



SUPPLEMENTARY EUROPEAN SEARCH REPORT

Application number:
EP 15 84 71 68

Classification of the application (IPC):
B23B 27/16, B23C 5/06, B23C 5/20

Technical fields searched (IPC):
B27L, B23C, B23B

DOCUMENTS CONSIDERED TO BE RELEVANT		
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim
X	US 2885766 A (HANS ERNST ET AL) 12 May 1959 (1959-05-12) * figures *	1-3, 7-9, 12, 13, 15
Y	* column 2, line 26 - line 51 * * column 2, line 69 - column 3, line 10 * * column 3, line 62 - column 4, line 2 *	4-6, 10, 11, 14
Y	US 4093392 A (HOPKINS DAVID ALAN) 06 June 1978 (1978-06-06) * abstract * * figures * * column 4, line 59 - column 5, line 9 *	4-6
Y	US 4812087 A (STASHKO DANIEL R [US]) 14 March 1989 (1989-03-14) * abstract * * figures * * column 7 *	10, 14
Y	US 2011135407 A1 (KOGA KENICHIROU [JP]) 09 June 2011 (2011-06-09) * abstract * * figure 8 *	11

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 03 July 2018	Examiner Hamel, Pascal
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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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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 2885766	A	12-05-1959	GB 791487 A	05-03-1958
			US 2885766 A	12-05-1959
US 4093392	A	06-06-1978	BR 7602195 A	05-10-1976
			CA 1030329 A	02-05-1978
			DE 2615609 A1	21-10-1976
			DE 2660167 C2	02-12-1982
			FR 2306772 A1	05-11-1976
			GB 1534939 A	06-12-1978
			IT 1057477 B	10-03-1982
			JP S542709 B2	10-02-1979
			JP S51137186 A	26-11-1976
			US 4093392 A	06-06-1978
US 4812087	A	14-03-1989	DE 3785582 D1	27-05-1993
			DE 3785582 T2	29-07-1993
			EP 0298154 A1	11-01-1989
			JP S6420911 A	24-01-1989
			US 4812087 A	14-03-1989
US 2011135407	A1	09-06-2011	CN 102300657 A	28-12-2011
			EP 2412462 A1	01-02-2012
			JP 4603629 B2	22-12-2010
			JP 5297433 B2	25-09-2013
			JP 2011025407 A	10-02-2011
			JP WO2010110110 A1	27-09-2012
			US 2011135407 A1	09-06-2011
			WO 2010110110 A1	30-09-2010

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