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- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

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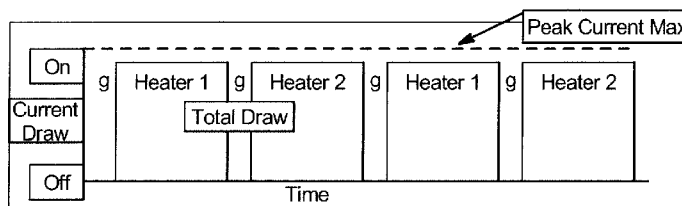
- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

(88) Date of publication of the international search report:

3 December 2009

(54) Title: DIALYSIS SYSTEM INCLUDING MULTI-HEATER POWER COORDINATION

FIG. 11



(57) Abstract: A dialysis system includes a first fluid heater, a second fluid heater, and a logic implementer configured to synchronize the duty cycles of the first and second heaters so that (i) power is not supplied to the first heater when power is supplied to the second heater and (ii) power is not supplied to the second heater when power is supplied to the first heater.

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INTERNATIONAL SEARCH REPORT

International application No
PCT/US2009/031809

A. CLASSIFICATION OF SUBJECT MATTER
 INV. **A61M1/14** **A61M1/16** **A61M5/44**

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)
A61M

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)
EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2003/220605 A1 (BOWMAN JOSEPH H [US] ET AL BOWMAN JR JOSEPH H [US] ET AL) 27 November 2003 (2003-11-27) paragraph [0297] - paragraph [0300] figures 26,27	1-15
A	US 2003/135250 A1 (LAUMAN BRIAN [US] ET AL) 17 July 2003 (2003-07-17) paragraph [0120] - paragraph [0121]	1-15
A	WO 96/40318 A (COBE LAB [US]) 19 December 1996 (1996-12-19) page 13, line 15 - page 15, line 18 figure 4	1-15

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	*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
E earlier document but published on or after the international filing date	*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
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)	*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.
O document referring to an oral disclosure, use, exhibition or other means	*Z* document member of the same patent family
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 16 July 2009	Date of mailing of the international search report 19/10/2009
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Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer Louarn, Arzhur
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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2009/031809

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:

see additional sheet

1. As all required additional search fees were timely paid by the applicant, this international search report covers allsearchable claims.
2. As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
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.:

see additional sheet(s)

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.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

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

1. claims: 1-15

A pair of heaters whose duty cycles are synchronized by an implementer so that power is not supplied to the first fluid heater when power is supplied to the second heater and power is not supplied to the second fluid heater when power is supplied to the first heater.

2. claims: 16-19

A pair of heaters whose duty cycles are synchronized by an implementer so that the first and second heaters are powered simultaneously as little as possible if a collective duty cycle of the first and second heater is greater than one-hundred percent.

3. claims: 20-22

A pair of heaters and a supplemental power source controlled by an implementer.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No PCT/US2009/031809

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2003220605	A1	27-11-2003	US 2007213654 A1 13-09-2007
US 2003135250	A1	17-07-2003	EP 1465691 A1 13-10-2004 JP 4293911 B2 08-07-2009 JP 2006500968 T 12-01-2006 WO 03061740 A1 31-07-2003 US 2007106197 A1 10-05-2007
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