(19) World Intellectual Property Organization

International Bureau



(43) International Publication Date 14 April 2005 (14.04.2005)

PCT

(10) International Publication Number WO 2005/032436 A3

(51) International Patent Classification⁷:

A61F 2/66

(21) International Application Number:

PCT/US2004/031515

(22) International Filing Date:

27 September 2004 (27.09.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

10/674,736

30 September 2003 (30.09.2003) US

- (71) Applicant (for all designated States except US): ÖSSUR ENGINEERING, INC. [US/US]; 10 Burstein Drive, Albion, MI 49224 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): LECOMTE, CHRITOPHE, GUY [FR/IS]; Snaelandi 7, IS-108 Reykjavik (IS). RAGNARSDOTTIR, Heidrun, Gigja [IS/IS]; Gardastraeti 17, IS-10 Reykjavik (IS).

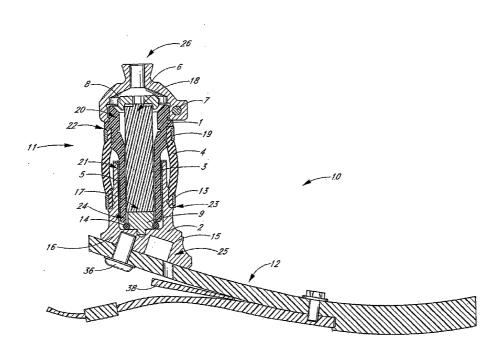
- (74) Agent: ALTMAN, Daniel, E.; 2040 Main Street, Fourteenth Floor, Irvine, CA 92614 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, 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, 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).

Declaration under Rule 4.17:

— of inventorship (Rule 4.17(iv)) for US only

[Continued on next page]

(54) Title: LOW PROFILE ACTIVE SHOCK MODULE PROSTHESIS



(57) Abstract: In one embodiment, an impact and torque-absorbing module 11 for a low profile lower limb prosthesis 10 comprises two support members 1 and 2 telescopingly engaged to permit axial and rotational motion therebetween. A resilient element 3 resists axial displacement of the two support members 1 and 2, and a torque resisting cuff 4 resists rotational displacement of the two support members 1 and 2. Precompression of the resilient element 3 can reduce the size of the shock module 11 making it more compact. The resilient element 3 can also be replaced allowing adjustment of the shock absorption.

WO 2005/032436 A3



Published:

with international search report

(88) Date of publication of the international search report: $21 \; \mathrm{July} \; 2005$

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

Internationa Application No
PCT/US2004/031515

					<u> </u>		
A. CLASSII IPC 7	FICATION OF SUBJECT MATTER A61F2/66	-					
According to International Patent Classification (IPC) or to both national classification and IPC							
	SEARCHED				<u> </u>		
Minimum do IPC 7	cumentation searched (classification system followed by classification $A61F$	on symbols)		v			
Documentat	ion searched other than minimum documentation to the extent that si	ich documents are incl	uded in	the fields se	arched		
Electronic da	ata base consulted during the international search (name of data bas	e and, where practical	l, search	terms used			
EPO-Internal							
C. DOCUMENTS CONSIDERED TO BE RELEVANT							
Category °					Relevant to claim No.		
					·		
X	US 6 511 512 B2 (PHILLIPS VAN L E 28 January 2003 (2003-01-28) cited in the application	ET AL)			1,4-7		
γ .	column 8, line 55 - column 9, lir column 25, line 9 - line 11; figu				2,3		
Y	US 4 728 336 A (COOPER ET AL) 1 March 1988 (1988-03-01) column 5, line 1 - line 5; figure	es 7-9			2		
Y	EP 0 255 556 A (FLEISCHAUER, K.E) 10 February 1988 (1988-02-10) column 2, line 51 - line 54; figu				3		
Further documents are listed in the continuation of box C. X Patent family members are listed in annex.							
° Special cat	egories of cited documents :	"T" later document put	olished a	after the inte	rnational filing date		
"A" document defining the general state of the art which is not considered to be of particular relevance "I" 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							
"E" earlier document but published on or after the international filing date invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to							
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another elitating or other provide page (as possified). "Y" document of particular relevance; the claimed invention							
"O" document referring to an oral disclosure, use, exhibition or other means 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							
	nt published prior to the international filing date but an the priority date claimed	in the art. "&" document member	r of the s	same patent	family		
Date of the a	ctual completion of the international search	Date of mailing of	the inter	national sea	rch report		
10	9 February 2005	2 9.	04.				
Name and m	nailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2	Authorized officer		,-	>		
	NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Arjona	Lope	ez, G			
	• •		-		•		

INTERNATIONAL SEARCH REPORT

International application No. PCT/US2004/031515

Box 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:								
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 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:								
see additional sheet								
As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.								
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.:								
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.: 1-7								
Remark on Protest The additional search fees were accompanied by the applicant's protest. No protest accompanied the payment of additional search fees.								

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-7

A prosthetic shock module comprising an adapter for attaching said shock module to a stump-supporting socket, wherein said adapter can be at least partly removed to allow replacement of the resilient member

2. claims: 8-18

A prosthetic shock module comprising a precompressed resilient member

3. claims: 19-23

A lower limb prosthesis comprising a shock module, an adapter and a prosthetic foot, whereby the vertical height from the ground contacting portion of the foot to the top of the adapter is about 160 mm or less

4. claims: 24-27

A prosthetic shock module comprising a lower and upper support member and a torque resisting cuff, wherein an upper end of the lower support member extends into the space surrounded by the torque resisting cuff

5. claims: 28-39

A prosthetic shock module comprising a base having at least a partially inclined attachment surface for attachement to a prosthetic foot member

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PCT/US2004/031515

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 6511512 B	28-11-2002	US 6478826 B1 US 2002177906 A1 US 2004030409 A1 US 2004068325 A1 US 2002120349 A1 AT 259196 T AU 3487999 A CA 2321591 A1 DE 69914730 D1 DE 69914730 T2 EP 1067889 A1 ES 2214850 T3 WO 9952475 A1	12-11-2002 28-11-2002 12-02-2004 08-04-2004 29-08-2002 15-02-2004 01-11-1999 21-10-1999 18-03-2004 27-01-2005 17-01-2001 16-09-2004 21-10-1999
US 4728336 A	01-03-1988	DE 3676791 D1 EP 0224373 A1 GB 2184160 A , JP 62142550 A	14-02-1991 03-06-1987 B 17-06-1987 25-06-1987
EP 0255556 A	10-02-1988	EP 0255556 A1 DE 3684021 D1 US 4605417 A	10-02-1988 02-04-1992 12-08-1986