

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
19 January 2006 (19.01.2006)

PCT

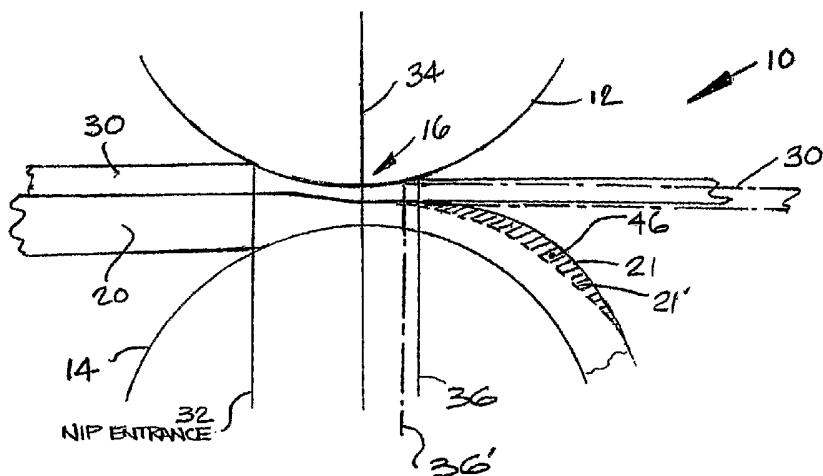
(10) International Publication Number
WO 2006/006952 A3

- (51) International Patent Classification:
D21F 7/08 (2006.01) D21F 11/00 (2006.01)
- (21) International Application Number:
PCT/US2004/042920
- (22) International Filing Date:
21 December 2004 (21.12.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/532,194 23 December 2003 (23.12.2003) US
10/918,075 12 August 2004 (12.08.2004) US
10/918,152 12 August 2004 (12.08.2004) US
10/918,031 12 August 2004 (12.08.2004) US
10/918,028 12 August 2004 (12.08.2004) US
- (71) Applicant (for all designated States except US): AS-
TENJOHNSON, INC. [US/US]; 4399 Corporate Road,
Charleston, SC 29423-8001 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): DESPAULT, Marc,
P. [CA/CA]; 1403 Plumber Avenue, Ottawa, Ontario
K1K 4B2 (CA). PATTERSON, Brady, P. [CA/CA];
1231 Klondike Road, Kanata, Ontario K2W 1E1 (CA).

- JACKSON, Graham [CA/CA]; 4854 Opeongo Road,
Box 1519, RR 3, Woodlawn, Ontario K0A 3M0 (CA).
- (74) Agent: HUIS, Randolph, J.; Volpe and Koenig, P.C.,
United Plaza, Suite 1600, 30 South 17th Street, Philadel-
phia, PA 19103 (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, 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, SM, SY,
TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU,
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, 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: IMPROVED DEWATERING OF A PAPER WEB IN A PRESS SECTION OF A PAPERMAKING MACHINE AND PRESS FELT THEREFOR



(57) Abstract: A press felt for use in the press section of a papermaking machine. The felt is comprised of at least one base fabric to which at least one batt layer is attached by needling or another suitable method. A woven or nonwoven fibrous scrim may be included between the base fabric and the at least one layer of batt material, or between any two or more layers. At least one of the base fabric, the at least one layer of batt material, or the fabric scrim is comprised of polymeric fibers which are blended with fibers whose modulus of elasticity is substantially less than the modulus of elasticity of the polymeric fibers. Press felts manufactured in accordance with the teachings of the invention provide a retarded elastic spring-back in the vertical (or Z) direction of the felt following the mid-nip point in the press section. This retarded elastic spring-back advances the post nip separation position of the felt and the paper web towards the mid-nip point, thus reducing rewetting of the paper sheet. Fibers comprised of regenerated cellulose, such as viscose rayon, have proven effective for use as the low modulus of elasticity component fibers in the press fabrics of the invention.

WO 2006/006952 A3



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*

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.

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

30 March 2006

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/42920

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) : D21F 7/08, 11/00
 US CL : 162/205, 358.2, 900

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)
 U.S. : 162/204-207, 358.1, 358.2, 900-904; 442/1, 268, 286, 320, 327

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
 TAPPI Journal, PIRA, Pulp and Paper

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4,529,643 A (LUNDSTROM) 16 July 1985 (16.07.1985), entire document.	1, 2
X	US 5,204,171 A (ESCHMANN) 20 April 1993 (20.04.1993), entire document.	1, 2
X	WO 99/32715 B (SAYERS) 01 July 1999 (01.07.1999), entire document.	15-21, 25, 26, 29-31, 36-37
Y		1-14, 23, 24, 27, 28, 32, 38
Y	US 4,781,967 A (LEGGE et al) 01 November 1988 (01.11.1988), entire document.	15-21, 23-35, 37, 51- 53, 58-80
Y	US 6,140,260 A (JOHNSON et al) 31 October 2000 (31.10.2000), entire document.	39-57, 73-77
Y	US 3,392,979 A (FEKETE) 09 July 1968 (09.07.1968), Figures 5 and 7, column 6.	23, 24
Y	US 4,520,059 A (WORRALL et al) 28 May 1985 (28.05.1985), entire document.	38, 57, 79

Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents:	"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
"A" document defining the general state of the art which is not considered to be of particular relevance	"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
"B" earlier application or patent published on or after the international filing date	"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
"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)	"&"	document member of the same patent family
"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		

Date of the actual completion of the international search

25 January 2006 (25.01.2006)

Date of mailing of the international search report

17 FEB 2006

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US
 Commissioner for Patents
 P.O. Box 1450
 Alexandria, Virginia 22313-1450
 Facsimile No. (571) 273-3201

Authorized officer

Eric Hug

Telephone No. 571 272-1700

