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- (71) **Applicant (for CA only):** HFSC COMPANY [US/US];  
1302 Wrights Lane East, West Chester, PA 19380 (US).
- (71) **Applicant (for all designated States except CA, US):** SYN-  
THES GMBH [CH/CH]; Eimattstrasse 3, CH-4436 Ober-  
dorf (CH).
- (72) **Inventors; and**
- (75) **Inventors/Applicants (for US only):** FRIGG, Robert

[CH/CH]; Mattenweg 8, CH-2544 Bettlach (CH).  
**SCHNIDER, Martin** [CH/CH]; Rufelstrasse 8, CH-4553  
Subingen (CH). **SCHWER, Stefan** [DE/DE]; Talweg 44,  
79540 Loerrach (DE).

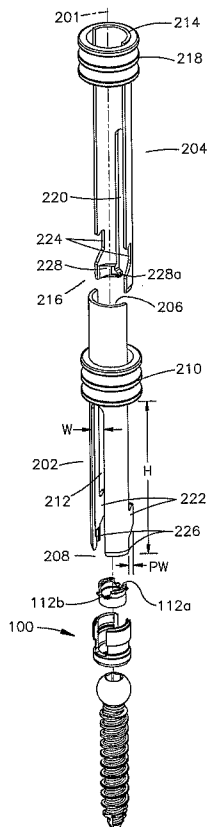
(74) **Agents:** ROTHERY, Brian, M. et al.; JONES DAY, 222  
East 41st Street, New York, NY 10017-6702 (US).

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[Continued on next page]

(54) **Title:** SPINAL FIXATION SYSTEM INSTRUMENTATION AND METHOD OF USING SAME



(57) **Abstract:** A method for performing spinal fixation and instrumentation for accomplishing the same is disclosed. The spinal fixation system and instruments may include an insertion guide operably connected to a screw or hook for insertion into a vertebrae. The insertion guide may have first and second longitudinal slots creating flexible arms for attachment to the screw. The slots are preferably sufficiently wide to permit the insertion of a spinal rod therethrough to be received in a channel in the screw. The insertion guide has a bore and preferably is sized to be inserted through a minimally sized passageway to the vertebrae. A sleeve may be positioned into one insertion guide in a first position to guide a rod through at least one other insertion guide. The sleeve may be rotated to a second position to allow the rod to move down the slots of the insertion guide(s) and into the head portion of the screw. Holding instruments to facilitate placement and angulation of the rod are also disclosed.

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FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, 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).

*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.*

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# INTERNATIONAL SEARCH REPORT

International application No  
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<b>A. CLASSIFICATION OF SUBJECT MATTER</b> INV. A61B17/88 ADD. A61B17/70		
According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b>		
Minimum documentation searched (classification system followed by classification symbols) A61B A61N		
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		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2004/138662 A1 (LANDRY MICHAEL E [US] ET AL) 15 July 2004 (2004-07-15) abstract; figures 26,44,45,48,80c paragraphs [0221], [0197]	1
A	US 2005/085813 A1 (SPITLER JAMES [US] ET AL) 21 April 2005 (2005-04-21) abstract; figures 4,6a,11,12b paragraph [0048]	1,9
A	US 2005/171540 A1 (LIM ROY [US] ET AL) 4 August 2005 (2005-08-04) abstract; figures 19,21	1,2
A	US 6 440 133 B1 (BEALE JEFFREY W [US] ET AL) 27 August 2002 (2002-08-27) abstract; figures 1-4	1
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<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <span style="margin-left: 200px;"><input checked="" type="checkbox"/> See patent family annex.</span>		
* 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  <p style="text-align: center;">17 April 2007</p>	Date of mailing of the international search report  <p style="text-align: center;">23/04/2007</p>	
Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer  <p style="text-align: center;">Macaire, Stéphane</p>	

## INTERNATIONAL SEARCH REPORT

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2005/065517 A1 (CHIN KINGSLEY RICHARD [US]) 24 March 2005 (2005-03-24) abstract; figures 1,9,17a paragraph [0050] -----	9
P,A	US 2005/228392 A1 (KEYER THOMAS R [US] ET AL) 13 October 2005 (2005-10-13) abstract; figure 17 paragraph [0060] -----	9

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US2006/033225

## 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.: 41-45, 47  
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.:  
1-4, 9-12
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: 1-4

Insertion guide operably connectable to each other and to a head portion of a screw (fig. 3B).

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2. claims: 5-8

System comprising an insertion guide and a guide sleeve configured to fit within the bore of the insertion guide.

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3. claims: 9-12

Sleeve comprising two longitudinal openings and two openings intersecting one corresponding longitudinal opening at an angle (figs. 8A-8B).

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4. claims: 13-39

Device with an elongated rod and an holding instrument (fig. 9).

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5. claim: 40

Sleeve with two spiral openings.

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6. claim: 46

Insertion guide with two sleeves and an actuation mechanism between the two sleeves.

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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2006/033225

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