate their contact receptacles (2) in inverted relationship to that of the central passageway (4).

6. A contact receptacle in or for a connector as claimed in claim 1, comprising a receptacle portion (17) extending forwardly from a wire connecting section (18) and being stamped and formed from sheet metal stock the receptacle section (17) being of forklike form having a pair of resilient arms (19) extending forwardly from a plate-like mounting section (20), characterised in that the arms (19) are free ended and are of double metal thickness formed by folds extending along outer sides of the arms (19), flanges (28)

being folded up between the arms from the underside layer at the forward free ends of the arms to define opposed contact faces (29), the flanges (28) being formed with forward divergent portions presenting a flared lateral entry.

7. A contact receptacle as claimed in claim 6, characterised in that the flanges (28) are supported on their remote sides by support flanges (30) turned up from the upper layers of the arms (19).

8. A contact receptacle as claimed in claim 7, characterised in that transversely of the arms the contact flanges (28) are dished to present arcuately convex facing contact surfaces (29).

9. A contact receptacle as claimed in claim 7, characterised in that the contact receptacle (2) is formed between the arms (19) with a resilient detent (21) turned back from a forward end of the plate-like mounting section (20), and a pair of ears (22) extend upwardly from opposite sides of the mounting section (20) to provide shoulders opposed to the detent (21).

Revendications

1. Connecteur électrique comprenant un boîtier isolant (1, 3), analogue à une plaque traversé par plusieurs passages (4) ouverts à des extrémités opposées du boîtier et présentant des ouvertures (6, 7) de réception de broches à une face latérale du boîtier communiquant avec les passages respectifs (4), chaque passage (4) contenant une douille de contact électrique (2) comportant une partie (17) de réception en alignement avec l'ouverture (6, 7) de réception de broche et une partie (18) de terminaison d'un conducteur commutée à un fil conducteur (26) partant d'une extrémité ouverte du passage (4), les ouvertures (6, 7) de réception de broches s'étendant latéralement vers l'une des extrémités ouvertes de chaque passage (4), opposée à l'extrémité dans laquelle passe le fil conducteur (26), et les parties (17) de réception des douilles de contact (2) comprennent chacune deux bras élastiques (19) s'étendant longitudinalement aux contacts associés (4) afin de recevoir entre eux une broche (33) passant dans l'ouverture associée (6, 7), caractérisé en ce que les ouvertures (6, 7) de réception de broches s'étendent latéralement jusqu'à des extrémités ouvertes des passages (4) à la même extrémité du boîtier (1, 3), les fils conducteurs (26) passant dans des extrémités ouvertes situées à l'extrémité opposées du boîtier (1, 3), les bras (19) présentant, sur des parties extrêmes libres en vis-à-vis, des surfaces opposées (29) de contact qui divergent vers des extrémités ouvertes adjacentes des passages (4) de manière que le connecteur puisse s'enclencher latéralement ou axialement avec des broches complémentaires (33).

2. Connecteur selon la revendication 1, caractérisé en ce que le boîtier (1, 3) comporte, à l'un des passages (4), un bras élastique (8) de verrouillage partant vers l'arrière d'une extrémité avant à laquelle il est réalisé d'une seule pièce avec un pontet (9) s'étendant au-dessus du passage (4),

l'extrémité libre (11) du bras faisant saillie dans le passage (4) en passant dans une encoche (10) et comportant un épaulement tourné vers l'arrière, conçu pour porter contre la tête d'une broche (33) s'étendant transversalement au passage (figure 8) afin de résister à un dégagement latéral du connecteur.

3. Connecteur selon la revendication 2, caractérisé en ce que le boîtier (1, 3) comporte, à son extrémité avant, deux prolongements latéraux (5) qui sont chanfreinés sur leurs surfaces (15) en vis-à-vis afin de former un guide-broches convergeant vers l'arrière.

4. Connecteur selon la revendication 1, caractérisé en ce que le boîtier (1, 3) présente trois passages (4), les deux passages extérieurs étant davantage éloignés de la face latérale à ouvertures que le passage central (4), de manière que la douille de contact centrale (2) soit agencée pour s'enclencher avec une broche complémentaire (33) à une plus grande distance de l'extrémité libre de la broche (33) que celle à laquelle les douilles (2) de la paire extérieure portent contre leurs broches complémentaires.

5. Connecteur selon la revendication 4, caractérisé en ce que les deux passages extérieurs (4) sont conçus pour loger leurs douilles (2) de contact dans une disposition inversée par rapport à celle du passage central (4).

6. Douille de contact logée dans ou destinée à un connecteur selon la revendication 1, comprenant une partie (17) de réception qui s'étend vers l'avant d'une section (18) de connexion à un fil et qui est découpée et formée en métal en feuille, la section (17) de réception ayant une forme analogue à celle d'une fourche comportant deux bras élastiques (19) qui partent vers l'avant d'une section (20) de montage analogue à une plaque, caractérisée en ce que les bras (19) ont des extrémités libres et sont d'une double épaisseur de métal formée par des plis s'étendant le long de côtés extérieurs des bras (19), les rebords étant pliés vers le haut entre les bras, à partir de la couche inférieure, aux extrémités libres avant des bras afin de définir des faces opposées (29) de contact, les rebords (28) comportant des parties avant divergentes qui forment une entrée latérale évasée.

7. Douille de contact selon la revendication 6, caractérisée en ce que les rebords (28) sont supportés, sur leurs côtés éloignés, par des rebords (30) de support tournés vers le haut à partir des couches supérieures des bras (19).

8. Douille de contact selon la revendication 7, caractérisée en ce que les rebords (28) de contact sont façonnés en creux, transversalement aux bras, afin de présenter des surfaces incurvées convexes (29) de contact en vis-à-vis.

9. Douille de contact selon la revendication 7, caractérisée en ce que la douille (2) de contact comporte, entre les bras (19), un cliquet élastique (21) tourné vers l'arrière à partir d'une extrémité avant de la section (20) de montage analogue à une plaque, et deux pattes (22) s'élevant de côtés

opposés de la section (20) de montage afin de former les épaulements opposés au cliquet (21).

Patentansprüche

1. Elektrischer Verbinder mit einem plattenartigen Isoliergehäuse (1, 3), das eine Mehrzahl von durchgehenden Durchführungen (4), die an einander gegenüberliegenden Enden des Gehäuses offen sind, sowie Stiftaufnahmeöffnungen (6, 7) an einer Seitenfläche des Gehäuses aufweist, die mit entsprechenden Durchführungen (4) in Verbindung stehen, wobei jede Durchführung (4) ein elektrisches Kontaktaufnahmeelement (2) enthält, das einen mit der Stiftaufnahmeöffnung (6, 7) fluchtenden Aufnahmebereich (17) sowie einen Leiterabschließbereich (18) aufweist, der mit einem sich von einem offenen Ende der Durchführung (4) wegerstreckenden Leiterdraht (26) verbunden ist, wobei sich die Stiftaufnahmeöffnungen (6, 7) in seitlicher Richtung zu einem der offenen Enden jeder Durchführung (4) erstrecken, das dem Ende gegenüberliegt, durch das sich der Leiterdraht (26) erstreckt, und wobei die Aufnahmebereiche (17) der Kontaktaufnahmeelemente (2) jeweils ein Paar federnd nachgiebiger Arme (19) aufweisen, die sich in Längsrichtung der zugehörigen Durchführung (4) erstrecken, um einen Stift (33) durch die zugehörige Öffnung (6, 7) hindurch zwischen sich aufzunehmen, dadurch gekennzeichnet, daß sich die Stiftaufnahmeöffnungen (6, 7) in seitlicher Richtung zu offenen Enden der Durchführungen (4) an demselben Ende des Gehäuses (1, 3) erstrecken, wobei sich die Leiterdrähte (26) durch offene Enden an dem gegenüberliegenden Ende des Gehäuses (1, 3) erstrecken, und wobei die Arme (19) an einander zugewendeten freien Endbereichen einander gegenüberliegende Kontaktflächen (29) aufweisen, die in Richtung auf in der Nähe befindliche offene Enden der Durchführungen (4) divergieren, wodurch der Verbinder an komplementären Stiften (33) in seitlicher Richtung oder in Axialrichtung angreifen kann.

2. Verbinder nach Anspruch 1, dadurch gekennzeichnet, daß das Gehäuse (1, 3) an einer der Durchführungen (4) mit einem federnd nachgiebigen Verriegelungsarm (8) ausgebildet ist, der sich von einem vorderen Ende, an dem er mit einer sich über die Durchführung (4) erstreckenden Brücke (9) einstückig ausgebildet ist, in Richtung nach hinten erstreckt, wobei das freie Ende (11) des Arms durch einen Schlitz (10) hindurch in die Durchführung (4) hineinragt und eine nach hinten weisende Schulter aufweist, die dazu ausgelegt ist, an dem Kopf eines sich in Querrichtung der Durchführung (Fig. 8) erstreckenden Stifts (33) anzugreifen, um einem Lösen des Verbinders in seitlicher Richtung entgegenzuwirken.

3. Verbinder nach Anspruch 2, dadurch gekennzeichnet, daß das Gehäuse (1, 3) an seinem vorderen Ende mit einem Paar von Seitenfortsätzen (5) ausgebildet ist, die zur Schaffung einer in Rich-

tung nach hinten konvergierenden Stiftführung an den einander zugewendeten Flächen (15) abgescrägt sind.

4. Verbinder nach Anspruch 1, dadurch gekennzeichnet, daß das Gehäuse (1, 3) mit drei Durchführungen (4) versehen ist, wobei das außenliegende Paar von der mit den Öffnungen versehenen Seitenfläche weiter entfernt ist also die mittlere Durchführung (4), wodurch das mittlere Kontaktaufnahmeelement (2) an einem komplementären Stift (33) weiter von dem freien Ende des Stifts (33) entfernt angreifen kann als die Aufnahmeelemente (2) des außenliegenden Paares an ihren komplementären Stiften angreifen können.

5. Verbinder nach Anspruch 4, dadurch gekennzeichnet, daß das außenliegende Paar von Durchführungen (4) dazu ausgelegt ist, seine Kontaktaufnahmeelemente (2) in umgekehrter Beziehung zu dem Kontaktaufnahmeelement der mittleren Durchführung (4) aufzunehmen.

6. Kontaktaufnahmeelement in einem oder für einen Verbinder nach Anspruch 1, mit einem Aufnahmebereich (17), der sich von einem Drahtanschlußabschnitt (18) nach vorne erstreckt und durch Stanzen und Formen aus Metallblechmaterial gebildet ist, wobei der Aufnahmeabschnitt (17) eine gabelartige Form mit einem Paar federnd nachgiebiger Arme (19) aufweist, die sich von einem plattenartigen Befestigungsabschnitt (20) nach vorne erstrecken, dadurch gekennzeichnet, daß die Arme (19) freie Enden aufweisen und eine doppelte Metalldicke besitzen,

die durch Faltungen gebildet ist, die längs von äußeren Seiten der Arme (19) verlaufen, wobei zwischen den Armen Flansche (28) an den vorderen freien Ende der Arme von der unterseitigen Lage hochgefaltet sind, um einander gegenüberliegende Kontaktflächen (29) zu definieren, und wobei die Flansche (28) mit in Richtung nach vorne divergierenden Bereichen ausgebildet sind, die einen konisch erweiterten seitlichen Eingang darbieten.

7. Kontaktaufnahmeelement nach Anspruch 6, dadurch gekennzeichnet, daß die Flansche (28) auf ihren voneinander abgelegenen Seiten durch Stützflansche (30) gestützt sind, die von den oberen Lagen der Arme (19) hochgebogen sind.

8. Kontaktaufnahmeelement nach Anspruch 7, dadurch gekennzeichnet, daß die Kontaktflansche (28) in Querrichtung zu den Armen konkav gewölbt sind, um konvex gekrümmte aufeinander zu weisende Kontaktflächen (29) darzubieten.

9. Kontaktaufnahmeelement nach Anspruch 7, dadurch gekennzeichnet, daß das Kontaktaufnahmeelement (2) zwischen den Armen (19) mit einer federnd nachgiebigen Verriegelungseinrichtung (21) ausgebildet ist, die von einem vorderen Ende des plattenartigen Befestigungsabschnitts (20) nach hinten zurückgebogen ist, und daß sich ein Paar von Laschen (22) von einander gegenüberliegenden Seiten des Befestigungsabschnitts (20) nach oben erstreckt, um der Verriegelungseinrichtung (21) gegenüberliegende Schultern zu schaffen.

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FIG.1.

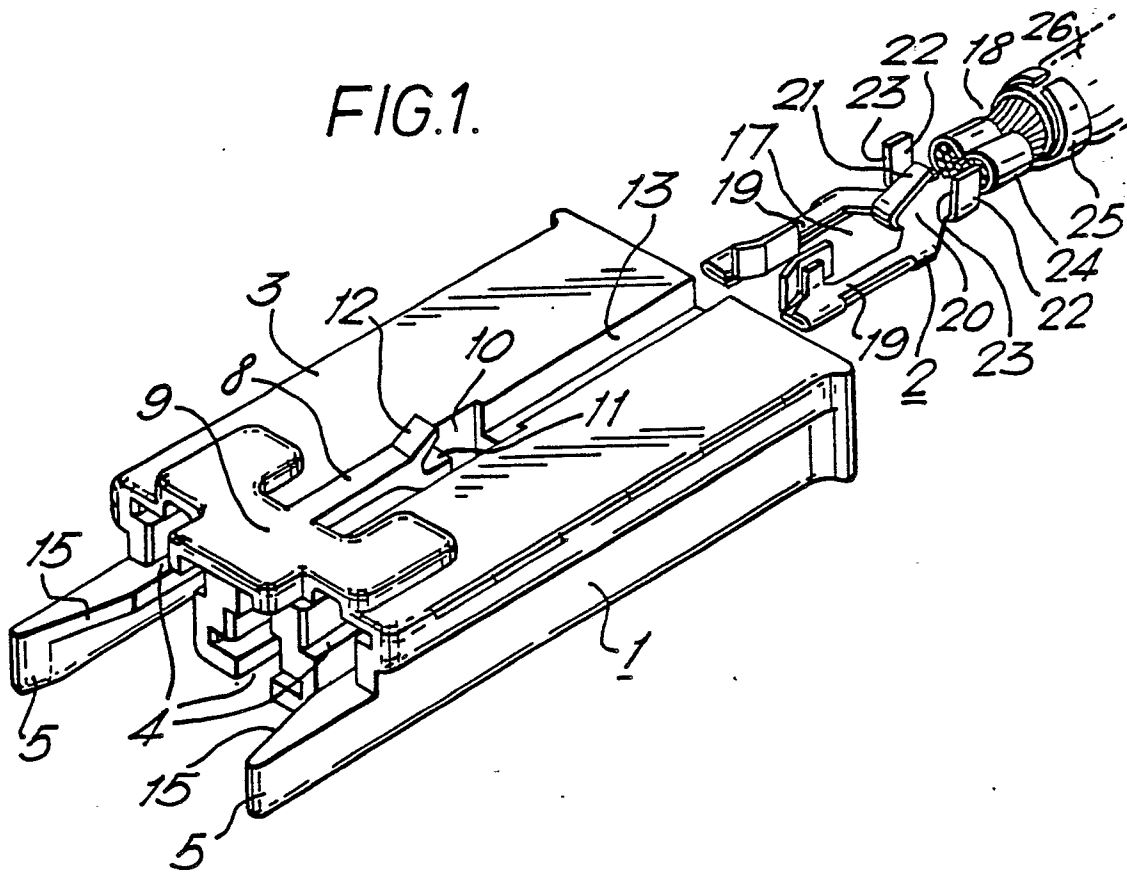


FIG.2.

