

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
27 April 2006 (27.04.2006)

PCT

(10) International Publication Number  
**WO 2006/045091 A3**

(51) International Patent Classification:  
A61B 17/56 (2006.01)

[US/US]; 411 Los Ninos Way, Los Altos, California 94022 (US).

(21) International Application Number:  
PCT/US2005/038021

(74) Agent: LASALLE, Carol M.; BOZICEVIC, FIELD & FRANCIS LLP, 1900 University Avenue, Suite 200, East Palo Alto, California 94303 (US).

(22) International Filing Date: 20 October 2005 (20.10.2005)

(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, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
10/970,366 20 October 2004 (20.10.2004) US  
11/006,495 6 December 2004 (06.12.2004) US  
11/033,452 10 January 2005 (10.01.2005) US

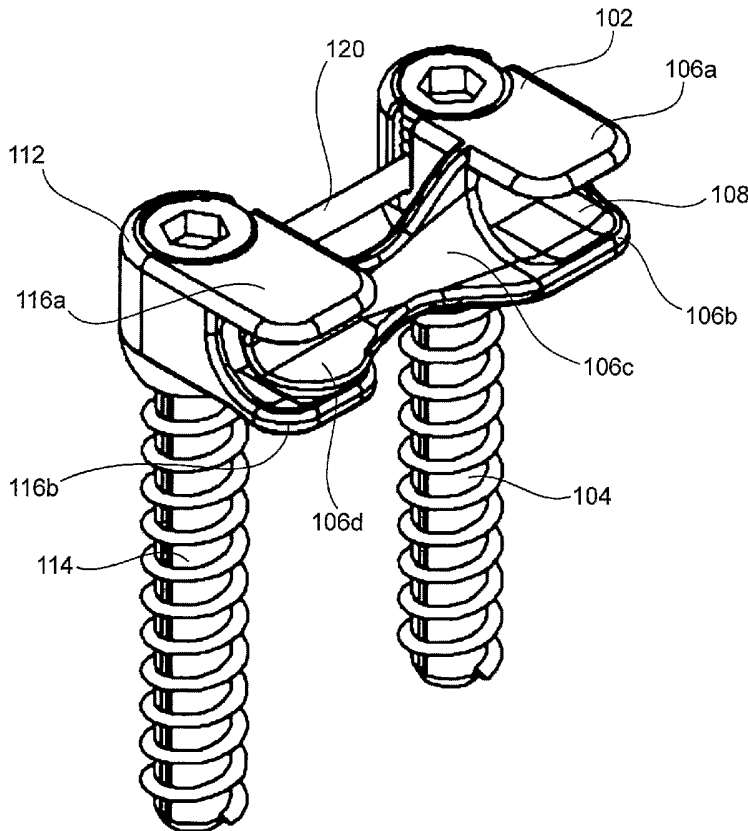
(71) Applicant (for all designated States except US): THE BOARD OF TRUSTEES OF THE LELAND STANFORD JUNIOR UNIVERSITY [US/US]; 1705 El Camino Real, Palo Alto, California 94306-1106 (US).

(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,

(72) Inventor; and  
(75) Inventor/Applicant (for US only): KIM, Daniel H.

[Continued on next page]

(54) Title: SYSTEMS AND METHODS FOR POSTERIOR DYNAMIC STABILIZATION OF THE SPINE



(57) Abstract: Systems and devices for dynamically stabilizing the spine are provided. The systems include a superior component for attachment to a superior vertebra of a spinal motion segment and an inferior component for attachment to an inferior vertebral of a spinal motion segment. The interconnection between the two components enables the spinal motion segment to move in a manner that mimics the natural motion of the spinal motion segment. Methods are also provided for stabilizing the spine and for implanting the subject systems.

WO 2006/045091 A3



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

(88) Date of publication of the international search report:  
26 May 2006

**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*

*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

International application No.

PCT/US05/38021

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC: **A61B 17/56**(2006.01)

USPC: 606/61,71

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)  
U.S. : 606/61,71,72,69,70,73;623/17.11

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 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          | US 6,645,248 B2 (CASUTT)11 November 2003 (11.11.2003), see whole document.         | 1-12                  |
| A          | US 5,616,142 A (YUAN et al.) 01 April 1997 (01.04.1997), see whole document.       | 1-12                  |
| A          | US 2004/0002708 A1 (RITLAND) 01 January 2004, (01.01.2004), see whole document.    | 1-12                  |

Further documents are listed in the continuation of Box C.

See patent family annex.

| * Special categories of cited documents:  | "T"  |
|---|--|
| "A" document defining the general state of the art which is not considered to be of particular relevance  | 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  |
| "E" earlier application or patent published on or after the international filing date   | "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   |
| "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) | "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 |
| "O" document referring to an oral disclosure, use, exhibition or other means  | "&" document member of the same patent family  |
| "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  
20 March 2006 (20.03.2006)

Date of mailing of the international search report  
**10 APR 2006**

Name and mailing address of the ISA/US  
Mail Stop PCT, Attn: ISA/US  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
Facsimile No. (571) 273-3201

Authorized officer  
*Jessica R. Baxter*  
Jessica R. Baxter  
Telephone No. 703-308-0858