



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<p>(51) International Patent Classification ⁶ : A61B 17/56</p>	<p>A3</p>	<p>(11) International Publication Number: WO 96/27321</p> <p>(43) International Publication Date: 12 September 1996 (12.09.96)</p>
<p>(21) International Application Number: PCT/US96/02378</p> <p>(22) International Filing Date: 26 February 1996 (26.02.96)</p> <p>(30) Priority Data: 08/394,836 27 February 1995 (27.02.95) US</p> <p>(71)(72) Applicant and Inventor: MICHELSON, Gary, Karlin [US/US]; 438 Sherman Canal, Venice, CA 90291 (US).</p> <p>(74) Agent: SCHELLIN, Eric, Paul; Suite 704, 2121 Crystal Drive, Arlington, VA 22202 (US).</p>		<p>(81) Designated States: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, UZ, VN, ARIPO patent (KE, LS, MW, SD, SZ, UG), Eurasian patent (AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).</p> <p>Published <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i></p> <p>(88) Date of publication of the international search report: 27 December 1996 (27.12.96)</p>
<p>(54) Title: IMPROVED METHODS AND INSTRUMENTATION FOR THE SURGICAL CORRECTION OF HUMAN THORACIC AND LUMBAR SPINAL DISEASE FROM THE LATERAL ASPECT OF THE SPINE</p>		
<p>(57) Abstract</p> <p>An improved method and instrumentation for performing spinal surgery, including dissection, inter-body fusion, and rigid internal fixation of the spine from the lateral aspect of the spine, is disclosed. The surgical procedure can be performed through a very small incision. The instrumentation of the present invention, all of which is inserted from a lateral position into the spine in the preferred embodiment, includes a guide pin (30), a distractor (100), an extended outer sleeve (140), an inner sleeve (242), an adjustable drill (250), and an implant driver. The distractor (100) of the present invention is driven into the disc for spacing apart and realigning the adjacent vertebrae. It further functions as an alignment rod for inserting the extended outer sleeve which is a hollow tubular member capable of maintaining said spacing and alignment of two adjacent vertebrae, and defines a protected space through which subsequent instruments may be included.</p> <div style="float: right; text-align: center;"> </div>		

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AM	Armenia	GB	United Kingdom	MW	Malawi
AT	Austria	GE	Georgia	MX	Mexico
AU	Australia	GN	Guinea	NE	Niger
BB	Barbados	GR	Greece	NL	Netherlands
BE	Belgium	HU	Hungary	NO	Norway
BF	Burkina Faso	IE	Ireland	NZ	New Zealand
BG	Bulgaria	IT	Italy	PL	Poland
BJ	Benin	JP	Japan	PT	Portugal
BR	Brazil	KE	Kenya	RO	Romania
BY	Belarus	KG	Kyrgystan	RU	Russian Federation
CA	Canada	KP	Democratic People's Republic of Korea	SD	Sudan
CF	Central African Republic	KR	Republic of Korea	SE	Sweden
CG	Congo	KZ	Kazakhstan	SG	Singapore
CH	Switzerland	LI	Liechtenstein	SI	Slovenia
CI	Côte d'Ivoire	LK	Sri Lanka	SK	Slovakia
CM	Cameroon	LR	Liberia	SN	Senegal
CN	China	LT	Lithuania	SZ	Swaziland
CS	Czechoslovakia	LU	Luxembourg	TD	Chad
CZ	Czech Republic	LV	Latvia	TG	Togo
DE	Germany	MC	Monaco	TJ	Tajikistan
DK	Denmark	MD	Republic of Moldova	TT	Trinidad and Tobago
EE	Estonia	MG	Madagascar	UA	Ukraine
ES	Spain	ML	Mali	UG	Uganda
FI	Finland	MN	Mongolia	US	United States of America
FR	France	MR	Mauritania	UZ	Uzbekistan
GA	Gabon			VN	Viet Nam

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US96/02378

A. CLASSIFICATION OF SUBJECT MATTER		
IPC(6) :A61B 17/56 US CL :606/61 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. : 606/60, 61, 72-79; 623/16, 17		
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) APS		
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, A, 3,875,595 (FRONING) 08 April 1975, see the entire document.	1-7, 9-12, 14, 16-19, 21, 31, 33, 39, 41-45, 47-51, 58-61, 67, 72-85, 87-89, 91 ----- 13, 20, 22-25, 27, 32, 57, 64, 65, 86, 92-94
Y	US, A, 4,878,915 (BRANIGAN) 07 November 1989, see the entire document.	1-94
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.		
* Special categories of cited documents:	"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
"A" document defining the general state of the art which is not considered to be of particular relevance	"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
"E" earlier document published on or after the international filing date	"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
"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)	"&"	document member of the same patent family
"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		
Date of the actual completion of the international search 14 AUGUST 1996	Date of mailing of the international search report 06 NOV 1996	
Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3590	Authorized officer <i>Michael A. Brown</i> FOR MICHAEL A. BROWN Telephone No. (703) 308-2682	

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US96/02378

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This international 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 II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

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

Group I, claim(s) 1-89 and 91-94, drawn to a method of inserting an intraspinal implant and a distractor instrument, Class 606/61.

Group II, claim 90, drawn to a depth limiting device, Class 606/102.

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.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US96/02378

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, A, 3,848,601 (MA ET AL.) 19 November 1974, see the entire document.	26
Y	US, A, 5,026,373 (RAY ET AL.) 25 June 1991, see the entire document.	52-54
Y, P	US, A, 5,396,880 (KAGAN ET AL.) 14 March 1995, see the entire document.	55, 56
Y	US, A, 4,545,374 (JACOBSON) 08 October 1985, see the entire document.	62, 63, 68-71