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(71) Applicant (for all designated States except US): SMITH & NEPHEW, INC. [US/US]; 1450 Brooks Road, Memphis, TN 38116 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): FERRANTE, Joseph, M. [US/US]; 5883 Peoplechase Drive, Bartlett, TN 38134 (US). GRUSIN, Kelley, N. [US/US]; 1999 Brantwood Cove, Germantown, TN 38139 (US). JAMES, Anthony [US/US]; 3605 Millie Drive, Bartlett, TN 38135 (US).

(74) Agents: PRATT, John, S. et al.; Kilpatrick Stockton LLP, Suite 2800, 1100 Peachtree Street, Atlanta, GA 30309-4530 (US).

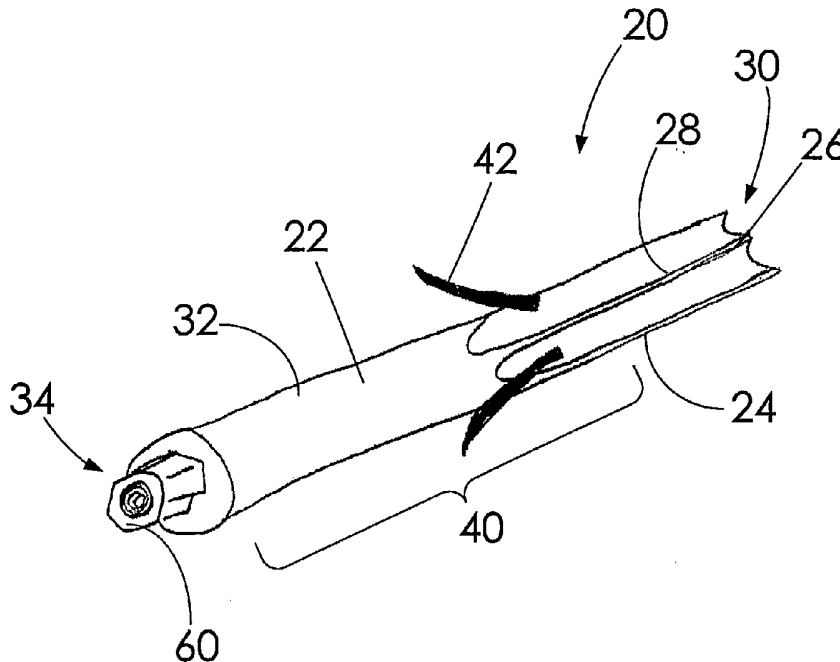
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Published:
— with international search report

[Continued on next page]

(54) Title: FIXATION ELEMENTS



(57) Abstract: The present invention provides a device for treating fractures of a bone and methods for treating a fracture, particularly fractures of the femur, that uses an intramedullary nail or a bone plate and a sliding compression fixation element. Certain features of various fixation elements described herein lessen the rotational forces applied during implantation and/or lessen the amount of bone that needs to be removed during placement of the sliding compression screw.

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— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

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(88) Date of publication of the international search report:

13 April 2006

INTERNATIONAL SEARCH REPORT

International application No
US2005/023499

<p>A. CLASSIFICATION OF SUBJECT MATTER A61B17/72 A61B17/78 A61B17/86</p> <p>According to International Patent Classification (IPC) or to both national classification and IPC</p>																				
<p>B. FIELDS SEARCHED</p> <p>Minimum documentation searched (classification system followed by classification symbols) A61B</p> <p>Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched</p> <p>Electronic data base consulted during the international search (name of data base and, where practical, search terms used) EPO-Internal</p>																				
<p>C. DOCUMENTS CONSIDERED TO BE RELEVANT</p> <table border="1"> <thead> <tr> <th>Category*</th> <th>Citation of document, with indication, where appropriate, of the relevant passages</th> <th>Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td>X</td> <td>WO 2004/030549 A (SYNTHES AG CHUR; SYNTHES ; KAUP, THOMAS; MUNRO, CHAD) 15 April 2004 (2004-04-15) abstract; claim 15; figures 1,3 page 6, paragraph 3</td> <td>1-4,6,7</td> </tr> <tr> <td>X</td> <td>EP 0 738 502 A (HALIFAX ORTHOPAEDIC RESEARCH LIMITED) 23 October 1996 (1996-10-23) abstract; figures 1,3,4</td> <td>1-6</td> </tr> <tr> <td>X</td> <td>US 2 490 364 A (LIVINGSTON HERMAN H) 6 December 1949 (1949-12-06) column 1, lines 1-30; figures 1-5</td> <td>1,2,4,6</td> </tr> <tr> <td>A</td> <td>US 2001/000186 A1 (BRAMLET DALE G ET AL) 5 April 2001 (2001-04-05) abstract; figures 2,5,6</td> <td>1-3,5-7</td> </tr> <tr> <td colspan="3" style="text-align: center;">-/--</td> </tr> </tbody> </table>			Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	X	WO 2004/030549 A (SYNTHES AG CHUR; SYNTHES ; KAUP, THOMAS; MUNRO, CHAD) 15 April 2004 (2004-04-15) abstract; claim 15; figures 1,3 page 6, paragraph 3	1-4,6,7	X	EP 0 738 502 A (HALIFAX ORTHOPAEDIC RESEARCH LIMITED) 23 October 1996 (1996-10-23) abstract; figures 1,3,4	1-6	X	US 2 490 364 A (LIVINGSTON HERMAN H) 6 December 1949 (1949-12-06) column 1, lines 1-30; figures 1-5	1,2,4,6	A	US 2001/000186 A1 (BRAMLET DALE G ET AL) 5 April 2001 (2001-04-05) abstract; figures 2,5,6	1-3,5-7	-/--		
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<p><input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex.</p>																				
<p>* Special categories of cited documents :</p> <table border="0"> <tr> <td style="vertical-align: top;"> <p>*A* document defining the general state of the art which is not considered to be of particular relevance</p> <p>*E* earlier document but published on or after the international filing date</p> <p>*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)</p> <p>*O* document referring to an oral disclosure, use, exhibition or other means</p> <p>*P* document published prior to the international filing date but later than the priority date claimed</p> </td> <td style="vertical-align: top;"> <p>*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</p> <p>*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</p> <p>*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.</p> <p>*G* document member of the same patent family</p> </td> </tr> </table>			<p>*A* document defining the general state of the art which is not considered to be of particular relevance</p> <p>*E* earlier document but published on or after the international filing date</p> <p>*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)</p> <p>*O* document referring to an oral disclosure, use, exhibition or other means</p> <p>*P* document published prior to the international filing date but later than the priority date claimed</p>	<p>*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</p> <p>*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</p> <p>*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.</p> <p>*G* document member of the same patent family</p>																
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<p>Date of the actual completion of the international search 8 February 2006</p>		<p>Date of mailing of the international search report 23. 02. 2006</p>																		
<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</p>		<p>Authorized officer Macaire, S</p>																		

INTERNATIONAL SEARCH REPORT

 International application No
 US2005/023499

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 5 578 035 A (LIN ET AL) 26 November 1996 (1996-11-26) abstract; figures 1,4 -----	1-3,5-7
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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2005/023499

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.: 8, 12
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.:
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.

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-7

Fixation element comprising a shaft with substantially straight flutes and protruding elements.

2. claims: 9-11

Fixation element comprising a threaded shaft, the threads having a substantially flat crest along a portion of the shaft.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
/US2005/023499

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