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### **Published**

With international search report.

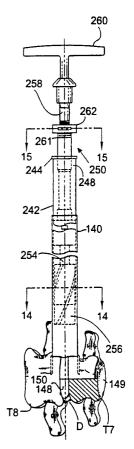
Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

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(54) Title: IMPROVED METHODS AND INSTRUMENTATION FOR THE SURGICAL CORRECTION OF HUMAN THORACIC AND LUMBAR SPINAL DISEASE FROM THE LATERAL ASPECT OF THE SPINE

#### (57) Abstract

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.



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## INTERNATIONAL SEARCH REPORT

International application No. PCT/US96/02378

IPC(6)	ASSIFICATION OF SUBJECT MATTER :A61B 17/56							
US CL:606/61 According to International Patent Classification (IPC) or to both national classification and IPC								
	LDS SEARCHED	national classification and IFC						
Minimum documentation searched (classification system followed by classification symbols)								
ı	606/60, 61, 72-79; 623/16, 17	. ,						
Documenta	Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched							
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APS								
C. DOC	CUMENTS CONSIDERED TO BE RELEVANT							
Category*	Citation of document, with indication, where a	ppropriate, of the relevant passages	Relevant to claim No.					
X  Y	US, A, 3,875,595 (FRONING) entire document.	08 April 1975, see the	1-7, 9-12, 14, 16-19, 21, 31, 33, 39, 41-45, 47-51, 58-61, 67, 72-85, 87-89, 91					
Υ	US, A, 4,878,915 (BRANIGAN) the entire document.	07 November 1989, see	65, 86, 92-94 1-94					
X Further documents are listed in the continuation of Box C. See patent family annex.								
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Date of the actual completion of the international search  Date of mailing of the international search report								
14 AUGU	IST 1996	0 6 NOV 1996						
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# INTERNATIONAL SEARCH REPORT

Inter 'onal 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 distrator 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. X 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					
No protest accompanied the payment of additional search fees.					

# INTERNATIONAL SEARCH REPORT

Intellitional application No.
PCT/US96/02378

C (Continua	ation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relev	Relevant to claim No	
Y	US, A, 3,848,601 (MA ET AL.) 19 November 1974 entire document.	4, see the	26
Y	US, A, 5,026,373 (RAY ET AL.) 25 June 1991, sedocument.	e the entire	52-54
Y, P	US, A, 5,396,880 (KAGAN ET AL.) 14 March 199 entire document.	95, see the	55, 56
Y	US, A, 4,545,374 (JACOBSON) 08 October 1985, entire document.	see the	62, 63, 68-71
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