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[Continued on next page]

(54) Title: FIXATION DEVICE

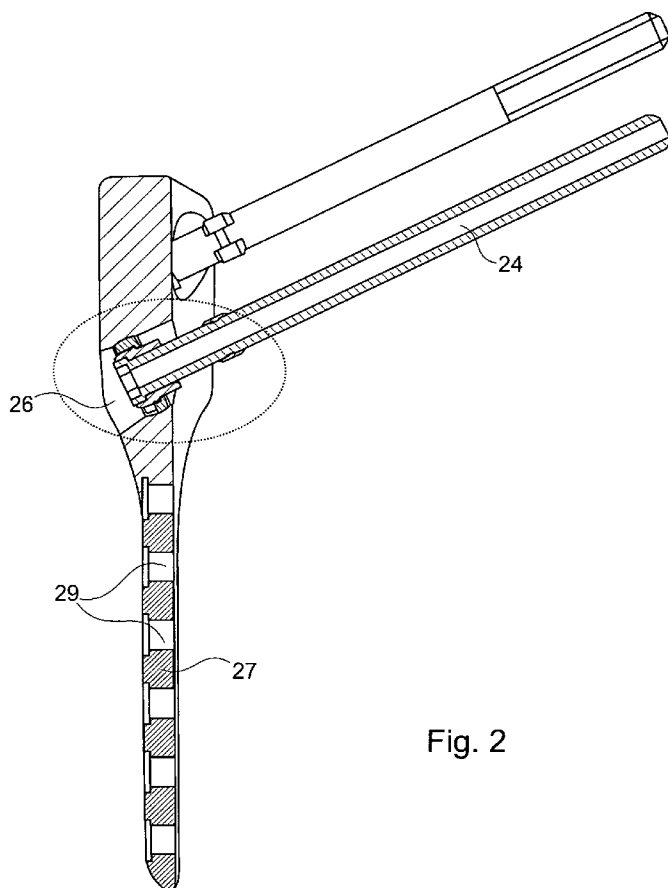


Fig. 2

(57) Abstract: A hip fracture device providing distance limited dynamization, load controlled dynamization and combinations of both dynamization methods by varying components. The components may be varied interoperatively. A bone plate having a plurality of openings for receiving a compression bone screw or a cortical screw. An end cap, threadably insertable in the opening and having a layer of polymeric material interposed between the end cap and the top of the head such that the compression of the polymeric material would allow slight axial movement of the screw. Alternatively, a locking ring adapted to attach to the head of the screw and having ridges that have shape complimentary to the depressions and fit in the depressions when the locking ring is attached to the head.

WO 2008/098728 A3



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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
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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.
X	US 2005/234457 A1 (JAMES ANTHONY [US] ET AL) 20 October 2005 (2005-10-20)	1,2,5-8
Y	abstract; figures 1,2,5-8	3
A	paragraphs [0040], [0041], [0046]	4,9,10
X	JP 2001 149379 A (HORIKKUSU KK) 5 June 2001 (2001-06-05)	1,5-8
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Y	US 2005/143742 A1 (PORCHER ROBERT [FR]) 30 June 2005 (2005-06-30)	3
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	abstract; figures 2,3	
	-/--	

☒ Further documents are listed in the continuation of Box C.

☒ 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
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International application No
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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	EP 1 486 175 A (MUECKTER HELMUT DR MED DIPL-IN [DE]; HILDINGER KARL HEINZ [DE]) 15 December 2004 (2004-12-15) abstract; figure 1 -----	1
A	US 5 735 853 A (OLERUD SVEN [SE]) 7 April 1998 (1998-04-07) abstract; figure 3 -----	1
Y	EP 0 807 420 A (STRYKER FRANCE SA [FR]; GANEM FRANCK [FR]) 19 November 1997 (1997-11-19) abstract; claims 9-12; figures 10,11 column 4, line 58 - column 5, line 22 -----	13
Y	US 2004/236335 A1 (MICHELSON GARY K [US]) 25 November 2004 (2004-11-25)	13
A	abstract; figures 46,55-58,82,91-94 paragraphs [0263], [0264] -----	15
A	US 2004/225289 A1 (BIEDERMANN LUTZ [DE] ET AL) 11 November 2004 (2004-11-11) abstract; figures 1-3 -----	13
A	US 6 402 755 B1 (PISHARODI MADHAVAN [US]) 11 June 2002 (2002-06-11) abstract; figures 3,3a,4a column 5, line 4 - column 6, line 9 -----	14
A	US 2005/096657 A1 (AUTERICQUE ALEX [FR] ET AL) 5 May 2005 (2005-05-05) abstract; figures 1,14,15 -----	14
A	US 2004/127899 A1 (KONIECZYNSKI DAVID D [US] ET AL) 1 July 2004 (2004-07-01) abstract; figures 9A-10F paragraphs [0090], [0091] -----	14
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INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP2008/001025

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.: 11-12
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 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 allsearchable 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 reportcovers 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 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: 1-10

Fixation device providing an adjustment followed by a fixation of the angle of the screw with respect to the plate without preventing the sliding movement of the screw.

2. claim: 13

Bone plating system with a locking mechanism to lock the sliding movement of a bone screw with an angular stability in the plate opening while allowing a slight axial movement of the screw.

3. claim: 14

Bone screw locking system with a locking mechanism in a bone screw head that allows a compression to be applied to a bone fracture by turning the bone screw and can be expended in order to clamp the screw head in the plate.

4. claim: 15

Bone screw locking system with a locking mechanism comprising a locking ring that allows the rotation of the screw in a first direction to provide a compression of the bone fracture with the locking ring in place and stops the rotation of the screw in the other direction.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/EP2008/001025

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

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