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<p>(84) Designated Contracting States: AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC MT NL PL PT RO SE SI SK TR Designated Extension States: AL BA HR MK RS</p>	<p>(71) Applicant: Fusion Components London Middlesex TW14 JR (GB)</p> <p>(72) Inventors: <ul style="list-style-type: none"> • Gray, Ian Winchester, Hampshire SO213AN (GB) • Elmes, Gary London, Middlesex TW14JR (GB) </p>
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(54) **RF latching connector with polymer spring**

(57) This invention relates to an RF connector latching system.

Some RF connectors are designed with a latching system to ensure that male and female connectors remain locked together to prevent accidental disconnection. With some connectors this locking system comprises a sprung loaded sleeve which requires forced axial movement to permit separation of the two connectors.

The current design as shown in Fig 1 and 2 incorporates a wire formed compression spring trapped between two locking washers which allows forced movement in

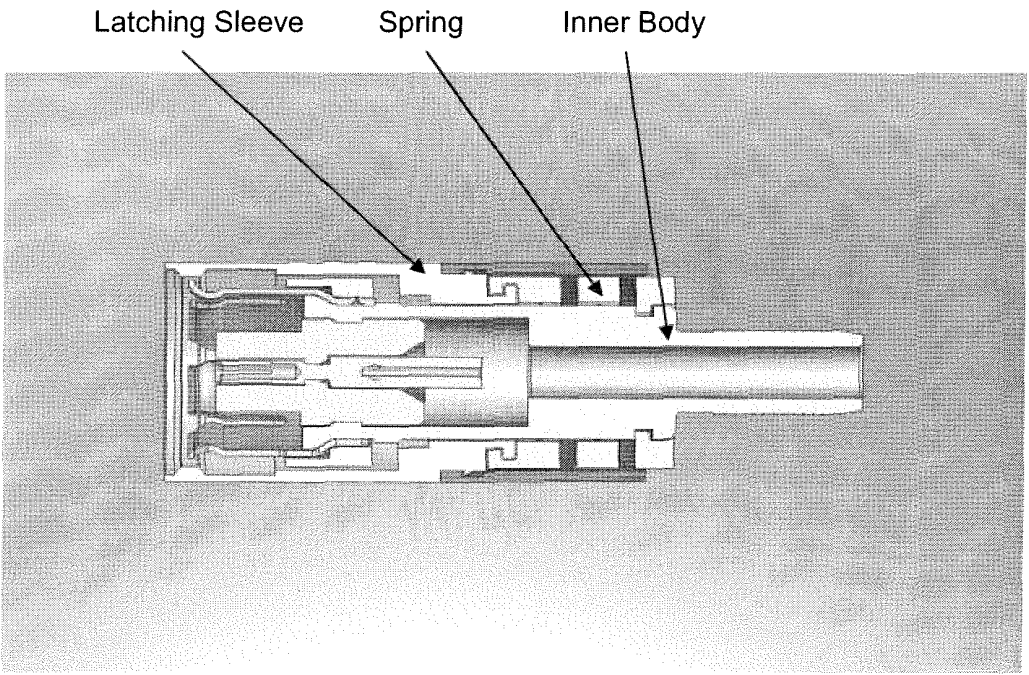
two axial dimensions permitting release of the mating connector at the extremities of movement.

This sprung mechanism is difficult to assemble and inspect after assembly.

This invention relates to an injection moulded spring as shown in Fig 5 which has a semi-circular form so that two springs can be easily assembled from each side of the connector as shown in Fig 4 and held in place with an injection moulded sleeve as shown in Fig 3.

The spring locates in two grooves to lock to the inner body and outer latching sleeve as shown in Fig 6.

Fig 6



EP 2 028 727 A1

Description

[0001]

Fig 1 illustrates a conventional connector with a transparent latching sleeve showing the wire formed spring and locking washers. 5

Fig 2 illustrates the conventional latching sleeve, spring and locking washers subassembly. 10

Fig 3 illustrates the invention showing the injection moulded springs in position through a transparent injection moulded sleeve. 15

Fig 4 illustrates the invention showing the injection moulded springs in position without the injection moulded sleeve.

Fig 5 illustrates the injection moulded spring. 20

Fig 6 illustrates a sectional view of the invention showing how the spring latches with the latching sleeve and inner body. 25

Claims

1. A latching RF connector incorporating an injection moulded spring. 30
2. A connector as described in 1 with an injection moulded sleeve to ensure location of the injection moulded springs. 35
3. A connector as described in 1 with two semi-circular injection moulded springs.
4. A connector as described in 1 with one semi-circular injection moulded spring. 40
5. A connector as described in 1 with one circular injection moulded spring. 45

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Fig 1

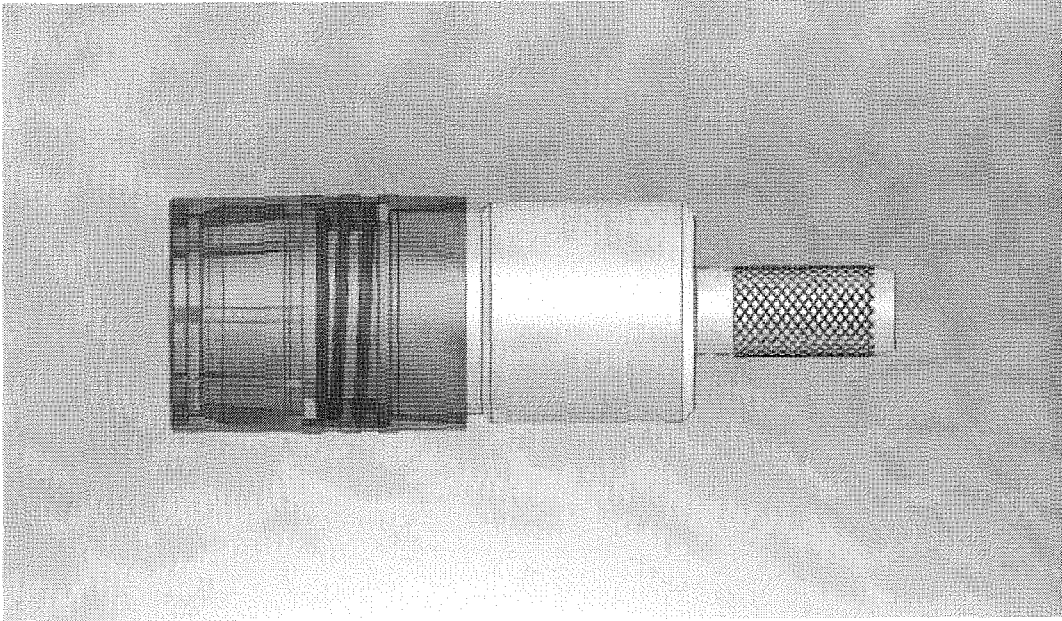


Fig 2

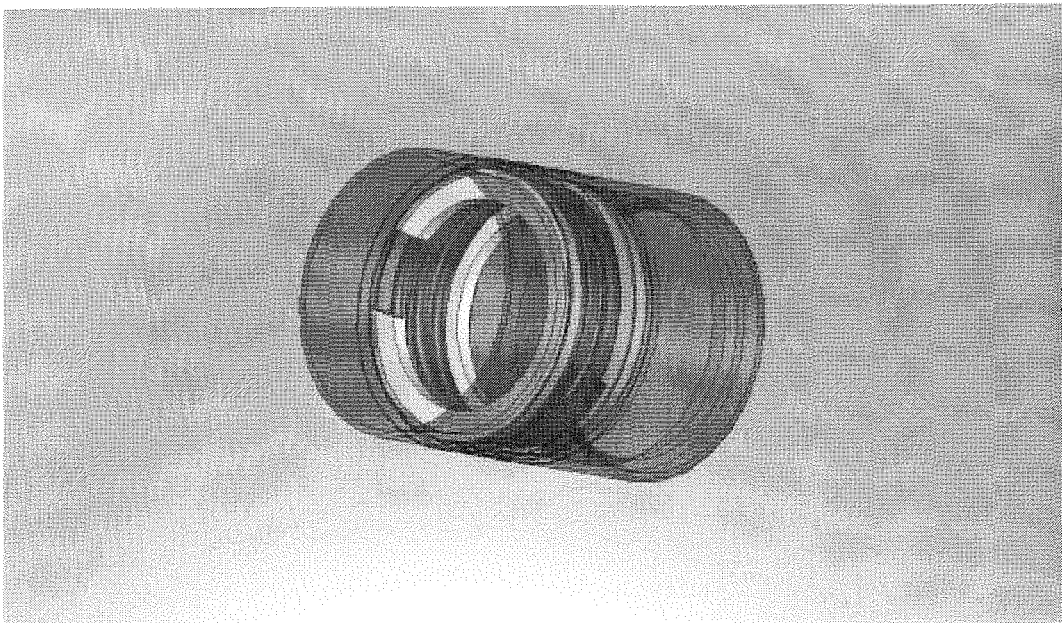


Fig 3

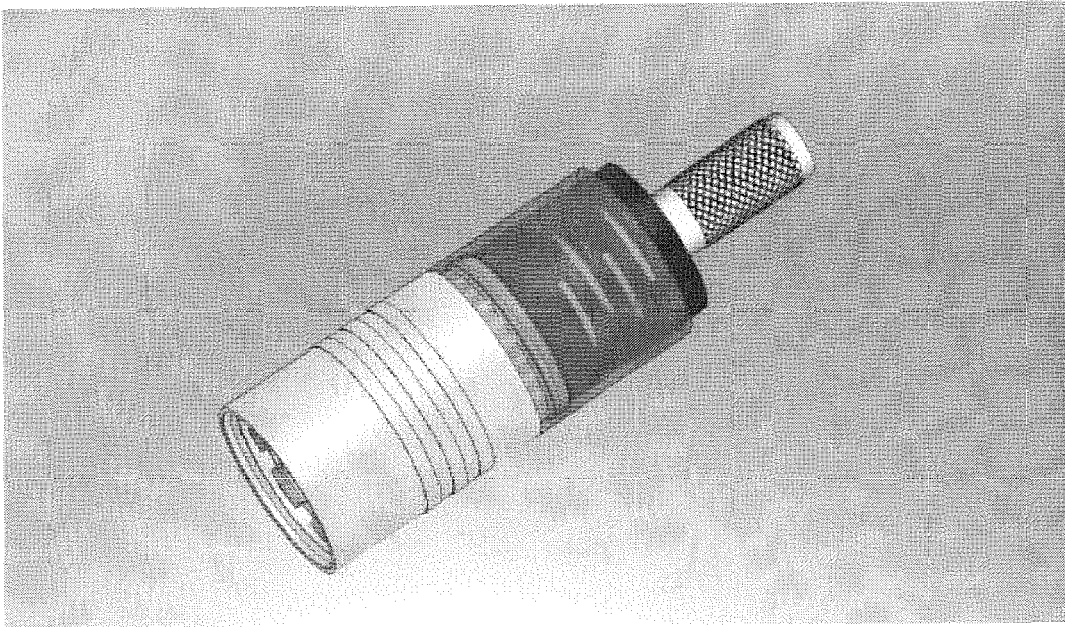


Fig 4

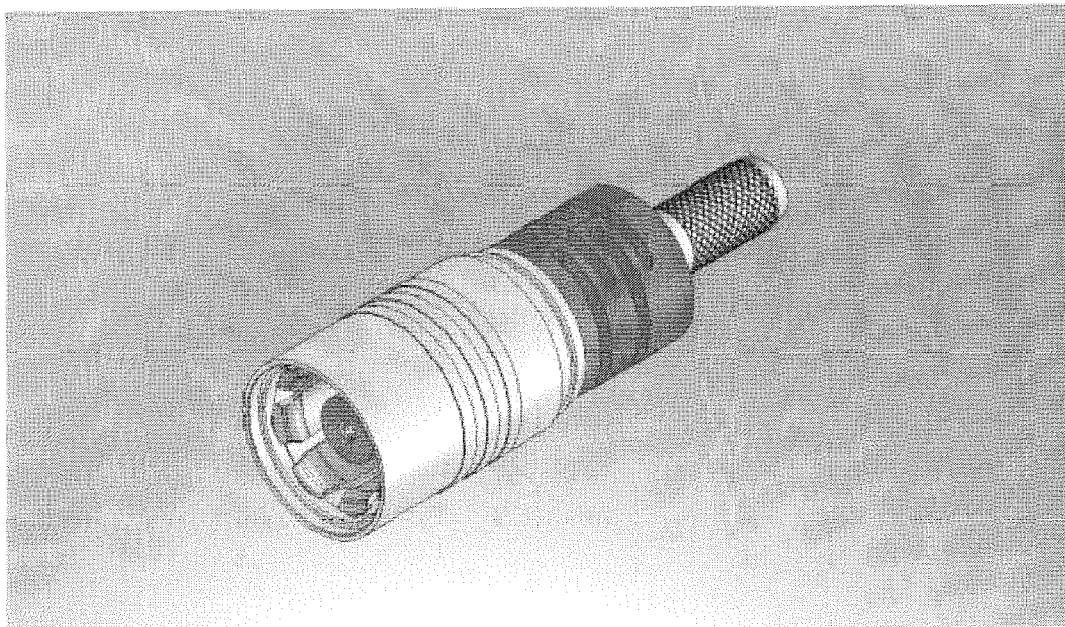


Fig 5

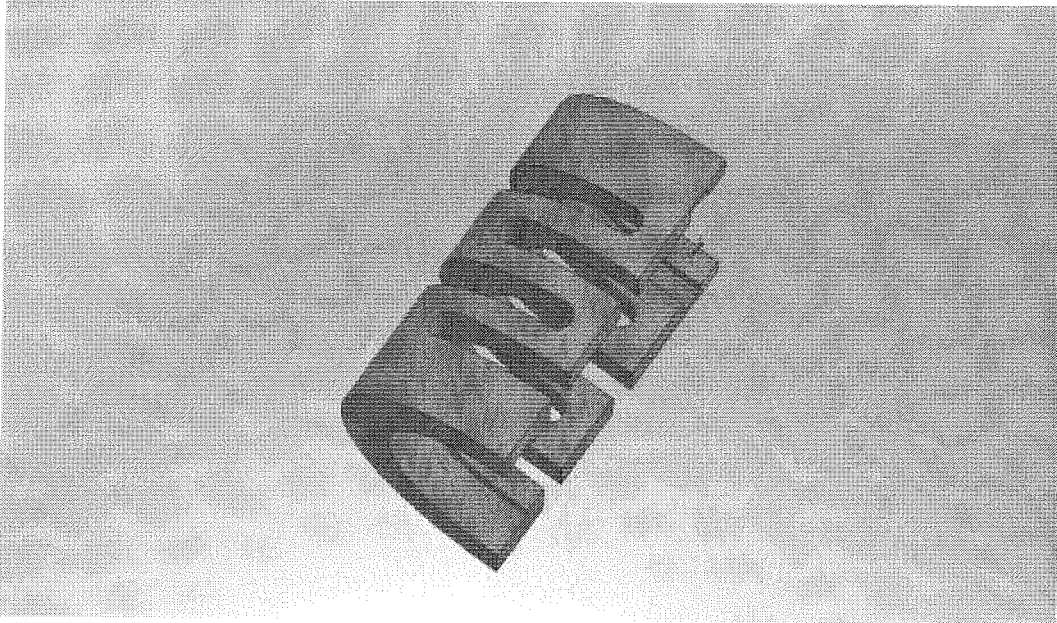
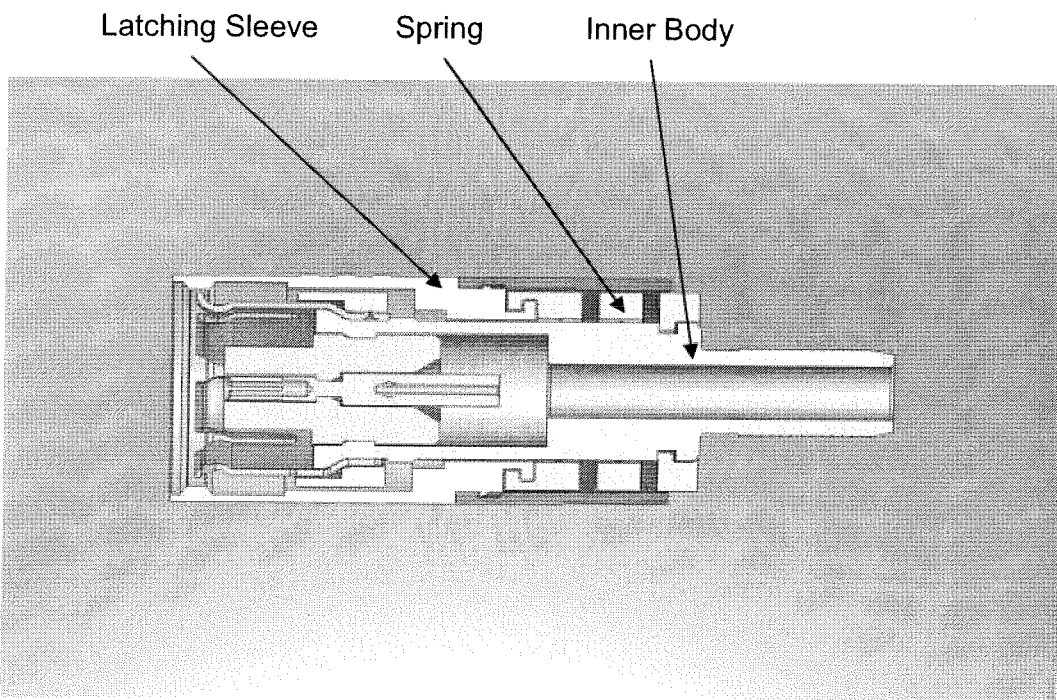


Fig 6





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The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC)
			H01R
Place of search		Date of completion of the search	Examiner
Munich		11 January 2008	Tappeiner, Roland
CATEGORY OF CITED DOCUMENTS		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 & : member of the same patent family, corresponding document	
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			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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EP 07 11 4747

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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