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(71) Applicant: **Armstrong, Russell Winston**  
**Chellaston, Derbyshire DE73 5AR (GB)**

(72) Inventor: **Armstrong, Russell Winston**  
**Chellaston, Derbyshire DE73 5AR (GB)**

(74) Representative: **Adamson Jones**  
**BioCity Nottingham**  
**Pennyfoot Street**  
**Nottingham NG1 1GF (GB)**

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**17.12.2015 GB 201522290**

(54) **PLUMBING CONNECTOR HAVING NON-RETURN VALVE**

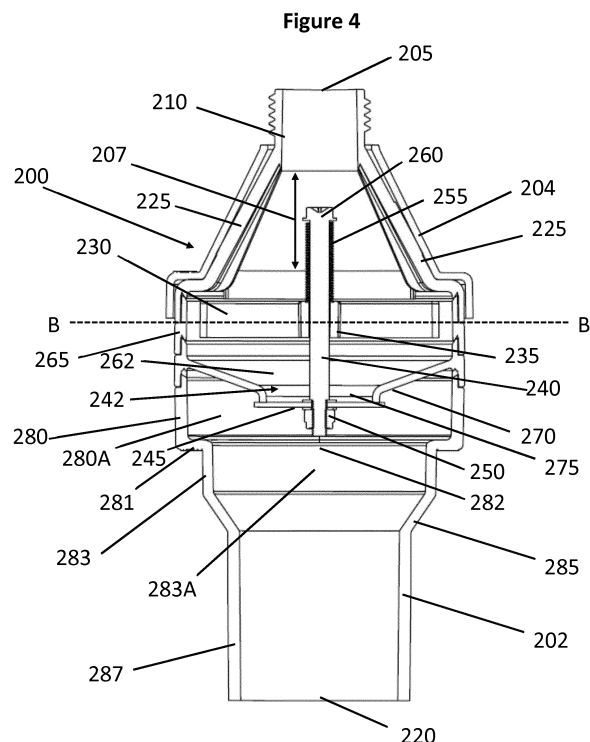
(57) The invention provides a connector which comprises:

- a. a chamber having an open upper chamber and a lower chamber,
- b. an inlet connector and
- c. an outlet connector formed in a floor of the lower chamber

wherein the inlet connector is supported above the open upper chamber by one or more arms; wherein the upper chamber has an upper chamber floor having an upper chamber outlet, the upper chamber is in fluid communication with the lower chamber by means of the upper chamber outlet; wherein the upper chamber outlet has a non-return valve which is arranged to open at a pre-selected pressure; and

wherein the lower chamber forms a flow conduit for receiving the valve when it is open; a shielded connector comprising a shield and the connector wherein the shield is shaped to cover the open upper chamber; and a valve assembly for use in the connector or shielded connector wherein the valve assembly comprises a stem, a biasing member for biasing the valve assembly into a closed position, a valve disc for sealing the outlet, an upper washer and a lower washer wherein the upper and lower washers support the valve disc such that the valve disc does not distort in use.

To be accompanied when published with Figure 4 of the accompanying drawings.





## EUROPEAN SEARCH REPORT

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EP 16 18 2821

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EPO FORM 1503 03.82 (P04C01)

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	DE 20 2012 103132 U1 (SASSERATH & CO KG H [DE]) 22 November 2013 (2013-11-22) * figures 1-4 *	1-11,13	INV. E03B7/07 E03C1/10 F24D19/08
X	DE 20 2005 002415 U1 (SASSERATH & CO KG H [DE]) 21 April 2005 (2005-04-21) * figures 1,4 *	1-3,13	
A	WO 02/18824 A1 (CHERNE IND INC [US]) 7 March 2002 (2002-03-07) * abstract *	13	
<p style="text-align: center;">-----</p> <p style="text-align: center;">-----</p>			<p style="text-align: center;">TECHNICAL FIELDS SEARCHED (IPC)</p> <p>E03B E03C F24D</p>
<p style="text-align: center;">-----</p>			
<p style="text-align: center;"><del>The present search report has been drawn up for all claims</del></p>			
Place of search		Date of completion of the search	Examiner
Munich		15 December 2016	Flygare, Esa
<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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**CLAIMS INCURRING FEES**

The present European patent application comprised at the time of filing claims for which payment was due.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due and for those claims for which claims fees have been paid, namely claim(s):

☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due.

**LACK OF UNITY OF INVENTION**

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

☐ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

☒ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

1-13

☐ The present supplementary European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims (Rule 164 (1) EPC).

**LACK OF UNITY OF INVENTION  
SHEET B**

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The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-13

Connector and shield

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2. claims: 14, 15

Valve assembly

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**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

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5 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  
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

15-12-2016

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