(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
25 January 2001 (25.01.2001)

PCT

(10) International Publication Number
WO 01/05440 A3

(51) International Patent Classification[7]: A61F 13/15

(21) International Application Number: PCT/US00/19493

(22) International Filing Date: 14 July 2000 (14.07.2000)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/144,345 16 July 1999 (16.07.1999) US

(71) Applicants *(for all designated States except US)*: **DRYPERS CORPORATION** [US/US]; Suite 900, 5300 Memorial, Houston, TX 77009 (US). **JAPAN ABSORBENT TECHNOLOGY INSTITUTE** [JP/JP]; Takizawa Building, 3rd floor, 2-26-5, Nihonbashi Hamacho, Chuo-ku, Tokyo 103-0007 (JP).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **KLEMP, Walter, V.** [US/US]; 1973 W. Clay, Houston, TX 77019 (US). **DUCKER, Paul, M.** [US/US]; 6705 N.E. 53rd Circle, Vancouver, WA 98661 (US). **SNEED, Scott, W.** [US/US]; 902 Laurelfield, Friendswood, TX 77546 (US). **SUZUKI, Migaku** [JP/JP]; Seaside Chigasaki Higashi Kaigan Minami #505, 3-8-24, Higashi Kaigan Minami, Chigasaki, Kanagawa 253-0054 (JP).

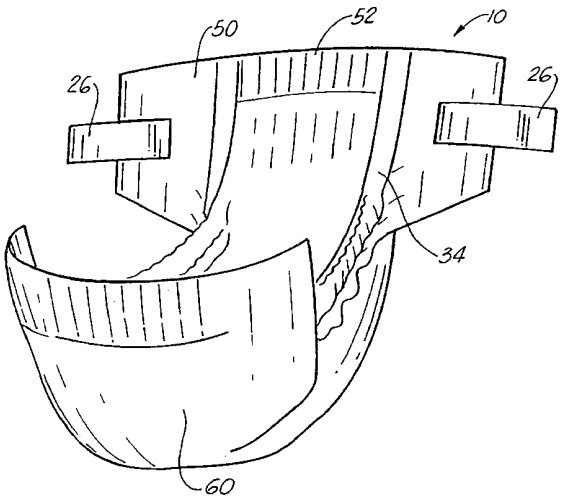
(74) Agent: **AMATONG, Alberto, Q., Jr.**; Fulbright & Jaworski, Suite 5100, 1301 McKinney, Houston, TX 77010 (US).

(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DZ, EE, 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, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: DISPOSABLE ABSORBENT ARTICLE EMPLOYING AN ABSORBENT COMPOSITE, AND METHOD OF MAKING THE SAME



(57) Abstract: A disposable absorbent article includes a topsheet (50), a backsheet (60) and an absorbent core (46) disposed therebetween. One or more of the backsheet, topsheet and absorbent core is constructed of an absorbent composite that includes an absorbent layer of hydratable fine fibers in the form of microfibril obtained from cellulose or a derivative thereof and super absorbent polymer (SAP) particles bonded together by the hydratable fibers and a nonwoven substrate supporting the absorbent layer such as SMS. The core may include one uniform layer of the absorbent composite or a composite having one layer of the nonwoven substrate and a plurality of segmented absorbent layers applied thereon. In the latter design, the absorbent layers are spaced apart from one another to expose surface sections of the substrate. These non-coated surface sections provide wicking zones which allow room for the absorbent layers to expand and prevent gel blocking.

WO 01/05440 A3

Published:
— *with international search report*

(88) Date of publication of the international search report:
6 December 2001

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.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US00/19493

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) :A61F 13/15

US CL :604/385.28, 385.01, 364

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. : 604/385.28, 385.01, 364

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. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X — Y	US 5,571,096 A (DORBIN ET AL.) 05 NOVEMBER 1996, COL. 2, LINES 15-20, 35-37, 54-55, COL. 5, LINE 46, FIGS. 1 & 4.	1-6,8,11, 13-14,16, 18-22,29-31,33 ——— 7,15,17,23, 24,28,34-38
Y	US 4,055,180 A (KARAMI ET AL.) 25 OCTOBER 1977, FIGS. 9-13, COL.1, LINES 63-65	12, 27
Y	US 4,578,068 A (KRAMER ET AL.) 25 MARCH 1986, COL. 3, LINES 13-18, FIG. 3.	12, 27
Y	US 5,422,169 A (ROE) 06 JUNE 1995, COL. 2, LINES 53-68,	12, 27

[X] 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
"E"	earlier document 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 05 FEBRUARY 2001	Date of mailing of the international search report 21 MAY 2001
Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230	Authorized officer PAUL SHANOSKI Telephone No. (703) 308-0560

Form PCT/ISA/210 (second sheet) (July 1998)★

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US00/19493

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5,628,737 A (DORBIN ET AL.) 13 MAY 1997, WHOLE DOCUMENT.	
A	US 5,919,179 A (ULKS ET AL.) 06 JULY 1999, WHOLE DOCUMENT .	
A	US 4,731,071 A (PIGNUEL) 15 MARCH 1988, WHOLE DOCUMENT.	
A	US 5,695,324 A (WEIRICH) 09 DECEMBER 1997, WHOLE DOCUMENT.	