

Search query (2): [SP]: 1. a single ply wet-pressed tissue product comprising hardwood kraft pulp fibers having a curl index greater than about 0.20, the tissue product having a basis weight from about 16 to about 20 grams per square meter (gsm), a cd tensile greater than about 450 g/3? and cd stretch greater than about 6.0 percent. 2. the tissue product of claim 1 having a cd tea greater than about 4.0 g*cm/cm2. 3. the tissue product of claim 1 having a cd stretch from about 6.0 to about 8.0 percent. 4. the tissue product of claim 1 having a slough less than about 4.0 mg. 5. the tissue product of claim 1 having cd tear from about 8.0 to about 11.0 gf. 6. the tissue product of claim 1 consisting essentially of softwood and hardwood pulp fibers. 7. the tissue product of claim 6 wherein the product comprises from about 10 to about 50 percent hardwood kraft pulp fibers having a curl index greater than about 0.20 and from about 50 to about 90 percent softwood kraft fibers. 8. the tissue product of claim 1 having a cd durability index from about 18.0 to about 22.0. 9. the tissue product of claim 1 wherein the product is substantially free from non-wood fibers. 10. the tissue product of claim 1 wherein the single ply consists of a first and a second outer layer and a middle layer disposed there between, the first and the second outer layer comprising hardwood kraft pulp fibers having a curl index greater than about 0.20 and the middle layer consisting of conventional softwood kraft fibers. 11. the tissue product of claim 10 wherein the product comprises from about 10 to about 50 percent hardwood kraft pulp fibers having a curl index greater than about 0.20 and from about 50 to about 90 percent softwood kraft fibers. 12. the tissue product of claim 10 wherein the first and the second outer layers comprise hardwood kraft pulp fibers having a curl index from about 0.20 to about 0.30. 13. the tissue product of claim 10 wherein the first and the second outer layer comprise 100 percent, by weight of the layer, hardwood kraft pulp fibers having a curl index from about 0.20 to about 0.30.

Results: 22

Search history

Search FT=(Tissue product and cellulosic and fibers and creping and curl index) (Results 4)

1:

Search [SP]: 1. a single ply wet-pressed tissue product comprising hardwood kraft pulp fibers having a curl index greater than about 0.20, the tissue product having a basis weight from about 16 to about 20 grams per square meter (gsm), a cd tensile greater than about 450 g/3? and cd stretch greater than about 6.0 percent. 2. the tissue product of claim 1 having a cd tea greater than about 4.0 g*cm/cm2. 3. the tissue product of claim 1 having a cd stretch from about 6.0 to about 8.0 percent. 4. the tissue product of claim 1 having a slough less than about 4.0 mg. 5. the tissue product of claim 1 having cd tear from about 8.0 to about 11.0 gf. 6. the tissue product of claim 1 consisting essentially of softwood and hardwood pulp fibers. 7. the tissue product of claim 6 wherein the product comprises from about 10 to about 50 percent hardwood kraft pulp fibers having a curl index greater than about 0.20 and from about 50 to about 90 percent softwood kraft fibers. 8. the tissue product of claim 1 having a cd durability index from about 18.0 to about 22.0. 9. the tissue product of claim 1 wherein the product is substantially free from non-wood fibers. 10. the tissue product of claim 1 wherein the single ply consists of a first and a second outer layer and a middle layer disposed there between, the first and the second outer layer comprising hardwood kraft pulp fibers having a curl index greater than about 0.20 and the middle layer consisting of conventional softwood kraft fibers. 11. the tissue product of claim 10 wherein the product comprises from about 10 to about 50 percent hardwood kraft pulp fibers having a curl index greater than about 0.20 and from about 50 to about 90 percent softwood kraft fibers. 12. the tissue product of claim 10 wherein the first and the second outer layers comprise hardwood kraft pulp fibers having a curl index from about 0.20 to about 0.30. 13. the tissue product of claim 10 wherein the first and the second outer layer comprise 100 percent, by weight of the layer, hardwood kraft pulp fibers having a curl index from about 0.20 to about 0.30. (Results 22)

1) Family number: 61808018 (US2017204568A)

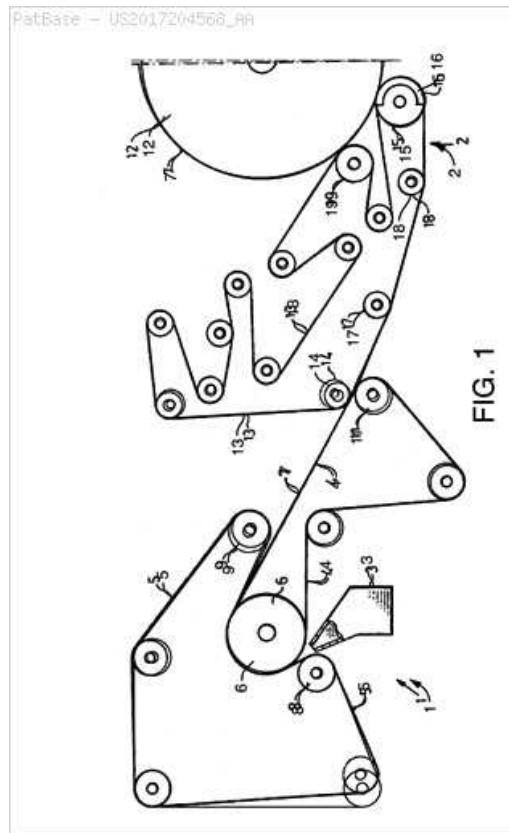
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Title: DURABLE WET-PRESSED TISSUE

Abstract: The disclosure provides a wet-pressed tissue product having improved cross-machine tensile, toughness and durability properties. Cross-machine properties are significant because tissue products often fail in the cross-machine direction because it is often the weaker of the two product orientations (cross and machine directions). Accordingly, in certain embodiments the present disclosure provides a conventional wet pressed tissue product having a CD Tensile greater than about 450 g/3? and a CD Stretch greater than about 6.0 percent.

Classifications:

International (IPC 8-9): A47K7/00 D21H D21H15/04 D21H21/14
D21H25/00 D21H27/00 D21H27/30 D21H27/40 (Advanced/Invention)
CPC: D21H25/005 D21H27/30 A47K7/00 D21H27/005 D21H27/40
D21H27/002 D21H15/04

**Family:**

Publication number	Publication date	Application number	Application date
AU2014404375 AA	20160303	AU20140404375	20140827
BR112017001514 A2	20180130	BR20171101514	20140827
CA2957659 AA	20170208	CA20142957659	20140827
CO20170001878 A2	20170519	CO20170001878	20170224
EP3185739 A1	20170705	EP20140900919	20140827
EP3185739 A4	20180124	EP20140900919	20140827
IL250376 A0	20170330	IL20140250376	20140827
KR101794487 B1	20171106	KR20177005492	20140827
KR20170031249 A	20170320	KR20177005492	20140827
MX2017001257 A1	20170501	MX20170001257	20140827
US2017204568 AA	20170720	US20140326513	20140827
US9896805 BB	20180220	US20140326513	20140827
WO16032450 A1	20160303	WO2014US52834	20140827

Priority:

US20140326513 20140827 WO2014US52834 20140827

Probable Assignee: KIMBERLY CLARK CORP

Assignee(s): (std): KIMBERLY CLARK CO ; KIMBERLY CLARK CORP ; KIMBERLY CLARK WORLDWIDE INC

Assignee(s): TIMM JEFFREY JAMES ; HERMANS MICHAEL ALAN

Inventor(s): (std): HERMANS MICHAEL ALAN ; JEFFREY JAMES TIMM ; MICHAEL ALAN HERMANS ; TIMM JEFFREY JAMES

Agent(s): MADDEN PATENT AND TRADE MARK ATTORNEYS; SPRUSON AND FERGUSON; PERRY AND CURRIER; BORDEN LADNER GERVAIS LLP; JAMES IAN RAISBECK LLINAS; DAVIES CHRISTOPHER ROBERT; KIMBERLY CLARK WORLDWIDE INC; SULLIVAN MICHAEL J ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

2) Family number: 16053287 (US2003056911A)

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Title: Method for making tissue sheets on a modified conventional wet-pressed machine

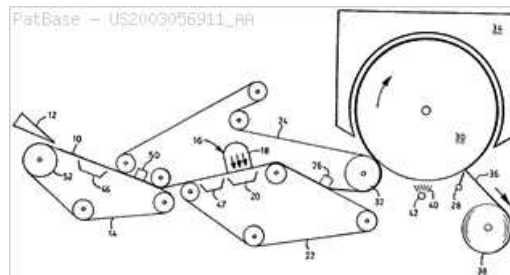
Abstract: A tissue sheet is made using a modified wet pressing machine in a modified wet pressing process employing an integrally sealed air press. After initial formation and conventional vacuum dewatering, the wet web is conformed to the surface contour of a relatively coarse fabric to give the web a textured surface. By creating a pressure differential across the web of at least 30 inches of mercury and an air stream through the web of at least 500 SCFM/in², the air press noncompressively dewater the wet web to a consistency of about 30 to about 40 percent prior to a heated drying cylinder. The web is dried to substantially preserve its three-dimensional, throughdried-like texture. The process provides a web having an exceptionally high degree of bulk and absorbency not expected in wet-pressed products.

Classifications:**International (IPC 8-9):** D21F1/48 D21F1/52

D21F11/14 (Advanced/Invention);

D21F11/14 (Advanced/Non-invention);

D21F1/48 D21F11/00 (Core/Invention)

International (IPC 1-7): D21F011/14 D21F1/00 D21F1/48 D21F11/00
D21F11/14 D21F3/00 D21F5/02 D21F5/18 D21F9/00 F26B3/00 F26B3/02**CPC:** D21F1/48 D21F1/52 D21F11/145 D21F11/14**European:** D21F1/48 D21F1/52 D21F11/14 D21F11/14B**US:** 162/101 162/115 162/205 162/205S 162/206 162/206S 162/207
162/207S 162/289 162/290 162/297 162/301 162/303 162/303S 162/305
162/358.1 162/358.100P 162/359.1 162/359.100S 162/363 34/444
34/444S 34/452 34/452S 34/454 34/454S 34/634 34/634S**Family:**

Publication number	Publication date	Application number	Application date
AT374862 E	20071015	AT20010946608T	20010621
AU2001268634 AA	20020114	AU20010268634	20010621
AU2001268634 BB	20050428	AU20010268634	20010621
AU200168634 A1	20020114	AU20010068634	20010621
AU200168634 A5	20020114	AU20010068634	20010621
BRPI0112114 A	20030930	BR2001PI12114	20010621
BRPI0112114 B1	20130402	BR2001PI12114	20010621
CA2415937 AA	20021223	CA20012415937	20010621
CA2415937 C	20090519	CA20012415937	20010621
CN1440480 A	20030903	CN20018012106	20010621
CO5650179 A2	20060630	CO20020117242	20021230
DE60130761 D1	20071115	DE20016030761	20010621
DE60130761 T2	20080717	DE20016030761T	20010621
EP1294982 A2	20030326	EP20010946608	20010621
EP1294982 B1	20071003	EP20010946608	20010621
KR100822568 B1	20080416	KR20027017836	20010621
KR20030034111 A	20030501	KR20027017836	20010621
MXPA02012362 A1	20050419	MX2002PA12362	20010621
US2003056911 AA	20030327	US20020199779	20020718
US2003070781 AA	20030417	US20020199778	20020718
US2004173333 AA	20040909	US20040803405	20040317
US6454904 BA	20020924	US20000607712	20000630
US6497789 BA	20021224	US20000607711	20000630
US6921460 BB	20050726	US20040803405	20040317
WO0202869 A2	20020110	WO2001US19807	20010621
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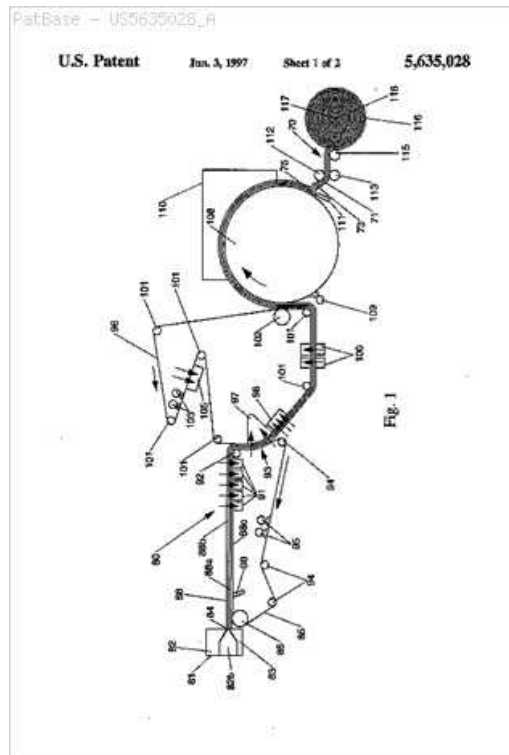
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Probable Assignee: KIMBERLY CLARK CORP**Assignee(s):** (std): KIMBERLY CLARK CO ; KIMBERLY CLARK CORP ; KIMBERLY CLARK WORLDWIDE INC**Assignee(s):** HADA FRANK STEPHEN ; HERMANS MICHAEL ALAN ; HICKEY STEVEN JACK**Inventor(s):** (std): FS HADA ; HADA F S ; HADA FRANK ; HADA FRANK STEPHEN ; HERMANS M A ; HERMANS MICHAEL ;
HERMANS MICHAEL ALAN ; HICKEY S J ; HICKEY STEVEN ; HICKEY STEVEN JACK ; MA HERMANS ; SJ
HICKEY**Inventor(s):** STEVEN JACK HICKEY ; MICHAEL ALAN HERMANS ; S J HICKEY ; F S HADA ; FRANK STEPHEN HADA ; M A
HERMANS**Agent(s):** SPRUSON AND FERGUSON; BORDEN LADNER GERVAIS LLP; BAUM SCOTT A; SCOTT A**Designated states:** AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM
DZ EC EE ES FI FR GA GB GD GE GH GM GN GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LK LR
LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NE NL NO NZ PL PT RO RU SD SE SG SI SK SL SN SZ
TD TG TJ TM TR TT TZ UA UG UZ VN YU ZA ZW**3) Family number: 20367287 (US5635028A)**

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Title: PROCESS FOR MAKING SOFT CREPED TISSUE PAPER AND PRODUCT THEREFROM**Abstract:** Soft creped tissue paper products comprising papermaking fibers and a crepe facilitating composition are disclosed. The crepe facilitating composition comprises a bonding inhibitor, a cationic starch and a carboxymethyl cellulose. Preferably, the bonding inhibitor is a quaternary ammonium compound. The use of a bonding inhibitor, a cationic starch and a carboxymethyl cellulose results in a creped tissue paper that is both strong and soft. A creped papermaking process comprising the addition of the crepe facilitating composition is also disclosed. The crepe facilitating composition offers the potential to improve production capacity.**Classifications:****International (IPC 8-9):** A47K7/00 B31F1/12 B32B29/06 D21H11/04
D21H17/07 D21H17/26 D21H17/28 D21H17/29 D21H21/22 D21H27/38
D21H27/40 (Advanced/Invention);
A47K7/00 D21H27/40 D21H7/38 (Advanced/Non-invention);
A47K7/00 B32B29/00 D21H11/00 D21H17/00 D21H21/22
D21H27/30 (Core/Invention)**International (IPC 1-7):** //D21H17:26 11:04 17:07 17:29 A47K7/00

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US: 162/111 162/112 162/113 162/123 162/125 162/127 162/129
162/130 162/158 162/175 162/177



Family:

Publication number	Publication date	Application number	Application date
AT195359 E	20000815	AT19960911356T	19960320
AU199654263 A1	19961107	AU19960054263	19960320
AU709472 B2	19990826	AU19960054263	19960320
BRPI9608104 A	19990202	BR1996PI08104	19960320
CA2218557 AA	19971017	CA19962218557	19960320
CA2218557 C	20041102	CA19962218557	19960320
CN1082590 C	20020410	CN19961093828	19960320
CN1184516 A	19980610	CN19961093828	19960320
CZ9703311 A3	19980617	CZ19970003311	19960320
DE69609708 D1	20000914	DE19966009708	19960320
DE69609708 T2	20010405	DE19966009708T	19960320
EP0821750 A1	19980204	EP19960911356	19960320
EP0821750 B1	20000809	EP19960911356	19960320
ES2148751 T3	20001016	ES19960911356T	19960320
HU9801180 AB	19980828	HU19980001180	19960320
JP11504080 T2	19990406	JP19960531736T	19960320
KR100264041 B1	20001101	KR19970707389	19971018
KR19990007866 A	19990125	KR19970707389	19960320
MX9708056 A1	19980131	MX19970008056	19960320
NO974809 A	19971219	NO19970004809	19971017
NO974809 A0	19971017	NO19970004809	19971017
NZ306095 A	19990629	NZ19960306095	19960320
TH22683 A	19961227	TH19961001155	19960417
TR9701208 T1	19980221	TR19960001208T	19960320
TR9701208 T1	19980221	TR19970001208T	19960320
TW336264 B	19980711	TW19960104276	19960411
US5635028 A	19970603	US19950424835	19950419
WO9633310 A1	19961024	WO1996US03819	19960320
ZA9603101 A	19961024	ZA19960003101	19960418

Priority:

US19950424835 19950419 WO1996US03819 19960320

Probable Assignee: PROCTER AND GAMBLE CO

Assignee(s): (std): PROCTER AND GAMBLE ; PROCTER AND GAMBLE CO ; P AND G CO

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Inventor(s): PAUL THOMAS WIESMAN ; DEAN V PHAN ; PAUL T WEISMAN ; KENNETH D VINSON

Agent(s): WATERMARK PATENT AND TRADE MARKS ATTORNEYS; WATERMARK INTELLECTUAL PROPERTY PTY LTD; SIM AND MCBURNEY

Designated states: AL AM AT AU AZ BB BE BF BG BJ BR BY CA CF CG CH CI CM CN CZ DE DK EE ES FI FR GA GB GE GN GR HU IE IS IT JP KE KG KP KR KZ LI LK LR LS LT LU LV MC MD MG MK ML MN MW MX NL NO NZ PL PT RO RU SD SE SG SI SK SZ TJ TM TR TT UA UG UZ VN

4) Family number: 23992705 (US2003102096A)

PatBase

Title: SOFT BULKY MULTI-PLY PRODUCT AND METHOD OF MAKING THE SAME

Abstract: An ultra soft, bulky, multi-ply tissue having low overall sidedness and a geometric mean tensile strength of less than about 800 g/3" wherein an embossed ply has a TMI sidedness of at least about 0.45 and an embossed area of at least about 2 percent, which is capable of being made from non-premium furnish, and method for making such products are disclosed. An ultra soft, bulky, multi-ply tissue having low overall sidedness and a geometric mean tensile strength of less than about 35 g/3" per lb. of basis weight wherein an embossed ply has a TMI sidedness of at least about 0.45 and an embossed area of at least about 2 percent, which is capable of being made from non-premium furnish, and method for making such products are also disclosed.

Classifications:

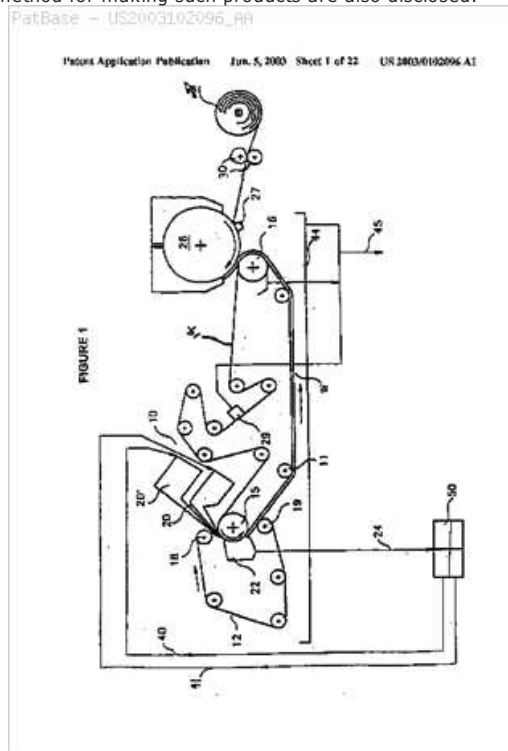
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International (ipc 1-7): B31D1/04 B32B29/00 D21F11/04 D21F11/14 D21H27/30 D21H27/40

CPC: Y10T156/1023 Y10T428/24479 Y10T428/24612 Y10T428/27 B31F1/07 B31F2201/0738 B31F2201/0764 B31F2201/0769 B31F2201/0784 B32B3/02 B32B27/02 D21F11/006 D21F11/14 D21F11/145 D21H27/40 B32B7/12 B32B5/26 B32B3/28 D21H27/30

European: B31F1/07 B32B27/02 B32B3/02 B32B3/28 B32B5/26 D21F11/00E D21F11/14 D21F11/14B D21H27/30 D21H27/40 L31F201/07C2D3J L31F201/07G2B L31F201/07G2F L31F201/07P

US: 156/209 16/211.3 16/213.2 16/215.8 16/216.46 16/217.9 16/220.4 162/113 162/117 162/117S 162/123 162/123S 162/125 162/132 162/132S 162/158 162/164.6 162/179 162/204 162/204S 42/815.6 42/817.2 428/156 428/172 428/211 428/34 428/340 428/340S



Family:

Publication number	Publication date	Application number	Application date
AT368768 E	20070815	AT20020252933T	20020425
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CA2381869 C	20101019	CA20022381869	20020416
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DE60221458 T2	20080424	DE20026021458T	20020425
EP1253242 A2	20021030	EP20020252933	20020425
EP1253242 A3	20031105	EP20020252933	20020425
EP1253242 B1	20070801	EP20020252933	20020425
ES2290248 T3	20080216	ES20020252933T	20020425
US2003102096 AA	20030605	US20020112376	20020328
US2004168780 AA	20040902	US20040793456	20040303
US6827819 BB	20041207	US20040793456	20040303
US6896768 BB	20050524	US20020112376	20020328

Priority:

US20010286887P 20010427 US20020112376 20020328 CA20022381869 20020416
US20040793456 20040303

Probable Assignee: GPCP IP HOLDINGS LLC

Assignee(s): (std): GEORGIA PACIFIC CORP ; GEORGIA PACIFIC CONSUMER OPERA ; FORT JAMES CORP

Assignee(s): GEORGIA PACIFIC CONSUMER PRODUCTS LP ; GEORGIA PACIFIC CONSUMER OPERATIONS LLC ; GEORGIA PACIFIC CHEMICALS LLC DELAWARE LIABILITY CO LTD ; GEORGIA PACIFIC CONSUMER PRODUCTS LP DELAWARE LIABILITY CO LTD ; GEORGIA PACIFIC CONSUMER PRODUCTS LLC ; CITICORP NORTH AMERICA INC ; COLOR BOX LLC DELAWARE LIABILITY CO LTD ; DIXIE CONSUMER PRODUCTS LLC DELAWARE LIABILITY CO LTD ; DWIGGINS JOHN H ; GEORGIA PACIFIC CORRUGATED LLC DELAWARE LIABILITY CO LTD ; GEORGIA PACIFIC GYPSUM LLC DELAWARE LIABILITY CO LTD ; GEORGIA PACIFIC LLC DELAWARE PARTNERSHIP LTD ; GEORGIA PACIFIC WOOD PRODUCTS LLC DELAWARE LIABILITY CO LTD ; GP CELLULOSE GMBH ZUG SWITZERLAND LIABILITY CO LTD ; WIESE PAMELA J ; HEATH MICHAEL S ; SCHULZ GALYN A ; LEEGE JOSEPH C ; WENDT GREG A ; ORIAN T PHILIPS ; SCHUH BRIAN J ; HARPER FRANK D ; GPCP IP HOLDINGS LLC

Inventor(s): (std): DWIGGINS JOHN H ; HARPER FRANK D ; HEATH MICHAEL S ; LEEGE JOSEPH C ; ORIAN T PHILIPS ; ORIAN T PHILLIPS ; SCHUH BRIAN J ; SCHULZ GALYN A ; WENDT GREG A ; WIESE PAMELA J ; ORIAN

T PHILIPS

Agent(s): OGILVY RENAULT LLP SENCRL SRL; NORTON ROSE FULBRIGHT CANADA LLP SENCRL SRL

Designated states: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR

5) Family number: 28147690 (US2001040015A)

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Title: Method of providing papermaking fibers with durable curl and absorbent products incorporating same

Abstract: A process for producing high bulk cellulosic fiber exhibiting a durable elevated curl index includes: (a) concurrently heat treating and convolving cellulosic fiber pulp at elevated temperature and pressure at high consistency under conditions selected so as to preclude substantial fibrillation and attendant paper strength and fiber bonding development; and (b) recovering the pulp wherein the length weighted curl index of the treated fiber is at least about 20 percent higher than the length weighted curl index of the fiber prior to the heat treatment and convolving thereof. The curl imparted to the fiber persists upon treatment for 30 minutes in a laboratory disintegrator at 3000 rpm at 1 percent consistency at a temperature of 125 Degrees Fahrenheit. Moreover, the curl may be imparted to the fiber in a disk refiner at very short residence times, on the order of several seconds or less. In general, the process is carried out in the presence of saturated steam at a pressure of from about 5 to about 150 psig.

Classifications:

International (IPC 8-9): D21C9/00 D21D1/20

D21H11/16 (Advanced/Invention);

D21C9/00 D21D1/00 D21H11/00 (Core/Invention)

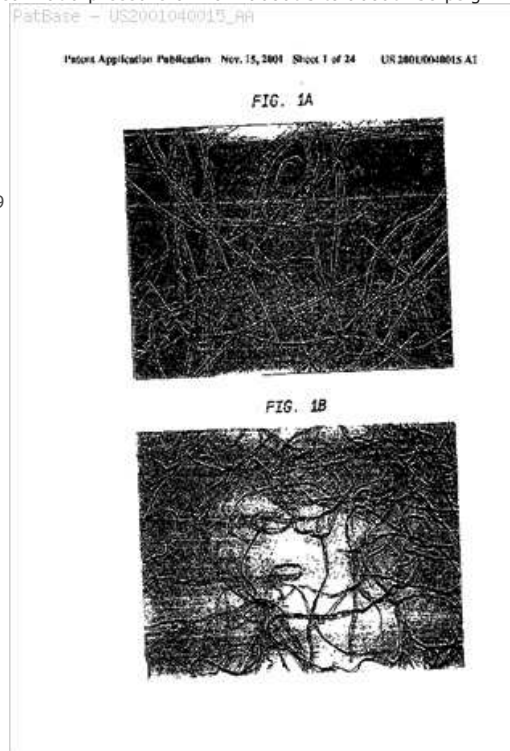
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CPC: D21C9/007 D21H11/16

European: D21C9/00B4 D21H11/16

US: 162/111 162/111S 162/13 162/23 162/23S 162/26 162/26S 162/4
162/4P 162/56 162/56S 162/6 162/68 162/68S 162/7 162/78 162/8 162/9
162/90



Family:

Publication number	Publication date	Application number	Application date
CA2337160 AA	20010906	CA20012337160	20010305
CA2337160 C	20100216	CA20012337160	20010305
EP1132516 A1	20010912	EP20010302051	20010306
US2001040015 AA	20011115	US20010793863	20010227
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Priority:

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Probable Assignee: GPCP IP HOLDINGS LLC

Assignee(s): (std): GEORGIA PACIFIC CORP ; GEORGIA PACIFIC CONSUMER PROD ; LEE JEFFREY A

Assignee(s): GEORGIA PACIFIC GYPSUM LLC DELAWARE LIABILITY CO LTD ; GEORGIA PACIFIC LLC DELAWARE PARTNERSHIP LTD ; GEORGIA PACIFIC WOOD PRODUCTS LLC DELAWARE LIABILITY CO LTD ; GP CELLULOSE GMBH ZUG SWITZERLAND LIABILITY CO LTD ; GPCP IP HOLDINGS LLC ; GEORGIA PACIFIC CONSUMER PRODUCTS LP DELAWARE LIABILITY CO LTD ; GEORGIA PACIFIC CORRUGATED LLC DELAWARE LIABILITY CO LTD ; GEORGIA PACIFIC CONSUMER PRODUCTS LLC ; GEORGIA PACIFIC CONSUMER OPERATIONS LLC ; GEORGIA PACIFIC CONSUMER PRODUCTS LP ; CITICORP NORTH AMERICA INC ; COLOR BOX LLC DELAWARE LIABILITY CO LTD ; DIXIE CONSUMER PRODUCTS LLC DELAWARE LIABILITY CO LTD ; GEORGIA PACIFIC CHEMICALS LLC DELAWARE LIABILITY CO LTD

Inventor(s): (std): LEE JEFFREY A

Inventor(s): LEE JEFFREY

Agent(s): GOUDREAU GAGE DUBUC ; PATENT GROUP GA030 43 GEORGIA PACIFIC CORP; FERRELL MICHAEL W; MICHAEL W; LAURA L

Designated states: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR

Title: Low density resilient webs and methods of making such webs

Abstract: A method for making a textured tissue sheet on a conventional tissue making machine using a conventional cylindrical drum dryer creates a product that is remarkably bulky, soft, and wet resilient. A combination of rush transfer and sheet molding with three-dimensional fabrics is combined with the step of web inversion to ensure that the surface of the web which was molded onto a first textured transfer fabric is the surface which is placed against the surface of the cylinder dryer. Web inversion improves machine productivity and enhances physical properties of the web.

Classifications:

International (ipc 8-9): D04H1/00 D21F1/66 D21F1/76 D21F11/00

D21H27/00 (Advanced/Invention);

D21F11/00 D21H27/00 (Advanced/Non-invention);

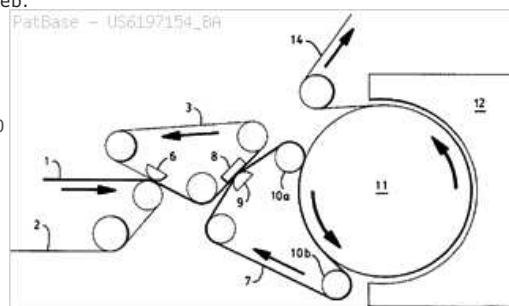
D04H1/00 D21F1/66 D21F11/00 D21H27/00 (Core/Invention)

International (ipc 1-7): D04H1/00 D21F D21F1/76 D21F11/00 D21H27/00

CPC: D21F11/006

European: D21F11/00E

US: 162/109 162/111 162/113 162/117



Family:

Publication number	Publication date	Application number	Application date
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Priority:

US19970961913 19971031 WO1998US23073 19981030

Probable Assignee: KIMBERLY CLARK CORP

Assignee(s): (std): KIMBERLY CLARK WORLDWIDE INC ; KIMBERLY CLARK CO ; KIMBERLY CLARK CORP

Assignee(s): KIMBERLY CLARK WORLDWIDE ; KAMPS RICHARD JOSEPH ; LINDSAY JEFFREY DEAN ; CHEN SHAN LIANG ; HERMANS MICHAEL ALAN ; HU SHENG HSIN

Inventor(s): (std): CHEN LIANG ; CHEN SHAN LIANG ; DEAN LINDSAY JEFFREY ; HERMANS ALAN ; HERMANS M A ; HERMANS MICHAEL A ; HERMANS MICHAEL ALAN ; HU SHEN HSIN ; HU SHENG HSIN ; JEFFREY DEAN LINDSAY ; KAMPS JOSEPH ; KAMPS RICHARD JOSEPH ; LINDSAY DEAN ; LINDSAY JEFFREY DEAN ; MICHAEL ALAN HERMANS ; RICHARD JOSEPH KAMPS ; SHAN LIANG CHEN ; SHENG HSIN HU

Inventor(s): Y ; M A HERMANS ; MA HERMANS

Agent(s): SPRUSON AND FERGUSON; ASPEN PHARMA PTY LTD; BORDEN LADNER GERVAIS LLP; RAMIRO CASTRO DUQUE; MABEY KATHERINE FRANCES

Designated states: AL AM AT AU AZ BA BB BE BF BG BJ BR BY CA CF CG CH CI CM CN CU CY CZ DE DK EE ES FI FR GA GB GE GH GM GN GR GW HR HU ID IE IL IS IT JP KE KG KP KR KZ LC LK LR LS LT LU LV MC MD MG MK ML MN MR MW MX NE NL NO NZ PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TR TT UA UG UZ VN YU ZW

Title: SOFT TISSUE

Abstract: Soft throughdried tissues, which are sufficiently soft to serve as premium bathroom tissues, can be made without the use of a Yankee dryer. The typical Yankee functions of building machine direction and cross-machine direction stretch are replaced by a wet end rush transfer and the throughdrying fabric design, respectively. It is particularly advantageous to form the tissue with chemimechanically treated fibers in at least one layer. The resulting tissues have high bulk (about 6 cubic centimeters per gram or greater) and low stiffness.

Classifications:

International (IPC 8-9): B32B29/00 D21F11/00 D21F11/14 D21F5/00 D21F7/00 D21F9/02 D21H11/08 D21H15/04 D21H21/38 D21H25/00 D21H27/00 D21H27/30 D21H27/38 D21H27/40 (Advanced/Invention); D21F11/14 D21H27/00 D21H27/30 (Advanced/Non-invention); D21H27/30 (Core/Invention)

International (IPC 1-7): A47K10/16 B31D1/04 B32B29/00 B32B29/02 B32B3/00 B32B5/12 B32B5/14 D21F11/00 D21F11/04 D21F11/14 D21F2/00 D21F5/00 D21F5/18 D21F7/00 D21F9/02 D21H 27/30 D21H11/00 D21H11/08 D21H15/04 D21H17/00 D21H21/30 D21H25/00 D21H27/00 D21H27/10 D21H27/30 D21H27/38 D21H27/40

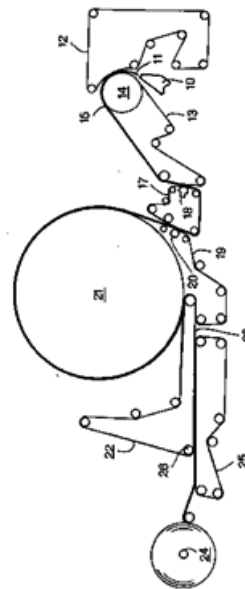
CPC: Y10T428/24455 B32B29/00 D21F11/006 D21F11/14 D21H15/04 D21H25/005 D21H27/30 D21H27/38 B32B29/005 B32B2038/0028 B32B2307/54 B32B2432/00 D21F11/145

European: B32B29/00 D21F11/00E D21F11/14 D21F11/14B D21H15/04 D21H25/00B D21H27/30 D21H27/38

US: 162/109 162/109S 162/111 162/117 162/123 162/123S 162/125 162/125S 162/127 162/127S 162/129 162/130 162/158 162/158S 162/57 162/57S 162/9 162/9S 428/153 428/211

PatBase - US2003089475_AA

Patent Application Publication May 15, 2003 Sheet 1 of 18 US 2003/0089475 A1



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WO9500706 A1	19950105	WO1994US06065	19940527

Priority:

US19930082684	19930624	CA19932103342	19931117	CA19932103342	19931117
AU19940072438	19940527	WO1994US06065	19940527	FR19940007634	19940622
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Probable Assignee: KIMBERLY CLARK CORP

Assignee(s): (std): BAHLMAN JULIA SMITH ; BURAZIN MARK ALAN ; CHEN FUNG JOU ; KIMBERLY CLARK CO ; FARRINGTON THEODORE EDWIN ; GOERG KRISTIN ANN ; HERMANS MICHAEL ALAN ; KIMBERLY CLARK CORP ; MAKOLIN ROBERT JOHN ; REKOSKE MICHAEL JOHN

Assignee(s): KIMBERLY CLARK WORLDWIDE INC ; KIMBERLY CLARK WORLDWIDE INC NEENAH WIS US ; KIMBERLY CLARK CORP NEENAH WIS US ; FARRINGTON THEODORE EDWIN JR ; KIMBERLEY CLARK CORP

Inventor(s): (std): ALAN BURAZIN MARK ; ALAN HERMANS MICHAEL ; ANN GOERG KRISTIN ; BAHLMAN JULIA S ; BAHLMAN JULIA SMITH ; BATHLMAN J S ; BURAZIN M A ; BURAZIN MARK A ; BURAZIN MARK ALAN ; CHEN FUNG JOU ; FARRINGTON JR THEODORE E ; FARRINGTON JR THEODORE EDWIN ; FARRINGTON T E JR ; FARRINGTON TEHODORE SMITH JULI ; FARRINGTON THEODORE E ; FARRINGTON THEODORE E JR ; FARRINGTON THEODORE EDWIN ; FARRINGTON THEODORE EDWIN JR ; EDWIN FARRINGTON THEODORE ; EDWIN FARRINGTON THEODORE JR ; FUNG JOU CHEN ; GOERG KRISTIN A ; GOERG KRISTIN ANN ; J S BATHLMAN ; JOHN MAKOLIN ROBERT ; JOHN REKOSKE MICHAEL ; JR THEODORE EDWIN FARRINGTON ; JULIA SMITH BAHLMAN ; KRISTIN ANN GOERG ; M A BURAZIN ; HERMANS MICHAEL A ; HERMANS MICHAEL ALAN ; MAKOLIN ROBERT J ; MAKOLIN ROBERT JOHN ; MARK ALAN BURAZIN ; MICHAEL ALAN HERMANS ; MICHAEL JOHN REKOSKE ; ROBERT JOHN MAKOLIN ; SMITH BAHLMAN JULIA ; T E FARRINGTON JR ; THEODORE EDWIN FARRINGTON JR ; REKOSKE MICHAEL J ; REKOSKE MICHAEL JOHN

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Agent(s): SPRUSON AND FERGUSON; ASPEN PHARMA PTY LTD; BORDEN LADNER GERVAIS LLP; KIMBERLY CLARK WORLDWIDE INC; GREGORY E

Designated states: AT AU BB BE BF BG BJ BR BY CA CF CG CH CI CM CN CZ DE DK ES FI FR GA GB GN GR HU IE IT JP KP KR KZ LI LK LU LV MC MG ML MN MR MW NE NL NO NZ PL PT RO RU SD SE SK SN TD TG UA UZ VN

8) Family number: 29932109 (US0633523A)

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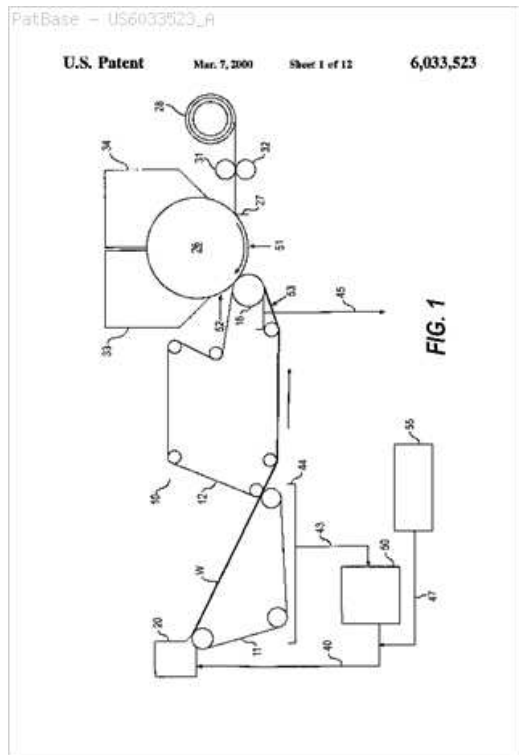
Title: Method of making soft bulky single-ply tissue

Abstract: The present invention relates to a process for the manufacture of a soft thick single-ply tissue, such tissue product having a basis weight of at least about 15 lbs./3,000 square foot ream and having low sidedness, said tissue exhibiting a specific total tensile strength of between 40 and 75 grams per 3 inches per pound per 3000 square feet ream, a cross direction specific wet tensile strength of between 2.75 and 7.5 grams per 3 inches per pound per 3000 square feet ream, the ratio of MD tensile to CD tensile of between 1.00 and 2.75, a specific geometric mean tensile stiffness of between 0.5 and 1.2 grams per inch per percent strain per pound per 3000 square feet ream, a ratio of product cross direction stretch to base sheet cross direction stretch of at least about 1.4, a friction deviation of less than 0.225, and a sidedness parameter of less than 0.275.

Classifications:

International (IPC 8-9): B31F1/07 D21F11/00 D21F11/14 D21H21/20

D21H21/22 (Advanced/Invention);
D21H21/22 (Advanced/Non-invention);
B31F1/00 D21F11/00 D21H21/14 D21H21/22 (Core/Invention);
D21H21/22 (Core/Non-invention)
International (IPC 1-7): B31F1/07 B31F1/12 D21F11/14 D21H15/00
D21H17/06 D21H17/15 D21H17/45 D21H21/20 D21H21/22 D21H27/02
CPC: Y10T428/24479 D21F11/145 B31F1/07 B31F2201/0735
B31F2201/0738 B31F2201/0756 B31F2201/0758 B31F2201/0764
B31F2201/0784 D21F11/006 D21F11/14 D21H21/20 D21H21/22
European: B31F1/07 D21F11/00E D21F11/14 D21F11/14B D21H21/20
L31F201/07C2D3G2 L31F201/07C2D3J L31F201/07E L31F201/07G
L31F201/07G2B L31F201/07P N21H21/22
US: 162/109 162/111 162/117 162/158 162/164.1 162/164.3 162/168.2
162/179 428/156



Family:

Publication number	Publication date	Application number	Application date
CA2253932 AA	19981109	CA19982253932	19980331
CA2253932 C	20071218	CA19982253932	19980331
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US6368454 BA	20020409	US20000484249	20000118
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Priority:

US19970042902P 19970331 US19970042903P 19970331 US19980049071 19980327
WO1998US06366 19980331 US20000484249 20000118

Probable Assignee: GPCP IP HOLDINGS LLC

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Assignee(s): GEORGIA PACIFIC CHEMICALS LLC DELAWARE LIABILITY CO LTD ; GEORGIA PACIFIC CONSUMER PRODUCTS LP DELAWARE LIABILITY CO LTD ; GEORGIA PACIFIC CORRUGATED LLC DELAWARE LIABILITY CO LTD ; GEORGIA PACIFIC GYPSUM LLC DELAWARE LIABILITY CO LTD ; GEORGIA PACIFIC LLC DELAWARE PARTNERSHIP LTD ; GEORGIA PACIFIC WOOD PRODUCTS LLC DELAWARE LIABILITY CO LTD ; GP CELLULOSE GMBH ZUG SWITZERLAND LIABILITY CO LTD ; SCHULZ GALYN A ; ORIARAN T PHILIPS ; HARPER FRANK D ; GPCP IP HOLDINGS LLC ; FORT JAMES CORP ATLANTA ; FT JAMES CORP ; GEORGIA PACIFIC CONSUMER PRODUCTS LP ; CITICORP NORTH AMERICA INC ; COLOR BOX LLC DELAWARE LIABILITY CO LTD ; DIXIE CONSUMER PRODUCTS LLC DELAWARE LIABILITY CO LTD ; DWIGGINS JOHN H

Inventor(s): (std): HARPER FRANK ; HARPER FRANK D ; ORIARAN T PHILIPS ; SCHULZ GALYN A ; DWIGGINS JOHN H

Inventor(s): FRANK HARPER ; GALYN A SCHULZ ; T PHILIPS ORIARAN ; SCHULZ A ; ORIARAN PHILIPS ; DWIGGINS H ; JOHN H DWIGGINS ; ORIARAN T

Agent(s): KIRBY EADES GALE BAKER

Designated states: AT BE CA CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR

9) Family number: 30108835 (US2002104630A)

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Title: Soft bulky multi-ply product and method of making the same

Abstract: The present invention is a method of making an ultra soft, multi-ply tissue from non-premium furnish using wet press technology and the product produced thereby.

Classifications:

International (IPC 8-9): B31F1/07 D21H25/02

D21H27/30 (Advanced/Invention);

B31F1/00 (Core/Invention)

International (IPC 1-7): B31F1/07 B31F1/12 D21F11/04 D21F3/04