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HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP,  
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Published:

- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the  
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[Continued on next page]

(54) Title: SYSTEMS AND METHODS FOR PROVIDING DEEPER KNEE FLEXION CAPABILITIES FOR KNEE PROS-  
THESIS PATIENTS

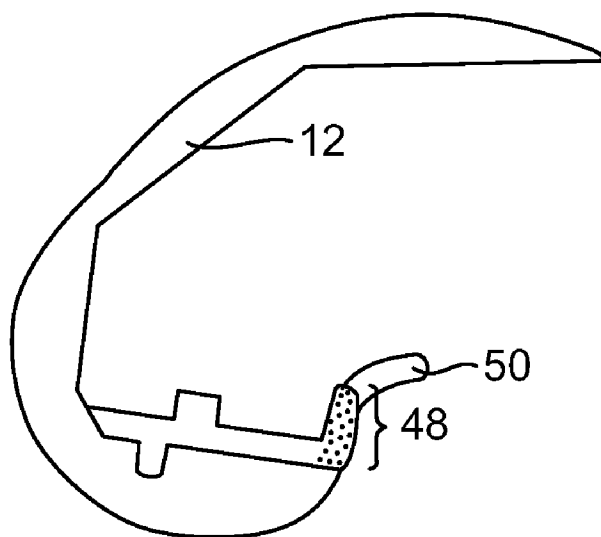


FIG. 16C

(57) Abstract: Systems and methods for providing deeper knee flexion capabilities, more physiologic load bearing and improved patellar tracking for knee prosthesis patients. Such systems and methods include (i) adding more articular surface to the antero- proximal posterior condyles of a femoral component, including methods to achieve that result, (ii) modifications to the internal geometry of the femoral component and the associated femoral bone cuts with methods of implantation, (iii) asymmetrical tibial components that have an unique articular surface that allows for deeper knee flexion than has previously been available, (iv) asymmetrical femoral condyles that result in more physiologic loading of the joint and improved patellar tracking and (v) modifying an articulation surface of the tibial component to include an articulation feature whereby the articulation pathway of the femoral component is directed or guided by articulation feature.



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## INTERNATIONAL SEARCH REPORT

International application No.  
**PCT/US2010/038219****A. CLASSIFICATION OF SUBJECT MATTER****A61F 2/38(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)

A61F 2/38

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)

eKOMPASS(KIPO internal) &amp; Keywords: artificial knee joint, total knee arthroplasty, deep knee flexion, condyle, tibial, insert, and femoral.

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	US 2005-0096747 A1 (DAVID R. TUTTLE et al.) 05 May 2005 See abstract; paragraphs [53]-[74]; claims 1-21; Figs. 1, 13A, 14-17.	1,4-7,10,12,13 2,3,8,9,11,18,21
A	EP 0978261 A1 (BIOMEDICAL ENGINEERING TRUST I) 09 February 2000 See the whole document.	1-13,18,21
A	US 5358527 A1 (MARK R. FORTE) 25 October 1994 See the whole document.	1-13,18,21
A	US 2008-0140212 A1 (ROBERT METZGER et al.) 12 June 2008 See the whole document.	1-13,18,21
A	US 2008-0058945 A1 (BINYAMIN HAJAJ et al.) 06 March 2008 See the whole document.	1-13,18,21
A	US 5387240 A1 (LAWRENCE POTTENGER et al.) 07 February 1995 See the whole document.	1-13,18,21

☐ 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

"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

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

Date of the actual completion of the international search

18 FEBRUARY 2011 (18.02.2011)

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**INTERNATIONAL SEARCH REPORT**

International application No.

**PCT/US2010/038219****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.: 14-17  
because they relate to subject matter not required to be searched by this Authority, namely:  
Claims 14-17 pertain to methods for treatment of human body by surgery, thus relate to a subject matter which this International Searching Authority is not required, under Article 17(2)(a)(i) of the PCT and Rule 39.1(iv) of the Regulations under the PCT, to search.
2. ☒ Claims Nos.: 19,20,22,23  
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:  
Claim 15 relates to a method of applying a femoral component, but claims 19, 20, 22 and 23 dependant on claim 15 relate to a knee prosthesis. As the matter for which protection is sought is different between the cited claim and dependant claims, claims 19, 20, 22 and 23 do not clearly define the matter for which protection is sought.
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.

**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

**PCT/US2010/038219**

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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