



SUPPLEMENTARY EUROPEAN SEARCH REPORT

Application number:
EP 20 91 55 58

Classification of the application (IPC):
F28F 9/02

Technical fields searched (IPC):
F28F

DOCUMENTS CONSIDERED TO BE RELEVANT		
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim
E	EP 3875878 A1 (MITSUBISHI ELECTRIC CORP [JP]) 08 September 2021 (2021-09-08) * paragraph [0010] - paragraph [0015]; figure 1 *	1-3, 5, 6, 9
A	US 2016076824 A1 (MATSUDA TAKUYA [JP] ET AL) 17 March 2016 (2016-03-17) * paragraph [0122] - paragraph [0137]; figures 20,22 *	1-9
A	US 10077953 B2 (MITSUBISHI ELECTRIC CORP [JP]) 18 September 2018 (2018-09-18) * column 5, line 55 - column 7, line 29; figure 2 *	1-9
A	WO 2019087235 A1 (MITSUBISHI ELECTRIC CORP [JP]) 09 May 2019 (2019-05-09) * the whole document *	1-9
A	JP 2006010262 A (DENSO CORP) 12 January 2006 (2006-01-12) * figures 1-16 *	1-9
A	US 2008314076 A1 (ICHIYANAGI SHIGEHARU [JP] ET AL) 25 December 2008 (2008-12-25) * abstract; figure 8 *	1-9

The supplementary search report has been based on the last set of claims valid and available at the start of the search.

Place of search Munich	Date of completion of the search 01 December 2022	Examiner Jessen, Flemming
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CATEGORY OF CITED DOCUMENTS

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|---|--|
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ANNEX TO SUPPLEMENTARY 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 01-12-2022
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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 3875878 A1	08-09-2021	CN 112888910 A	01-06-2021
		CN 115111939 A	27-09-2022
		EP 3875878 A1	08-09-2021
		JP 7097986 B2	08-07-2022
		JP WO2020089966 A1	02-09-2021
		US 2021215409 A1	15-07-2021
		WO 2020089966 A1	07-05-2020
US 2016076824 A1	17-03-2016	CN 105229404 A	06-01-2016
		CN 203798237 U	27-08-2014
		EP 2998682 A1	23-03-2016
		HK 1214343 A1	22-07-2016
		JP 6116683 B2	19-04-2017
		JP WO2014184917 A1	23-02-2017
		US 2016076824 A1	17-03-2016
US 10077953 B2	18-09-2018	WO 2014184917 A1	20-11-2014
		AU 2014266400 A1	03-12-2015
		BR 112015028496 A2	25-07-2017
		CN 105164491 A	16-12-2015
		EP 2998683 A1	23-03-2016
		HK 1217531 A1	13-01-2017
		JP 6012857 B2	25-10-2016
		JP WO2014185391 A1	23-02-2017
		KR 20150143682 A	23-12-2015
		US 2016169595 A1	16-06-2016
WO 2019087235 A1	09-05-2019	WO 2014184915 A1	20-11-2014
		WO 2014185391 A1	20-11-2014
JP 2006010262 A	12-01-2006	JP WO2019087235 A1	22-10-2020
		WO 2019087235 A1	09-05-2019
JP 2006010262 A	12-01-2006	DE 102005029171 A1	23-02-2006
		JP 4281634 B2	17-06-2009
		JP 2006010262 A	12-01-2006
		US 2005284621 A1	29-12-2005
US 2008314076 A1	25-12-2008	US 112005001295 T5	03-05-2007
		US 2008314076 A1	25-12-2008
		WO 2005124259 A1	29-12-2005