



SUPPLEMENTARY EUROPEAN SEARCH REPORT

Application number:
EP 20 75 94 11

Classification of the application (IPC):
E02F 3/43, E02F 9/24, E02F 9/20, E02F 9/26

Technical fields searched (IPC):
E02F

DOCUMENTS CONSIDERED TO BE RELEVANT		
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim
X Y	JP 2019002242 A (KOBE STEEL LTD; KOBELCO CONSTRUCTION MACHINERY LTD) 10 January 2019 (2019-01-10) * figures 1,3,4 *	1-3, 5, 9 4, 6, 7
X	US 9256227 B1 (WEI MO [US] ET AL) 09 February 2016 (2016-02-09) * figures 2,3,4 *	1
Y	EP 0321894 A2 (FUJI HEAVY IND LTD [JP]) 28 June 1989 (1989-06-28) * figure 2 *	4
Y	US 2016040398 A1 (KITAJIMA JIN [JP] ET AL) 11 February 2016 (2016-02-11) * figures 7,48 *	6, 7
A	US 2016281335 A1 (BENZAL LUIS ANTONIO GÁLAN [ES] ET AL) 29 September 2016 (2016-09-29) * paragraph [0037]; figure 2.2 *	1, 9
A	JP 2018165935 A (HITACHI CONSTRUCTION MACHINERY) 25 October 2018 (2018-10-25) * figures 1,2 *	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 18 January 2022	Examiner Papadimitriou, S
---------------------------	---	------------------------------

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

Disclaimer: this document has been automatically generated using data structured in accordance with WIPO standard ST.36 from the database of search reports of the European Patent Office. For technical reasons, its content and layout may differ from that of the original publication. Only the original published information is legally binding.



ANNEX TO SUPPLEMENTARY EUROPEAN SEARCH REPORT

Application number:
EP 20 75 94 11

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 18-01-2022
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
JP 2019002242 A	10-01-2019	JP 6824830 B2	03-02-2021
		JP 2019002242 A	10-01-2019
US 9256227 B1	09-02-2016	AU 2015224463 A1	31-03-2016
		AU 2020200916 A1	27-02-2020
		US 9256227 B1	09-02-2016
EP 0321894 A2	28-06-1989	EP 0321894 A2	28-06-1989
		JP 2618250 B2	11-06-1997
		JP H01168555 A	04-07-1989
		US 4976330 A	11-12-1990
US 2016040398 A1	11-02-2016	CN 105324540 A	10-02-2016
		DE 112015000043 T5	03-12-2015
		JP 6014260 B2	25-10-2016
		JP WO2015137528 A1	06-04-2017
		KR 20150139541 A	11-12-2015
		KR 20170038191 A	06-04-2017
		US 2016040398 A1	11-02-2016
		US 2017121930 A1	04-05-2017
		WO 2015137528 A1	17-09-2015
US 2016281335 A1	29-09-2016	DE 112014005213 T5	18-08-2016
		ES 2537895 A1	15-06-2015
		US 2016281335 A1	29-09-2016
		WO 2015071520 A1	21-05-2015
JP 2018165935 A	25-10-2018	CN 109564534 A	02-04-2019
		EP 3493061 A1	05-06-2019
		JP 6723184 B2	15-07-2020
		JP 2018165935 A	25-10-2018
		US 2019186104 A1	20-06-2019
		WO 2018179918 A1	04-10-2018