

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
9 December 2004 (09.12.2004)

PCT

(10) International Publication Number
WO 2004/106484 A3

(51) International Patent Classification⁷: C12M 1/00

York 11356 (US). ANGELBECK, Judy [US/US]; 43 Soundview Road, Huntington, New York 11743 (US).

(21) International Application Number:
PCT/US2004/015668

(74) Agent: JAY, Jeremy M.; Leydig, Voit & Mayer, 700 Thirteenth Street, N.W., Suite 300, Washington, District of Columbia 20005 (US).

(22) International Filing Date: 18 May 2004 (18.05.2004)

(25) Filing Language: English

(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.

(26) Publication Language: English

(30) Priority Data:
60/472,425 22 May 2003 (22.05.2003) US

(71) Applicant (for all designated States except US): PALL CORPORATION [US/US]; 2200 Northern Boulevard, East Hills, New York 11548-1209 (US).

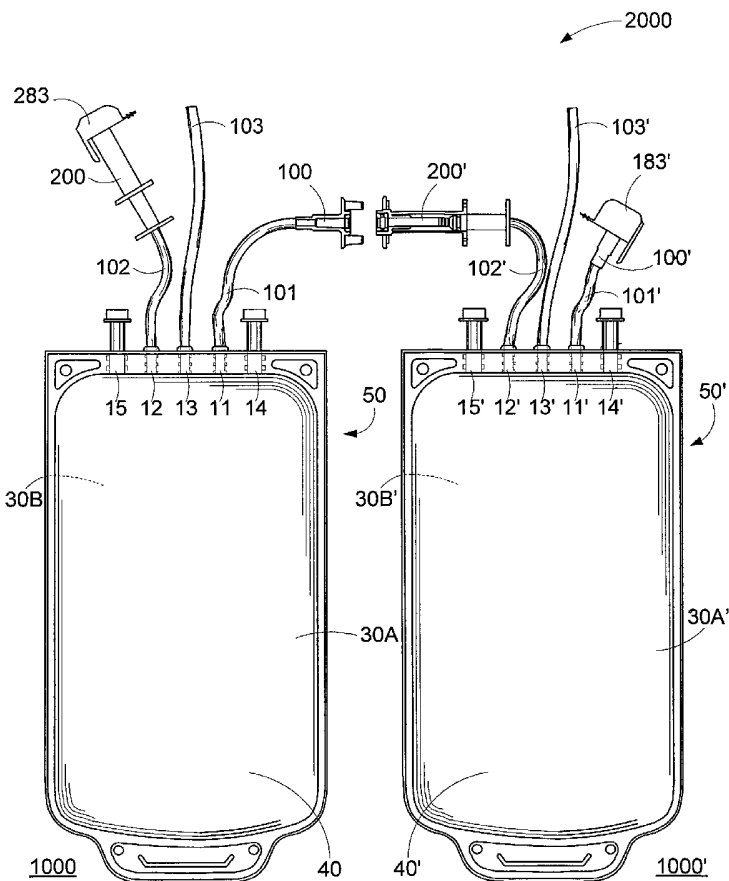
(72) Inventors; and

(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,

(75) Inventors/Applicants (for US only): RUSSELL, Rosalind [CA/US]; 115-12 9th Ave., College Point, New York 11356 (US).

[Continued on next page]

(54) Title: CELL CULTURING DEVICE AND SYSTEM



(57) Abstract: Devices, systems, and methods for culturing cells and providing a contaminant-free connection are disclosed. A cell culture device (1000) comprises a container (50) having first and second side walls (30A, 30B) wherein the first and second side walls are gas permeable, the device further comprising a female connector (100) and a male connector (200). At least one of the connectors can be coupled to the corresponding connector of another cell culture device while providing a contaminant-free connection.

WO 2004/106484 A3



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).

(88) Date of publication of the international search report:
20 January 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.

Published:

- *with international search report*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

INTERNATIONAL SEARCH REPORT

Int. I Application No
PCT/US2004/015668

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 C12M1/00

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)
IPC 7 C12M 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.
X	US 4 829 002 A (PATTILLO MARTHA C ET AL) 9 May 1989 (1989-05-09)	1-4, 9, 11, 12, 21-24
Y	column 8, lines 13-48; figure 5	5, 6, 10
Y	US 3 945 380 A (HINK JOHN H ET AL) 23 March 1976 (1976-03-23) column 4, lines 6-58; figure 1	13, 14, 17-20
Y	WO 02/065976 A (PALL CORP ; DONART MICHAEL (US)) 29 August 2002 (2002-08-29) cited in the application page 5, paragraph 26 - page 6, paragraph 30; figure 1	5, 6, 10, 13, 14, 17-20

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "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)
- "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

17 November 2004

Date of mailing of the international search report

01/12/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Gruber, M

INTERNATIONAL SEARCH REPORT

Inter national Application No
PCT/US2004/015668

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 175 274 A (TERUMO CORP ; JAPAN RED CROSS (JP)) 26 March 1986 (1986-03-26) page 12, paragraph 4 - page 13, paragraph 2; figures 4,5 -----	15,16
A	EP 0 686 403 A (TERUMO CORP) 13 December 1995 (1995-12-13) page 8, lines 34-36; figures -----	
A	EP 0 600 804 A (TERUMO CORP) 8 June 1994 (1994-06-08) page 8, lines 47-49 -----	
A	US 5 057 429 A (ICHINOHE KAZUNORI ET AL) 15 October 1991 (1991-10-15) figures 26-31 -----	
A	US 3 648 693 A (KOREMURA NORIO) 14 March 1972 (1972-03-14) the whole document -----	

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US2004/015668

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 4829002	A	09-05-1989	AU 607915 B2	21-03-1991
			AU 7430487 A	01-12-1987
			CA 1270467 A1	19-06-1990
			EP 0267266 A1	18-05-1988
			JP 63503201 T	24-11-1988
			WO 8706952 A1	19-11-1987
			US 4937194 A	26-06-1990
			US 3945380	A
WO 02065976	A	29-08-2002	CA 2436175 A1	29-08-2002
			EP 1379212 A2	14-01-2004
			NO 20033675 A	20-10-2003
			WO 02065976 A2	29-08-2002
EP 0175274	A	26-03-1986	JP 1712409 C	11-11-1992
			JP 3074648 B	27-11-1991
			JP 61071064 A	11-04-1986
			DE 3580631 D1	03-01-1991
			EP 0175274 A2	26-03-1986
EP 0686403	A	13-12-1995	JP 7328099 A	19-12-1995
			EP 0686403 A1	13-12-1995
EP 0600804	A	08-06-1994	JP 3283641 B2	20-05-2002
			JP 7136243 A	30-05-1995
			JP 3264716 B2	11-03-2002
			JP 6169984 A	21-06-1994
			AT 157267 T	15-09-1997
			DE 69313412 D1	02-10-1997
			DE 69313412 T2	15-01-1998
			EP 0600804 A1	08-06-1994
			US 5523004 A	04-06-1996
			US 5057429	A
JP 63155399 U	12-10-1988			
JP 2023521 C	26-02-1996			
JP 3075148 B	29-11-1991			
JP 63248382 A	14-10-1988			
JP 1018433 A	23-01-1989			
JP 1918652 C	07-04-1995			
JP 6020524 B	23-03-1994			
JP 1820566 C	27-01-1994			
JP 3070469 B	07-11-1991			
JP 63056275 A	10-03-1988			
AU 600968 B2	30-08-1990			
AU 7748287 A	03-03-1988			
CA 1305934 C	04-08-1992			
DE 3788026 D1	09-12-1993			
DE 3788026 T2	21-04-1994			
EP 0258795 A2	09-03-1988			
KR 9107820 B1	02-10-1991			
US 5071760 A	10-12-1991			
US 3648693	A	14-03-1972	BE 751101 A1	03-11-1970
			DE 2026086 A1	03-12-1970
			GB 1295934 A	08-11-1972