(19) World Intellectual Property Organization International Bureau





(43) International Publication Date 3 May 2007 (03.05.2007)

(10) International Publication Number WO 2007/050211 A3

(51) International Patent Classification: *A61M 37/00* (2006.01) *A61M 1/00* (2006.01)

(21) International Application Number:

PCT/US2006/036802

(22) International Filing Date:

20 September 2006 (20.09.2006)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

11/256,627

21 October 2005 (21.10.2005) US

(71) Applicant (for all designated States except US): FRESE-NIUS MEDICAL CARE HOLDINGS, INC. [US/US]; 95 Hayden Avenue, Lexington, MA 02420-9192 (US).

(72) Inventors; and

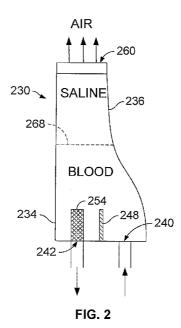
(75) Inventors/Applicants (for US only): FOLDEN, Thomas, Irvin [US/US]; 155 Erselia Trail, Alamo, CA 94507 (US). CRNKOVICH, Martin, Joseph [US/US]; 3436 Cassena Dr., Walnut Creek, CA 94598 (US). SCHLAEPER, Christian [DE/US]; 4231 Cuneo Dr, Concord, CA 94518 (US). JENSEN, Lynn [US/US]; 1355 S. 2500 W., Syracuse, UT

84075 (US). **REIHANIFAM, Mohsen** [IE/US]; P.o. Box 7183, Rancho Santa Fe, CA 92067 (US).

- (74) Agents: HENNESSEY, Gilbert, H. et al.; FISH & RICHARDSON P.C., P.o. Box 1022, Minneapolis, MN 55440-1022 (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, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, 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, IS, IT, LT, LU, LV, 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).

[Continued on next page]

(54) Title: EXTRACORPOREAL FLUID CIRCUIT



(57) Abstract: A chamber is described for use in an extracorporeal fluid system. The chamber has a bottom entry port and a bottom exit port. A microporous filter at the top of the chamber allows air in the fluid to vent from the chamber. In use, the chamber is filled with saline. Blood is then introduced into the chamber. A layer of saline is above a layer of blood in the chamber. The saline stagnates as the blood flows through the chamber. The saline keeps the blood from contacting the filter and depositing protein on the filter.



WO 2007/050211 A3



Published:

with international search report

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

30 April 2009

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US06/36802

A. CLAS	SSIFICATION OF SUBJECT MATTER A61M 37/00 (2006.01) A61M 1/00(2006.01)			
USPC: 604/5.01,6.09,6.15,80,81,82,83,85,86,87,88,89,90,91;422/44,45 According to International Patent Classification (IPC) or to both national classification and IPC				
D. DVII DO OR A DOVID				
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols)				
U.S.: 604/5.01,6.09,6.15,80,81,82,83,85,86,87,88,89,90,91;422/44,45				
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. DOC	UMENTS CONSIDERED TO BE RELEVANT			
Category *	Citation of document, with indication, where a	ppropriate, o	f the relevant passages	Relevant to claim No.
X	US 6,337,049 B1 (TAMARI) 08 January 2002 (08.0)	1.2002) Entir	e disclosure.	1-10
Y				11-35
Y	US 5,989,423 B1 (KAMEN et al) 23 November 1999 (23.11.1999), Entire Disclosure.			19-35
Α	US 4,370,983 A (Lichtenstein) 01 February 1983 (02.01.0983) Entire Discosure.			1-35
Y	US 5,330,425 A (UTTERBERG) 19 July 1994 (19.0	7.1994). Ent	ire Disclosure.	11-18
Further	documents are listed in the continuation of Box C.	S	ce patent family annex.	
* Special categories of cited documents: "T"			later document published after the intendate and not in conflict with the applica	
	defining the general state of the art which is not considered to be of relevance	I	principle or theory underlying theinvent	tion
"E" earlier application or patent published on or after the international filing date			document of particular relevance; the cl considered novel or cannot be considere 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	
"O" document	ment referring to an oral disclosure, use, exhibition or other means		obvious to a person skilled in the art	, such combination being
"P" document published prior to the international filing date but later than the priority date claimed		"&" document member of the same patent family		
Date of the actual completion of the international search 11 April 2008 (11.04.2008)		Date of mailing of the international search report 0 8 MAY 2008		
Name and mailing address of the ISA/US A			officer O	, All
Mail Stop PCT, Attn: ISA/US Commissioner for Patents		Phil Wiest (MWCNUM)		
P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201			No. (571) 272-3235	Luj
z acominie ivo	. (311) 213 3201			

Form PCT/ISA/210 (second sheet) (April 2007)