



(51) International Patent Classification:

A61C 8/00 (2006.01) A61C 19/06 (2006.01)  
A61F 2/28 (2006.01) A61B 17/56 (2006.01)  
A61F 2/46 (2006.01)

(72) Inventor; and

(75) Inventor/Applicant (for US only): MCKAY, William  
[US/US]; 3870 McElrie Cove, Memphis, Tennessee 38133 (US).

(21) International Application Number:

PCT/US2011/064461

(74) Agent: BARKER, Robert T.; Medtronic Inc, 710 Medtronic Parkway, Minneapolis, Minnesota 55432 (US).

(22) International Filing Date:

12 December 2011 (12.12.2011)

(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, CL, 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, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(25) Filing Language: English

English

(26) Publication Language: English

English

(30) Priority Data:

12/973,159 20 December 2010 (20.12.2010) US

(71) Applicant (for all designated States except US):

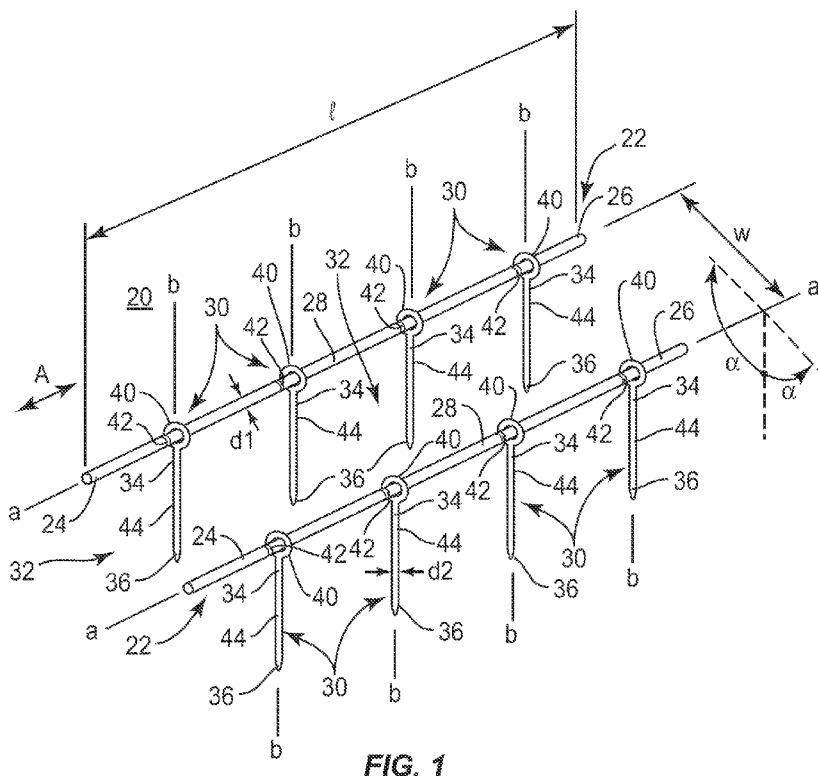
WARSAW ORTHOPEDIC, INC. [US/US]; 2500 Silveus Crossing, Warsaw, Indiana 46581 (US).

(84) Designated States (unless otherwise indicated, for every kind of regional protection available):

ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ,

[Continued on next page]

(54) Title: BONE AUGMENTATION DEVICE AND METHOD



(57) Abstract: A bone augmentation device includes at least one axial member defining a longitudinal axis and a plurality of transverse members. Each transverse member extends from a first end, removably connected to the at least one axial member to a second end configured for fixation with bone. The transverse members are spaced apart and disposed along the longitudinal axis. The at least one axial member and the transverse members are disposed in a configuration to define a bone graft cavity. Methods of use are also disclosed.

WO 2012/087640 A3



UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, 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, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

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

16 August 2012

**Published:**

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

**A. CLASSIFICATION OF SUBJECT MATTER***A61C 8/00(2006.01)i, A61F 2/28(2006.01)i, A61F 2/46(2006.01)i, A61C 19/06(2006.01)i, A61B 17/56(2006.01)i*

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)

A61C 8/00; A61C 11/00; A61F 5/04; A61B 17/56

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

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

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

eKOMPASS(KIPO internal) &amp; Keywords: augmentation, strut, dental, oral, jawbone

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	KR 10-0545891 B1 (HWANG, SOON JUNG) 18 January 2006 See the abstract, claims 1, 2, figures 4-5, 8, page 5 and lines 4-14.	1-3,5,8,10-14 4,6-7,9,15
X A	KR 2003-0082243 A (HWANG, SOON JUNG) 22 October 2003 See the abstract, claims 1, 3, and figures 2, 4.	1-3,5,8,10-14 4,6-7,9,15
A	US 2010-0159419 A1 (GRANT, JAMES C.) 24 June 2010 See the abstract, claim 1, figure 3, and paragraph [0007].	1-15
A	US 2005-0159754 A1 (ODRICH, RONALD B.) 21 July 2005 See the abstract, claim 1, figure 3, and paragraph [0043].	1-15

 Further documents are listed in the continuation of Box C. 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 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 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

"&amp;" document member of the same patent family

Date of the actual completion of the international search

20 JUNE 2012 (20.06.2012)

Date of mailing of the international search report

**20 JUNE 2012 (20.06.2012)**

Name and mailing address of the ISA/KR

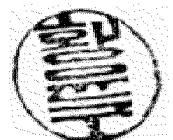
Korean Intellectual Property Office  
189 Cheongsu-ro, Seo-gu, Daejeon Metropolitan  
City, 302-701, Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

HWANG, Yun Koo

Telephone No. 82-42-481-5715



**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

**PCT/US2011/064461**

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
KR 10-0545891 B1	24.01.2006	None	
KR 10-2003-0082243 A	22.10.2003	None	
US 2010-0159419 A1	24.06.2010	CA 2732001 A1 EP 2349064 A2 US 2009-0226857 A1 US 2011-0151408 A1 US 7806685 B1 WO 2009-111171 A2 WO 2009-111171 A3 WO 2011-094420 A1	11.09.2009 03.08.2011 10.09.2009 23.06.2011 05.10.2010 11.09.2009 11.09.2009 04.08.2011
US 2005-0159754 A1	21.07.2005	US 2005-0159755 A1	21.07.2005