



SUPPLEMENTARY EUROPEAN SEARCH REPORT

Application number:
EP 20 81 84 23

Classification of the application (IPC):
B65B 27/06, B65B 13/02, B65B 61/28, B65B 61/20, B21C 47/24

Technical fields searched (IPC):
B65B, B21C, B21L

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim
X	US 4783905 A (HASENKAMP FRIEDERICH [DE])	1
Y	15 November 1988 (1988-11-15)	4-6, 8, 12-15
A	* column 1, line 35 - column 4, line 53 *	2, 3, 7, 9-11
Y	JP 2007106432 A (JFE STEEL KK; JFE KONAN STEEL CT KK) 26 April 2007 (2007-04-26)	1, 4-6, 8, 12-15
	* paragraph [0007] - paragraph [0045] *	
Y	CN 104709489 A (SHANGHAI BAOSTEEL IND COMPANY ET AL.) 17 June 2015 (2015-06-17)	1, 4-6, 8, 12-15
	* paragraph [0004] - paragraph [0077] *	
Y	US 3699880 A (NUCKEL NORBERT) 24 October 1972 (1972-10-24)	4
	* column 2, line 34 - column 5, line 40 *	
A	US 3447227 A (WOLLAM CARL ARLEN) 03 June 1969 (1969-06-03)	1-15
	* column 1, line 28 - column 3, line 32 *	
A	US 4498276 A (REED GEOFFREY R [GB]) 12 February 1985 (1985-02-12)	1-15
	* the whole document *	
A	US 2010172729 A1 (MARCELLI PIERRE [FR] ET AL) 08 July 2010 (2010-07-08)	1-15
	* the whole document *	
A	US 6585475 B1 (MARCELLI PIERRE [FR]) 01 July 2003 (2003-07-01)	1-15
	* the whole document *	

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 12 July 2023	Examiner Yazici, Baris
---------------------------	--	---------------------------

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 81 84 23

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 12-07-2023
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
US 4783905	A	15-11-1988	DE 3543692 A1	19-06-1987
			EP 0226139 A2	24-06-1987
			JP S62193920 A	26-08-1987
			US 4783905 A	15-11-1988
			US 4807350 A	28-02-1989
JP 2007106432	A	26-04-2007	NONE	
CN 104709489	A	17-06-2015	NONE	
US 3699880	A	24-10-1972	DE 2041181 A1	09-03-1972
			GB 1355707 A	05-06-1974
			US 3699880 A	24-10-1972
US 3447227	A	03-06-1969	NONE	
US 4498276	A	12-02-1985	EP 0044627 A1	27-01-1982
			JP S5768317 A	26-04-1982
			US 4498276 A	12-02-1985
US 2010172729	A1	08-07-2010	EP 2167251 A2	31-03-2010
			FR 2916750 A1	05-12-2008
			US 2010172729 A1	08-07-2010
			WO 2009004160 A2	08-01-2009
US 6585475	B1	01-07-2003	CA 2345330 A1	13-04-2000
			DE 69918865 T2	21-07-2005
			EP 1165425 A1	02-01-2002
			FR 2784088 A1	07-04-2000
			US 6585475 B1	01-07-2003
			WO 0020322 A1	13-04-2000