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(54) **Cathode assembly and method for pulsed plasma generation**

(57) A cathode assembly and a method for generation of pulsed plasma are disclosed. The cathode assembly comprises a cathode (2) holder connected to multiple longitudinally aligned cathodes (10, 20, 30), preferably of the same diameter, and different lengths. The method is characterized by forming an electric arc between the cathodes (10, 20, 30) in the assembly and an anode (4) by passing DC current of a predetermined magnitude.

Once the arc is established the current is reduced to the magnitude sufficient to sustain an electric arc, or a slightly larger magnitude, thereby reducing the area of arc attachment to a single cathode. Once the area of attachment has been reduced, the current is raised to the operational level of the pulse, while the area of attachment does not increase significantly.

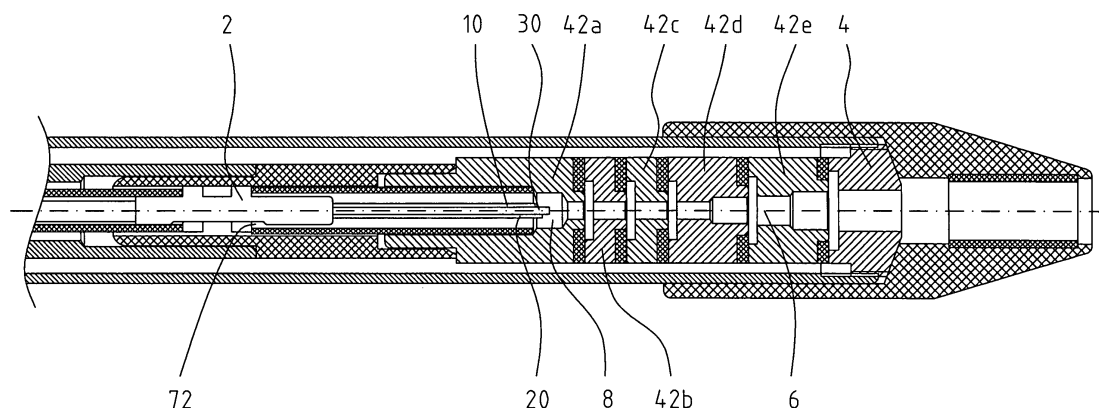


Fig. 3



EUROPEAN SEARCH REPORT

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EP 12 17 3651

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	US 5 406 046 A (LANDES KLAUS [DE]) 11 April 1995 (1995-04-11) * column 3, line 23 - line 28 * * column 3, line 40 - line 59 * * column 4, line 67 - column 5, line 10 * * figures 1,2 *	1-3,5,6, 8-11,14	INV. H05H1/34
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A,D	US 5 225 652 A (LANDES KLAUS [DE]) 6 July 1993 (1993-07-06) * column 5, line 48 - line 67 * * column 6, line 36 - line 47 * * figures 1,3 *	1-3,5,6, 8-11,14	
			TECHNICAL FIELDS SEARCHED (IPC)
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The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 17 September 2014	Examiner Capostagno, Eros
CATEGORY OF CITED DOCUMENTS 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 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			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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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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