



SUPPLEMENTARY EUROPEAN SEARCH REPORT

Application number:
EP 22 84 95 77

Classification of the application (IPC):

C22C 38/00, C22C 38/50, C23C 2/12, C23C 30/00, C22C 38/58, C23C 2/06,
C22C 38/32, C22C 38/54, C21D 8/02, C22C 38/22, C22C 38/52, C22C 38/38,
C22C 38/20, C22C 38/14, C22C 38/34, C22C 38/26, C22C 38/12, C22C 38/28,
C22C 38/10, C22C 38/16

Technical fields searched (IPC):

C21D, C22C

DOCUMENTS CONSIDERED TO BE RELEVANT		
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim
X A	US 2019169707 A1 (HAYASHI KOUTAROU [JP] ET AL) 06 June 2019 (2019-06-06) * § 0105, 0144, 0145; tab. 1-3 *	4, 5 1-3
A	KR 20210059746 A (JFE STEEL CORP [JP]) 25 May 2021 (2021-05-25) * § 0101; tab. 1,3; cl. 1 *	1-5
A	US 9273370 B2 (FUJITA NOBUHIRO [JP]; HAYASHI KUNIO [JP] ET AL.) 01 March 2016 (2016-03-01) * tables 9-11 *	1-5

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 27 September 2024	Examiner Kreutzer, Ingo
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CATEGORY OF CITED DOCUMENTS

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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 27-09-2024
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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2019169707 A1	06-06-2019	CA 2934599 A1	02-07-2015
		CN 105849294 A	10-08-2016
		EP 3088547 A1	02-11-2016
		JP WO2015097891 A1	23-03-2017
		KR 20160090336 A	29-07-2016
		KR 20180085056 A	25-07-2018
		RU 2635056 C1	08-11-2017
		US 2016312325 A1	27-10-2016
		US 2019169707 A1	06-06-2019
		WO 2015097891 A1	02-07-2015
KR 20210059746 A	25-05-2021	CN 112840055 A	25-05-2021
		EP 3868909 A1	25-08-2021
		JP 6737419 B1	12-08-2020
		JP WO2020080339 A1	15-02-2021
		KR 20210059746 A	25-05-2021
		US 2021381077 A1	09-12-2021
		WO 2020080339 A1	23-04-2020
US 9273370 B2	01-03-2016	BR 112013001864 A2	31-05-2016
		CA 2806626 A1	02-02-2012
		CN 103038383 A	10-04-2013
		EP 2599887 A1	05-06-2013
		JP 5163835 B2	13-03-2013
		JP WO2012014926 A1	12-09-2013
		KR 20130021460 A	05-03-2013
		MX 342629 B	07-10-2016
		TW 201213558 A	01-04-2012
		US 2013153091 A1	20-06-2013
		US 2016130711 A1	12-05-2016
		WO 2012014926 A1	02-02-2012