

Description

BACKGROUND OF THE INVENTION

The present invention relates to an electrical connector system and, more particularly, an electrical connector system having connector members that have a polarized relationship and which can be latched into engagement with one another.

Various types of electrical connector systems use a plug and cooperating header or receptacle which are designed to be mechanically latched together. In some systems, internally threaded sleeves are mounted on the plug and cooperate with an externally threaded receptacle to effect a threaded connection between the parts, and, in other systems, a bayonet-type arrangement is provided to allow a 'push-and-twist' type engagement. In those connectors used in consumer and commercial products, molded plastic latches are oftentimes provided on the plug to engage the receptacle. For example, the plug disclosed in U.S. -A- 4,641,902 uses finger-operated latch arms that are pivotally mounted to the plug body at their mid-point. A latch tab is provided at the end of each arm to engage a ledge formed on the receptacle. While the latches perform their intended function, they are mounted so as to extend outwardly of the plug and thus limit the size of the minimum design 'envelop'. In addition to connector systems in which the two components are latched together, various polarizing arrangements are known to insure that a plug engages its receptacle in only one possible alignment. A common polarizing arrangement provides some type of key on one of the components and a keyway on the other component to effect the desired alignment. In many applications that require latchable and polarized connections, it is also a requirement that the associated cabling be shielded to prevent EMI emission and that the shielding function not be compromised by the connector system. Oftentimes, a connector system which provides polarization, shielding and latching functions represents a connector that is less than optimally compact and, accordingly, presents design constraints that limit the number and type of applications for the connector system.

US -A- 4639061 describes a connector with a plug and a receptacle. A raised projection on the receptacle serves as a catch for a latching lever on the plug. Separate keys on the plug engage in slots to orientate the plug and the receptacle.

SUMMARY OF THE INVENTION

In view of the above, it is an object of the present invention, among others, to provide an

improved connector system of compact design which effects both a polarized and latched engagement.

According to the invention and, as it is known from US -A- 4639061, there is provided an electrical connector system comprising:

a first connector member having a plurality of electrical contacts of a first type and
a second connector member having a plurality of electrical contacts of a second type,
said first and second connector members having side walls being inter-engageable with one another to effect electrical connection between said first and second contact types; latching means mounted on one of said first and second connector members and means defining a raised projection associated with one sidewall of the other of said first and second connector members for releasably latching the first and second connector members together, said latching means latching engagingly the raised projection to latch the members together.

In accordance with the invention means is associated with one sidewall of the one of said first and second connector members to define a forwardly facing slot for slidably accepting said projection thereby for polarizing the first and second connector members in a preferred alignment and the latching means comprises a latching arm mounted in a recess rearwardly of the slot and capable of engaging with said projection on joining the two connector members together. The latching and polarizing functions are thereby combined as a common structure.

An improved connector system in accordance with the invention is of compact design and effects polarized and latched engagement.

To achieve electrical shielding, it is preferable that the connector members are made of metal. The connector members are also preferably formed so that one member has an opening into which the other member is telescopically received when the two components are engaged and latched. A preferred embodiment of a connector system includes a plug and cooperating receptacle with the plug having an open end into which the receptacle is telescopically received to provide a high degree of shielding integrity. The receptacle includes a raised, key-like polarizing projection and the plug includes a slot for receiving the key-like projection on the receptacle to effect a polarizing function. A user-operated latch is pivotally mounted on the plug and includes a latch arm co-aligned with the slot to resiliently engage an opening in the projection to releasably latch the plug into engagement with its receptacle. A recess is provided on the side of the plug to accept the latch arm to provide a compact flush-mounted arrangement. The plug

is preferably fabricated from metal and assembled from upper and lower half-shell members that contain a connection block with contacts of a first type, such as square or cylindrical pins, and includes an interior cavity or pocket for receiving the mounting fulcrum of the latch. The receptacle is defined by inter-engaging inner and outer shells which contain another connection block with contacts of a second type, such as pin-receiving receptacles, for inter-engaging the contacts of the first type. A resilient spring is provided on the receptacle on the side opposite the raised key-like projection to assist in maintaining the plug and receptacle in electrical and mechanical engagement with one another. The present invention may advantageously provide a compact and efficient connector system in which the latching and polarizing functions are provided in a physically compact envelope with a high degree of shielding integrity. Other objects and further scope of applicability of the present invention will become apparent from the detailed description to follow, taken in conjunction with the accompanying drawings, in which like parts are designated by like reference characters.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an isometric projection of a plug and cooperating receptacle in accordance with the present invention with a selected portion of a latch arm broken away for reasons of clarity;

FIG. 1A is a partial detail, in cross-section, of a flush-mounted latch arm taken along line 1A-1A of FIG. 1;

FIG. 2 is an isometric projection of the plug and receptacle of FIG. 1 from the side opposite that shown in FIG. 1;

FIG. 3 is an exploded isometric view of the plug of FIGS. 1 and 2 in which a connector block has been partially broken away for reasons of clarity; and

FIG. 4 is an exploded isometric view of the receptacle of FIGS. 1 and 2 in which a connector block has been partially broken away for reasons of clarity.

DESCRIPTION OF THE PREFERRED EMBODIMENT

A connector system in accordance with the present invention is shown in FIGS. 1 and 2 and includes a plug 10 and cooperating receptacle 12. The plug 10 terminates the end of a multi-conductor cable 14 and is assembled, as described in more detail below, from first and second metal half-shells 16 and 18 having coterminal surfaces that mate along a medial line 19. As shown in FIG.

1, the plug 10 includes a forwardly facing slot 20 on one side thereof defined by a surface 22 of the half-shell 16 and an opposing surface 24 of the half-shell 18. The slot 20 extends generally in the longitudinal direction of the plug 10 and is terminated at its rearward end by a surface 20A (partially illustrated in FIG. 1). The slot 20, as described below, assists in performing both a polarizing function and a latching function. A user-operated latch member, designated generally by the reference character 26, is mounted intermediate its ends to the assembled half-shells 16 and 18, as explained below in relationship to FIG. 3, and includes a forwardly extending arm 28 and rearwardly extending arm 30. Striations 32 are provided on the rearwardly extending arm 30 to facilitate manual operation of the latch member 26. The sidewall of assembled half-shells 16 and 18 rearwardly of the slot 20 includes a recess or guideway 34, best shown in the detail of FIG. 1A, which accepts the forwardly extending arm 28 of the latch member 26 to provide a desirable 'flush' mounting arrangement which contributes to the compact configuration of the plug 10.

The receptacle 12 is formed as a block-like structure and is dimensioned to be telescopically received within the open, forward end of the plug 10 and has, in the case of the preferred embodiment, laterally extending mounting flanges 36 and 38 for bulk-head type mounting applications. The flanges 36 and 38 can include openings (unnumbered) for receiving various fasteners. As shown in FIG. 1, a raised key-like projection 42 is formed on one side of the receptacle 12. The projection 42 has a length dimension substantially equal to the depth of the receptacle 12 and a width dimension that is somewhat less than the dimension between the opposed surfaces 22 and 24 of the projection-receiving slot 20 of the plug 10. The dimensional relationship between the projection 42 and the slot 20 is such to allow a clearance-type sliding fit between the plug 10 and the receptacle 12 with the slot 20 accommodating substantially the entire length of the raised projection 42. The projection 42 is formed with a latching indentation or slot 44 adjacent the end facing the plug 10. The latching slot 44 is designed to engage the forward arm 28 of the latch member 26 to releasably latch the components together, as explained below. As shown in FIG. 2, the opposite side of the receptacle 12 includes a resilient leaf spring 46 that extends laterally outward of the side of the receptacle 12 and includes a rounded nub 48 at its remote end.

As shown in the exploded view of FIG. 3, the half-shells 16 and 18 define interior cavities which retain a plastic connector block 50 having a rectangular array of forwardly extending pins 52. The

connector block 50 is set back from the forward, open end of the plug 10 to define a cavity (unnumbered) that receives the receptacle 12. In the preferred embodiment, the connector block 50 includes cylindrical or square crimp-to-wire pins 52 fitted to Mini-Latch Housings, designated generally by the reference character 54, marketed under the BergCon System trademark by DuPont Connectors Systems of New Cumberland, PA 17070. The housings 54 include tabs (unnumbered) which engage appropriate tab-receiving slots or recesses (not shown) formed in the interior surfaces of the half-shells 16 and 18 to maintain the housings 54 in place within the plug 10.

The latch member 26 includes a tab 56 at its forward end that faces and extends into the slot 20 and which is designed to enter the slot 44 adjacent the forward end of the projection 42 of the receptacle 12. An attachment member 58 joins with the forward and rearward arms 28 and 30 of the latch member 26 through a flex-hinge 60. The latch member 26 is preferably molded as a unitary structure from a flexible plastic, such as a polycarbonate or nylon. Both of the upper and lower half-shells 16 and 18 include a slot-like pocket 62 (shown only in the half-shell 16 of FIG. 3) which, when the half-shells 16 and 18 are assembled, define an interior cavity in the side of the plug 10 to retain the attachment member 58 in place. An opening (unnumbered) is provided in the sidewall of the half-shells 16 and 18 through which the flex-hinge 60 extends to maintain the latch member 26 in position on the side of the plug 10 with the forwardly extending arm 28 positioned in its recess 34 as shown in FIG. 1A.

The rearward end of the upper and lower half-shells 16 and 18 include respective semi-circular openings 64 which, when the half-shells are assembled, define a circular opening through which the cable 14 extends into the plug 10. A groove 66 (FIG. 3) is formed in the wall surface that defines each semi-circular opening 64 and is designed to accept a U-shaped retaining clip (not shown) which retains the cable 14 in place. The cable 14 is typically shielded by a woven wire braid or helical foil wrapping to prevent EMI emissions. The U-shaped retaining clip is designed to penetrate the outer insulation of the cable 14 and contact the shield to physically retain the cable 14 in place as well as establish a ground connection with assembled half-shells 16 and 18. A suitable retaining clip system is described in U.S. -A- 4,416,501. As can be appreciated, other cable retaining devices may likewise be used in the plug 10. The half-shells 16 and 18 are assembled together by staked pins, that is, a pin or pins (not shown in the figures) is mounted in the sidewall of one half-shell and pressed into respective pin-receiving

bores 68 (FIG. 3) in the other half-shell. When a staked-pin fastening arrangement is used, the wall thickness in the region adjacent the connecting pins and their pin-receiving bores is thickened somewhat, as shown in FIG. 3, to provide enhanced structural integrity.

The receptacle 12, as shown in FIG. 4, is assembled from inner and outer shells 70 and 72 which may be formed from pressed metal sheet stock. The inner shell 70 includes opposed sides 74 and 76 and an intermediate panel 78. The above-described leaf spring 46 is formed integrally with the side 74 which also includes a row of apertures 80 adjacent its lower edge, the function of which is described below. The key-like projection 42 and its latching slot 44 is integrally formed in the side 76. The side 76 also includes a row of apertures 82 adjacent its lower edge. The outer shell 72 includes opposed sides 84 and 86 and an intermediate panel 88 with the mounting flanges 36 and 38 formed with the sides 84 and 86, respectively. Outwardly extending locking tabs 90 and 92, respectively, are formed on the sides 84 and 86. The inner and outer shells 70 and 72 engage one another with the tabs 90 and 92 engaging and extending partly into the apertures 82 and 80 to retain the two shells together. A plastic connector block 94, shown in partial break-away in FIG. 4, is captured between the inner and outer shells 70 and 72. The connector block 94 contains contacts designed to engage those of the connector block 50 of the plug 10. In the preferred embodiment, crimp-to-wire receptacles 96 are fitted to housings of and type described above.

In order to engage the plug 10 with its receptacle 12, the plug 10 is aligned in general registration with the receptacle 12 with the polarizing slot 20 facing the key-like projection 42. The receptacle 12 is telescopically received within the open end of the plug 10 with the parts pressed together to cause the projection 42 to enter and slide into the polarizing slot 20. The rounded nub 48 of the leaf spring 46 frictionally engages the opposite interior surface of the plug 10 to assist in maintaining a mechanical and electrical connection between the plug 10 and the receptacle 12. As the plug 10 is pressed into engagement with the receptacle 12, the tab 56 presents a forwardly facing ramp surface 56A (FIG. 3) that engages and rides up onto the projection 42 until the tab 56 clears and enters the slot 44 to latch the plug 10 into engagement with the receptacle 12. The organization of the plug 10 and receptacle 12 is such that the receptacle 12 is telescopically received within the opening at the forward end of the plug 10 to completely envelop the receptacle 12 and thus provide a high degree of shielding integrity. Since the plug 10 is fabricated from a metal, as are the

inner and outer shells 70 and 72 of the receptacle 12, the electrical circuit paths joined through the plug 10 and its connected receptacle 12 are fully and reliably shielded to prevent EMI emissions from those circuits or, conversely, EMI emissions from affecting signals carried by the connected circuits.

In order to disengage the plug 10 from its connected receptacle 12, the rearward end of the plug 10 is grasped and the rearwardly extending arm 30 of the latch member 26 is pressed toward the body of the plug 10 causing the forwardly extending arm 28 to pivot outwardly at the flex-hinge 60 and retract the tab 56 from the tab-receiving slot 44 of the projection 42. Once the tab 56 is disengaged, the plug 10 is pulled to separate the plug 10 from the receptacle 12.

The present invention advantageously provides a compact and efficient connector system in which the latching and polarizing functions are provided in a compact arrangement having a high degree of shielding integrity. The latch member is desirably flush mounted to the plug body to provide a compact overall configuration.

Thus it will be appreciated from the above that as a result of the present invention, a connector system having a combined latch and polarization member is provided by which the principal objectives, among others, are completely fulfilled. It will be equally apparent and is contemplated that modification and/or changes may be made in the illustrated embodiment without departure from the invention.

Claims

1. An electrical connector system comprising:
 - a first connector member (10) having a plurality of electrical contacts (52) of a first type; and
 - a second connector member (12) having a plurality of electrical contacts (96) of a second type; said first and second connector members (10, 12) having side walls and being interengageable with one another to effect electrical connection between said first and second contact types (52, 96); latching means (26) mounted on one of said first and second connector members (10, 12) for releasably latching the first and second connector members (10, 12) together and means defining a raised projection (42) associated with one sidewall of the other of said first and second connector members (12, 10); said latching means (26) being enengageable with the raised projection (42) to latch the members together; characterised by means associated with one sidewall of said one of said first and second connector

members (10, 12) to define a forwardly facing slot (20) for slidably accepting said projection (42) thereby polarizing the first and second connector members in a preferred alignment and said latching means comprises a latch arm (26) mounted in a recess (34) rearwardly of the slot (20) and capable of engaging the projection (42) on joining the two connecting members (10, 12) together.

2. A connector system according to Claim 1, wherein said first connector member (10) constitutes the one member with the latch arm (26) associated therewith and takes the form of a plug (16, 18) having a connector block therein containing the electrical contacts (52) of the first type, said plug having an opening at one end for accepting said second connector member, said plug having surface means (20A, 22, 24) defining the slot (20) and wherein the latch arm (26) is movable between latching and unlatching positions for engaging said projection (42) when said projection is received in the slot (20).
3. A connector system according to Claim 2, wherein the latch arm (26) is mounted intermediate its ends to the first connector member (10) and has a first arm portion (28) for engaging said projection (42) to effect latching and unlatching and a second arm portion (30) manipulatable by a user to move said first arm portion (28) into and out of engagement with said projection (42).
4. A connector system according to Claim 3, wherein the recess (34) formed in said first connector member (10) co-operates with said first arm portion (28).
5. A connector system according to any one of Claims 1 to 4 wherein said projection (42) is defined by raised surface means (44) engageable by said latch arm (26) to latch the connector members (10, 12) together.
6. A connector system according to any one of Claims 1 to 5 wherein said other connector member (12) takes the form of a receptacle (12) having a connector block (94) therein containing the electrical contacts (96) of the second type.
7. A connector system according to Claim 1, wherein said latch arm (26) is pivotally mounted intermediate its ends to said one connector member (10) and has a first arm portion (28) for engaging said projection (42) to effect



inner and outer shells 70 and 72 of the receptacle 12, the electrical circuit paths joined through the plug 10 and its connected receptacle 12 are fully and reliably shielded to prevent EMI emissions from those circuits or, conversely, EMI emissions from affecting signals carried by the connected circuits.

In order to disengage the plug 10 from its connected receptacle 12, the rearward end of the plug 10 is grasped and the rearwardly extending arm 30 of the latch member 26 is pressed toward the body of the plug 10 causing the forwardly extending arm 28 to pivot outwardly at the flex-hinge 60 and retract the tab 56 from the tab-receiving slot 44 of the projection 42. Once the tab 56 is disengaged, the plug 10 is pulled to separate the plug 10 from the receptacle 12.

The present invention advantageously provides a compact and efficient connector system in which the latching and polarizing functions are provided in a compact arrangement having a high degree of shielding integrity. The latch member is desirably flush mounted to the plug body to provide a compact overall configuration.

Thus it will be appreciated from the above that as a result of the present invention, a connector system having a combined latch and polarization member is provided by which the principal objectives, among others, are completely fulfilled. It will be equally apparent and is contemplated that modification and/or changes may be made in the illustrated embodiment without departure from the invention.

Claims

1. An electrical connector system comprising:

a first connector member (10) having a plurality of electrical contacts (52) of a first type; and

a second connector member (12) having a plurality of electrical contacts (96) of a second type; said first and second connector members (10, 12) having side walls and being interengageable with one another to effect electrical connection between said first and second contact types (52, 96); latching means (26) mounted on one of said first and second connector members (10, 12) for releasably latching the first and second connector members (10, 12) together and means defining a raised projection (42) associated with one sidewall of the other of said first and second connector members (12, 10); said latching means (26) being engageable with the raised projection (42) to latch the members together; characterized by means associated with one sidewall of said one of said first and second connector

members (10, 12) to define a forwardly facing slot (20) for slidably accepting said projection (42) thereby polarizing the first and second connector members in a preferred alignment and said latching means comprises a latch arm (26) mounted in a recess (34) rearwardly of the slot (20) and capable of engaging the projection (42) on joining the two connecting members (10, 12) together.

2. A connector system according to Claim 1, wherein said first connector member (10) constitutes the one member with the latch arm (26) associated therewith and takes the form of a plug (16, 18) having a connector block therein containing the electrical contacts (52) of the first type, said plug having an opening at one end for accepting said second connector member, said plug having surface means (20A, 22, 24) defining the slot (20) and wherein the latch arm (26) is movable between latching and unlatching positions for engaging said projection (42) when said projection is received in the slot (20).

3. A connector system according to Claim 2, wherein the latch arm (26) is mounted intermediate its ends to the first connector member (10) and has a first arm portion (28) for engaging said projection (42) to effect latching and unlatching and a second arm portion (30) manipulatable by a user to move said first arm portion (28) into and out of engagement with said projection (42).

4. A connector system according to Claim 3, wherein the recess (34) formed in said first connector member (10) co-operates with said first arm portion (28).

5. A connector system according to any one of Claims 1 to 4 wherein said projection (42) is defined by raised surface means (44) engageable by said latch arm (26) to latch the connector members (10, 12) together.

6. A connector system according to any one of Claims 1 to 5 wherein said other connector member (12) takes the form of a receptacle (12) having a connector block (94) therein containing the electrical contacts (96) of the second type.

7. A connector system according to Claim 1, wherein said latch arm (26) is pivotally mounted intermediate its ends to said one connector member (10) and has a first arm portion (28) for engaging said projection (42) to effect



latching and unlatching and a second arm portion (30) manipulatable by a user to move said first arm portion into and out of engagement with said projection (42).

6. A connector system according to Claim 3 or Claim 7 or any one of Claim 4 to 6 when dependent upon Claim 3, further comprising a tab (56) formed at the remote end of said first arm portion (28) for engaging said projection (42).
9. A connector system according to any one of Claims 1 to 8 wherein the one connector member (10) is made of metal.
10. A connector system according to any one of Claims 1 to 9 wherein the other connector member (12) is made of metal.
11. A connector system according to any one of Claims 1 to 10 wherein the first and second connector members (10, 12) inter-engage in a telescopic manner.

Patentansprüche

1. Elektrisches Verbindersystem, welches aufweist:
 ein erstes Verbindungsteil (10), welches eine Mehrzahl von elektrischen Kontakten (52) einer ersten Bauart hat;
 und
 ein zweites Verbindungsteil (12), welches eine Mehrzahl von elektrischen Kontakten (96) einer zweiten Bauart hat, wobei die ersten und zweiten Verbindungsteile (10, 12) Seitenwände haben und miteinander in Eingriff zur Herstellung einer elektrischen Verbindung zwischen den ersten und zweiten Kontaktbauarten (52, 96) sind, wobei eine Verriegelungseinrichtung (26) an einem umfassend die ersten und zweiten Verbindungsteile (10, 12) zum lösbaren Verriegeln der ersten und zweiten Verbindungsteile (10, 12) miteinander angebracht ist und eine Einrichtung vorgesehen ist, welche einen erhabenen Vorsprung (42) bildet, welcher einer Seitenwand des jeweils anderen Teils, umfassend die ersten und zweiten Verbindungsteile (12, 10) zugeordnet ist, und wobei die Verriegelungseinrichtung (26) in Eingriff mit dem erhabenen Vorsprung (42) bringbar ist, um die Teile miteinander zu verriegeln, **gekennzeichnet** durch eine Einrichtung, welche einer Seitenwand eines der Teile umfassend die ersten und zweiten Verbindungsteile (10, 12) zugeordnet ist, um einen nach vorne weisenden Schlitz (20) zur gleitbeweglichen

Aufnahme des Vorsprungs (42) zu bilden, wodurch die ersten und zweiten Verbindungsteile in einer bevorzugten Ausrichtung gepolt werden, wobei die Verriegelungseinrichtung einen Verriegelungsarm (26) aufweist, welcher in einer Ausnehmung (34) auf der Rückseite des Schlitzes (20) angebracht ist und der mit dem Vorsprung (42) beim Verbinden der beiden Verbindungsteile (10, 12) miteinander zusammenarbeiten kann.

2. Verbindersystem nach Anspruch 1, bei dem das erste Verbindungsteil (10) das eine Teil mit dem Verriegelungsarm (26) bildet, welcher diesem zugeordnet ist und dieses in Form eines Steckers (16, 18) ausgebildet ist, welcher einen Verbindungsblock darin hat, welcher die elektrischen Kontakte (52) der ersten Bauart enthält, der Stecker eine Öffnung an einem Ende zur Aufnahme des zweiten Verbindungsteiles hat, der Stecker eine Oberflächeneinrichtung (20A, 22, 24) zur Bildung des Schlitzes (20) hat und bei dem der Verriegelungsarm (26) zwischen Verriegelungs- und Entriegelungsstellungen zum Zusammenarbeiten mit dem Vorsprung (42) beweglich ist, wenn der Vorsprung in dem Schlitz (20) aufgenommen ist.
3. Verbindersystem nach Anspruch 2, bei dem der Verriegelungsarm (26) zwischen seinen Enden an dem ersten Verbindungsteil (10) angebracht ist und einen Armabschnitt (28) zum Zusammenarbeiten mit dem Vorsprung (42) hat, um das Verriegeln und Entriegeln zu bewirken, und einen zweiten Armabschnitt (30) hat, welcher von einem Anwender manipulierbar ist, um den ersten Armabschnitt (28) in den Eingriffszustand mit dem Vorsprung (42) und aus demselben zu bringen.
4. Verbindersystem nach Anspruch 3, bei dem die Ausnehmung (34), die in dem ersten Verbindungsteil (10) ausgebildet ist, mit dem ersten Armabschnitt (28) zusammenarbeitet.
5. Verbindersystem nach einem der Ansprüche 1 bis 4, bei dem der Vorsprung (42) von erhabenen Flächeneinrichtungen (44) gebildet wird, welche mit dem Verriegelungsarm (26) zusammenarbeiten können, um die Verbindungsteile (10, 12) miteinander zu verriegeln.
6. Verbindersystem nach einem der Ansprüche 1 bis 5, bei dem das andere Verbindungsteil (12) die Form einer Aufnahme (12) hat, welche einen Verbinderblock (94) darin hat, welcher die elektrischen Kontakte (96) der zweiten Bauart



enthält.

7. Verbindersystem nach Anspruch 1, bei dem der Verriegelungsarm (26) zwischen seinen Enden schwenkbeweglich an einem Verbindungsteil (10) angebracht ist und einen ersten Armabschnitt (28) zum Zusammenarbeiten mit dem Vorsprung (42) hat, um eine Verriegelung und Entriegelung zu bewirken, und einen zweiten Armabschnitt (30) hat, welcher durch einen Anwender manipulierbar ist, um den ersten Armabschnitt in den Eingriffszustand mit dem Vorsprung (42) oder aus demselben zu bewegen.
8. Verbindersystem nach Anspruch 3 oder Anspruch 7 oder einem der Ansprüche 4 bis 6, wenn diese von Anspruch 3 abhängig sind, welches ferner einen Ansatz (56) aufweist, welcher an dem entfernt liegenden Ende des ersten Armabschnitts (28) zum Zusammenarbeiten mit dem Vorsprung (42) ausgebildet ist.
9. Verbindersystem nach einem der Ansprüche 1 bis 8, bei dem ein Verbindungsteil (10) aus Metall hergestellt ist.
10. Verbindersystem nach einem der Ansprüche 1 bis 9, bei dem das andere Verbindungsteil (12) aus Metall hergestellt ist.
11. Verbindersystem nach einem der Ansprüche 1 bis 10, bei dem die ersten und zweiten Verbindungsteile (10, 12) auf eine teleskopartige Weise ineinandergreifen.

Revendications

1. Un système de connecteur électrique comprenant:
 - un premier élément de connecteur (10) comprenant une pluralité de contacts (52) d'un premier type; et
 - un second élément de connecteur (12) comprenant une pluralité de contacts (96) d'un second type;
 lesdits premier et second éléments de connecteur (10, 12) comprenant des parois latérales et pouvant être mutuellement enfichés de manière à établir une connexion électrique entre lesdits premier et second types de contacts (52, 96); des moyens de verrouillage (26) montés sur l'un desdits premier et second éléments de connecteur (10, 12) pour verrouiller mutuellement, de façon amovible, les premier et second éléments de connecteur (10, 12) et des moyens définissant une saillie (42) associés à une paroi latérale de l'autre

desdits premier et second éléments de connecteur (12, 10); lesdits moyens de verrouillage (26) pouvant venir en prise sur la saillie (42) pour verrouiller les éléments mutuellement; caractérisé par des moyens associés à une paroi latérale de l'un desdits premier et second éléments de connecteur (10, 12) pour définir une fente dirigée vers l'avant (20) pour recevoir par un montage glissant ladite saillie (42) de manière à indexer les premier et second éléments de connecteur dans un alignement préféré et que lesdits moyens de verrouillage comprennent un doigt de verrouillage (26) monté dans une cavité (34) à l'arrière de la fente (20) et susceptible d'engager la saillie (42) en prise lors de la jonction mutuelle des deux éléments de connecteur (10, 12).

2. Un système de connecteur selon la revendication 1, dans lequel ledit premier élément de connecteur (10) constitue l'élément muni du bras de verrouillage (26) associé et est réalisé en forme de fiche mâle (16, 18), munie d'un bloc de raccordement à l'intérieur, contenant les contacts électriques (52) du premier type, ladite fiche comprenant une ouverture à une extrémité pour recevoir ledit second élément de connecteur, ladite fiche comprenant des moyens en surface (20A, 22, 24) définissant la fente (20) et dans lesquels le doigt de verrouillage (26) est mobile entre des positions de verrouillage et de déverrouillage, pour engager la saillie (42) en prise lorsque ladite saillie est logée dans la fente (20).
3. Un système de connecteur selon la revendication 2, dans lequel le doigt de verrouillage (26) est monté entre ses extrémités sur le premier élément de connecteur (10), et comprend une première partie de doigt (28) venant en prise sur ladite saillie (42) pour assurer le verrouillage et le déverrouillage, et une seconde partie de doigt (30) que l'utilisateur peut manipuler pour déplacer ladite première partie de doigt (28) afin de l'engager en prise sur ladite saillie (42) ou la dégager de celle-ci.
4. Un système de connecteur selon la revendication 3, dans lequel la cavité (34) ménagée dans ledit premier élément de connecteur (10) coopère avec ladite première partie de doigt (28).
5. Un système de connecteur selon l'une quelconque des revendications 1 à 4, dans lequel ladite saillie (42) est définie par lesdits moyens formant surface en saillie (44) venant



en prise sur ledit doigt de verrouillage (26) de manière à verrouiller mutuellement les éléments de connecteur (10, 12).

- Un système de connecteur selon l'une quelconque des revendications 1 à 5, dans lequel ledit autre élément de connecteur (12) est en forme de prise femelle (12) munie intérieurement d'un bloc de raccordement (94) contenant les contacts électriques (96) de second type. 5 10
7. Un système de connecteur selon la revendication 1, dans lequel ledit doigt de verrouillage (26) est monté à rotation entre ses extrémités sur ledit élément de connecteur (10) et comprend une première partie de doigt (28) venant en prise sur ladite saillie (42) pour assurer le verrouillage et le déverrouillage, et une seconde partie de doigt (30) que l'utilisateur peut manipuler pour déplacer ladite première partie de doigt en prise sur ladite saillie (42) ou la dégager de celle-ci. 15 20
8. Un système de connecteur selon la revendication 3 ou 7, ou l'une quelconque des revendications 4 à 6 lorsqu'elle est dépendante de la revendication 3, comprenant en outre une languette (56) ménagée à l'extrémité distale de ladite première partie de doigt (28) pour venir en prise sur ladite saillie (42). 25 30
9. Un système de connecteur selon l'une quelconque des revendications 1 à 8, dans lequel l'un des éléments de connecteur (10) est métallique. 35
10. Un système de connecteur selon l'une quelconque des revendication 1 à 9, dans lequel l'autre élément de connecteur (12) est métallique. 40
11. Un système de connecteur selon l'une quelconque des revendication 1 à 10, dans lequel les premier et second éléments de connecteur (10, 12) s'enfichent mutuellement de façon télescopique. 45

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