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(54) **OVERVOLTAGE PROTECTION DEVICE INCLUDING MULTIPLE VARISTOR WAFERS**

(57) An overvoltage protection device includes a first electrode member, a second electrode member, and a varistor assembly. The varistor assembly includes: a plurality of varistor wafers each formed of a varistor material; and at least one electrically conductive interconnect member connecting the varistor wafers in electrical parallel between the first and second electrode members. The varistor wafers are axially stacked between the first and second electrodes.

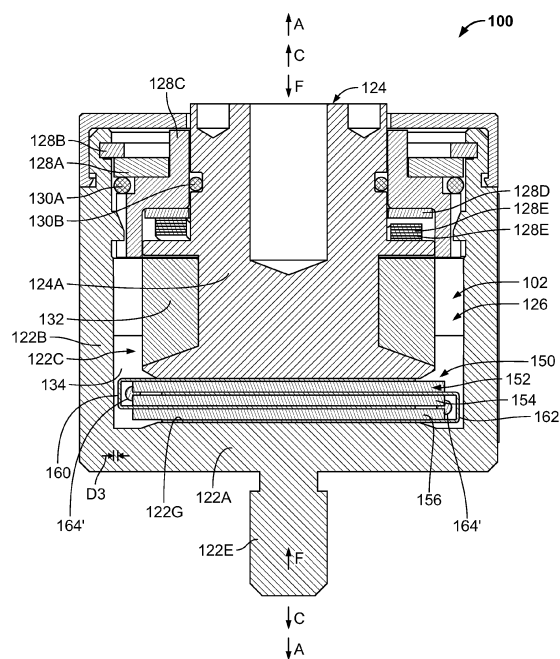


FIG. 5



EUROPEAN SEARCH REPORT

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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	US 2013/335869 A1 (XEPAPAS FOTIS [GR] ET AL) 19 December 2013 (2013-12-19) * paragraphs [0004], [0010], [0012], [0015], [0016], [0040] - [0042], [0046], [0050] - paragraphs [0055], [0065], [0069], [0072], [0073], [0087], [0088], [0092], [0110]; claims 1-5, 11, 12; figures 1-6 * * the whole document *	1-15	INV. H01C7/102 H01C7/12
X	US 2015/103462 A1 (DEPPING CHRISTIAN [DE]) 16 April 2015 (2015-04-16) * paragraphs [0023] - [0027], [0046], [0049], [0057]; claims 22,23, 30; figures 3-5 * * the whole document *	1,3-5,8,15 2,6,7,9-14	
Y	US 2016/276821 A1 (POLITIS ZAFIRIS G [GR] ET AL) 22 September 2016 (2016-09-22) * paragraphs [0146], [0191]; figures 19,20 * * the whole document *	2,6,7,9-14	
Y	CA 2 098 365 A1 (COOPER POWER SYST [US]) 31 December 1993 (1993-12-31) * abstract; claims 1,3,8,11,12,15; figures 6,7 * * page 8, lines 11-16,23 - page 9, lines 6,12-16 * * pages 10,16,18, lines 18-24,4-14,19 - page 19, line 1 * * page 21, line 19 - page 22, line 2 * * page 28, line 19 - page 30, line end * * the whole document *	9-12	H01T H01C H01H H02H H01R
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 7 September 2020	Examiner Dessaux, Christophe
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
ON EUROPEAN PATENT APPLICATION NO.**

EP 20 17 4839

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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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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2013335869 A1	19-12-2013	CY 1120809 T1	11-12-2019
		DK 2677524 T3	07-01-2019
		ES 2699918 T3	13-02-2019
		HR P20181844 T1	28-12-2018
		HR P20200479 T1	26-06-2020
		HU E042442 T2	28-06-2019
		HU E048826 T2	28-08-2020
		PT 2677524 T	17-12-2018
		PT 3358577 T	22-04-2020
		US 2013335869 A1	19-12-2013
US 2015103462 A1	16-04-2015	WO 2013190338 A1	27-12-2013
		CN 104160460 A	19-11-2014
		DE 102012004678 A1	12-09-2013
		EP 2826044 A1	21-01-2015
		US 2015103462 A1	16-04-2015
US 2016276821 A1	22-09-2016	WO 2013135369 A1	19-09-2013
		CA 2976969 A1	22-09-2016
		CN 107636925 A	26-01-2018
		EP 3259818 A2	27-12-2017
		US 2016276821 A1	22-09-2016
		US 2020021098 A1	16-01-2020
CA 2098365 A1	31-12-1993	WO 2016146086 A2	22-09-2016
		CA 2098365 A1	31-12-1993
		JP H0696835 A	08-04-1994

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82