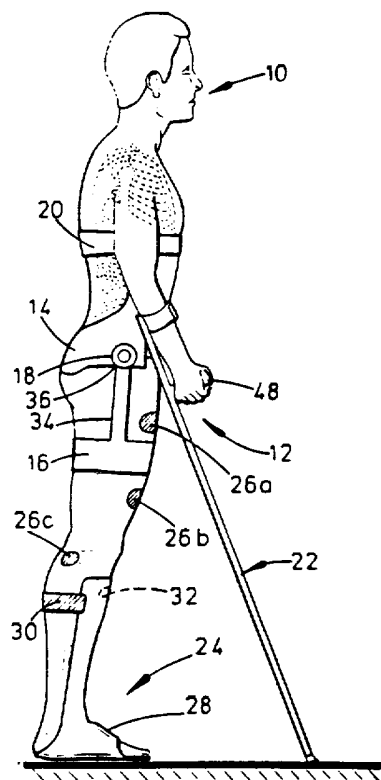




INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<p>(51) International Patent Classification ⁵ : A61F 2/68, 2/70</p>	<p>A3</p>	<p>(11) International Publication Number: WO 94/09727 (43) International Publication Date: 11 May 1994 (11.05.94)</p>
<p>(21) International Application Number: PCT/GB93/02220 (22) International Filing Date: 28 October 1993 (28.10.93) (30) Priority data: 9222732.1 29 October 1992 (29.10.92) GB (71)(72) Applicant and Inventor: ANDREWS, Brian [GB/CA]; 4132 Ramsey Crescent, Riverbend, Edmonton, Alberta T6H 5S5 (CA). (74) Agents: NAISMITH, Robert, Stewart et al.; Cruikshank & Fairweather, 19 Royal Exchange Square, Glasgow G1 3AE (GB).</p>		<p>(81) Designated States: AT, AU, BB, BG, BR, BY, CA, CH, CZ, DE, DK, ES, FI, GB, HU, JP, KP, KR, KZ, LK, LU, LV, MG, MN, MW, NL, NO, NZ, PL, PT, RO, RU, SD, SE, SK, UA, US, UZ, VN, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).</p> <p>Published <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i></p> <p>(88) Date of publication of the international search report: 7 July 1994 (07.07.94)</p>

(54) Title: ORTHOSIS AND PROSTHESIS



(57) Abstract

An orthosis or prosthesis (12) is described which has a first member (34), a second member (14) and a pivotal joint (36) therebetween. The joint (36) includes one-way clutch means based on a wrap spring clutch (42), and a servo (46) arranged to be energised to wrap or unwrap the clutch spring (42) to disengage or engage the clutch (36), the servo (46) being arranged to maintain the clutch (36) in a disengaged condition without continuing energisation of the servo. The orthosis or prosthesis can be applied to a variety of joints such as the hip, knee, ankle, elbow and wrist. Various embodiments of the invention are described.

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INTERNATIONAL SEARCH REPORT

International Application No
PCT/GB 93/02220

A. CLASSIFICATION OF SUBJECT MATTER

A 61 F 2/68, A 61 F 2/70

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)

A 61 F

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 practical, 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.
A	SOVIET INVENTIONS ILLUSTRATED, PQ section, week 8804, issued March 09, 1988 DERWENT PUBLICATIONS LTD., London, SU, 1316 669 (PROSTHESIS RES INST.).	1, 6, 14, 15
A	SOVIET INVENTIONS ILLUSTRATED, PQ section, week 8438, issued October 31, 1984 DERWENT PUBLICATIONS LTD., London, SU, A, 1068 117 (AS UKR STRENGTH PROBLEMS).	1, 6, 14
A	GB, A, 2 201 260	1

 Further documents are listed in the continuation of box C. Patent family members are listed in annex.

* Special categories of cited documents:

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- "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

Date of the actual completion of the international search

26 January 1994

Date of mailing of the international search report

07.06.94

Name and mailing address of the ISA

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MIHATSEK e.h.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 93/02220

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>(BOX) 24 August 1988 (24.08.88), the whole document. --</p> <p>DE, B, 1 042 176 (HÄFNER) 30 October 1958 (30.10.58), claim 1; fig. 1. -----</p>	1,6

INTERNATIONAL SEARCH REPORT

International application No.

PCT/GB 93/02220

Box I Observations where certain claims were found unsearchable (Continuation of item 1 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 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:

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.:

1-7, 14-19 (see PCT/ISA/210 (extra sheet))

Remark on Protest

- The additional search fees were accompanied by the applicant's protest.
- No protest accompanied the payment of additional search fees.

The application shows four different groups of inventions, namely

- 1.) claims 1 to 7 and 14 to 19 (an orthosis or prosthesis having a pivotal joint including clutch means and a servo for operating the clutch),
- 2.) claims 8 to 10 (an orthosis or prosthesis having a pivotal joint including energy storage means)
- 3.) claims 11 to 13 (a reciprocating gait orthosis having right and left hip joints with extension in one hip and thigh member forces the others)
- 4.) claims 20 to 23 (an orthosis or prosthesis with members coupled by a mechanical coupling and with control means).

First of all the claims 6 to 23 are formally not related to any of the claims 1 to 5 which are formally related to each other. But the claims 6,7 and 14 to 19 fullfill the requirement of unity of invention because the show an evidential technical relationship to the claims 1 to 5 although they are formally not related to claim 1 as mentioned above.

The claims 8 to 10, 11 to 13 and 20 to 23 do not fullfill the requirement of unity because there is no evidential technical relationship to the group 1 (claims 1 to 7 and 14 to 19). For a technical relationship one or more of the same or corresponding special technical features would be necessary. - However the technical features of the four groups of claims do not show any technical relationship to each other. Thus the lack of unity of invention is evident.

ANHANG

zum internationalen Recherchenbericht über die internationale Patentanmeldung Nr.

ANNEX

to the International Search Report to the International Patent Application No.

ANNEXE

au rapport de recherche international relatif à la demande de brevet international n°

PCT/GB 93/02220 SAE 80993

In diesem Anhang sind die Mitglieder der Patentfamilien der im obengenannten internationalen Recherchenbericht angeführten Patentdokumente angegeben. Diese Angaben dienen nur zur Unterrichtung und erfolgen ohne Gewähr.

This Annex lists the patent family members relating to the patent documents cited in the above-mentioned international search report. The Office is in no way liable for these particulars which are given merely for the purpose of information.

La présente annexe indique les membres de la famille de brevets relatifs aux documents de brevets cités dans le rapport de recherche international visée ci-dessus. Les renseignements fournis sont donnés à titre indicatif et n'engagent pas la responsabilité de l'Office.

In Recherchenbericht angeführtes Patentdokument Patent document cited in search report Document de brevet cité dans le rapport de recherche	Datum der Veröffentlichung Publication date Date de publication	Mitglied(er) der Patentfamilie Patent family member(s) Membre(s) de la famille de brevets	Datum der Veröffentlichung Publication date Date de publication
GB A1 2201260	24-08-88	GB A0 8702773 GB B2 2201260	11-03-87 13-02-91
DE B 1042176		keine - none - rien	