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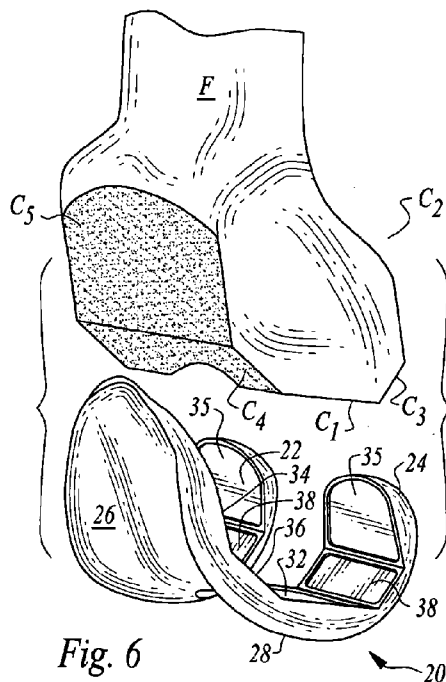
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(54) Title: ARTIFICIAL KNEE JOINT



(57) Abstract: An artificial knee joint with both a femoral component and a tibial component. The femoral component has multiple different facets which are similar in size and shape for many different sizes, to simplify an associated method for forming a distal end of the femur to receive the femoral component. Jig embodiments form surfaces on a distal end of a femur to correspond with facets of the femoral component, with the same jig usable for femoral components of differing size. The femoral component includes medial and lateral condylar legs with a posterior facet of the femoral component exhibiting a negative angle relative to a central axis of the femur, to maximize contact and increase flexion of the artificial knee joint. The tibial component cooperates with the femoral component to allow pivoting rotation of the artificial knee joint in either a clockwise or counterclockwise direction. The tibial component includes a plate with a tapered dovetail rib thereon which allows an insert to be removably secured thereto to act as a meniscal structure for the tibial component. The insert has a proximal surface with left and right wells therein that include valleys to guide rotation of one condylar leg of the femoral component while holding a second condylar leg of the femoral component within the other one of the wells, allowing pivoting rotation in either direction. A nesting of the insert into a portion of the plate minimizes an overall height of the tibial component and minimizing tibial bone resection, while providing a greater resistance to shear forces upon the knee joint.

WO 2009/128943 A3

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)

IPC 8 A61F 2/64, A61F 2/38, A61B 17/58, A61B 17/00, A61F 5/00

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 since 1975

Japanese Utility models and applications for Utility models since 1975

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

eKOMPASS, USPC, Delphion, FI/Fterm, ECLA

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 05486178 A (HODGE, W. ANDREW) 1996.01.23 see abstract, figs. 1,3-5,7, columns 1,3-7, claims 1,2,6,7,9,14-17	1,4-7, 8-11, 13-15,17 2,3,12,16
Y A	US 2004-0102786 A1 (GRUNDEL, HANS) 2004.05.27 see abstract, figs. 1,3,4, paragraphs[0003,0013,0018,0028,0033,0035], claims 1,5	1,4-7, 8-11, 13-15,17 2,3,12,16
X A	US 5549686 A (JOHNSON, TODD S. et al.) 1996.08.27 see abstract, figs. 1-7, columns 1-3, claim 1	18,21,27 19,20, 22-26, 28-37
X A	US 06652588 B2 (HAYES, JR., DANIEL E. E. et al.) 2003.11.25 see aAbstract, figs. 1-3, columns 1,3,4, claim 1]	38,47 39-46, 48-57

 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

"&" document member of the same patent family

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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.:
because they relate to subject matter not required to be searched by this Authority, namely:

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:

Claims 1-17 concern a single jig for cutting a distal end of a femur.

Claim 18-57 concern a artificial knee joint(femoral component, tibial component).

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/US2009/002415

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 05486178 A	23.01.1996	none	
US 2004-0102786 A1	27.05.2004	AT 375759 T DE 50211082 D1 DE 10113069 C1 EP 1367946 A1 EP 1367946 B1 JP 2004-524104 T JP 2004-524104 A WO 2002-074172 A1	15.11.2007 29.11.2007 14.11.2002 10.12.2003 17.10.2007 12.08.2004 12.08.2004 26.09.2002
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US 06652588 B2	25.11.2003	AU 1999-36501 A1 CA 2354065 A1 EP 1093384 B1 EP 1093384 A1 US 06261322 B1 US 06827742 B2 US 07105030 B2 US 07189262 B2 US 07445640 B2 US 07513912 B2 US 2002-0016635 A1 US 2002-0052659 A1 US 2002-0161448 A1 US 2004-0267371 A1 US 2005-0102034 A1 US 2006-0178751 A1 US 2008-0021565 A1 WO 1999-058167 A1	16.04.1999 18.11.1999 03.12.2008 25.04.2001 17.07.2001 07.12.2004 12.09.2006 13.03.2007 04.11.2008 07.04.2009 07.02.2002 02.05.2002 31.10.2002 30.12.2004 12.05.2005 10.08.2006 24.01.2008 18.11.1999