

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

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
10 March 2005 (10.03.2005)

PCT

(10) International Publication Number
WO 2005/020827 A3

(51) International Patent Classification⁷: **A61B 17/16**,
A61F 2/46

(21) International Application Number:
PCT/US2004/028484

(22) International Filing Date:
1 September 2004 (01.09.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10/653,281 2 September 2003 (02.09.2003) US

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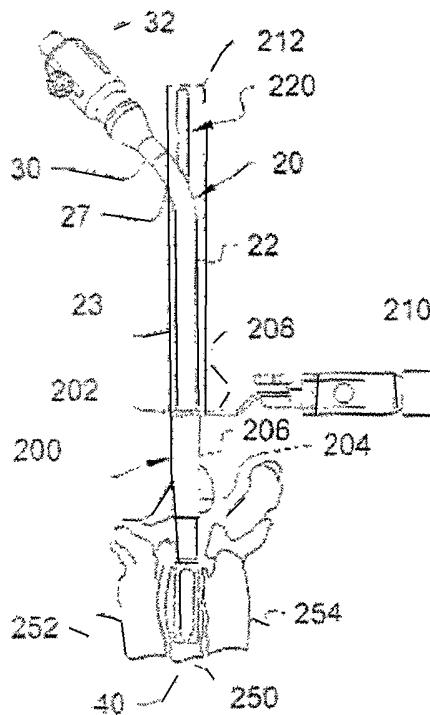
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(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, 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),

[Continued on next page]

(54) Title: DEVICES AND TECHNIQUES FOR A MINIMALLY INVASIVE DISC SPACE PREPARATION AND IMPLANT INSERTION



(57) Abstract: Methods and instruments are provided for performing spinal disc space preparation and implant insertion in minimally invasive procedures. The instruments include cutting instruments (20, 60, 100) and implant insertion instruments (140, 180) adapted for insertion through a minimally invasive access portal (200) to a spinal disc space (250.) The proximal portions of the instruments (20, 60, 100, 140, 180) are adapted to facilitate viewing through a proximal end opening of the access portal (200) with the instruments (20, 60, 100, 140, 180) positioned through the access portal (200) while also enhancing the surgeon's control of the distal working end of the instruments (20, 60, 100, 140, 180) while in the disc space (250).

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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).

IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

— as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations

Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations 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, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, NA, 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,

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

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

22 September 2005

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.

INTERNATIONAL SEARCH REPORT

Int'l Application No
PCT/US2004/028484

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A61B17/16 A61F2/46

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 7 A61B 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, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 4 541 423 A (BARBER FOREST C) 17 September 1985 (1985-09-17) claim 1 -----	1-5
Y	US 6 575 899 B1 (LIU MINGYAN ET AL) 10 June 2003 (2003-06-10) column 4, line 26 – line 52 column 6, line 56 – line 66 -----	1-5
Y	US 2002/019637 A1 (LIU MINGYAN ET AL) 14 February 2002 (2002-02-14) paragraph '0094! – paragraph '0095!; figure 11 -----	3,4
A	US 2 878 809 A (TREACE HARRY T) 24 March 1959 (1959-03-24) column 2, line 11 – line 41 ----- -/-	1,5

Further documents are listed in the continuation of box C.

Patent family members are listed in 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

22 July 2005

Date of mailing of the international search report

03.08.2005

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INTERNATIONAL SEARCH REPORT

Int'l Application No
PCT/US2004/028484

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 6 174 311 B1 (BRANCH CHARLES L ET AL) 16 January 2001 (2001-01-16) column 18, line 9 – line 36 column 15, line 57 – column 16, line 30 column 19, line 62 – column 20, line 14; figure 39 -----	6-13, 18-22, 27-31
Y	US 5 586 989 A (BRAY, JR. ET AL) 24 December 1996 (1996-12-24) column 2, line 39 – column 3, line 2 column 3, line 65 – line 67 -----	6-13
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Y	column 1, line 49 – column 2, line 12 -----	18-22
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Y	page 4, line 14 – line 27 -----	26-31
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Y	US 2003/045880 A1 (MICHELSON GARY K) 6 March 2003 (2003-03-06) paragraph ‘0225! -----	26

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2004/028484

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.: 32–40 because they relate to subject matter not required to be searched by this Authority, namely:
Rule 39.1(iv) PCT – Method for treatment of the human or animal body by surgery
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.:
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: 1-5

A cutting instrument assembly comprising a rotary cutting instrument and a retractor sleeve.

2. claims: 6-13

An instrument for scraping tissue having an offset proximal linear shaft portion.

3. claims: 14-22

An instrument for forming an insertion path comprising a handle member transversely oriented to a longitudinal axis of said instrument.

4. claims: 23-31

An instrument for inserting an implant.

INTERNATIONAL SEARCH REPORT

Information on patent family members

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	PCT/US2004/028484

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