## (19) World Intellectual Property Organization

International Bureau





(43) International Publication Date 22 March 2007 (22.03.2007)

(10) International Publication Number WO 2007/031998 A3

(51) International Patent Classification: *A61B 17/70* (2006.01) *A61F 2/44* (2006.01)

(21) International Application Number:

PCT/IL2006/001062

(22) International Filing Date:

11 September 2006 (11.09.2006)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

11/224,948 14 September 2005 (14.09.2005) US

(71) Applicant (for all designated States except US): IMPLI-ANT LTD. [IL/IL]; 7 Giborey Israel Street, PO Box 8630, 42504 Ramat Poleg (IL).

(72) Inventor; and

(75) Inventor/Applicant (for US only): ARNIN, Uri [IL/IL]; 1 Ha'amelim Street, 36089 Kiryat Tivon (IL).

(74) Agent: KLEIN, David; Beit HaRof'im, 18 Menuha VeNahala Street, Room 27, 76209 Rehovot (IL).

(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.

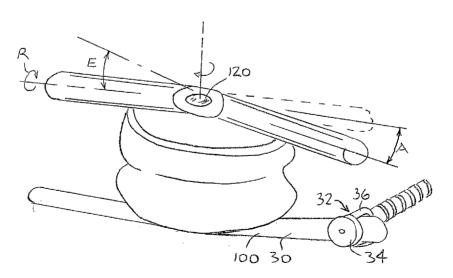
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, 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
- 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: 28 June 2007

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.

(54) Title: ADJUSTABLE SPINAL PROSTHESES



(57) Abstract: Apparatus including a first spinal prosthetic member attachable to a first spinal structure, a second spinal prosthetic member attachable to a second spinal structure and articulating with the first spinal prosthetic member to form an articulating assembly, and pedicle screw mounting members extending outwards from the first and second spinal prosthetic members, at least one of the pedicle screw mounting members being movably attached to the first and second spinal prosthetic members such that the at least one pedicle screw mounting member has at least two different attachment orientations with respect to reference axes defined on one of the spinal prosthetic members.





#### INTERNATIONAL SEARCH REPORT

International application No PCT/IL2006/001062

A. CLASSIFICATION OF SUBJECT MATTER INV. A61B17/70 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)

A61B 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

С. DOCUM	ENTS CONSIDERED TO BE RELEVANT	
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
А	WO 2005/044152 A (IMPLIANT LTD [IL]; ARNIN URI [IL]; TAUBER MICHAEL [IL]; SUDIN YURI [IL) 19 May 2005 (2005-05-19) cited in the application page 8, paragraph 1 - page 9, paragraph 4; figure 8d	1,6
А	US 6 063 121 A (XAVIER RAVI [US] ET AL) 16 May 2000 (2000-05-16) column 2, line 51 - column 4, line 53; figures 1-5	1,6
A	US 6 610 093 B1 (PISHARODI MADHAVAN [US]) 26 August 2003 (2003-08-26) column 2, line 62 - column 5, line 58; figures 1-6A	1,6
	her documents are listed in the continuation of Box C.  X See patent family annex.	

X Further documents are listed in the continuation of Box C.	X See patent family 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	<ul> <li>"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</li> <li>"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</li> <li>"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.</li> <li>"&amp;" document member of the same patent family</li> </ul>
Date of the actual completion of the international search	Date of mailing of the international search report
16 January 2007	20/04/2007
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  Ducreau, Francis

## INTERNATIONAL SEARCH REPORT

International application No
PCT/IL2006/001062

C(Continua	tion). DOCUMENTS CONSIDERED TO BE RELEVANT				
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.			
A	JP 10 277070 A (SANO SHIGEO; ITO KAORU) 20 October 1998 (1998-10-20) abstract; figure 	1,6			

International application No. PCT/IL2006/001062

## INTERNATIONAL SEARCH REPORT

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.: because they relate to subject matter not required to be searched by this Authority, namely:
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:
see additional sheet
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.:  See annex
Remark on Protest  The additional search fees were accompanied by the applicant's protest.  No protest accompanied the payment of additional search fees.

### FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-10

Apparatus comprising a firat spinal prosthetic member (12), a second spinal prosthetic member (16) and pedicle screw mounting members (100), at least one of said pedicle screw mounting members being movably attached to said first and second spinal prosthetic members

2. claims: 11-15

Article comprising an elongate link element connected between one pedicle screw and a non-pedicle screw structure

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/IL2006/001062

Patent document cited in search report		Publication date	Patent family member(s)		Publication date	
WO 2005044152	A	19-05-2005	EP US US	1578314 2006149383 2005102028	A1	28-09-2005 06-07-2006 12-05-2005
US 6063121	Α	16-05-2000	CA	2300613	A1	14-09-2001
US 6610093	B1	26-08-2003	US	2004039448	A1	26-02-2004
JP 10277070	Α	20-10-1998	JP	2992878	B2	20-12-1999