

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
26 August 2004 (26.08.2004)

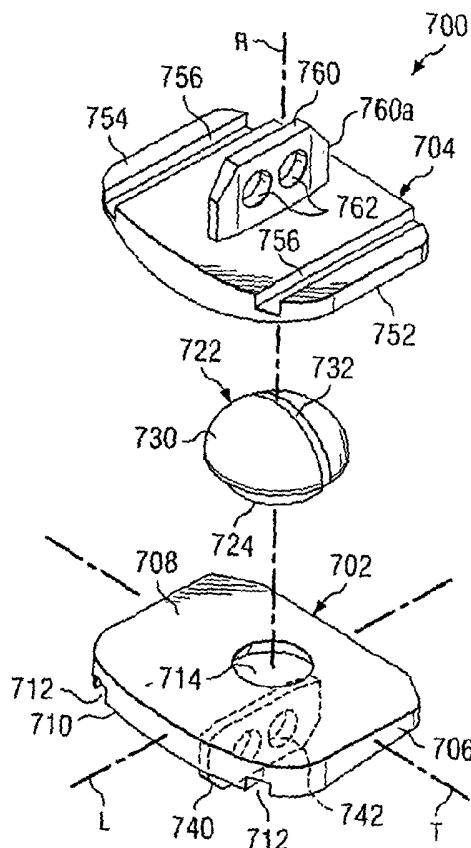
PCT

(10) International Publication Number
WO 2004/071344 A3

- (51) International Patent Classification⁷: **A61F 2/44**
- (21) International Application Number: PCT/US2004/004047
- (22) International Filing Date: 12 February 2004 (12.02.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/446,963 12 February 2003 (12.02.2003) US
- (71) Applicant (for all designated States except US): **SDGI HOLDINGS INC.** [US/US]; 300 Delaware Avenue Suite 508, Wilmington, DE 19801 (US).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): **EISERMANN, Lukas** [US/US]; 42 Riverview Drive West, Number 301, Memphis, TN 38103 (US).
- (74) Agents: **REVIS, Paul, A.** et al.; MC LC340, 710 Medtronic Parkway, Minneapolis, MN 55432 (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, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, 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, IT, LU, MC, NL, PT, RO, SE, SI, SK,

[Continued on next page]

(54) Title: MOBILE BEARING ARTICULATING DISC PROTHESIS



(57) Abstract: A prosthetic device (700) for insertion into an intervertebral space is provided. The prosthetic device includes a first component (704) having a first recess (758) formed therein, the first recess defining a substantially concave recess surface of the first component, a second component (702) having a second recess (714) formed therein, the second recess defining a substantially planar recess surface (718), and a projection member (730) adapted to engage the second recess surface wherein the projection member is also adapted to engage the first recess surface to permit articulating motion between the first and second components.



TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

Declaration under Rule 4.17:

- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK,*

Published:

- *with international search report*
— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

(88) Date of publication of the international search report:

23 September 2004

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.

INTERNATIONAL SEARCH REPORT

PCT/US2004/004047

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A61F2/44

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)
IPC 7 A61F

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

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

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 01/01893 A (BEYERSDORFF BORIS ; MARNAY THIERRY (FR); SPINE SOLUTIONS INC (US)) 11 January 2001 (2001-01-11) claims 1-6,10-13; figures page 11, paragraph 4 - page 12, paragraph 2	1-5,8-21
Y		6,7,22,23
X	US 6 368 350 B1 (GRIFFITH STEVEN L ET AL) 9 April 2002 (2002-04-09) claims 1,2; figures 6,7,21-28 column 5, line 20 - line 28 column 6, line 56 - line 67	1-3
Y		6,7,22,23
A		12,13,16,17,21
	----- -/--	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *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)
- *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

- *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
- *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
- *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.
- *Z* document member of the same patent family

Date of the actual completion of the international search

28 July 2004

Date of mailing of the international search report

04/08/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Stach, R

INTERNATIONAL SEARCH REPORT

PCT/US2004/004047

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 02/089701 A (CHATAIGNIER HERVE ; ALLAIN JEROME (FR); DELECRIN JOEL (FR); LDR MEDICA) 14 November 2002 (2002-11-14) claim 1; figures 3,13 page 10, line 26 - line 28 page 16, line 22 - line 27	1-3, 8-13, 17-19
A	-----	6,7,16, 21-23
X	US 5 314 477 A (MARNAY THIERRY) 24 May 1994 (1994-05-24) figures 1-3 column 4, line 63 - column 5, line 29	1-3, 8-15, 17-19
A	-----	16,20-23

INTERNATIONAL SEARCH REPORT

PCT/US2004/004047

Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 24-27
because they relate to subject matter not required to be searched by this Authority, namely:
Rule 39.1(iv) PCT - Method for treatment of the human or animal body by surgery
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

PCT/US2004/004047

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 0101893	A	11-01-2001	DE 29911422 U1	12-08-1999
			WO 0101893 A1	11-01-2001
			AU 7224500 A	22-01-2001
			BR 9917397 A	05-03-2002
			CA 2391330 A1	11-01-2001
			EP 1194088 A1	10-04-2002
			JP 2003503154 T	28-01-2003
<hr/>				
US 6368350	B1	09-04-2002	AU 3873000 A	28-09-2000
			WO 0053127 A1	14-09-2000
<hr/>				
WO 02089701	A	14-11-2002	FR 2824261 A1	08-11-2002
			CA 2446095 A1	14-11-2002
			EP 1399086 A2	24-03-2004
			WO 02089701 A2	14-11-2002
<hr/>				
US 5314477	A	24-05-1994	FR 2659226 A1	13-09-1991
			AT 106707 T	15-06-1994
			AU 7499191 A	10-10-1991
			DE 69102369 D1	14-07-1994
			EP 0471821 A1	26-02-1992
			ES 2057874 T3	16-10-1994
			WO 9113598 A1	19-09-1991
			JP 2889696 B2	10-05-1999
			JP 4505574 T	01-10-1992
			KR 189346 B1	01-06-1999