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(71) Applicant (for all designated States except US): **BIO-MEDFLEX LLC** [US/US]; 1283 Audubon Drive, Gastonia, North Carolina 28054 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **KELLAR, Franz W.** [US/US]; 3757 Kennedy Road, Gastonia, North Carolina 28056 (US). **CROWDER, Harold Lloyd** [US/US]; 1005 Chadbourne Avenue, SW, Concord, North Carolina 28027 (US).

(74) Agents: **HINES, Jonathan M.** et al.; Trego, Hines & Ladenheim, PLLC, 9300 Harris Corners Parkway, Suite 210, Charlotte, North Carolina 28269 (US).

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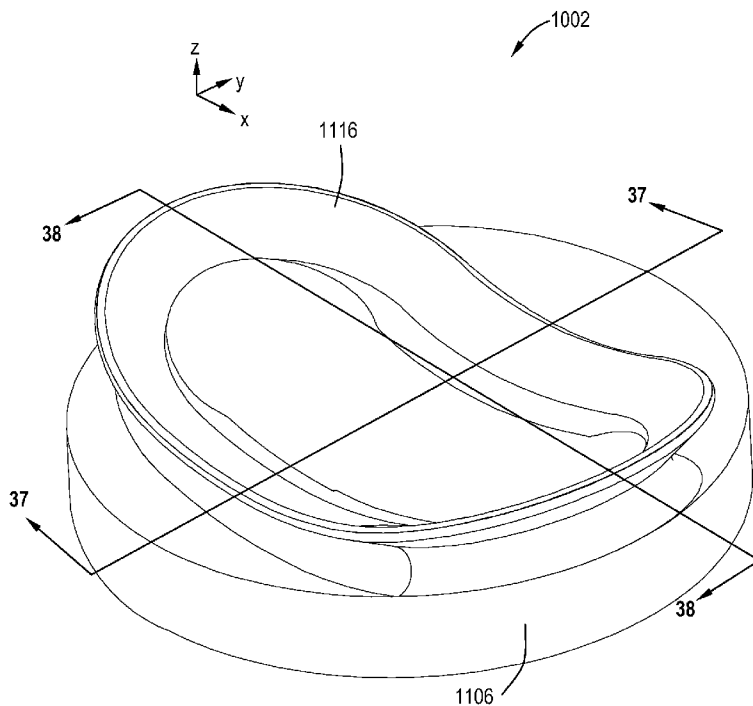


FIG. 36

(57) Abstract: A prosthetic joint has a central axis and includes: (a) a first member of rigid material and including a body having a cantilevered perimeter flange extending therefrom, the flange defining a wear-resistant, concave first contact surface having a protruding rim and a recessed central portion; and (b) a second member of rigid material with a wear-resistant, convex second contact surface. The first and second contact surfaces bear directly against each other so as to transfer axial and lateral loads from one of the members to the other, while allowing pivoting motion between the two members. The flange is shaped and sized so as to deform elastically and permit the first contact surface to conform in an irregular shape to the second contact surface when the joint is placed under a predetermined load.

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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)

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

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

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

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2010-0280623 A9 (KELLAR, F. W. and CROWDER, H. L.) 04 November 2010 See abstract; paragraphs [0040], [0050]-[0053], [0063]-[0069];	1,3-9,13,16-19
A	claims 1-10; figures 1-21.	2,10-12,14-15
A	US 7601174 B2 (KELLY, A. et al.) 13 October 2009 See entire document.	1-19
A	US 2009-0326656 A1 (DE VILLIERS, M. and HAHNLE, U.) 31 December 2009 See entire document.	1-19
A	WO 03-063727 A2 (SDGI HOLDINGS, INC.) 07 August 2003 See entire document.	1-19
A	WO 91-13598 A1 (J.B.S. S.A.) 19 September 1991 See entire document.	1-19

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

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Date of the actual completion of the international search

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Authorized officer

Inho Han

Telephone No. 82-42-481-8744



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Patent document cited in search report	Publication date	Patent family member(s)	Publication date		
US 2010-0280623 A9	04.11.2010	CA 2668692 A1	15.05.2008		
		EP 2081520 A1	29.07.2009		
		US 2008-0154369 A1	26.06.2008		
		US 2010-0161064 A1	24.06.2010		
		US 2010-0262250 A1	14.10.2010		
		US 2011-0087333 A1	14.04.2011		
		US 2011-0166667 A1	07.07.2011		
		US 2011-0166671 A1	07.07.2011		
		US 7905919 B2	15.03.2011		
		US 7914580 B2	29.03.2011		
		US 8029574 B2	04.10.2011		
		US 8070823 B2	06.12.2011		
		WO 2008-058205 A1	15.05.2008		
		WO 2011-106668 A2	01.09.2011		
		WO 2011-106668 A3	26.01.2012		
		US 7601174 B2	13.10.2009	AU 2001-281166 B2	20.07.2006
				AU 2001-81166 A1	18.02.2002
AU 2001-84752 A1	18.02.2002				
AU 2002-326694 B2	05.07.2007				
CA 2426453 A1	14.02.2002				
CA 2429246 A1	14.02.2002				
EP 1307153 A2	07.05.2003				
EP 1307153 B1	23.09.2009				
EP 1363565 A2	26.11.2003				
EP 1420703 A1	26.05.2004				
EP 1420703 B1	14.03.2007				
EP 2301447 A2	30.03.2011				
EP 2301447 A3	06.04.2011				
JP 04-255375 B2	15.04.2009				
JP 04-617408 B2	05.11.2010				
JP 2004-505668 A	26.02.2004				
JP 2004-516044 A	03.06.2004				
JP 2005-500122 A	06.01.2005				
US 2002-0035400 A1	21.03.2002				
US 2002-0111631 A1	15.08.2002				
US 2002-0128715 A1	12.09.2002				
US 2002-0161446 A1	31.10.2002				
US 2003-0199738 A1	23.10.2003				
US 2004-0054411 A1	18.03.2004				
US 2005-0038515 A1	17.02.2005				
US 2005-0059976 A1	17.03.2005				
US 2010-0070042 A1	18.03.2010				
US 6562045 B2	13.05.2003				
US 6949105 B2	27.09.2005				
US 7125380 B2	24.10.2006				
US 7179262 B2	20.02.2007				
US 7537612 B2	26.05.2009				
US 7641692 B2	05.01.2010				

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2012/028807

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
		US 8092542 B2	10.01.2012
		WO 02-11633 A2	14.02.2002
		WO 02-11650 A2	14.02.2002
		WO 03-17853 A1	06.03.2003
		WO 2004-080322 A1	23.09.2004
US 2009-0326656 A1	31.12.2009	EP 1626685 A2	22.02.2006
		EP 1626685 A4	21.01.2009
		EP 1626685 B1	08.09.2010
		EP 2161008 A2	10.03.2010
		EP 2161008 A3	30.06.2010
		EP 2226038 A1	08.09.2010
		JP 04-481312 B2	26.03.2010
		JP 2007-501686 A	01.02.2007
		JP 2009-219889 A	01.10.2009
		JP 2010-017568 A	28.01.2010
		JP 4481312 B2	16.06.2010
		US 2005-0021145 A1	27.01.2005
		US 2005-0021146 A1	27.01.2005
		US 2008-0133011 A1	05.06.2008
		US 2008-0215155 A1	04.09.2008
		US 2008-0221696 A1	11.09.2008
		US 2009-0222101 A1	03.09.2009
		US 2010-0076558 A1	25.03.2010
		US 2010-0191338 A1	29.07.2010
		US 2011-0160862 A1	30.06.2011
		US 2012-035732 A1	09.02.2012
		US 7442211 B2	28.10.2008
		US 7753956 B2	13.07.2010
		US 8092538 B2	10.01.2012
		WO 2004-105638 A2	09.12.2004
		WO 2004-105638 A3	13.01.2005
WO 03-063727 A2	07.08.2003	AU 2002-346524 A1	02.09.2003
		AU 2002-346524 B2	18.01.2007
		CA 2468300 A1	07.08.2003
		DE 60239563 D1	05.05.2011
		EP 1460978 A2	29.09.2004
		EP 1460978 A4	23.01.2008
		EP 1460978 B1	23.03.2011
		JP 04-373790 B2	11.09.2009
		JP 2005-515827 A	02.06.2005
		JP 4373790 B2	25.11.2009
		KR 10-2004-0058343 A	03.07.2004
WO 91-13598 A1	19.09.1991	AU 7499191 A	10.10.1991
		EP 0471821 A1	26.02.1992
		EP 0471821 B1	08.06.1994
		FR 2659226 A1	13.09.1991
		FR 2659226 B1	29.05.1992

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2012/028807

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
		JP 02-889696 B2	19.02.1999
		KR 10-0189346 B1	01.06.1999