

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
26 May 2005 (26.05.2005)

PCT

(10) International Publication Number
WO 2005/048039 A3

(51) International Patent Classification:
A61F 2/00 (2006.01)

(21) International Application Number:
PCT/US2004/036681

(22) International Filing Date:
3 November 2004 (03.11.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10/703,980 6 November 2003 (06.11.2003) US

(71) Applicant (for all designated States except US): **KI-NAMED, INC.** [US/US]; 820 Flynn Road, Camarillo, CA 93012 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **SARIN, Vineet, Kumar** [US/US]; 1800 Hillcrest Drive, Thousand Oaks, CA 91320 (US). **BRUCE, Robert, A.** [US/US]; 100 South Dunning St., Ventura, CA 93003 (US). **PRATT, William, Ralph** [US/US]; 140 Hope Road, Newbury Park, CA 91320 (US). **PRATT, Clyde, Ronald** [US/US]; 5898 La Cumbre, Somis, CA 93066 (US).

(74) Agent: **JOHNSON, William, L.**; P.O. Box 1240, Somis, CA 93066-1240 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))

[Continued on next page]

(54) Title: NON-IMAGING, COMPUTER ASSISTED NAVIGATION SYSTEM FOR JOINT REPLACEMENT WITH MODULAR IMPLANT SYSTEM

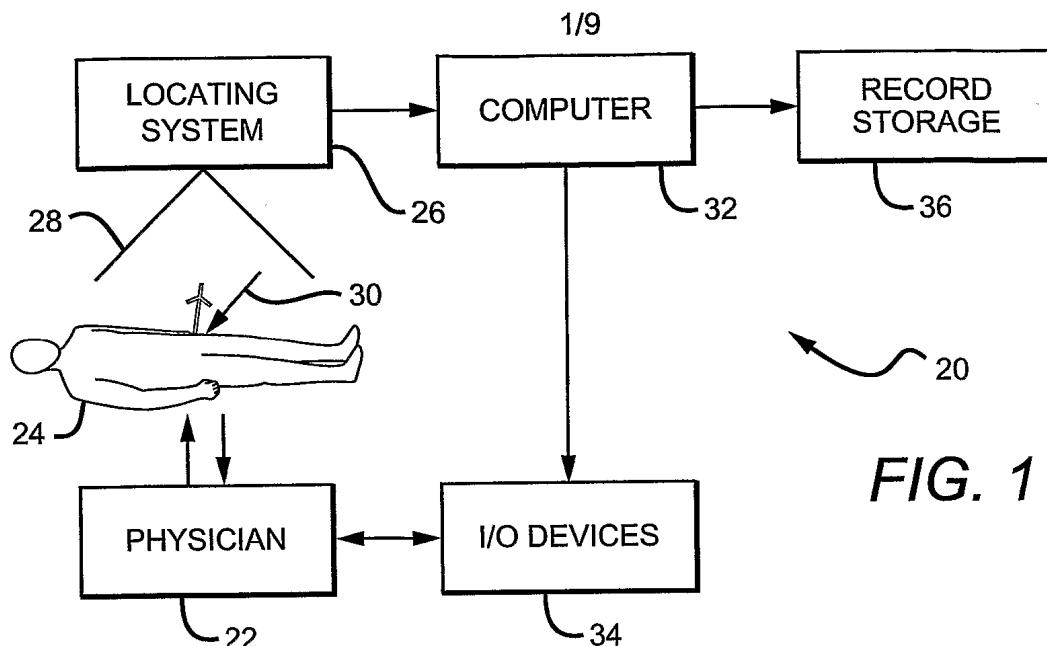


FIG. 1

(57) Abstract: The invention includes a method and system for intra-operative navigation of a joint replacement operation, without recourse to pre-operative imagery of pre-operative computerized simulations. Trackable markers and a locating system are employed to track first and second bones. A computer receives positional information regarding the trackable markers and calculates (predicts) at least one suggested combination of components of a modular implant system to produce a desired post-operative skeletal relationship.



- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

Published:

- *with international search report*

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

2 April 2009

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/36681

A. CLASSIFICATION OF SUBJECT MATTER

IPC: A61F 2/00(2006.01)

USPC: 606/102

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)

U.S. : 606/102

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 practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,880,976 (DiGioia III et al) 9 March 1999 (9.3.1999) Figures 1-12	1 and 4-34
Y	US 4,475,549 (Oh) 9 October 1984 (9.10.1984) Figures 1-5	2 and 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	"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
"E" earlier application or patent published on or after the international filing date	"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
"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)	"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
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

13 May 2008 (13.05.2008)

Date of mailing of the international search report

12 JUN 2008

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Facsimile No. (571) 273-3201

Authorized officer

Corrine McDermott /Christopher Prone/

Telephone No. (571) 272-4754