### (19) World Intellectual Property Organization

International Bureau





(43) International Publication Date 29 December 2004 (29.12,2004)

**PCT** 

# (10) International Publication Number WO 2004/112642 A3

(51) International Patent Classification<sup>7</sup>: A61F 2/28

(21) International Application Number:

PCT/US2004/019207

(22) International Filing Date: 16 June 2004 (16.06.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data: 60/478,465

16 June 2003 (16.06.2003) US

(71) Applicant and

(72) Inventor: JAMALI, Amir, Ali [US/US]; 420 Hebron Circle, Sacramento, CA 95835 (US).

(74) Agents: GOTTS, Lawrence, J. et al.; Shaw, Pittman, LLP, 1650 Tysons Boulevard, Mc Lean, VA 22102-4859 (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, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, 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, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

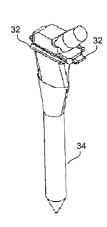
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC,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

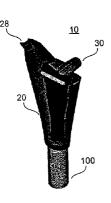
with international search report

[Continued on next page]

#### (54) Title: DEVICE AND METHOD FOR RECONSTRUCTION OF OSSEOUS SKELETAL DEFECTS



(57) Abstract: A device for the reconstruction of skeletal defects with a flexible member (20), which is preferably resorbable, attached to a rigid structural prosthesis (30) such as a dental implant, an orthopedic prosthetic implant, or an artificial disc implant. The cavitary space surrounded by the flexible member is filled with osteoconductive and/or inductive materials which eventually matures into bone. The prosthesis is supported by the bed of graft material surrounding it and is gradually unloaded as the bed matures into solid bone. The fixation of the prosthesis into native bone depends on the specific implant and the anatomic area of its use. The flexible member is secured to the margins of the prosthesis using rails, runners, sutures, or other attachment devices (32) that prevent the escape of the bone graft and maintain an initial column of support for the implant.



### WO 2004/112642 A3



 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.

 $(88)\;\; Date \; of \; publication \; of the international search report:$ 

10 March 2005

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/19207

			<del></del>
A. CLASSIFICATION OF SUBJECT MATTER  IPC(7) : A61F 2/28			
US CL: 623/16.11 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.: 623/16.11, 20.16, 20.17, 22.33, 23.26, 23.28-23.3, 23.54, 23.55, 23.57, 23.58			
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 a	ppropriate, of the relevant passages	Relevant to claim No.
X	US 6,328,765 B1 (HARDWICK et al.) 11 December 2001 (11.12.2001), See entire document.		1-21
Α	US 4,813,960 A (MULLER) 21 March 1989 (21.03.1989), See entire document.		1-21
Α	US 5,080,674 A (JACOBS et al.) 14 January 1992 (14.01.1992), See entire document.		1-21
Α	US 6,214,049 B1 (GAYER et al.) 10 April 2001 (10.04.2001), see entire document.		1-21
Further	documents are listed in the continuation of Box C.	See patent family annex.	
* Special categories of cited documents:		"I" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the	
"A" document defining the general state of the art which is not considered to be of particular relevance		principle or theory underlying the invertible or theory underlying the invertible "X" document of particular relevance; the c	
	plication or patent published on or after the international filing date	considered novel or cannot be consider 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	
"O" document referring to an oral disclosure, use, exhibition or other means		being obvious to a person skilled in the	
"P" document published prior to the international filing date but later than the priority date claimed		"&" document member of the same patent family	
Date of the actual completion of the international search		Date of mailing of the international search report 2 9 DEC 2004	
	2004 (12.12.2004)		<b>4</b>
Name and mailing address of the ISA/US		Authorized officer Sharm M. Meene for	
Mail Stop PCT, Attn: ISA/US Commissioner for Patents		Javier G. Blanco	
P.O. Box 1450 Alexandria, Virginia 22313-1450		Telephone No. 571-272-4747	
	xandria, Virginia 22313-1430		