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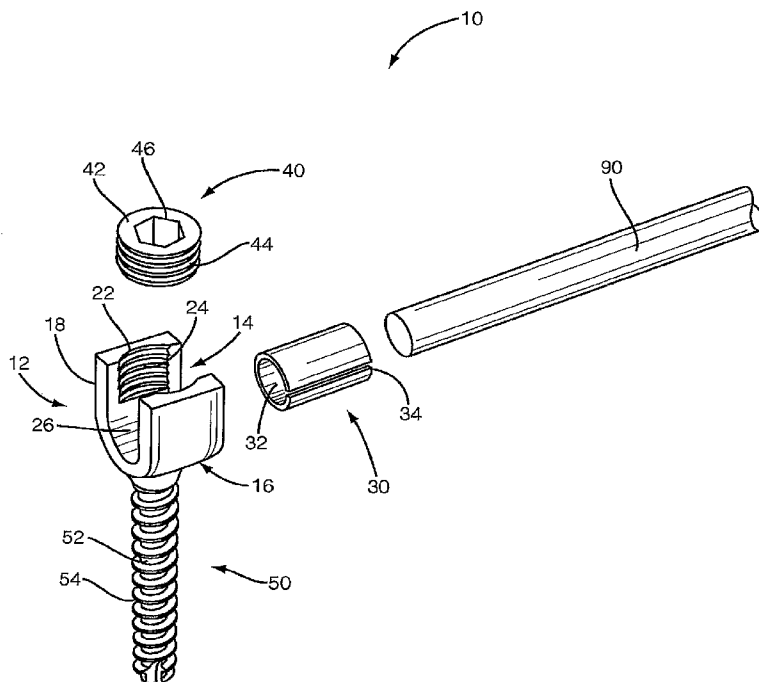
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[Continued on next page]

(54) Title: SPINAL FIXATION DEVICES



(57) Abstract: A spinal fixation device (10, 100, 200, 300) comprises a receiver (12, 110, 210, 310) that can be used with rods (90) of different sizes. The receiver comprises a body with a channel (14, 112, 212, 312) formed therein. The body is adapted to receive one of a set of interchangeable inserts (30, 60, 80, 130, 230, 330) that engage rods (90) of different sizes. A bone anchor (50, 150, 250, 350) secures the receiver to a vertebral member.

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INTERNATIONAL SEARCH REPORT

International application No

PCT/US2007/060658

A. CLASSIFICATION OF SUBJECT MATTER

INV. A61B17/70

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

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.
P, X	WO 2006/096241 A (ACCIN CORP [US]) 14 September 2006 (2006-09-14) page 10, line 9 - line 22 page 12, line 16 - page 14, line 25; figures 3A-5	1, 6-9, 11
P, X	WO 2006/102605 A (ALPHASPINE INC [US]) 28 September 2006 (2006-09-28) paragraph [0029] - paragraph [0035]; figure 1	1, 6-9, 11
X	GB 2 312 624 A (HARMS JURGEN [DE]; BIEDERMANN LUTZ [DE]) 5 November 1997 (1997-11-05) page 4, line 6 - page 6, line 4; figures -/--	1, 2, 6-9, 14

 Further documents are listed in the continuation of Box C. See patent family annex.

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- *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
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- * & * document member of the same patent family

Date of the actual completion of the international search

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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	WO 93/11715 A (JBS SA [FR]) 24 June 1993 (1993-06-24) page 3, line 23 - line 27 page 16, line 17 - page 17, line 27; figures 1-5	1-3,6,8, 9,14
X	----- FR 2 659 546 A1 (LAPRESLE PHILIPPE [FR]; MISSENARD GILLES [FR]; SACRISTE JEAN FRANCOIS) 20 September 1991 (1991-09-20)	1,6-9,14
Y	page 2, line 22 - page 4, line 35; figures	11
A	----- EP 0 612 507 A1 (SOPRANE SA [FR] SOFAMOR [FR]) 31 August 1994 (1994-08-31)	1
Y	column 3, line 45 - column 4, line 46; figures 5,6	11

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2007/060658

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.: 29-32
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.:

see additional sheet(s)

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: 1-3, 6-9, 11, 14

A spinal fixation device comprising a receiver adapted to receive a set of interchangeable inserts, the insert including a retaining feature, the device further comprising a bone anchor.

2. claims: 4, 5, 22-28

A spinal fixation device comprising a receiver , an insert having an orientation feature, the device further comprising a bone anchor.

3. claim: 10

A spinal fixation device comprising a receiver adapted to receive a set of interchangeable inserts, the insert and an elongated member inserted in the insert having non-congruent shapes, the device further comprising a bone anchor.

4. claim: 12

A spinal fixation device comprising a receiver adapted to receive a set of interchangeable inserts, the insert integral with an elongated member, the device further comprising a bone anchor.

5. claims: 13, 15-21

A spinal fixation device comprising a receiver, an insert having two layers of different materials, the device further comprising a bone anchor.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 2006096241	A	14-09-2006	US 2006212033 A1	21-09-2006
WO 2006102605	A	28-09-2006	US 2006241600 A1	26-10-2006
GB 2312624	A	05-11-1997	DE 19617362 A1	13-11-1997
			FR 2747910 A1	31-10-1997
			JP 10033552 A	10-02-1998
			US 5873878 A	23-02-1999
WO 9311715	A	24-06-1993	AT 151254 T	15-04-1997
			AU 3356193 A	19-07-1993
			DE 69218925 D1	15-05-1997
			DE 69218925 T2	17-07-1997
			EP 0571619 A1	01-12-1993
			ES 2101297 T3	01-07-1997
			FR 2684866 A1	18-06-1993
			JP 3307428 B2	24-07-2002
			JP 5212055 A	24-08-1993
FR 2659546	A1	20-09-1991	NONE	
EP 0612507	A1	31-08-1994	DE 69415054 D1	21-01-1999
			DE 69415054 T2	06-05-1999
			ES 2126090 T3	16-03-1999
			FR 2702362 A1	16-09-1994
			US 5486174 A	23-01-1996