### (19) World Intellectual Property Organization

International Bureau



## 

# (43) International Publication Date 5 April 2007 (05.04.2007)

### PCT

# (10) International Publication Number WO 2007/038418 A3

- (51) International Patent Classification: *A61F 2/44* (2006.01)
- (21) International Application Number:

PCT/US2006/037233

(22) International Filing Date:

26 September 2006 (26.09.2006)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

60/720,355 26 September 2005 (26.09.2005) US 11/526,239 25 September 2006 (25.09.2006) US

- (71) Applicant (for all designated States except US): K2M, INC. [US/US]; 751 Miller Drive, S.E., Suite F-1, Leesburg, VA 20175 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): MIZ, George [US/US]; 12413 S. Hobart Avenue, Palos Park, IL 60464 (US). WOODS, Richard, W. [US/US]; 14 Melvin Avenue, Catonsville, MD 21228 (US). STRAUSS, Kevin, R. [US/US]; 5358 Tarkington Place, Columbia, MD 21044 (US).

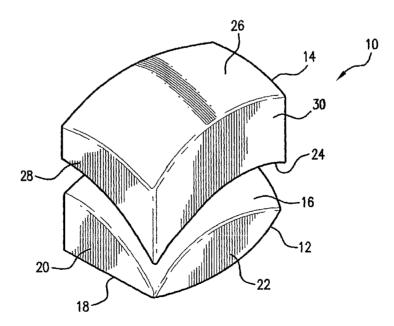
- (74) Agent: VAN OVER, Perry, E.; PERRY VAN OVER & ASSOCIATES PLLC, P.O. Box 399, Fairfax, VA 22038-0399 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

#### **Published:**

with international search report

[Continued on next page]

(54) Title: POSTERIOR METAL-ON-METAL DISC REPLACEMENT DEVICE AND METHOD



o (57) Abstract: Provided is a device and method for replacing a diseased or damaged intervertebral disc in the spine of a patient. The device provided having at least two units, each of the units having an articulation surface and a bone contacting surface, the articulation surfaces of each of the at least two being in articulating opposition one to the other, one of which having a convex articulation surface and the other having a complementary concave articulation surface. The bone contacting surfaces being provided with bone implantation securing elements such as keel type or spike type protrusions. Also provided is a method of implanting the device into an intervertebral space from a posterior approach.



### WO 2007/038418 A3



 before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

 $\textbf{(88)} \ \ \textbf{Date of publication of the international search report:}$ 

14 June 2007

### INTERNATIONAL SEARCH REPORT

International application No. PCT/US 06/37233

A. CLASSIFICATION OF SUBJECT MATTER IPC(8) - A61F 2/44 (2007.01) USPC - 623/17.15			
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) USPC: 623/17/15			
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched USPC: 623/17.15, 17.16, 17.11			
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) PGPB,USPT,USOC,EPAB,JPAB - Intervertebral, articular, cervical, catheter			
C. DOCUMENTS CONSIDERED TO BE RELEVANT			
Category*	Citation of document, with indication, where ag	ppropriate, of the relevant passages	Relevant to claim No.
X			1-7, 9, 15, 18, 25
Y	Abstract; col 1 lines 40-43; col 1 line 65 to col 3 line 25	; col 6 lines15-65	8, 10-14, 16, 17, 19-24,
			26-28
Y .	US 6,802,863 B2 (LAWSON et al.) 12 October 2004 (12.10.2004) entire document esp Fig. 1B, para 0007		8
Y 	US 6,610,093 B1 (PISHARODI) 26 August 2003 (26.08.2003) esp entire document col 2 lines 13-20; col 4 lines 24-63		10-12
Υ	US 2005/0085911 A1 (LINK) 21 April 2005 (21.04.2005) entire document esp para 0004, 0005; 0009; 0010		13, 14, 26-28
Y US 2004/0260286 A1 (FERREE et al) 23 December 2004 (23.12.2004) entire document esp Fig. 1C; para 0007, 0051		16, 17, 19-24	
Further documents are listed in the continuation of Box C.			
* 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			
to be of particular relevance  the principle or theory underlying the invention  the principle or theory underlying the invention  the principle or theory underlying the invention  document of particular relevance; the claimed invention cannot be filling date  "X"  document of particular relevance; the claimed invention cannot be considered to involve an inventive			
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other "y" document of particular relevance; the alaimed invention correct the			
"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			
"P" document published prior to the international filing date but later than the priority date claimed "&" document member of the same patent family			
Date of the actual completion of the international search  Date of mailing of the international search report			
	7 (12.02.2007)	<b>26</b> APR 2007	
	nailing address of the ISA/US T, Attn: ISA/US, Commissioner for Patents	Authorized officer:	
P.O. Box 145	60, Alexandria, Virginia 22313-1450	Lee W. Young PCT Helpdesk: 571-272-4300	
Facsimile No. 571-273-3201 PCT OSP: 571-272-7700			