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(72) Inventors; and

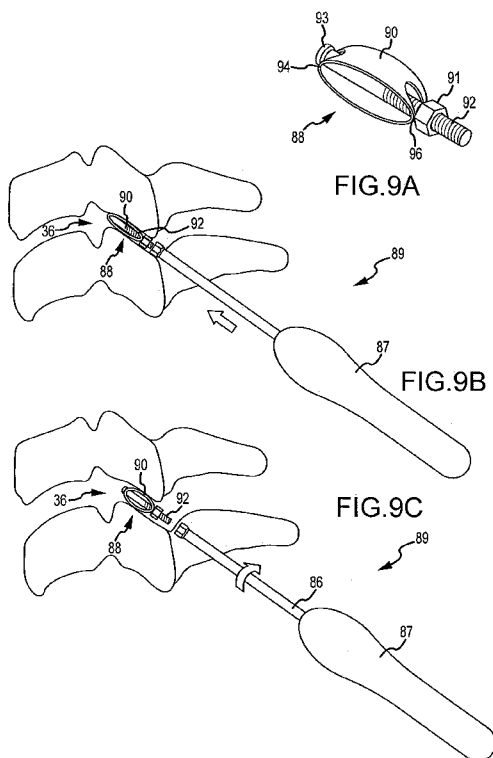
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[Continued on next page]

(54) Title: CERVICAL DISTRACTION/IMPLANT DELIVERY DEVICE



(57) Abstract: Systems for distracting a facet joint (36) and positioning a permanent implant (88) in the joint are disclosed. The implants serve to retain a distracted position of the facet joint which is achieved with positioning of the leading end of a distraction tool in the facet joint and then distracting or enlarging the joint a desired amount. The permanent implant could be part of the distraction mechanism (88) which can be separated from the delivery tool (89) once the joint has been distracted or an auxiliary implant may be positioned before the distraction mechanism is removed from the distracted joint. The permanent implants can be solid, mechanical devices that may have fixation means thereon to hold them in place or injected fluids such as hydrogels or fluids confined within balloons.

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INTERNATIONAL SEARCH REPORT

International application No
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A. CLASSIFICATION OF SUBJECT MATTER		
INV. A61B17/70 A61B19/00	A61B17/02 A61F2/44	A61B17/88 A61B17/16 A61B17/17
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 A61F		
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		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2006/130791 A (ZIMMER SPINE INC [US]; DAWSON JOHN M [US]; SHINBROT ADAM [US]) 7 December 2006 (2006-12-07)	1, 2, 8, 9, 12, 28, 29
Y	figures 1, 2, 4, 5, 8, 9 paragraphs [0023] - [0029], [0034], [0037], [0039], [0044]	10, 11
X	US 2005/182417 A1 (PAGANO PAUL J [US]) 18 August 2005 (2005-08-18)	1, 2, 8, 9, 12, 28, 29
Y	figures 1-6 paragraphs [0019], [0022] - [0033], [0036], [0039] - [0041], [0057], [0058] ----- -/-	10, 11
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> 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 19 November 2009	Date of mailing of the international search report 09/04/2010	
Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer Hochrein, Marion	

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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.
X	US 2008/167657 A1 (GREENHALGH E SKOTT [US]) 10 July 2008 (2008-07-10)	1,2,8,9, 12,28,29
Y	figure 7 paragraphs [0065], [0075] - [0077], [0128], [0140], [0143], [0150]	10,11
Y	US 2007/161991 A1 (ALTARAC MOTI [US] ET AL) 12 July 2007 (2007-07-12) paragraphs [0114] - [0116], [0140] - [0142] figures 19-21,24,25,28,30	10,11

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2009/056841

Box No. 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.:
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 No. 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 fees, this Authority did not invite payment of additional fees.
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.:

see additional sheet(s)

Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- 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: 1,2,8-12,28,29

A distraction mechanism for distracting a facet joint, the mechanism comprising: a head in the form of an oblong band; and an elongate member extending through the head and adapted to draw opposing ends of the head toward one another thereby expanding the head.

2. claims: 3,13-16

A distraction mechanism for distracting a facet joint, the mechanism comprising: a plurality of pairs of teeth in pivotal relation with a central core; and an elongate member extending through the central core, wherein, actuation of the elongate member causes distraction of at least one of the plurality of pairs of teeth.

3. claims: 4,5,17-21

A distraction mechanism for a facet joint, the mechanism comprising: a hollow elongated body having facet engaging features; and an elongated member adapted for insertion within the body, wherein, insertion of the elongated member actuates the facet engaging features.

4. claim: 6

A distraction tool for distracting a facet joint, the tool comprising: a handle; a cannula extending from the handle; and a distraction mechanism positioned on a distal end of the cannula and adapted to be placed in the facet joint, wherein the handle is in communication with the distraction mechanism and actuation of the handle causes distraction thereof and wherein the distraction mechanism comprises a plurality of leaf blades and the handle includes an indicating dial, wherein actuation of the indicating dial advances one or more of the plurality of leaf blades and provides an indication of the level of distraction.

5. claims: 7,22-27

A distraction mechanism for distracting a facet joint, the mechanism comprising: an expandable receiving portion having upper and lower generally planar elements connected at an end with a living hinge; and an actuation device adapted to be placed between the planar elements, wherein, the planar elements include malleable material that conforms to the facet surface upon implantation.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No PCT/US2009/056841
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Patent document cited in search report	A	Publication date	Patent family member(s)	Publication date
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