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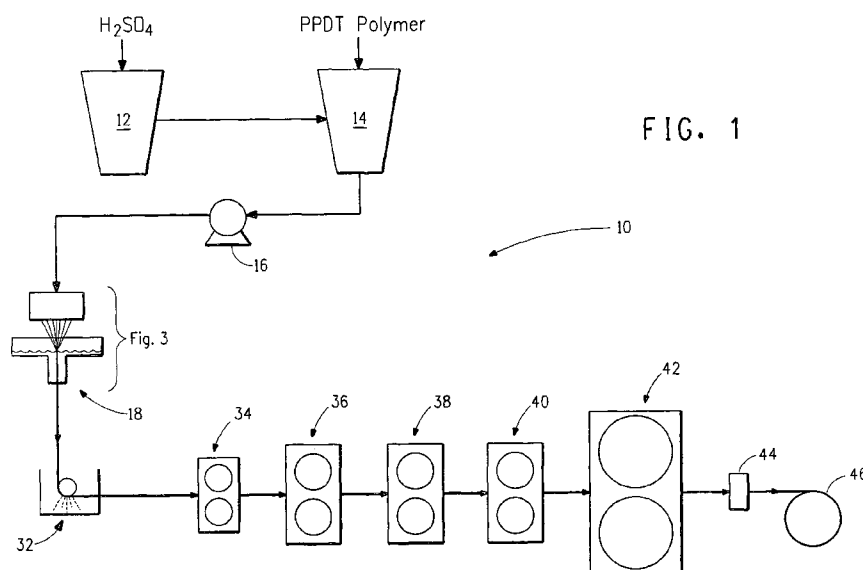
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(54) Title: CUT-RESISTANT YARNS AND METHOD OF MANUFACTURE



(57) Abstract: The invention provides yarns made of filaments of different average diameters, having excellent cut-resistance.

INTERNATIONAL SEARCH REPORT

International application No
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A. CLASSIFICATION OF SUBJECT MATTER
INV. D02G3/44 D01D5/08

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)

D02G D01D

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 6 153 545 A (LALONDE REMI [CH] ET AL) 28 November 2000 (2000-11-28) column 1, line 54 - column 2, line 43; figures 2-5	1,15,16
A	EP 1 424 412 A (POLYFELT GMBH [AT]) 2 June 2004 (2004-06-02) paragraph [0015] - paragraph [0016] paragraph [0018]	1,15,16
X	US 4 605 364 A (ROTH DOUGLAS D [US] ET AL) 12 August 1986 (1986-08-12) column 11, line 45 - line 47; claim 1	16
E	US 2008/085646 A1 (PRICKETT LARRY JOHN [US]) 10 April 2008 (2008-04-10) paragraph [0031] paragraph [0056]	1,2,7, 12-17
-/-		

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☒ See patent family annex.

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 6153545	A	28-11-2000	AT 219531 T 15-07-2002
		BR 9806919 A 18-04-2000	
		WO 9831854 A1 23-07-1998	
		CN 1242807 A 26-01-2000	
		DE 59804507 D1 25-07-2002	
		DK 953072 T3 14-10-2002	
		EP 0953072 A1 03-11-1999	
		ES 2178138 T3 16-12-2002	
		HK 1025135 A1 01-08-2003	
		ID 21898 A 12-08-1999	
		JP 2001507410 T 05-06-2001	
		PT 953072 T 29-11-2002	
		SK 96199 A3 14-02-2000	
		TR 9901744 T2 23-10-2000	
EP 1424412	A	02-06-2004	AU 2003288177 A1 18-06-2004
		BR 0316626 A 11-10-2005	
		CA 2507603 A1 10-06-2004	
		CN 1717509 A 04-01-2006	
		WO 2004048649 A1 10-06-2004	
		JP 2006508263 T 09-03-2006	
		KR 20050084691 A 26-08-2005	
		TR 200501975 T2 21-04-2006	
		US 2006151905 A1 13-07-2006	
		ZA 200504986 A 27-09-2006	
US 4605364	A	12-08-1986	NONE
US 2008085646	A1	10-04-2008	WO 2008045459 A1 17-04-2008
WO 2008017400	A	14-02-2008	NONE
EP 0022065	A	07-01-1981	AR 222554 A1 29-05-1981
		BR 8003573 A 05-01-1981	
		CA 1132865 A1 05-10-1982	
		CH 624527 A 14-08-1981	
		DE 3065412 D1 01-12-1983	
		DK 246080 A 08-12-1980	
		ES 8105047 A1 01-08-1981	
		FI 801788 A 08-12-1980	
		IE 49605 B1 30-10-1985	
		PT 71352 A 01-07-1980	
		US 4330989 A 25-05-1982	
WO 0008410	A	17-02-2000	AT 236383 T 15-04-2003
		AU 760746 B2 22-05-2003	
		AU 5158999 A 28-02-2000	
		BR 9912863 A 02-05-2001	
		CA 2345048 A1 17-02-2000	
		CN 1319175 A 24-10-2001	
		CZ 20010491 A3 15-05-2002	
		DE 69906535 D1 08-05-2003	
		DE 69906535 T2 20-11-2003	
		DK 1099088 T3 21-07-2003	
		ES 2192065 T3 16-09-2003	
		HU 0103018 A2 28-12-2001	
		JP 2002522658 T 23-07-2002	
		PL 345892 A1 14-01-2002	

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2007/021689

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 0008410	A	SK 1982001 A3	06-11-2001
		TR 200100619 T2	21-06-2001
		US 6829881 B1	14-12-2004