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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
7 October 2010 (07.10.2010)

PCT

(10) International Publication Number
WO 2010/114625 A3

(51) International Patent Classification:
A61B 17/02 (2006.01) *A61F 2/44* (2006.01)
A61B 17/34 (2006.01)

(21) International Application Number:
PCT/US2010/001014

(22) International Filing Date:
3 April 2010 (03.04.2010)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/211,835 3 April 2009 (03.04.2009) US
61/251,281 14 October 2009 (14.10.2009) US

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(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, RO, RS, RU, 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.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LR, 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, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

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

— *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:
10 February 2011

(54) Title: SURGICAL RETRACTOR SYSTEM

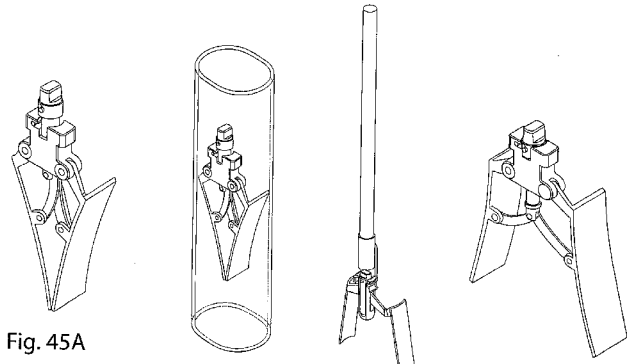


Fig. 45A Fig. 45B Fig. 45C Fig. 45D

Fig. 45

(57) Abstract: A surgical retractor system (10) includes a first retractor (21) and a second retractor (31). The first retractor comprises a first working channel (25) for receiving a tool (60) therethrough. The second retractor is capable of being advanced through the first working channel, and its proximal end is positioned in the vicinity of the distal end of the first retractor. The second retractor includes a second working channel (35) for receiving a tool therethrough. In another aspect, a method for accessing a surgical site comprises inserting a first retractor into a first tissue, advancing a second retractor through a first working channel in the first retractor, and inserting the second retractor into a second tissue to retract the second tissue, with the distal end of the first retractor remaining in the vicinity of the proximal end of the second retractor sufficiently to allow access to the target tissue by a surgical tool. A tool (400) for operating a second retractor located distally in a first retractor is described. The use of the system for surgery of the spine is described.

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INTERNATIONAL SEARCH REPORT

International application No
PCT/US2010/001014

A. CLASSIFICATION OF SUBJECT MATTER
INV. A61B17/02 A61B17/34 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)
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

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 2007/208229 A1 (PRUSMACK CHAD J [US]) 6 September 2007 (2007-09-06) figures 6A,6B,5A,5B paragraphs [0072] - [0078] -----	1,4-6,27 2
X Y	US 5 976 146 A (OGAWA AKIHISA [JP] ET AL) 2 November 1999 (1999-11-02) figures 18-20 -----	1,4-6,27 2
Y	US 7 267 690 B2 (FELT JEFFREY C [US]) 11 September 2007 (2007-09-11) figures 1,8 paragraphs [0046] - [0048] -----	2

☐ 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	Date of mailing of the international search report
30 July 2010	27/12/2010

Name and mailing address of the ISA/	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Schießl, Werner

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2010/001014

Box No. 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. [X] Claims Nos.: 11-25, 29-31
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. [X] Claims Nos.: 3, 8, 9, 26
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:

see FURTHER INFORMATION sheet PCT/ISA/210

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 No. 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 fees, this Authority did not invite payment of additional fees.

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. [X] 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.:

1, 2, 4-6, 27

Remark on Protest

[ ] The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.

[ ] The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.

[ ] No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box II.1

Claims Nos.: 11-25, 29-31

Rule 39.1(iv) PCT - Method for treatment of the human or animal body by surgery

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Continuation of Box II.2

Claims Nos.: 3, 8, 9, 26

Present dependent claims 3, 8, 9, and 26 encompass systems further defined only by their desired function during use thereof, contrary to the requirements of clarity of Article 6 PCT, because the result-to-be-achieved type of definition does not allow the scope, i.e. the corresponding structural features, of the claim to be ascertained. The non-compliance with the substantive provisions is to such an extent that no meaningful search of these claims could be carried out at all (Article 17(2) PCT).

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guideline C-VI, 8.2), should the problems which led to the Article 17(2)PCT declaration be overcome.

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, 2, 4-6, 27

A surgical retractor system further comprising a prosthetic implant (see claim 2) to provide therapeutic capabilities to the system.

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2. claims: 7, 10, 28

A surgical retractor system wherein the deployment and removal means for the blades of the second retractor is a jackscrew, a rack and pinion, a ratchet (see claim 7), or a track (see claim 10) of the first retractor with respect to which attachment means of the second retractor are positionable to provide alternative positioning mechanisms thereof.

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3. claims: 32-35

A surgical retractor system further including a retractor inserter (see claims 32-34) comprising means for grasping, expanding and releasing the expansion of the (second) retractor, thereby enabling a complete removal of the actuation mechanism after deployment and expansion of the second retractor to provide maximum space for further instruments to be used.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/US2010/001014

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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