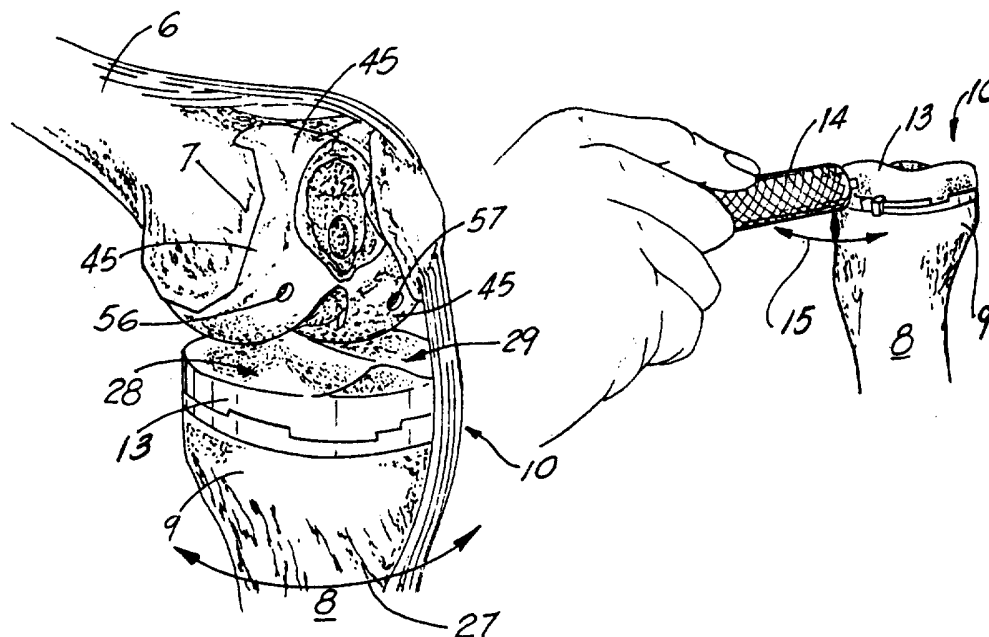




INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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(21) International Application Number: PCT/US96/02127 (22) International Filing Date: 15 February 1996 (15.02.96) (30) Priority Data: 08/389,100 15 February 1995 (15.02.95) US (71) Applicant: SMITH & NEPHEW RICHARDS INC. [US/US]; 1450 Brooks Road, Memphis, TN 38116 (US). (72) Inventors: CARLS, Thomas, A.; 1736 Carruthers Place, Mem- phis, TN 38112 (US). JOHNSON, Chris, E.; 5030 Wood- lark Avenue, Memphis, TN 38117 (US). STEELE, John; Suite 2303, 1050 South Blackhawk, Aurora, CO 80012 (US). VENDRELY, Tim; 2234 Brewer's Landing, Mem- phis, TN 38104 (US). WHITESIDE, Leo, A.; 3165 McK- elvey Road, Bridgeton, MO 63044 (US). NARAGHIAN, Khosrow; 3426 Castleman, Memphis, TN 38118 (US). (74) Agents: KRIEGER, Paul, E. et al.; Pravel, Hewitt, Kimball & Krieger, P.C., 10th floor, 1177 West Loop South, Houston, TX 77027-9095 (US).		(81) Designated States: AU, CA, CN, JP, KR, SG, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published <i>With international search report.</i> <i>Before the expiration of the time limit for amending the</i> <i>claims and to be republished in the event of the receipt of</i> <i>amendments.</i> (88) Date of publication of the international search report: 26 September 1996 (26.09.96)

(54) Title: TRIAL KNEE PROSTHESIS AND BONE PREPARATION SYSTEM



(57) Abstract

A trial knee prosthesis suitable for use in knee joint replacement surgery and for revising a previously implanted total knee implant is disclosed. The trial knee prosthesis comprises at least a trial tibial prosthesis (10), a trial femoral prosthesis (45), and includes a handle portion (14) for rotating the tibial trial prosthesis (10) about its stem (12). There is also provided a method for implanting a femoral knee prosthesis and a tibial knee prosthesis, and instruments for surgically implanting the femoral and tibial prosthesis components using the trial knee as disclosed.

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US96/02127

A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) :A61F 2/38

US CL :623/20

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. : 606/88; 623/20

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 --- Y	US, A, 5,194,066 (VAN ZILE) 16 March 1993, see entire document.	1 ----- 2-6
A	US, A, 5,194,066 (VAN ZILE) 16 March 1993, see entire document.	1 ----- 2-6
Y	US, A, 5,007,933 (SIDEBOTHAM ET AL.) 16 April 1991, see column 2 line 68 to column 3 line 2, and column 3 lines 11-25.	3
Y	US, A, 5,080,676 (MAY) 14 January 1992, see entire document.	4, 5

☒ Further documents are listed in the continuation of Box C.
 ☐ See patent family annex.

* Special categories of cited documents:	"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
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"E" earlier document published on or after the international filing date	"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
"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)	"&" document member of the same patent family
"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	

Date of the actual completion of the international search

22 JULY 1996

Date of mailing of the international search report

06 AUG 1996

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US96/02127

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US, A, 5,019,103 (VAN ZILE ET AL.) 28 May 1991, see entire document.	6
X	US, A, 5,342,367 (FERRANTE ET AL.) 30 August 1994, See Abstract	9
Y	US, A, 4,950,298 (GUSTILO ET AL.) 21 August 1990, see entire document.	6
X	US, A, 5,342,367 (FERRANTE ET AL.) 30 August 1994, see Abstract.	9
A	US, A, 4,948,769 (SHAW) 03 July 1990, see entire document.	10, 11
Y, P	US, A, 5,489,311 (CIPOLLETTI) 06 February 1996, see entire document.	3-5
X	US, A, 5,326,359 (OUDARD) 05 July 1994, see entire document.	1
Y		2

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US96/02127

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This international 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 II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

Please See Extra Sheet.

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.
☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US96/02127

BOX II. OBSERVATIONS WHERE UNITY OF INVENTION WAS LACKING

This ISA found multiple inventions as follows:

This application contains the following inventions or groups of inventions which are not so linked as to form a single inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I, claims 1-8, drawn to a trial knee prosthesis.

Group II, claim 9, drawn to a tibial cutting instrument.

Group III, claims 10 and 11, drawn to a method of implanting a femoral and tibial knee prosthesis.

Groups I-III, the inventions listed in these groups do not relate to a single inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

Groups I and II, the trial knee prosthesis of Group I and the tibial cutting instrument of Group II are separate devices which are unrelated to one another and have no common special technical feature.

Groups I and III do not share a special technical feature because the trial knee prosthesis sets forth neither an instrument or level engaging the tibial trial prosthesis, nor the tibial trial prosthesis being made out of a plurality of trays, stems, and inserts, which are the special technical features set forth in the method of Group III.

Groups II and III share no special technical feature because the cutting block means of Group II could be used in any number of types of surgeries, and the method implanting of Group III does not require the use of a cutting block means.