



(43) International Publication Date
24 September 2009 (24.09.2009)

(10) International Publication Number
WO 2009/117459 A3

(51) International Patent Classification:
A61F 2/44 (2006.01)

(21) International Application Number:
PCT/US2009/037460

(22) International Filing Date:
18 March 2009 (18.03.2009)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
12/051,491 19 March 2008 (19.03.2008) US

(71) Applicant (for all designated States except US): **INTELLIGENT IMPLANT SYSTEMS** [US/US]; 3300 International Airport Drive, Suite 1100, Charlotte, NC 28208 (US).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **RICHELSON, Marc**; 3300 International Airport Drive, Suite 1100, Charlotte, NC 28208 (US).

(74) Agent: **KOHN, Kenneth**; 30500 Northwestern Highway, Suite 410, Farmington Hills, MI 48334 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ,

CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, 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, ST, 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, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

— of inventorship (Rule 4.17(iv))

Published:

— with international search report (Art. 21(3))

(88) Date of publication of the international search report:
18 March 2010

(54) Title: VERTEBRAL DEVICE FOR RESTORATION OF VERTEBRAL BODY HEIGHT

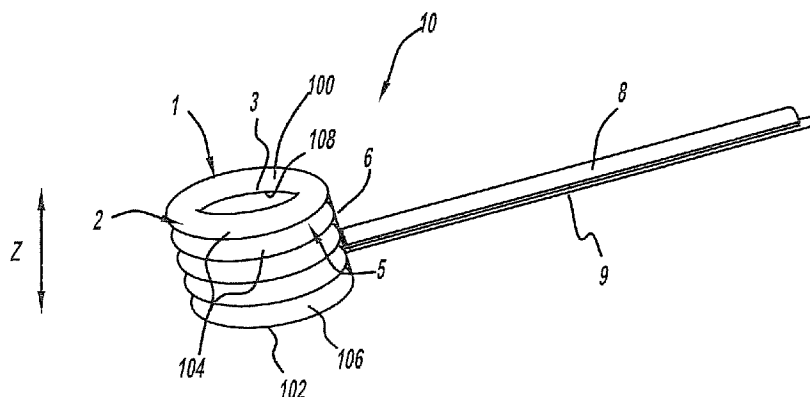


FIG - 1

(57) Abstract: An intra-vertebral body height restoring device includes a body for insertion into an intra-vertebral space. The body includes top and bottom surfaces for engaging opposing vertebral surfaces defining the intra-vertebral space. The body includes at least two layers extending along a width of the body and having a fully expanded and fully collapsed height relative thereto. A reversible expansion mechanism selectively and reversely expands and collapse the height of the layers and including the fully expanded and collapsed heights to restore a selected height to the intra-vertebral space.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2009/037460

A. CLASSIFICATION OF SUBJECT MATTER IPC(8) - A61F 2/44 (2009.01) USPC - 623/17.16 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(8) - A61F 2/44 (2009.01) USPC - 600/587, 594; 606/90, 92; 623/17.16 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) PatBase		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 2007/0288095 A1 (WIRTEL et al) 13 December 2007 (13.12.2007) entire document	1-2, 15-17, 21-23, 33-34, 36-38, 43-44, 48, 53
		3-14, 18-20, 24-32, 35, 39-42, 45-47, 49-52
Y	WO 2008/021013 A1 (KORLESKI et al) 21 February 2008 (21.02.2008) entire document	3-14, 18-20, 24-32
Y	US 2007/0055275 A1 (SCHALLER) 08 March 2007 (08.03.2007) entire document	7-11, 25-29, 39-42
Y	WO 2007/122608 A2 (BEYAR et al) 01 November 2007 (01.11.2007) entire document	14, 18, 32, 35, 41-42, 45-47
Y	US 2007/0118144 A1 (TRUCKAI et al) 24 May 2007 (24.05.2007) entire document	49-52
Y	US 2007/0233065 A1 (DONOFRIO et al) 04 October 2007 (04.10.2007) entire document	50-52
☐ Further documents are listed in the continuation of Box C. ☐		
* 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 application or patent 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 "&" document member of the same patent family		
Date of the actual completion of the international search 04 May 2009		Date of mailing of the international search report 13 MAY 2009
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: Blaine R. Copenheaver PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774