



(51) International Patent Classification:

A61B 17/86 (2006.01) A61B 17/70 (2006.01)  
A61B 17/88 (2006.01)

(21) International Application Number:

PCT/US2011/058224

(22) International Filing Date:

28 October 2011 (28.10.2011)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

12/915,632 29 October 2010 (29.10.2010) US

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(81) Designated States (unless otherwise indicated, for every kind of national protection available):

AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available):

ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report (Art. 21(3))

[Continued on next page]

(54) Title: DIRECTIONAL CONTROL FOR A MULTI-AXIAL SCREW ASSEMBLY

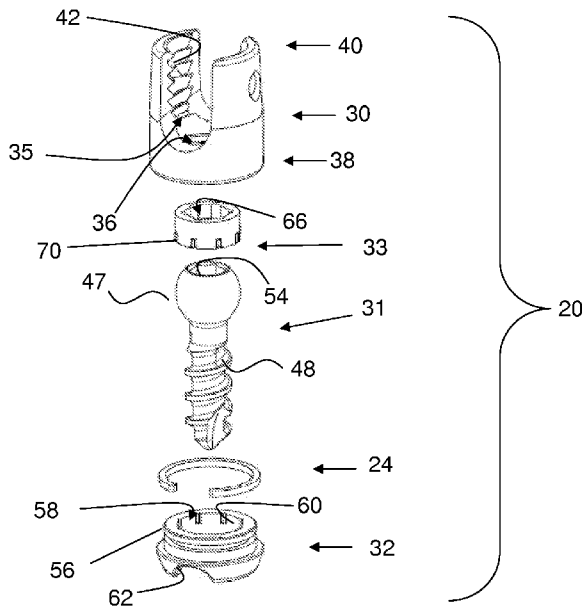


FIGURE 1

(57) Abstract: A multi-axial screw assembly comprises a receiver, a base member, and a crown. The receiver comprises a channel for receiving a rod and an aperture extending from a bottom portion of the receiver. The base member comprises an aperture extending through the base member and an opening on a bottom portion of the base member. The base member is configured to couple to the receiver such that the aperture of the receiver is generally aligned with the aperture of the base member. The base member is rotatable relative to the receiver. The crown is received in the receiver and configured to mate to the base member. The crown has a mating feature configured to couple to the base member such that the crown rotates the base member when the crown is rotated.





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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 (Rule 48.2(h))*

**(88) Date of publication of the international search report:**  
5 July 2012

## INTERNATIONAL SEARCH REPORT

International application No.  
**PCT/US2011/058224****A. CLASSIFICATION OF SUBJECT MATTER***A61B 17/86(2006.01)i, A61B 17/88(2006.01)i, A61B 17/70(2006.01)i*

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 17/86; A61B 17/88; A61B 17/70

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) &amp; Keywords: multi, axial, screw, base, crown, align.

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2009-0182384 A1 (BRYAN SCOTT WILCOX et al.) 16 July 2009 See the abstract and paragraphs [0027]-[0029] and figures 3-5, 17.	1-8
A	US 2010-0057140 A1 (JAMES F. ZUCHERMAN et al.) 04 March 2010 See the abstract and paragraphs [0120]-[0122] and figures 5-8.	1-8
A	US 2007-0167949 A1 (MOTI ALTARAC et al.) 19 July 2007 See the abstract and paragraphs [0059]-[0062] and figures 2A-8B.	1-8
A	US 2010-0241170 A1 (FRANK CAMMISA et al.) 23 September 2010 See the abstract and paragraphs [0031]-[0034] and figures 3-5.	1-8

 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 application or patent 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 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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"&amp;" document member of the same patent family

Date of the actual completion of the international search

17 MAY 2012 (17.05.2012)

Date of mailing of the international search report

**17 MAY 2012 (17.05.2012)**

Name and mailing address of the ISA/KR

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Facsimile No. 82-42-472-7140

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**INTERNATIONAL SEARCH REPORT**

International application No.

**PCT/US2011/058224****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.: **9-14**  
because they relate to subject matter not required to be searched by this Authority, namely:  
Claims 9-14 pertain to methods for treatment of the human body by surgery, and thus relate to a subject matter which this International Searching Authority is not required to search, under Article 17(2)(a)(i) of the PCT and Rule 39.1(iv) of the Regulations under the PCT.
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:

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 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.

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