

**INTERNATIONAL SEARCH REPORT**

International application No.  
PCT/JP2015/002456

**A. CLASSIFICATION OF SUBJECT MATTER**  
C25D3/58(2006.01)i, C25D5/26(2006.01)i, C25D7/00(2006.01)i, F16L15/04(2006.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
C25D3/58, C25D5/26, C25D7/00, F16L15/04

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Jitsuyo Shinan Koho	1922-1996	Jitsuyo Shinan Toroku Koho	1996-2015
Kokai Jitsuyo Shinan Koho	1971-2015	Toroku Jitsuyo Shinan Koho	1994-2015

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	JP 2011-527381 A (Umicore Galvanotechnik GmbH), 27 October 2011 (27.10.2011), claims 1 to 3; paragraphs [0001], [0014] to [0022]; examples & US 2011/0174631 A1 & WO 2010/003621 A1 & EP 2310558 A1 & KR 10-2011-0031183 A & CN 102089466 A & TW 201014935 A	1 2
X A	JP 2010-270374 A (Bridgestone Corp.), 02 December 2010 (02.12.2010), claim 1; paragraphs [0002], [0014] to [0019]; examples (Family: none)	1 2

Further documents are listed in the continuation of Box C.  See patent family annex.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier application or patent but published on or after the international filing date	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search 29 July 2015 (29.07.15)	Date of mailing of the international search report 11 August 2015 (11.08.15)
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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP 2008-215473 A (Sumitomo Metal Industries, Ltd.), 18 September 2008 (18.09.2008), entire text & US 2010/0059986 A1 & WO 2008/108263 A1 & EP 2128506 A1	1, 2
A	JP 2011-042841 A (Kizai Corp.), 03 March 2011 (03.03.2011), entire text (Family: none)	1, 2
A	JP 2011-520037 A (Umicore Galvanotechnik GmbH), 14 July 2011 (14.07.2011), entire text & US 2011/0089043 A1 & WO 2009/135572 A2 & EP 2116634 A1 & KR 10-2011-0011613 A & CN 102016130 A & TW 201005129 A	1, 2
A	JP 2013-534963 A (Miba Gleitlager GmbH), 09 September 2013 (09.09.2013), entire text & US 2013/0216169 A1 & WO 2011/127513 A1 & EP 2558617 A1 & CN 102918182 A & KR 10-2013-0092982 A	1, 2