



SUPPLEMENTARY EUROPEAN SEARCH REPORT

Application number:
EP 18 84 52 53

Classification of the application (IPC):

C22C 38/14, C22C 38/04, C22C 38/06, C22C 38/02, C21D 8/02, C21D 9/46,
C23C 2/06, C23C 2/02, C23C 30/00

Technical fields searched (IPC):

C23C, C21D, C22C

DOCUMENTS CONSIDERED TO BE RELEVANT		
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim
X A	US 2013319582 A1 (YOKOI TATSUO [JP] ET AL) 05 December 2013 (2013-12-05) * paragraphs [0187] - [0189]; examples H-27; tables 1, 2 *	9, 12 1-8, 10, 11
A	JP 2014095146 A (JFE STEEL CORP) 22 May 2014 (2014-05-22) * the whole document *	1-12
A	US 2015284819 A1 (TAMAKI AKARI [JP] ET AL) 08 October 2015 (2015-10-08) * the whole document *	1-12
A	US 2008202639 A1 (TOMIDA TOSHIROU [JP] ET AL) 28 August 2008 (2008-08-28) * the whole document *	1-12

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 The Hague	Date of completion of the search 30 April 2020	Examiner Martinavicius, A
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CATEGORY OF CITED DOCUMENTS

X: particularly relevant if taken alone	P: intermediate document
Y: particularly relevant if combined with another document of the same category	T: theory or principle underlying the invention
A: technological background	E: earlier patent document, but published on, or after the filing date
O: non-written disclosure	D: document cited in the application
& : member of the same patent family, corresponding document	L: document cited for other reasons

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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 30-04-2020
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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2013319582 A1	05-12-2013	BR 112013024166 A2	06-12-2016
		CA 2827844 A1	04-10-2012
		CN 103443320 A	11-12-2013
		EP 2692894 A1	05-02-2014
		ES 2678918 T3	20-08-2018
		JP 5376089 B2	25-12-2013
		JP WO2012133636 A1	28-07-2014
		KR 20130125824 A	19-11-2013
		MX 353192 B	05-01-2018
		PL 2692894 T3	31-08-2018
		TW 201247894 A	01-12-2012
		US 2013319582 A1	05-12-2013
		US 2017130294 A1	11-05-2017
		US 2012133636 A1	04-10-2012
		JP 2014095146 A	22-05-2014
JP 2014095146 A	22-05-2014		
US 2015284819 A1	08-10-2015	CA 2880946 A1	20-02-2014
		CN 104583437 A	29-04-2015
		CN 109023051 A	18-12-2018
		EP 2886674 A1	24-06-2015
		JP 5505574 B1	28-05-2014
		JP WO2014027682 A1	28-07-2016
		KR 20150029742 A	18-03-2015
		RU 2015108067 A	10-10-2016
		TW 201410878 A	16-03-2014
		US 2015284819 A1	08-10-2015
		WO 2014027682 A1	20-02-2014
		ZA 201501490 B	27-01-2016
		US 2008202639 A1	28-08-2008
CN 102242306 A	16-11-2011		
CN 102242307 A	16-11-2011		
CN 102242308 A	16-11-2011		
CN 102251087 A	23-11-2011		
JP 5029361 B2	19-09-2012		
JP WO2007015541 A1	19-02-2009		
KR 20080027948 A	28-03-2008		
US 2008202639 A1	28-08-2008		
US 2010209283 A1	19-08-2010		
US 2010263767 A1	21-10-2010		
US 2011162760 A1	07-07-2011		
WO 2007015541 A1	08-02-2007		