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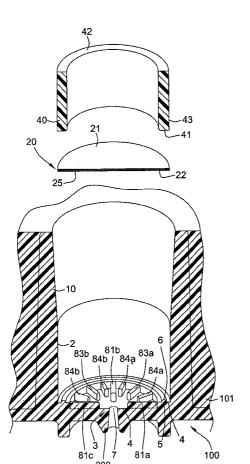
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- (71) Applicant (for all designated States except US): PALL CORPORATION [US/US]; 2200 Northern Boulevard, East Hills, NY 11548-1209 (US).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): KANE, Jeffrey [US/US]; 423 East Duncan, Manchester, MI 48158 (US).

- (74) Agent: JEREMY, Jay; Leydig, Voit & Mayer, LTD., 700 Thirteenth Street, N.W., Suite 300, Washington, DC 20005 (US).
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[Continued on next page]

(54) Title: WELL FOR PROCESSING AND FILTERING A FLUID



(57) **Abstract:** A well (50) comprising a side wall (10), a sealing ring (40), a rib arrangement (5), and a filter (20), for use in processing a fluid, e.g., by microtitration or microfiltration, is disclosed.

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A. CLASSIFICATION OF SUBJECT MATTER IPC 7 B01L3/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

 $\begin{array}{ccc} \text{Minimum documentation searched} & \text{(classification system followed by classification symbols)} \\ \text{IPC 7} & \text{B01L} & \text{B01D} & \text{A61M} \end{array}$

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					
Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.				
EP 0 403 679 A (MILLIPORE CORP) 27 December 1990 (1990-12-27) figures 2,3,5 column 3, line 14 -column 4, line 26	1-3, 12-22				
US 4 170 056 A (MEYST RICHARD P ET AL) 9 October 1979 (1979-10-09) figure 2 column 3, line 47 - line 50	1-3,5-8, 12-22				
DE 41 14 611 A (SARTORIUS GMBH) 14 November 1991 (1991-11-14) figure 1 column 2, line 27 - line 48	1,12,22				
	EP 0 403 679 A (MILLIPORE CORP) 27 December 1990 (1990-12-27) figures 2,3,5 column 3, line 14 -column 4, line 26 US 4 170 056 A (MEYST RICHARD P ET AL) 9 October 1979 (1979-10-09) figure 2 column 3, line 47 - line 50 DE 41 14 611 A (SARTORIUS GMBH) 14 November 1991 (1991-11-14) figure 1 column 2, line 27 - line 48				

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Date of the actual completion of the international search	Date of mailing of the international search report			
28 March 2003	1 0. 04. 2003			
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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	Wyplosz, N			

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PCT/US 02/16686

C.(Continua	ation) DOCUMENTS CONSIDERED TO BE RELEVANT	
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 047 215 A (MANNS ROY) 10 September 1991 (1991-09-10) figures 5-7,10 column 2, line 13 - line 55 column 4, line 36 - line 62	1,12,22
X	US 6 159 368 A (FRYE WARD K ET AL) 12 December 2000 (2000-12-12)	4,9
Υ	figure 4 column 15, line 41 -column 16, line 42	5-8
X	US 4 948 442 A (MANNS ROY) 14 August 1990 (1990-08-14)	4-9, 19-21, 23-25
	figure 10 column 1, line 5 - line 31 column 5, line 10 - line 57	23 23
P,X	EP 1 110 611 A (3M INNOVATIVE PROPERTIES CO) 27 June 2001 (2001-06-27) figures 2-4,6	4,9
A	EP 0 359 249 A (GRACE W R & CO) 21 March 1990 (1990-03-21) figures 10,11	4,9
Α	US 4 948 564 A (LYMAN GEORGE ET AL) 14 August 1990 (1990-08-14) figures 1,4,8 column 7, line 25 - line 34	10
A	US 5 918 273 A (HORN MARCUS J) 29 June 1999 (1999-06-29) column 11, line 14 - line 18; figures 3,4	10

Interna_____ication No. PCT/US 02/16686

Box I	Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)
This Inte	ernational 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 Inte	ernational Searching Authority found multiple inventions in this international application, as follows:
	see additional sheet
1. X	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.:
Remark (on Protest The additional search fees were accompanied by the applicant's protest. X 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: 1-3, 12-18, 19-21 (in part), 22

well with a rib, a sealing ring and a filter wherein the filter is sealed between the rib and the sealing ring

2. Claims: 4-9, 19-21 (in part), 23-25

well with a lip, a sealing ring and a filter wherein the filter is sealed between the lip and the sealing ring.

3. Claims: 10, 11

multiple well device, comprising top plate, plurality of filters, and plurality of inserts, wherein filters are sealed in the well between the top plate and the inserts.

Internation: on No
PCT/US 02/16686

	ent document in search report		Publication date		Patent family member(s)		Publication date
EP (0403679	A	27-12-1990	US	4902481		20-02-1990
				EP	0403679	A1 	27-12-1990
US 4	4170056	Α	09-10-1979	ΑU	513599	B2	11-12-1980
				ΑU	2275577	Α	07-09-1978
				BE	851244		31-05-1977
				BR	7701407		08-11-1977
				CA	1092519		30-12-1980
				CH DE	614634 2704099		14-12-1979 29-09-1977
				ES	456859		16-02-1978
				FR	2345196		21-10-1977
				GB	1575751		24-09-1980
				GB	1575752		24-09-1980
				GB	1575753		24-09-1980
				ĬΕ	45129		30-06-1982
				IE IE	45128 45127		30-06-1982
				IL	45127 51209		30-06-1982 27-02-1981
				IL	58386		27-02-1981
				JP	52116969		30-09-1977
				MX	143892		30-07-1981
				NO	770977		27-09-1977
				NO	791914		27-09-1977
				SE	7703364		26-09-1977
				SE US	8203932 4157967		24-06-1982 12-06-1979
				ZA	7700172		30-11-1977
	- 4114611	 А	14-11-1991	DE	4114611		14-11-1991
				DE	9105550	U1	01-08-1991
US 5	5047215	Α	10-09-1991	US	4948442		14-08-1990
				EP	0227802		08-07-1987
				WO	8607606 	A1 	31-12-1986
US 6	5159368	Α	12-12-2000	AU	1518400		22-05-2000
				CA	2346860		11-05-2000
				EP	1124637		22-08-2001
				JP WO	2002528265 0025922		03-09-2002 11-05-2000
				US	2002150505		17-10-2000
				US	2002179520		05-12-2002
				ÜS	6419827		16-07-2002
				US	6506343	B1	14-01-2003
				US	6338802		15-01-2002
				US 	6451261	B1 	17-09-2002
US 4	1948442	Α	14-08-1990	EP	0227802		08-07-1987
				WO	8607606		31-12-1986
				US 	5047215 		10-09-1991
EP 1	1110611	Α	27-06-2001	EP	1110611	A1	27-06-2001
				AU	2453101		03-07-2001
				EP	1239960		18-09-2002
				WO	01 4 5844		28-06-2001
	0359249	Α	21-03-1990	US	5108704		28-04-1992

Internatio Ition No
PCT/US 02/16686

Patent document cited in search report	Publication date		Patent family member(s)	Publication date
EP 0359249 A		EP JP	0359249 A2 2187110 A	21-03-1990 23-07-1990
US 4948564 A	14-08-1990	US	4895706 A	23-01-1990
		US	5084246 A	28-01-1992
		EP	0339769 A1	02-11-1989
		JP	2149321 A	07-06-1990
		US	5110556 A	05-05-1992
US 5918273 A	29-06-1999	US	5800784 A	01-09-1998
		US	6039924 A	21-03-2000
		US	6082417 A	04-07-2000
		US	6173603 B1	16-01-2001
		US	6168760 B1	02-01-2001
		US	6153437 A	28-11-2000
		US	6427731 B1	06-08-2002
		AU	730411 B2	08-03-2001
		AU	3653297 A	10-02-1998
		CA	2259648 A1	29-01-1998
		EP	1015881 A2	05-07-2000
		JP	2000514563 T	31-10-2000
		WO	9803264 A2	29-01-1998