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(54) **Solderless Right Angle Coaxial Connector**

(57) This invention relates to electrical conductor terminating arrangements which are especially, but not exclusively, applicable to the termination of electrical conductors in electrical connectors of the coaxial type.

The invention is especially directed to an improved conductor terminating arrangement in a coaxial connector of the kind facilitating the ready and effective connection of the usual central conductor of an incoming coaxial cable to contact means (e.g. socket contact) of the connector without the need for crimping and/or other tools.

According to the present invention as broadly conceived an electrical conductor terminating arrangement comprises electrically conductive contact-making means which makes good electrical contact with an electrical conductor in response to non-axial pressure displacement over the contact making means of displaceable means to exert a radial force on the contact-making means and to co-operate therewith for providing ongoing pressure engagement between the contact making means and the electrical conductor without the need for the continuance of non-axial pressure on the displaceable means after a predetermined non-axial displacement of the displaceable means.

In carrying out the present invention the displaceable means may comprise a resilient flat or formed clip member which when displaced exerts an inward radial force on the contact-making means located within the clip member and which co-operates with the contact-making means positioned over the electrical conductor to provide the aforesaid ongoing pressure engagement with the conductor. A resilient clip member may be provided by a formed or flat metal clip.

The contact-making means of the conductor termi-

nating arrangement may comprise a compressible clamping element adapted to fit over the electrical conductor.

The compressible clamping element may comprise a split tubular metal part into one end of which the conductor extends and which is adapted to be radially compressed by the contact-making means to make good electrical contact with the conductor. The split tubular metal part may be formed integrally with contact means (e.g. pin or socket contact) of the terminating arrangement provided at the end thereof remote from the end at which the conductor enters the tubular compressible clamping element.

In accordance with one especially contemplated application of the present invention, a conductor terminating arrangement of the foregoing construction as broadly conceived is provided as part of a coaxial connector comprising a tubular body structure having a non-axial extending bore therein for receiving an incoming coaxial cable and for accommodating the electrically conductive contact-making means of the terminating arrangement located adjacent a part of the cable within the tubular body structure and electrically coupled with connector contact means (e.g. pin contact), the displaceable means of the arrangement, in response to the predetermined non-axial displacement thereof exerting a radial force on the contact making means with which it co-operates to provide ongoing pressure engagement between the contact-making means and the central conductor of the coaxial cable to ensure good electrical contact there between without the need for the continuance of any axially applied force to the displaceable means.

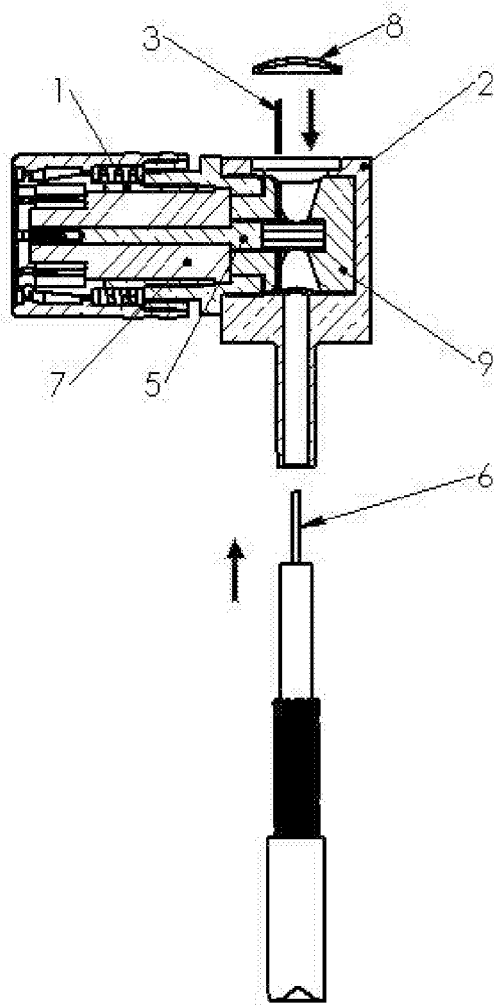


FIG. 1

## Description

**[0001]** By way of example various embodiments of the present invention will now be described with reference to the accompanying drawings in which:

Figure 1 shows a longitudinal cross-sectional view of an assembled connector.

Figure 2 shows a diagrammatic view of the termination process

Figure 3 shows a diagrammatic view of the termination process

Figure 4 shows the contact and cable interface

**[0002]** Referring now to Figures 1 of the drawings, the embodiment depicted therein constitutes a preferred construction which provides the pre-terminated state of the connector.

**[0003]** The tubular body structure of the coaxial connector comprises one cylindrical metal part 1 retaining the insulator 7 and centre contact 5. The rear body 2 is integrated with the front body and contains the rear insulator 9, the clip 3 and the rear cap 8.

To terminate the connector the cable is inserted into the rear body 2 with the centre core of the cable 6 inserted between the two movable blades of the contact 5 as shown in fig 2 & 3. The clip 3 is then pressed down over the contact 5 terminating the centre conductor 6 to the contact 5. To complete the operation the rear cap 8 is then located and swaged in place.

## Claims

1. An electrical conductor terminating arrangement comprising electrically conductive contact-making means which makes good electrical contact with an electrical conductor in response to a non-axial pressure displacement over the contact-making means of a displaceable means which exerts a radial force on the contact-making means and co-operates therewith to provide ongoing pressure engagement between the contact-making means and the electrical conductor without the need for the continuance of non-axial pressure on the displaceable means. 45
2. An electrical conductor terminating arrangement as claimed in claim 1, in which the non-axially displaceable means comprises a resilient clip member which exerts an inward radial force on a contact-making element located within it and which co-operates with the element to provide the ongoing pressure engagement of the element with the conductor. 50
3. An electrical conductor terminating arrangement as claimed in claim 2, in which the clip member is resilient and is provided by a flat stamped metal clip. 55

4. An electrical conductor terminating arrangement as claimed in claim 2, in which the clip member is resilient and is provided by a formed stamped metal clip.
5. An electrical conductor terminating arrangement as claimed in any preceding claim, in which the contact-making means comprises a compressible clamping element adapted to fit over the conductor and subjected to a radial compressive force exerted on it by the displaceable means in order to cause the clamping element to clamp down on the conductor. 10
6. An electrical conductor terminating arrangement as claimed in claim 5, in which the compressible clamping element comprises a split tubular metal part into one end of which the conductor extends and which is adapted to be radially inwardly compressed to make good electrical contact with the conductor. 15
7. An electrical conductor terminating arrangement as claimed in claim 6, in which the split tubular metal part is formed integrally with contact means (e.g. pin contact) of the terminating arrangement provided at the end thereof remote from the conductive compressible clamping element. 20
8. An electrical conductor terminating arrangement as claimed in claim 5, 6 or 7, in which the actual conductor clamping region of the compressible clamping element is screw-threaded or otherwise configured to bite into the outer surface of the conductor as clamping takes place. 25
9. An electrical conductor terminating arrangement as claimed in claim 8, in which the clamping element is provided by a stamped formed flat or round section to bite into the outer surface of the conductor as clamping takes place. 30

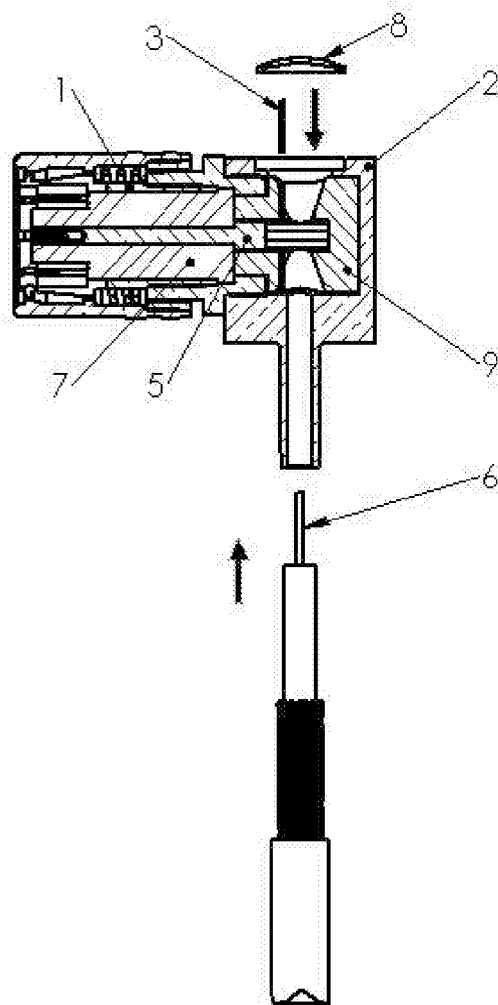


FIG. 1

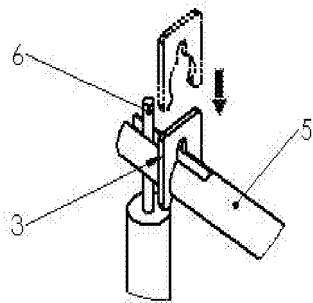


FIG. 2

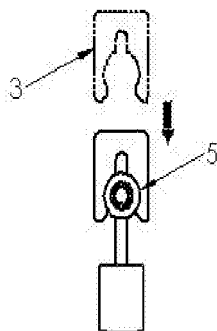


FIG. 3

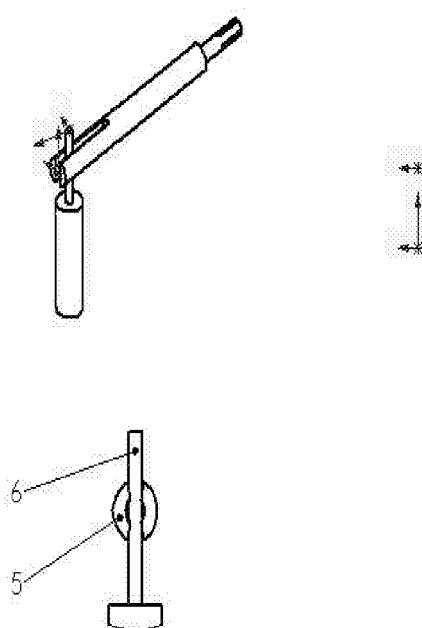


FIG. 4



European Patent  
Office

# EUROPEAN SEARCH REPORT

Application Number  
EP 07 10 2695

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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			TECHNICAL FIELDS SEARCHED (IPC)
			H01R
The present search report has been drawn up for all claims			
Place of search <b>Berlin</b>		Date of completion of the search <b>4 October 2007</b>	Examiner <b>Segeberberg, Tomas</b>
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons &amp; : member of the same patent family, corresponding document</p>			

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**ANNEX TO THE EUROPEAN SEARCH REPORT  
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EP 07 10 2695

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.  
The members are as contained in the European Patent Office EDP file on  
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04-10-2007

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