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54 **Hinge joint and electrical connector having a latch arm joined thereto at a hinge joint.**

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Description

The present invention relates to the field of electrical connectors and more particularly to connector housings.

Housings for certain electrical connectors are molded from dielectric plastic material and are intended to be secured to mating connector housings when the connectors have been moved together in a mated condition, in which the respective arrays of electrical contacts are mated to complete electrical connections. In some of these connectors, hardware is fastened to the respective housings to secure them together in their mated condition, but it is desirable that the housings have an integral latching means. Integrally molded latch arms are known, in which a pair of latch arms are disposed along opposed sides of the housing of one of the connectors and extend forwardly to latchingly engage corresponding latching surfaces of the housing of the other connector, when the connectors are moved together into a mated condition.

Latch arms used for securing connectors together are known in US-A-4 867 700. The latch arms include rearward portions which are deflectable to unlatch the latch arms when it is desired to separate and unmate the connectors, in which case the latch arms can be said to be hingedly joined to the housing. Such latch arms are subjected to stress and torque during mating and unmating of the connectors, and the hinge joint must be rugged and durable to withstand many cycles of mating and unmating, especially taking into consideration that the hinge joint is molded of plastic material which can commonly lose strength over time when worked and subjected to temperature cycling as well.

It is desired to provide a hinge joint for latch arms of connector housings which is designed to resist stress and torque and yet be flexible to allow many cycles of deflection of the latch arm.

The present invention provides a hinge joint as defined in claim 1 and an electrical connector housing molded of plastic material as defined in claim 6. Particular embodiments of the hinge joint and of the electrical connector housing are set out in the dependent claims.

In particular, a hinge joint is provided for joining a latch arm to an outer surface of a plastic connector housing, with the latch arm extending forwardly from the hinge joint to a latching means at the forward end adapted to latchingly engage a corresponding latching means of a mating connector housing, and a gripping portion extending rearwardly from the hinge joint to an inwardly deflectable portion for delatching the forward latching means for connector unmating, the latch arm commonly used as an opposed pair each on one of the opposed sides of the housing. Each hinge joint defines a vertical hinge axis with the forward arm

portion deflectable outwardly away from the respective housing side while riding over a corresponding portion of the mating connector housing forwardly of the respective corresponding latching means thereof just prior to latching, or during delatching. Correspondingly the rearward arm portion is deflectable inwardly about the vertical hinge axis to urge the forward arm portion outwardly; thus the pair of gripping portions of the pair of latch arms can be gripped by a person and urged toward each other to unmate the connectors.

The hinge joint for each latch arm comprises a pair of vertically spaced parallel legs coextending outwardly a short distance from the side surface of the housing to a bight section joined integrally to each leg and spaced outwardly from the housing side; each leg is essentially a thin web having a substantial horizontal forward/rearward dimension. Extending between and integrally joining the vertical bight section to about the middle of the latch arm spaced outwardly therefrom, is a rib section having at least a horizontal rib component, and preferably having intersecting vertical and horizontal components defining a cross-shaped rib cross-section. The legs allow flexure of the bight section, permitting it to deform slightly about the hinge axis sufficiently to allow deflection of the latch arm for latching and delatching; the horizontal rib component slightly elastically deforms the center of the bight section intermediate the spaced legs.

The present invention provides an integral hinge joint for each latch arm of a connector housing which is capable of flexure to allow deflection of the latch arm during mating and unmating of the connector with a mating connector.

Such a hinge joint resists stress and torque and is durable over many cycles of latch arm deflection, allowing many cycles of connector mating and unmating.

Such a hinge is moldable as an integral portion of a plastic connector housing in a two-draw molding process.

An embodiment of the improved integral flexible hinge joint will now be described with respect to the accompanying drawings, in which:

FIGURE 1 is a perspective view of a connector housing having a pair of latch arms joined thereto by hinge joints of the present invention, with a mating connector housing spaced therefrom; FIGURES 2A and 2B are enlarged longitudinal part section views of the mating connectors of Figure 1 showing latching of a latch arm during connector mating, with Figure 2A taken along lines 2A-2A of Figure 1;

FIGURE 3 is a part perspective view of a latch arm of Figure 1 broken away from the housing to expose the hinge joint of the present invention; and

FIGURES 4 and 5 are enlarged cross-section

views of the hinge joint of Figure 3, with Figure 4 taken along lines 4-4 of Figure 1 and Figure 5 taken along lines 5-5 of Figure 4.

Figures 1, 2A and 2B illustrate a pair of dielectric housings 10,70 for a pair of electrical connector assemblies. Housings 10,70 are molded of plastic material such as glass-filled polyester and are shaped and dimensioned to be matable, with housing 10 having a forward plug portion 12 shaped to be received into a corresponding large cavity 72 of housing 70, so that mating face 14 of housing 10 is disposed proximate the reduced-dimension rearward portion 74 of cavity 72. Shown along mating face 14 are a plurality of passageways 16 within which are housed respective contact sections of terminal means (not shown) secured within housing 10, to mate with corresponding contact means (not shown) secured within housing 70 upon connector mating. Housing 10 has a rear face 18, wide and flat upper and lower outer surfaces 20,22 and low profile sides 24,26. Mating housing 70 has a leading end 78, wide and flat upper and lower outer surfaces 80,82, low profile sides 84,86 and rear face 88; mating housing 70 is also shown having a pair of right-angled mounting flanges 90 for being secured to a printed circuit board (not shown) in either a horizontal or a vertical orientation. Housings 10,70 as shown have a low profile and are especially suitable for use as connectors for connecting a terminated flat power cable to a printed circuit board.

A pair of latch arms 30 are joined integrally to sides 24,26 of housing 10 at respective flexible integral hinge joints 32 located approximately midway along the latch arms. Each latch arm 30 includes a forward portion 34 concluding in a free end 36 having a latching projection 38 extending toward housing sides 24,26 defining a latching surface 40 facing rearwardly and preferably angled slightly outwardly as seen in Figure 2A. Housing 70 includes a pair of latching recesses 92 along sides 84,86 defining corresponding latching surfaces 94 facing rearwardly and angled slightly inwardly; latching recesses 92 are adapted to receive thereinto latching projections 38. Latch arms 30 further include rearward portions 42 extending rearwardly from hinge joints 32, adapted to be gripped.

During mating of the connectors, latch arms 30 are deflected slightly outwardly as latching projections 38 ride over portions 96 of housing sides 84,86 forwardly of latching recesses 92; upon mating, latching projections 38 enter latching recesses 92 with latching surfaces 40 latching behind corresponding latching surfaces 94. The slight angle of the latching surfaces 40,94 provides resistance to inadvertent delatching during stress and vibration when the connectors are in their mated condition by tending to hold latch arms 30 toward the sides 84,86 of housing 70. The connector-proximate portion of latch arm free ends 36 preferably includes an angled surface portion

44 to engage corresponding portions of leading end 78 of housing 70 and bear thereagainst to initiate deflection of latch arms 30 outwardly. During unmating, rearward latch arm portions 42 are adapted to be urged toward each other, rotating latch arms 30 about their respective hinge joints to delatch latching projections 38 from recesses 92, whereupon housing 10 may be moved rearwardly and away from housing 70.

Hinge joint 32 is shown in particular detail in Figures 3 to 5 and is capable of flexure during latch arm deflection. Hinge joint 32 includes a bight section 50 joined to housing side 24 by upper and lower legs 52,54 spaced vertically apart and creating a relief area 56 between bight section 50 and housing side 24. A rib section 58 at least has a horizontal rib component 60 and preferably also a vertical rib component 62 which intersect to provide rib section 58 with a cross-shaped cross-section. Horizontal rib component 60 is joined to bight section 50 across the outwardly facing surface thereof midway between upper and lower legs 52,54; upon deflection of latch arm 30 in the horizontal plane, horizontal rib component 60 elastically deforms the central portion of bight section 50 into relief area 56 along the first or rearward edge 64 of bight section 50 and away from relief area 56 along the second or forward edge 66 thereof. Vertical rib component 62 provides substantial strength to rib section 58 and bight section 50 to enable long-term resistance to stress and torque. Rearward latch arm portion 42 may preferably be provided with inwardly directed projections 68 adapted to engage housing sides 24,26 to limit the extent of deflection during unmating, as anti-overtress mechanisms.

Those skilled in the art may make modifications to the specific embodiment disclosed hereinabove, which would be within the scope of the claims.

Claims

1. A hinge joint (32) for joining a deflectable section (30) integrally to a plastic article (10), the plastic article including a surface portion (24,26) along which the hinge joint (32) is located and the deflectable section (30) being deflectable relatively toward and away from the surface portion (24,26) by being rotated about the hinge joint (32), characterized in that:

the hinge joint (32) includes a bight section (50) joined integrally to said surface portion (24,26) at a pair of spaced joints (52,54) and extending over a relief area portion (56) of said surface portion (24,26) between said spaced joints (52,54), said bight section (50) defining a first free edge (64) and a second free edge (66) spaced from said first free edge (64); and

means (58) joining said bight section (50) to said deflectable section (30) about midway be-

tween said pair of spaced joints (52,54), said joining means (58) at least joining said deflectable section (30) to said bight section (50) proximate said first free edge (64) of said bight section (50) and proximate said second free edge (66) thereof,

whereby upon deflection of said deflectable section (30) relative to said article (10), said bight section (50) is flexible by being adapted to be locally elastically deformed by said joining means (58) relatively toward said article surface portion (24,26) at one of said first (64) and second (66) free edges and relatively away therefrom at the other of said first (64) and second (66) free edges.

2. A hinge joint (32) as set forth in claim 1 further characterized in that said joining means (58) comprises a rib section (58) joining said deflectable section (30) to said first (64) and second (66) free edges.
3. A hinge joint (32) as set forth in claim 1 or 2 further characterized in that said spaced joints (52,54) comprise respective leg sections (52,54) extending between said article (10) and said bight section (50).
4. A hinge joint (32) as set forth in claim 3 further characterized in that said joining means (58) comprises a rib section (58) joining said deflectable section (30) to said first (64) and second (66) free edges and having at least a first rib component (60) joined to said bight section (50) substantially parallel to said leg sections (52,54) and midway therebetween and extending from proximate said first edge (64) to proximate said second edge (66).
5. A hinge joint (32) as set forth in claim 4 further characterized in that said rib section (58) includes a second rib component (62) perpendicular to said first rib component (60) and joining said deflectable section (30) and said bight section (50), whereby said rib section (58) has a cross-shaped cross-section.
6. An electrical connector housing (10) molded of plastic material and matable with a corresponding connector housing (70) and having a pair of latch arms (30,30) on opposite sides thereof each having respective latching projections (38) at forward free ends (36) thereof latchable with corresponding latching means (92,94) of said corresponding connector housing (70), each said latch arm (30) joined to a respective said side (24,26) of said housing (10) at a hinge joint (32) spaced a selected distance rearwardly from said forward

free end (36) of said latch arm (30), characterized in that:

each said hinge joint (32) includes a bight section (50) joined integrally to a respective side (24,26) of said housing (10) at a pair of spaced joints (52,54) and extending over a relief area portion (56) of said housing side (24,26) between said spaced joints (52,54) and defining a first free edge (64) and a second free edge (66) spaced from said first free edge (64), and means (58) joining said bight section (50) to said latch arm (30) about midway between said pair of spaced joints (52,54), said joining means (58) at least joining said latch arm (30) to said bight section (50) proximate said first free edge (64) of said bight section (50) and proximate said second free edge (66) thereof, whereby upon deflection of each said latch arm (30) relative to said housing (10), the respective said bight section (50) is flexible by being adapted to be locally elastically deformed by said joining means (58) relatively toward the respective said housing side (24,26) at one of said first (64) and second (66) free edges and relatively away therefrom at the other of said first (64) and second (66) free edges.

7. An electrical connector housing (10) as set forth in claim 6 further characterized in that said latch arms (30,30) include rearward portions (42) extending rearwardly from respective said hinge joints (32,32) to define a pair of inwardly deflectable latch arm portions enabling delatching and unmating of said connector housing (10) from said corresponding connector housing (70).
8. An electrical connector housing (10) as set forth in either of claims 6 or 7 further characterized in that said spaced joints (52,54) comprise respective leg sections (52,54) extending between said housing (10) and said bight section (50).
9. An electrical connector housing (10) as set forth in any of claims 6 to 8 further characterized in that said joining means (58) comprises a rib section (58) joining said latch arm (30) to said first (64) and second (66) free edges and having at least a first rib component (60) joined to said bight section (50) substantially parallel to said leg sections (52,54) and midway therebetween and extending from proximate said first edge (64) to proximate said second edge (66).
10. An electrical connector housing (10) as set forth in claim 9 further characterized in that said rib section (58) includes a second rib component (62) perpendicular to said first rib component (60) and joining said latch arm (30) and said bight section (50), whereby said rib section (58) has a

cross-shaped cross-section.

Patentansprüche

1. Gelenkverbindung (32) zum Verbinden eines ver-
lagerbaren Abschnitts (30) in integraler Weise mit
einem Kunststoffgegenstand (10), wobei der
Kunststoffgegenstand einen Oberflächenbe-
reich (24, 26) aufweist, entlang dessen die Ge-
lenkverbindung (32) vorgesehen ist und wobei
der verlagerbare Abschnitt (30) durch Ver-
schwenken desselben um die Gelenkverbindung
(32) relativ auf den Oberflächenbereich (24, 26)
zu sowie von diesem weg verlagerbar ist,
dadurch gekennzeichnet,
daß die Gelenkverbindung (32) einen Bügelab-
schnitt (50) aufweist, der an einen Paar vonein-
ander beabstandeter Gelenke (52, 54) in integra-
ler Weise mit dem Oberflächenbereich (24, 26)
verbunden ist und sich über einem Freiraumbereich
(56) des Oberflächenbereichs (24, 26) zwi-
schen den voneinander beabstandeten Gelen-
ken (52, 54) erstreckt, wobei der Bügelabschnitt
(50) eine erste freie Kante (64) und eine zweite
freie Kante (66) definiert, die von der ersten frei-
en Kante (64) beabstandet ist; und
daß eine Einrichtung (58) den Bügelabschnitt
(50) in etwa in der Mitte zwischen den beiden
voneinander beabstandeten Gelenken (52, 54)
mit dem verlagerbaren Abschnitt (30) verbindet,
wobei die Verbindungseinrichtung (58) den verla-
gerbaren Abschnitt (30) wenigstens in der Nähe
der ersten freien Kante (64) des Bügelabschnitts
(50) und in der Nähe der zweiten freien Kante
(66) desselben mit dem Bügelabschnitt (50) ver-
bindet, so daß beim Verlagern des verlagerbaren
Abschnitts (30) relativ zu dem Gegenstand (10)
der Bügelabschnitt (30) flexibel ist, indem er
durch die Verbindungseinrichtung (58) lokal ela-
stisch verformbar ist, und zwar an einer der er-
sten (64) und der zweiten (66) freien Kante relativ
auf den Oberflächenbereich (24, 26) des Gegen-
stands zu und an der anderen der ersten (64) und
der zweiten (66) freien Kante relativ von dem
Oberflächenbereich des Gegenstands weg.
2. Gelenkverbindung (32) nach Anspruch 1,
weiterhin dadurch gekennzeichnet, daß die Ver-
bindungseinrichtung (58) einen Rippenabschnitt
(58) aufweist, der den verlagerbaren Abschnitt
(30) mit der ersten (64) und der zweiten (66) frei-
en Kante verbindet.
3. Gelenkverbindung (32) nach Anspruch 1 oder 2,
weiterhin dadurch gekennzeichnet, daß die von-
einander beabstandeten Gelenke (52, 54) jewei-
lige Schenkelabschnitte (52, 54) aufweisen, die

sich zwischen dem Gegenstand (10) und dem
Bügelabschnitt (50) erstrecken.

4. Gelenkverbindung (32) nach Anspruch 3,
weiterhin dadurch gekennzeichnet, daß die Ver-
bindungseinrichtung (58) einen Rippenabschnitt
(58) aufweist, der den verlagerbaren Abschnitt
(30) mit der ersten (64) und der zweiten (66) frei-
en Kante verbindet und wenigstens eine erste
Rippenkomponente (60) aufweist, die im wesent-
lichen parallel zu den Schenkelabschnitten (52,
54) und in der Mitte zwischen diesen mit dem Bü-
gelabschnitt (50) verbunden ist und sich von in
der Nähe der ersten Kante (64) bis in die Nähe
der zweiten Kante (66) erstreckt.
5. Gelenkverbindung (32) nach Anspruch 4,
weiterhin dadurch gekennzeichnet, daß der Rip-
penabschnitt (58) eine zweite Rippenkomponen-
te (62) aufweist, die sich rechtwinklig zu der er-
sten Rippenkomponente (60) erstreckt und den
verlagerbaren Bereich (30) und den Bügelab-
schnitt (50) miteinander verbindet, so daß der
Rippenabschnitt (58) einen kreuzförmigen Quer-
schnitt besitzt.
6. Elektrisches Verbindergehäuse (10), das aus
Kunststoffmaterial geformt ist und mit einem ent-
sprechenden Verbindergehäuse (70) verbindbar
ist und auf gegenüberliegenden Seiten ein Paar
Verriegelungsarme (30, 30) aufweist, die an ihren
vorderen freien Enden (36) jeweilige Verriegel-
ungsvorsprünge (38) aufweisen, die mit entspre-
chenden Verriegelungseinrichtungen (92, 94)
des entsprechenden Verbindergehäuses (70)
verriegelbar sind, wobei jeder Verriegelungsarm
(30) mit einer jeweiligen Seite (24, 26) des Ge-
häuses (10) an einer Gelenkverbindung (32) ver-
bunden ist, die in einer ausgewählten Distanz
nach rückwärts von dem vorderen freien Ende
(36) des Verriegelungsarms (30) beabstandet ist,
dadurch gekennzeichnet, daß jede Gelenkver-
bindung (32) einen Bügelabschnitt (50) aufweist,
der an einem Paar voneinander beabstandeter
Gelenke (52, 54) in integraler Weise mit einer je-
weiligen Seite (24, 26) des Gehäuses (10) verbun-
den ist und sich über einen Freiraumbereich (56)
der Gehäuseseite (24, 26) zwischen den vonein-
ander beabstandeten Gelenken (52, 54) er-
streckt und eine erste freie Kante (64) und eine
zweite freie Kante (66) definiert, die von der er-
sten freien Kante (64) beabstandet ist, und daß
eine Einrichtung (58) den Bügelabschnitt (50) in
etwa in der Mitte zwischen den beiden voneinan-
der beabstandeten Gelenken (52, 54) mit dem
Verriegelungsarm (30) verbindet, wobei die Ver-
bindungseinrichtung (58) den Verriegelungsarm
(30) wenigstens in der Nähe der ersten freien

Kante (64) des Bügelabschnitts (50) und in der Nähe der zweiten freien Kante (66) desselben mit dem Bügelabschnitt (50) verbindet, so daß beim Verlagern eines jeden Verriegelungsarms (30) relativ zu dem Gehäuse (10) der jeweilige Bügelabschnitt (50) flexibel ist, indem er durch die Verbindungseinrichtung (58) lokal elastisch verformbar ist, und zwar an einer der ersten (64) und der zweiten (66) freien Kante relativ in Richtung auf die jeweilige Gehäusesseite (24, 26) zu und an der anderen der ersten (64) und der zweiten (66) freien Kante relativ in Richtung von derselben weg.

7. Elektrisches Verbindergehäuse (10) nach Anspruch 6,

weiterhin dadurch gekennzeichnet, daß die Verriegelungsarme (30, 30) rückwärtige Bereiche (42) aufweisen, die sich von den jeweiligen Gelenkverbindungen (32, 32) nach rückwärts erstrecken und ein Paar nach innen verlagerbarer Verriegelungsarmbereiche definieren, die eine Entriegelung sowie ein Trennen des Verbindergehäuses (10) von dem entsprechenden Verbindergehäuse (70) ermöglichen.

8. Elektrisches Verbindergehäuse (10) nach einem der Ansprüche 6 oder 7,

weiterhin dadurch gekennzeichnet, daß die voneinander beabstandeten Gelenke (52, 54) jeweilige Schenkelabschnitte (52, 54) aufweisen, die sich zwischen dem Gehäuse (10) und dem Bügelabschnitt (50) erstrecken.

9. Elektrisches Verbindergehäuse (10) nach einem der Ansprüche 6 bis 8,

weiterhin dadurch gekennzeichnet, daß die Verbindungseinrichtung (58) einen Rippenabschnitt (58) aufweist, der den Verriegelungsarm (30) mit der ersten (64) und der zweiten (66) freien Kante verbindet und wenigstens eine erste Rippenkomponente (60) aufweist, die mit dem Bügelabschnitt (50) im wesentlichen parallel zu den Schenkelabschnitten (52, 54) und in der Mitte zwischen diesen verbunden ist und sich von in der Nähe der ersten Kante (64) bis in die Nähe der zweiten Kante (66) erstreckt.

10. Elektrisches Verbindergehäuse (10) nach Anspruch 9,

weiterhin dadurch gekennzeichnet, daß der Rippenabschnitt (58) eine zweite Rippenkomponente (62) aufweist, die sich rechtwinklig zu der ersten Rippenkomponente (60) erstreckt und den Verriegelungsarm (30) und den Bügelabschnitt (50) miteinander verbindet, so daß der Rippenabschnitt (58) einen kreuzförmigen Querschnitt besitzt.

Revendications

1. Joint à charnière (32) destiné à relier en une seule pièce une partie (30) pouvant fléchir à un article (10) en matière plastique, l'article en matière plastique comprenant une partie de surface (24, 26) le long de laquelle le joint à charnière (32) est placé et la partie (30) pouvant fléchir pouvant se rapprocher et s'éloigner, par flexion, de la partie de surface (24, 26) en étant tournée autour du joint à charnière (32), caractérisé en ce que :

le joint à charnière (32) comprend une section en arceau (50) reliée en une seule pièce à ladite partie de surface (24, 26) par deux joints espacés (52, 54) et s'étendant au-dessus d'une partie à zone de dégagement (56) de ladite partie de surface (24, 26) entre lesdits joints espacés (52, 54), ladite section en arceau (50) définissant un premier bord libre (64) et un second bord libre (66) espacé dudit premier bord libre (64) ; et

des moyens (58) reliant ladite section en arceau (50) à ladite section (30) pouvant fléchir sensiblement à mi-distance entre ladite paire de joints espacés (52, 54), lesdits moyens de liaison (58) reliant au moins ladite section (30) pouvant fléchir à ladite section en arceau (50) à proximité dudit premier bord libre (64) de ladite section en arceau (50) et à proximité de son second bord libre (66),

grâce à quoi, lors d'une flexion de ladite section (30) pouvant fléchir par rapport audit article (10), ladite section en arceau (50) est flexible en étant conçue pour être localement déformée élastiquement par lesdits moyens de liaison (58) en se rapprochant de ladite partie de surface (24, 26) de l'article à l'un desdits premier (64) et second (66) bords libres et en s'en éloignant à l'autre desdits premier (64) et second (66) bords libres.

2. Joint à charnière selon revendication 1, caractérisé en outre en ce que lesdits moyens de liaison (58) comprennent une section à nervure (58) reliant ladite section (30) pouvant fléchir audit premier (64) et second (66) bords libres.

3. Joint à charnière (32) selon la revendication 1 ou 2, caractérisé en outre en ce que lesdits joints espacés (52, 54) comprennent des sections à branches respectives (52, 54) s'étendant entre ledit article (10) et ladite section à arceau (50).

4. Joint à charnière (32) selon la revendication 3, caractérisé en outre en ce que lesdits moyens de liaison (58) comprennent une section à nervure (58) reliant ladite section (30) pouvant fléchir audit premier (64) et second (66) bords libres et ayant au moins un premier constituant de nervu-

- re (60) relié à ladite section à arceau (50) à peu près parallèlement auxdites sections de branches (52, 54) et à mi-distance entre elles et s'étendant d'un point proche dudit premier bord (64) jusqu'à proximité dudit second bord (66).
5. Joint à charnière (32) selon la revendication 4, caractérisé en outre en ce que ladite section à nervure (58) comprend un second constituant de nervure (62) perpendiculaire audit premier constituant de nervure (60) et reliant ladite section (30) pouvant fléchir et ladite section à arceau (50), ladite section à nervure (58) présentant une coupe transversale en forme de croix.
6. Boîtier (10) de connecteur électrique moulé en matière plastique et pouvant être accouplé avec un boîtier de connecteur correspondant (70), et ayant une paire de bras de verrouillage (30, 30) sur ses côtés opposés, les extrémités libres avant (36) des deux bras de verrouillage ayant des saillies respectives (38) de verrouillage pouvant être verrouillées avec les moyens de verrouillage correspondants (92, 94) dudit boîtier de connecteur correspondant (70), chacun desdits bras de verrouillage (30) étant relié à un côté respectif (24, 26) dudit boîtier (10) par un joint à charnière (32) espacé d'une distance choisie vers l'arrière de ladite extrémité libre avant (36) dudit bras (30) de verrouillage, caractérisé en ce que :
- chaque joint à charnière (32) comprend une section à arceau (50) reliée en une seule pièce à un côté respectif (24, 26) dudit boîtier (10) par une paire de joints espacés (52, 54) et s'étendant au-dessus d'une partie à zone de dégagement (56) dudit côté (24, 26) du boîtier entre lesdits joints espacés (52, 54) et définissant un premier bord libre (64) et un second bord libre (66) espacé dudit premier bord libre (64), et des moyens (58) reliant ladite section en arceau (50) audit bras de verrouillage (30) à peu près à mi-distance entre ladite paire de joints espacés (52, 54), lesdits moyens de liaison (58) reliant au moins ledit bras de verrouillage (30) à ladite section en arceau (50) à proximité dudit premier bord libre (64) de ladite section en arceau (50) et à proximité de son second bord libre (66), grâce à quoi, lors d'une flexion de chacun desdits bras (30) de verrouillage par rapport audit boîtier (10), ladite section en arceau respective (50) est flexible en étant conçue pour être localement déformée élastiquement par lesdits moyens de liaison (58) en se rapprochant dudit côté de boîtier respectif (24, 26) à l'un desdits premier (64) et second (66) bords libres et en s'en éloignant à l'autre desdits premier (64) et second (66) bords libres.
7. Boîtier (10) de connecteur électrique selon la revendication 6, caractérisé en outre en ce que lesdits bras de verrouillage (30, 30) comprennent des parties arrière (42) s'étendant vers l'arrière depuis lesdits joints à charnière respectifs (32, 32) pour définir une paire de parties de bras de verrouillage pouvant fléchir vers l'intérieur, permettant un déverrouillage et un désaccouplement dudit boîtier de connecteur (10) à partir dudit boîtier du connecteur correspondant (70).
8. Boîtier (10) de connecteur électrique selon l'une des revendications 6 et 7, caractérisé en outre en ce que lesdits joints espacés (52, 54) comprennent des sections de branches respectives (52, 54) s'étendant entre ledit boîtier (10) et ladite section à arceau (50).
9. Boîtier (10) de connecteur électrique selon l'une quelconque des revendications 6 à 8, caractérisé en outre en ce que lesdits moyens de liaison (58) comprennent une section à nervure (58) reliant ledit bras de verrouillage (30) auxdits premier (64) et second (66) bords libres et ayant au moins un premier constituant de nervure (60) relié à ladite section en arceau (50) sensiblement parallèle auxdites sections de branche (52, 54) à mi-distance entre elles et s'étendant d'un point proche dudit premier bord (64) jusqu'à proximité dudit second bord (66).
10. Boîtier (10) de connecteur électrique selon la revendication 9, caractérisé en outre en ce que ladite section à nervure (58) comprend un second constituant de nervure (62) perpendiculaire audit premier constituant de nervure (60) et reliant ledit bras de verrouillage (30) et ladite section à arceau (50), ladite section à nervure (58) ayant une coupe transversale en forme de croix.



