



SUPPLEMENTARY EUROPEAN SEARCH REPORT

Application number:
EP 22 84 58 44

Classification of the application (IPC):
C22C 38/00, C21D 9/46, C22C 38/60, C21D 1/18

Technical fields searched (IPC):
C21D, C22C, B21B

DOCUMENTS CONSIDERED TO BE RELEVANT		
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim
X	WO 2020026838 A1 (JFE STEEL CORP [JP]) 06 February 2020 (2020-02-06) * abstract * * claims 1-2 * * table 3 * * examples C, E, F, G, H, J, M, O, P; table 1 * * table 2 * * paragraph [0056] *	1-4
A	JP 2020509199 A (ARCELORMITTAL) 26 March 2020 (2020-03-26) * abstract *	1-4
A	WO 2019189842 A1 (JFE STEEL CORP [JP]) 03 October 2019 (2019-10-03) * abstract *	1-4
A	WO 2019106894 A1 (JFE STEEL CORP [JP]) 06 June 2019 (2019-06-06) * abstract *	1-4
A	WO 2021085336 A1 (JFE STEEL CORP [JP]) 06 May 2021 (2021-05-06) * abstract *	1-4
A	EP 3495527 A1 (NIPPON STEEL & SUMITOMO METAL CORP [JP]) 12 June 2019 (2019-06-12) * abstract *	1-4

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 04 October 2024	Examiner Vermeulen, Yves
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CATEGORY OF CITED DOCUMENTS

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ANNEX TO SUPPLEMENTARY EUROPEAN SEARCH REPORT

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2020026838 A1	06-02-2020	CN 112513311 A	16-03-2021
		EP 3789510 A1	10-03-2021
		JP 6928112 B2	01-09-2021
		JP WO2020026838 A1	06-08-2020
		KR 20210024602 A	05-03-2021
		US 2021310092 A1	07-10-2021
		WO 2020026838 A1	06-02-2020
JP 2020509199 A	26-03-2020	BR 112019011097 A2	01-10-2019
		CA 3047696 A1	28-06-2018
		CN 110088342 A	02-08-2019
		EP 3559299 A1	30-10-2019
		JP 7107939 B2	27-07-2022
		JP 7431873 B2	15-02-2024
		JP 2020509199 A	26-03-2020
		JP 2022084632 A	07-06-2022
		KR 20190087506 A	24-07-2019
		RU 2019122579 A	22-01-2021
		UA 126200 C2	31-08-2022
		US 2019338385 A1	07-11-2019
		WO 2018115933 A1	28-06-2018
		WO 2018116155 A1	28-06-2018
		ZA 201903335 B	29-01-2020
WO 2019189842 A1	03-10-2019	CN 111936651 A	13-11-2020
		CN 115404406 A	29-11-2022
		EP 3757243 A1	30-12-2020
		JP 6631760 B1	15-01-2020
		JP 6787466 B2	18-11-2020
		JP 2020045568 A	26-03-2020
		JP WO2019189842 A1	30-04-2020
		KR 20200124740 A	03-11-2020
		US 2021010115 A1	14-01-2021
		WO 2019189842 A1	03-10-2019
WO 2019106894 A1	06-06-2019	CN 111386358 A	07-07-2020
		CN 114645219 A	21-06-2022
		EP 3719156 A1	07-10-2020
		JP 6544494 B1	17-07-2019
		JP 6777173 B2	28-10-2020
		JP 2019099922 A	24-06-2019
		JP WO2019106894 A1	12-12-2019
		KR 20200069371 A	16-06-2020
		US 2020291499 A1	17-09-2020
		WO 2019106894 A1	06-06-2019



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The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2021085336 A1	06-05-2021	CN 114555846 A	27-05-2022
		EP 4015660 A1	22-06-2022
		JP 6947329 B2	13-10-2021
		JP 2021181627 A	25-11-2021
		JP WO2021085336 A1	25-11-2021
		KR 20220066138 A	23-05-2022
		US 2022372590 A1	24-11-2022
		WO 2021085336 A1	06-05-2021
EP 3495527 A1	12-06-2019	BR 112019001331 A2	07-05-2019
		CN 109477184 A	15-03-2019
		CN 113637923 A	12-11-2021
		EP 3495527 A1	12-06-2019
		JP 6354916 B2	11-07-2018
		JP WO2018026013 A1	02-08-2018
		KR 20190015539 A	13-02-2019
		TW 201807214 A	01-03-2018
		US 2019309398 A1	10-10-2019
		WO 2018026013 A1	08-02-2018