

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
9 February 2006 (09.02.2006)

PCT

(10) International Publication Number
WO 2006/013603 A3

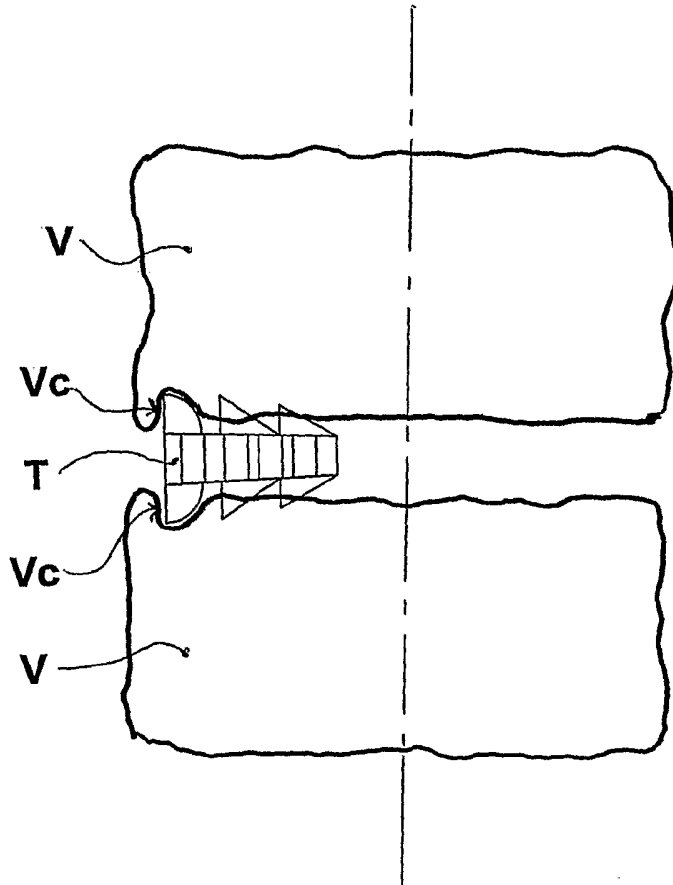
- (51) International Patent Classification:
A61F 2/44 (2006.01)
- (21) International Application Number:
PCT/IT2005/000439
- (22) International Filing Date: 25 July 2005 (25.07.2005)
- (25) Filing Language: Italian
- (26) Publication Language: English
- (30) Priority Data:
PD2004A000213 5 August 2004 (05.08.2004) IT
PD2005A000225 19 July 2005 (19.07.2005) IT
- (71) Applicant (for all designated States except US):
BIOMEDICA S.r.l. [IT/IT]; Via Grimani, 7/A, I-35041
Battaglia (PD) (IT).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): BINOTTO, Radames
[IT/IT]; Via Grimani, 7/A, I-35041 Battaglia Terme (PD)
(IT).
- (74) Agent: BENETTIN, Maurizio; Via Sorio, 116, I-35141
Padova (IT).

- (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, 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.
- (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, 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: BONE SPACER



(57) Abstract: This is a new bone spacer (T) with semispherical projecting parts (S) and/or teeth (D) suitable for fitting and engaging in cavities (Vc) specifically prepared on the surface of the vertebrae so as to prevent the displacement of said spacer, and containing at least one channel (Tc) placing the side facing towards the operator during its insertion in communication with the two opposite, superior and inferior surfaces (T2) facing the vertebrae. Plates (P) are also provided for coupling superiorly and inferiorly to the spacer, complete with ribs (Tr) and/or teeth.

WO 2006/013603 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:

1 June 2006

INTERNATIONAL SEARCH REPORT

Internal application No
PC 1/1T2005/000439

A. CLASSIFICATION OF SUBJECT MATTER
INV. A61F2/44

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)
A61F

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 practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 306 308 A (GROSS ET AL) 26 April 1994 (1994-04-26) figures 1-4d column 3, line 33 - column 4, line 21	1-7, 13, 15
Y		17
A		23, 29
X	EP 0 979 638 A (DIRIK, ERKAN) 16 February 2000 (2000-02-16) claims 1,5,8,9; figures column 5, line 7 - line 40	1-3, 7, 8, 13, 15, 27
A		16, 17, 23, 28
	----- -/--	

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 document 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

7 April 2006

Date of mailing of the international search report

20. 04. 2006

Name and mailing address of the ISA/
European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Stach, R

INTERNATIONAL SEARCH REPORT

Inter national application No
PCT/IT2005/000439

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 538 183 A (SULZER MEDIZINALTECHNIK AG) 21 April 1993 (1993-04-21) figure 8 column 3, line 37 - line 46	1-6,13, 15,27
A	-----	17,23
X	EP 0 599 419 A (ESKA IMPLANTS GMBH; BRISTOL-MYERS SQUIBB COMPANY) 1 June 1994 (1994-06-01) claims 1,5; figures	1,3,8,9, 13,15,27
A	-----	23
X	EP 0 610 837 A (ACROMED CORPORATION) 17 August 1994 (1994-08-17) figures column 2, line 49 - column 5, line 35	1,3,4,7, 13,15, 16,18, 19,23, 27-29
Y		17,20-22
A		25
X	EP 0 560 141 A (WALDEMAR LINK GMBH & CO; WALDEMAR LINK) 15 September 1993 (1993-09-15) figures 8-15 column 4, line 54 - column 5, line 7	1,3,16, 27,28
X	WO 00/44317 A (AESCULAP AG & CO. KG; FUSS, FRANZ, KONSTANTIN; SABITZER, RONALD, J; EC) 3 August 2000 (2000-08-03) claims 1,10,11,13-16; figures	1,3-5,7, 27
Y		20-22
A	-----	23,28,29

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IT2005/000439

Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

3. Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.

2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
1-9, 13, 15, 16-26, 27 in part, 28, 29

4. No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- The additional search fees were accompanied by the applicant's protest.
- No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-9, 13, 15, 27 in part

Bone spacer (T) suitable for inserting between two vertebrae (V), with two surfaces (T2) suitable for coming into contact with said two vertebrae (V), having on at least one of said surfaces one or more protuberances (S), said protuberances are suitable for preventing the displacement of said spacer (T) from between said vertebrae, the bone spacer has at least one channel (Tf) for placing at least the two major surfaces (T2) in communication with one another.

2. claims: 10-12, 14, 27 in part

Bone spacer (T) suitable for inserting between two vertebrae (V), with two surfaces (T2) suitable for coming into contact with said two vertebrae (V), having on at least one of said surfaces one or more protuberances (S), said protuberances are suitable for preventing the displacement of said spacer (T) from between said vertebrae, the bone spacer has at least one channel (Tc) suitable for placing one or both the major surfaces (T2) of said new spacer (T), that face the vertebrae, in communication with the side (TI) of said new spacer (T) that remains accessible to the operator after inserting the new spacer (1) in between said vertebrae.

3. claims: 16-26, 27 in part, 28, 29

Bone spacer (T) suitable for inserting between two vertebrae (V), with two surfaces (T2) suitable for coming into contact with said two vertebrae (V), having one or more plates (P) suitable for coupling with one or both major surfaces (T2) of the spacer (T), wherein each plate (P) is suitable for inserting between the spacer (T) and the vertebrae.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/IT2005/000439

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5306308	A	26-04-1994	DE 8912648 U1 22-11-1990
			WO 9105521 A1 02-05-1991
			EP 0497803 A1 12-08-1992
EP 0979638	A	16-02-2000	AT 228806 T 15-12-2002
			DE 19937651 A1 18-05-2000
EP 0538183	A	21-04-1993	AT 133555 T 15-02-1996
			DE 59205228 D1 14-03-1996
			ES 2082430 T3 16-03-1996
			US 5320644 A 14-06-1994
EP 0599419	A	01-06-1994	DE 9216092 U1 14-01-1993
EP 0610837	A	17-08-1994	AT 205069 T 15-09-2001
			AU 663638 B2 12-10-1995
			AU 5500294 A 18-08-1994
			DE 69428143 D1 11-10-2001
			DE 69428143 T2 29-05-2002
			ES 2161725 T3 16-12-2001
			JP 2838030 B2 16-12-1998
			JP 6285099 A 11-10-1994
			US 5534030 A 09-07-1996
EP 0560141	A	15-09-1993	AT 144695 T 15-11-1996
			DE 4208116 A1 23-09-1993
			ES 2094393 T3 16-01-1997
			JP 3017371 B2 06-03-2000
			JP 6007391 A 18-01-1994
			US 5401269 A 28-03-1995
WO 0044317	A	03-08-2000	AT 405367 B 26-07-1999
			AT 11098 A 15-12-1998
			WO 9937255 A1 29-07-1999
			AU 2142099 A 09-08-1999
			DE 19903763 A1 17-08-2000
			DE 19903764 A1 17-08-2000
			DE 29901612 U1 08-04-1999
			DE 29901613 U1 08-04-1999
			EP 1146836 A1 24-10-2001
			EP 1049430 A1 08-11-2000
			US 2002022886 A1 21-02-2002