

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



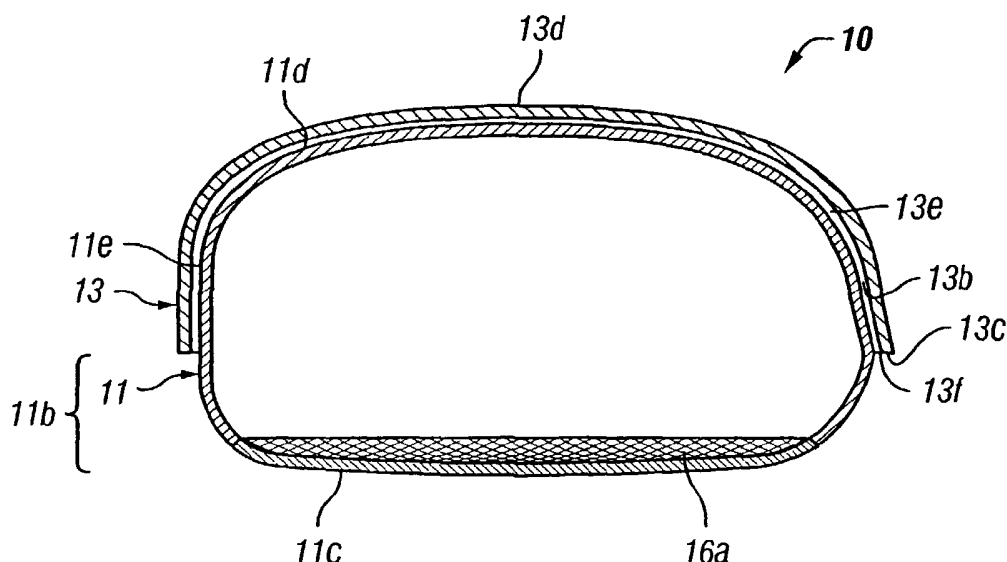
(43) International Publication Date  
31 July 2003 (31.07.2003)

PCT

(10) International Publication Number  
**WO 03/061364 A3**

- (51) International Patent Classification<sup>7</sup>: **A61F 2/44**
- (21) International Application Number: PCT/US03/01597
- (22) International Filing Date: 17 January 2003 (17.01.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
60/349,743 17 January 2002 (17.01.2002) US  
60/369,667 2 April 2002 (02.04.2002) US
- (71) Applicant: **CONCEPT MATRIX, LLC** [US/US]; 215 Eola Drive, Orlando, FL 32801 (US).
- (72) Inventor: **ECKMAN, Walter, W.**; 1907 Pecan Grove, Tupelo, MS 38801 (US).
- (74) Agents: **HAMEL, Kevin, R.** et al.; Akin Gump Strauss Hauer & Feld LLP, One Commerce Square, 2005 Market Street, Suite 2200, Philadelphia, PA 19103-7086 (US).
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, 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, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:  
— with international search report
- (88) Date of publication of the international search report:  
13 November 2003
- 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: INTERVERTEBRAL DISK PROSTHESIS



(57) Abstract: An intervertebral disk prosthesis (10) includes a first part (13), and the first part (13) has a top (13d), a bottom (13c) having an opening (13f), an outer surface (13a), an inner surface (13b) and a socket (13e) extending into an interior (13b) of the first part (13) from the opening (13f). The outer surface (13a) proximate the top (13d) contacts a concave portion of a first vertebra. The disk prosthesis (10) further includes a second part (11) including a top (11d), a bottom (11c), and an outer surface (11a). The outer surface (11a) proximate the bottom (11c) contacts a concave portion of a second vertebra, and the outer surface (11c) of the second part (11) proximate the top (11d) of the second part (11) cooperatively engages the inner surface (13b) of the first (13) part thereby allowing at least two-degrees of freedom of movement.

WO 03/061364 A3

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/01597

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC(7) : A61F 2/44  
 US CL : 623/17.11

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. : 623/17.11, 17.16, 17.14; 606/61

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 --- Y	US 5,674,296 A (BRYAN et al) 07 October 1997, (07.10.1997), Figures 3 and 4 and column 5, lines 16-22 where elements (20) and (22) are part of the lower part (13) as claimed.	1-3, 17-22, 28, 31 ----- 7, 8, 24-26, 29, 32
Y	US 6,174,334 B1 (SUDDABY) 16 January 2001 (16.01.2001), Figures 1 and 3.	29
X --- Y	US 4,349,921 A (KUNTZ) 21 September 1982 (21.09.1982), Figures 12 to 15, column 13, lines 34-42, and column 7, lines 52-56.	1, 17-22, 28, 30-32 ----- 24-26
A, P	US 6,419,705 B1 (ERICKSON) 16 July 2002 (16.07.2002), Figure 3 and column 7, lines 1-6.	2, 7, 31



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	"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
"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

13 May 2003 (13.05.2003)

Date of mailing of the international search report

17 JUL 2003

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. (703)305-3230

Authorized officer

Paul B. Prebille

Telephone No. (703) 308-0858