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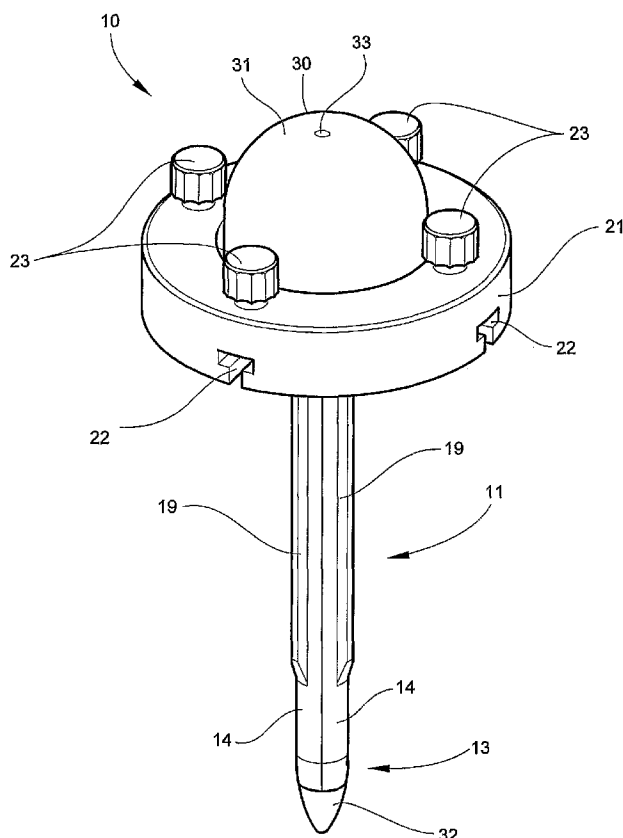
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[Continued on next page]

(54) Title: SURGICAL ACCESS DEVICE, SYSTEM, AND METHODS OF USE



(57) Abstract: A surgical access device can include a plurality of retractor members (11) that together define a lumen (16) having a first cross-sectional dimension. Each of the plurality of retractor members can be moved radially outward to at least a second cross-sectional dimension to create a surgical access passage. The surgical access device, systems and kits comprising the surgical access device, and methods of using the surgical access device can include a mechanism for inserting an elongate member from exterior the body to the surgical site, a mechanism for moving the retractor members radially outward, a mechanism (22) for guiding the radially outward movement of the retractor members, a mechanism (21) for securing each of the retractor members in a range of positions, and a mechanism for illuminating the surgical site. Variations of the devices, systems, kits, and methods are useful for creating and maintaining a surgical access passage for performing minimally invasive surgery.

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INTERNATIONAL SEARCH REPORT

International application No

PCT/US2006/025139

A. CLASSIFICATION OF SUBJECT MATTER

INV. A61B17/17 A61B17/34 A61M29/00 A61B17/02

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 A61M

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 93/25148 A (UNIV LOMA LINDA MED [US]) 23 December 1993 (1993-12-23)	1-3,7, 15,16, 25-27, 48,49, 54,55
Y	figures 1,3,4,11,16,19 page 14, line 2 - page 16, line 13 page 18, line 34 - page 19, line 20	4,5,14, 28,29, 43-45, 53,56, 58,59
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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

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INTERNATIONAL SEARCH REPORT

International application No

PCT/US2006/025139

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 004 341 A (ZHU YONG HUA [US] ET AL) 21 December 1999 (1999-12-21) figures 10,11,14 column 6, lines 45-47 column 6, lines 53-55 column 8, line 13 - line 51 column 13, line 23 - line 58	1-3,27, 48,49
Y		4,5,14, 25,26, 43-45, 53,54, 58,59
X	----- US 2004/054353 A1 (TAYLOR SCOTT [US] HART CHARLES C [US] ET AL) 18 March 2004 (2004-03-18) paragraphs [0076], [0086] - paragraph [0088]; figures 11,12,22,23	1-3,16, 25-29, 48,49, 58,59
Y		4-6,43, 44,53, 54,56
Y	----- US 2002/002324 A1 (MCMANUS RONAN BERNARD [IE]) 3 January 2002 (2002-01-03) paragraph [0020] - paragraph [0024] figures 1,3	4,5,14, 28,29, 43,44, 53,56
Y	----- US 6 254 533 B1 (FADEM KALFORD C [US] ET AL) 3 July 2001 (2001-07-03) figure 1 column 4, line 38 - column 5, line 17 column 5, line 40 - line 44 column 6, line 14 - line 18	4,25,26, 43,45, 53,54, 58,59
Y	----- US 2002/058957 A1 (FARASCIONI DAVID [US]) 16 May 2002 (2002-05-16) paragraphs [0115], [0126], [0127]; figures 8-10	4-6,43, 44,53, 54,56
A	----- US 3 998 217 A (TRUMBULL WILLIAM ERNEST ET AL) 21 December 1976 (1976-12-21) column 2, line 31 - line 66; figure 6 -----	4

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2006/025139

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.: 60-73
because they relate to subject matter not required to be searched by this Authority, namely:
Method for treatment of the human or animal body by surgery - Rule 39.1(iv)
PCT
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.:
1-7, 14-16, 25-29, 43-45, 48-49, 53-56, 58-59

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: 1-7,14-16,25-29,43-45,48-49,53-56,58,59

Retracting device with retractor members that expand radially, retainer ring comprising guide channels for the retractor member arms which are slidable within said channels for retaining the retractor members, kit comprising such a retracting device.

2. claims: 1,8-13,46,48,50-52

Retracting device with mechanism insertable in lumen to apply radially outwardly force to retractor members for expanding said retractor members.

3. claims: 1,17

Retracting device with retractor members that are hollow for transferring material to and from a site.

4. claims: 1,18-24,47,57

Retracting device with retractor members and illuminating means for illuminating the surgical site.

5. claims: 30-36,74

Retracting device with retractor members and retaining upper and lower rings, rotatable relative to one another for expanding and securing said retractor members.

6. claims: 37-42

Retracting device with threaded retractor member arms and retaining ring with channels that rotationally receive said threaded arms for retaining in an adjustable way the retractor arms.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2006/025139

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