

Search history

Search PN=(WO2015156712) (Results 1)

1:

Search [SP]: cross-reference to prior applicationthis application is a 371 national stage application of pct international application no. pct/se2014/050432 filed apr. 8, 2014, which is incorporated herein in its entirety.technical fieldthe present disclosure refers to a method for producing a flushable hydroentangled wipe or hygiene tissue impregnated with a wetting composition.backgroundpre-moistened wipes or hygiene tissue, are commonly used for cleansing different parts of the human body. examples of specific uses are baby care, hand wiping, feminine care and toilet paper or a complement to toilet paper.since a long period of time often elapses from the time of manufacture of pre-moistened wipes until the time of use, they must have a sufficient structural integrity for their intended wiping function during such period. adding a wet strength agent to the wipe will provide such wet integrity. however, especially when used as toilet paper, there is a strong desire that the wipe or tissue can be flushed in the sewer without causing problems with blocked pipes and filters. wipes or tissue having a high wet strength will not disintegrate or break up into small fibre clumps when flushed in conventional household toilet systems, which may cause plugging of the drainage system.previously moist flushable pre-moistened toilet papers which were on the market were flushable due to their small size. they could move along the drainage and sewage pipes, but were not readily dispersible and could therefore cause problems with blocked pipes and filters. nowadays disintegratable materials are available for use in flushable wipes and hygiene tissue.wo 02/44454 discloses a laminate nonwoven web that is flushable. the nonwoven web is produced by providing first and second nonwoven layers on a moving support and laminating the two layers by pattern hydroentanglement. hydroentanglement manifolds with jet clusters are used having a plurality of jet orifices separated from each other. the jet clusters thus organized in separate and distinct clusters creates alternating strongly bonded areas and weakly bonded areas along md (machine direction). these weakly bonded areas allow the laminate to delaminate, thus making it flushable.us 2012/0199301 discloses a flushable moist wipe or hygiene tissue comprising a hydroentangled nonwoven material. the moist wipe has a relatively low strength in cd (cross direction) and a length in md which exceeds the width in cd with at least 25 percent. the low strength cd strength makes it possible for the wipe to disintegrate when flushed in a sewer.ep 1 333 868 discloses flushable pre-moistened absorbent products comprising mechanically weakened web, wherein the mechanically weakened region comprises at least 20 percent of the total area of the product. the mechanical weakening can be accomplished by cutting, slitting, perforating, tensioning, ring rolling and the like.there is however still a need for a moist wipe or hygiene tissue which has sufficient structural integrity for its intended wiping function but which is readily disintegratable when flushed in a sewer.summaryit is desired to provide a method for producing a moist wipe or hygiene tissue solving the above problem. disclosed here is a method including the steps of: dry-, wet-, or foam-forming a fibrous web on a moving support, hydroentangling said fibrous web in a hydroentangling station to form a hydroentangled nonwoven web, wherein said moving support includes a plurality of protruding elongated elements protruding above the surface of the moving support, wherein said protruding elements will produce weakenings in the hydroentangled web.these weakenings are in the form of areas having a lower basis weight than the surrounding areas or are even through holes in the web. the weakenings will result in a material that more easily disintegrates and disperses in water under mild agitation, such as occurring in a standard sewer.the protruding elongated elements may have a height h protruding above the plane of the moving support of at least 0.5 times the thickness of the hydroentangled nonwoven web in dry condition and not more than 1.0 time the thickness of the hydroentangled nonwoven web in dry condition.the protruding elongated elements may have a width w between 0.5 and 2 mm.the protruding elongated elements may have a length l between 3 and 30 mm, between 10 and 25 mm, or between 20 and 25 mm.the protruding elongated elements may have a length/width relationship l/w between 1.5 and 60, between 5 and 50, or between 10 and 50.the protruding elongated elements may have their length direction oriented at an angle of plus or minus 45 degrees with respect to the machine direction md of the moving support.the protruding elongated elements may have their length direction oriented in the machine direction md.the protruding elongated elements may be arranged in a plurality of rows, wherein said rows extend at an angle of plus or minus 45 degrees with respect to the machine direction md of the moving support. said rows may extend in the machine direction (md).the distance a1 between adjacent protruding elongated elements in said rows may be between 10 and 45 mm, between 15 and 40 mm, or between 20 and 35 mm.the rows may be arranged at a distance a2 from each of between 5 and 40 mm, or between 10 and 30 mm.the protruding elongated elements in a row may be oriented with their length l direction aligned.the protruding elongated elements may have a straight configuration.the moving support 10 may be a hydroentangling fabric.brief description of the figures fig. 1 illustrates schematically a method for producing a hydroentangled nonwoven material. fig. 2a illustrates schematically, in a view from above, a moving support in the form of a hydroentangling fabric having a plurality of protruding elements thereon. fig. 2b and fig. 2c are similar to fig. 2a, but illustrates alternative configurations of the protruding elements on the hydroentangling fabric. figs. 3a-c are schematic sketches on an enlarged scale of protruding elements having different shapes and illustrate how the length (l) and width (w) is measured. fig. 4 is a schematic longitudinal section through a moving support including protruding elements.detailed description of particular embodimentsa premoistened wipe or hygiene tissue includes a hydroentangled nonwoven material impregnated with a wetting composition. the wetting composition may contain a major proportion of water and other ingredients depending on the intended use. wetting compositions useful in moist wipes and hygiene tissue are well-known in the art.hydroentangling or spunlacing is a technique for forming a nonwoven web introduced during the 1970'ies, see e g ca patent no. 841 938. the method involves forming a fibre web, which is either drylaid or wetlaid, after which the fibres are entangled by means of very fine water jets under high pressure. several rows of water jets are directed against the fibre web, which is supported by a movable support, such as a foraminous fabric or a perforated drum. in this process, the fibres entangle with one another providing sufficient bonding strength to the fibrous web without the use of chemical bonding agents. the entangled fibrous web is then dried. the fibres that are used in the material can be natural fibres, especially cellulosic pulp fibres, manmade staple fibres, and mixtures of pulp fibres and staple fibres. hydroentangled materials can be produced with high quality at a reasonable cost and they possess a high absorption capacity.one example of a method for producing the hydroentangled nonwoven material is shown in fig. 1. a slurry including fibres of optional kind is wetlaid on a moving forming fabric 10 by a headbox 11. the slurry may besides water contain conventional papermaking additives such as wet and/or dry strength agents, retention aids and dispersing agents. a special variant of wetlaying or wet-forming is foam-forming, wherein the fibres are dispersed in a foamed liquid containing water and a surfactant. the liquid or foam is sucked through the forming fabric 10 by means of suction boxes 12 arranged under the forming fabric, so that a fibrous web 14 is formed on the forming fabric 10. foam-forming is described in for example wo 96/02702 a1. an advantage of foam-forming is that it requires less liquid to be pumped and sucked through the forming fabric as compared to traditional wet-forming without foam. the fibrous web may also be an air-formed web.the fibrous web 14 is hydroentangled in a hydroentangling station 15 while it is supported on the forming fabric 10. alternatively, the fibrous web is transferred to a second support member, for example a second forming fabric or a perforated drum, before hydroentanglement. the hydroentangling station 15 includes at least one jet strip 16. in the embodiment of fig. 1, three jet strips 16 are provided. very fine water jets under pressure are directed against the fibrous web 14 from these jet strips 16 to provide an entangling of the fibres and thus form a hydroentangled nonwoven web 19. suction boxes 18 are arranged under the forming fabric 10 just opposite the hydroentangling station 15. the dewatered hydroentangled nonwoven web 19 is then brought to a drying station (not shown) before the finished material is reeled up and converted to the desired product. the hydroentangled nonwoven material is converte (Results 33)

Search 2 and support* (Results 27)

3:

Search 3 and hydroentang* (Results 21)

4:

Title: METHOD OF PRODUCING A NONWOVEN MATERIAL

Abstract: Source: US6163943A [EN] Method of producing a nonwoven material by **hydroentangling** a fiber mixture containing continuous filaments, e.g. meltblown and/or spunbond fibers, and natural fibers and/or synthetic staple fibers. The method is characterized by foamforming a fibrous web (14) of natural fibers and/or synthetic staple fibers and **hydroentangling** together the foamed fiber dispersion with the continuous filaments (11) for forming a composite material where the continuous filaments are well integrated with the rest of the fibers.

Classifications:

International (IPC 8-9): D04H1/4374 D04H1/44 D04H1/46 D04H1/492 D04H1/498 D04H3/02 D04H3/11 D04H3/16 D04H5/02 D04H5/03 D21F11/00 (Advanced/Invention);

D04H1/44 D04H3/16 (Advanced/Non-invention)

International (IPC 1-7): D04H1/44 D04H1/46 D04H3/02 D04H3/16 D04H5/02

CPC: D04H1/732 D04H1/492 D04H1/4374 D04H1/498 D04H3/02 D04H3/11 D04H3/16 D04H5/02 D04H5/03 D04H13/00 D21F11/002

European: D04H1/4374 D04H1/492 D04H1/498 D04H13/00 D04H3/02 D04H3/11 D04H3/16 D04H5/02 D04H5/03 D21F11/00B

US: 162/115 28/104

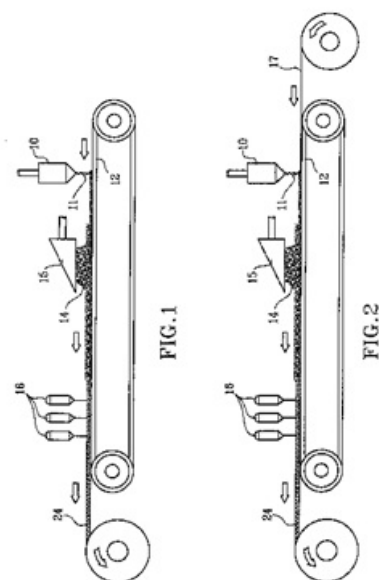
PatBase - US6163943_A

U.S. Patent

Dec. 26, 2000

Sheet 1 of 8

6,163,943



Family:

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AU734656 B2	20010621	AU19980097705	19981023
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CN1277644 A	20001220	CN19988010503	19981023
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DE69803035 T2	20020829	DE19986003035T	19981023
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SK200000550 A5	20010409	SK20000000550	19981023
TR200001120 T2	20000921	TR20000001120T	19981023
US6163943 A	20001226	US19990328454	19990609
WO9922059 A1	19990506	WO1998SE01925	19981023

Priority:

SE19970003886 19971024 WO1998SE01925 19981023

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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 LI 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 US UZ VN YU ZW

Title: DISPERSIBLE ABSORBENT PRODUCTS AND METHODS OF MANUFACTURE AND USE

Abstract: Source: US2001051796A [EN] A dispersible absorbent product comprises a mechanically weakened fibrous web. The dispersible absorbent product can absorb a sufficient amount of fluid without becoming overloaded and suffering from leakage, and is dispersible using a standard toilet. The mechanically weakened regions of the web enhance the dispersibility of the product. Additionally, the dispersible absorbent products may be pre-moistened with a composition. The pre-moistened products are stable in storage, easily dispersible down a toilet, and deliver cleaning, conditioning, and like benefits. Methods of making such dispersible absorbent products are also disclosed.

Classifications:

International (IPC 8-9): A47K7/00 A61F13/15 A61F13/47 A61F13/49 A61F13/53 A61F13/551 A61F5/44 A61L15/62 B29D22/00 B32B3/26 B32B5/00 B32B5/18 B32B7/00 B32B7/12 B65H18/28 B65H75/10 B65H75/26 C09J201/00 C09J7/02 D04H1/70 (Advanced/Invention); A47K7/00 A61F13/15 A61F5/44 A61L15/16 B29D22/00 B32B3/26 B32B5/00 B32B7/00 B32B7/12 B65H18/00 B65H75/04 B65H75/18 C09J201/00 C09J7/02 D04H1/70 (Core/Invention)

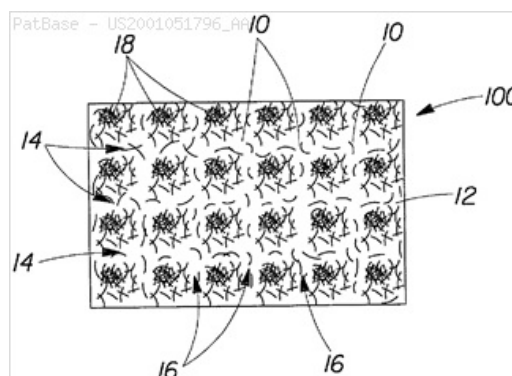
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CPC: A61L15/62 Y10S428/906 B65H75/26 B65H18/28 B65H75/10 B65H2701/377 B65H2701/514 Y10T428/13 Y10T428/139 Y10T428/14 Y10T428/24 Y10T428/28 Y10T442/198 Y10T442/277 A61F13/47 A61F13/15211 A61F13/15707 A61F13/471 Y10T428/249953 Y10T428/249982 C09J7/20

European: A61F13/1532 A61F13/15M6 A61F13/47 A61F13/471

A61L15/62 B65H18/28 B65H75/10 B65H75/26 C09J7/02 C09J7/02K9F L65H701/377 L65H701/514 L65H750/140

US: 156/349 221/70 242/610 242/610.1 242/610.3 242/613 242/613.1 242/613.2 428/304.4 428/317.1 428/34.1 428/343 428/343P 428/36.9 428/40.1 428/906 428/98 442/153 442/58 604/364 604/364S 604/374 604/374S 604/375 604/375S 604/383 604/383P 604/384 604/384S 604/385.16 604/385.160S



Family:

Publication number	Publication date	Application number	Application date
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WO0244294 A3	20020801	WO2001US51093	20011113

Priority:

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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 GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NE NL NO NZ PH PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

Title: METHOD AND DEVICE FOR PRODUCING A NONWOVEN MATERIAL

Abstract: Source: US2003088956A [EN] Method and device for manufacturing a nonwoven material by **hydroentangling** a fibre web by means of water jets at a high pressure, wherein the fibre web is **supported** by a moulded, close-meshed screen (12) of a thermoplastic material during the **hydroentanglement**. Possibly, the screen can be reinforced with reinforcement wires (14).

Classifications:

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

D21F11/14 (Advanced/Invention);

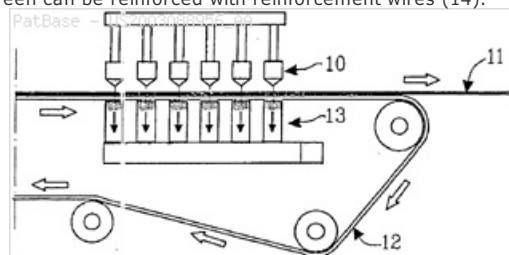
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International (ipc 1-7): D04H1/46 D06B1/02 D21F11/00

CPC: D04H18/04 D21F1/0063 D21F11/00 D21F11/14

European: D04H18/04 D21F1/00E4 D21F11/00 D21F11/14

US: 28/104 28/104P 28/167



Family:

Publication number	Publication date	Application number	Application date
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WO0188261 A1	20011122	WO2001SE00940	20010503

Priority:

SE20000001688 20000508 WO2001SE00940 20010503

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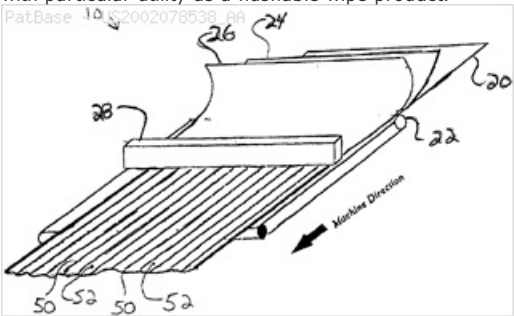
Designated states: AT BE CH CY DE DK ES FI FR GB GR IE IT JP LI LU MC NL PT SE TR US

Title: METHOD FOR FORMING LAMINATE NONWOVEN FABRIC

Abstract: Source: US2002078538A [EN] A method for creating a nonwoven laminate fabric has steps of depositing a first nonwovne layer on a moving **support**, depositing a second nonwoven layer over the first layer, and conveying the layers under a manifold. The manifold has a plurality of jet clusters separated from one another by a distance. Water is directed from the jet clusters onto the underlying layers to thereby create a laminated fabric. Because the jet clusters are separated from one another, the laminate fabric is "pattern entangled". Bundling occurs along substantially linear lines, with much lighter bundling in regions between the linear bundling regions. The result is a fabric with regions of relative strong entanglement and other regions of much lighter entanglement. When three layers are laminated, with top and bottom layers of thin veneer and a center layer of pulp the method of the invention has been discovered to result in a laminate fabric with particular utility as a flushable wipe product.

Classifications:

International (IPC 8-9): B32B5/26 D04H13/00
D06M11/00 (Advanced/Invention)
International (IPC 1-7): D04H1/46 D06M11/00
CPC: D04H1/495 D04H18/04 B32B5/26 D04H1/498
European: B32B5/26 D04H1/498 D04H13/00B3 D04H13/00B3B
D04H18/04
US: 28/104 28/104P 28/167



Family:

Publication number	Publication date	Application number	Application date
■ AU2002239380 AA	20020611	AU20020239380	20011129
■ AU2002239380 A1	20020611	AU20020039380	20011129
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■ US2002078538 AA	20020627	US20010997682	20011129
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■ WO0244454 A2	20020606	WO2001US44670	20011129
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Priority:

US20000253759P 20001129 US20010997682 20011129 WO2001US44670 20011129

Probable Assignee: POLYMER GROUP INC

Assignee(s): (std): POLYMER GROUP INC

Assignee(s): WILMINGTON TRUST CO ; LORETEX CORP ; PGI EUROPE INC ; PGI POLYMER INC ; PNA CORP ; POLY BOND INC ; POLYLONIX SEPARATION TECHNOLOGIES INC ; PRISTINE BRANDS CORP ; TECHNICS GROUP INC ; JPMORGAN CHASE BANK ; WILMINGTON TRUST CO SECOND LIEN COLLATERAL AGENT A ; NGAI MOU CHUNG ; WILMINGTON TRUST CO SECOND LIEN COLLATERAL AGENT AS ; BONLAM (SC) INC ; BONLAM INC ; BONLAM SC INC ; CHICOPEE INC ; CITICORP NORTH AMERICA INC ; CITICORP NORTH AMERICA INC COLLATERAL AGENT AS ; DOMINION TEXTILE INC ; FABPRO ORIENTED POLYMERS INC ; FABRENE CORP ; FABRENE GROUP LLC ; FIBERGOL CORP ; FIBERTECH GROUP INC ; FNA ACQUISITION INC ; FNA POLYMER CORP ; CITICORP NORTH AMERICA INC FIRST LIEN COLLATERAL A ; DOMINION TEXTILE (USA) INC ; DOMINION TEXTILE USA INC ; CITICORP NORTH AMERICA INC FIRST LIEN COLLATERAL AGENT AS

Inventor(s): (std): NGAI MOU CHUNG

Inventor(s): MOU CHUNG NGAI

Agent(s): SIM AND MCBURNEY

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 GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LI 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 ZM ZW

Title: METHOD OF PRODUCING A NONWOVEN MATERIAL

Abstract: Source: US2002088099A [EN] Method for producing a nonwoven material comprising at least one layer of continuous filaments, such as spunbond- or meltblown fibres. A first web of continuous filaments (19) are laid on a wire (14) or other permeable **support** member having a resilient extensibility in the transverse direction and which substantially resumes its original dimension when the extension is discontinued, that the wire is stretched in the transverse direction to at least 120 percent of its original width when the continuous filaments are laid on the wire. The stretching is discontinued after the continuous filaments have been laid on the wire.

Classifications:

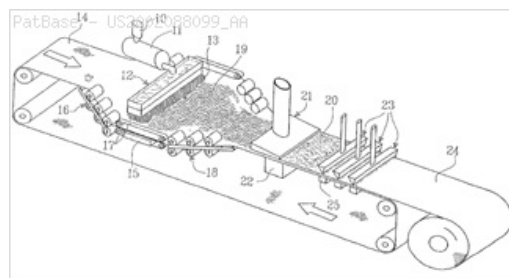
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International (IPC 1-7): B32B31/16 D04H1/46 D04H1/50 D04H1/72 D04H3/10 D04H3/16 D04H5/02 D04H5/08 D21F11/02

CPC: D04H1/732 D04H5/03 D21F9/00 D04H1/498 D04H3/02 D04H3/11 D04H3/16 D04H5/02 D04H5/08 D04H13/00 D04H3/14

European: D04H1/498 D04H13/00 D04H13/00B3 D04H3/02 D04H3/11 D04H3/16 D04H5/02 D04H5/08 D21F9/00

US: 162/103 162/115 162/125 162/129 264/165 264/198 264/209.5 264/479 28/103 28/104



Family:

Publication number	Publication date	Application number	Application date
EP1215325 A1	20020619	EP20010850205	20011207
JP2002285466 A2	20021003	JP20010382568	20011217
SE200004687 A	20020619	SE20000004687	20001218
SE200004687 A0	20001218	SE20000004687	20001218
SE200004687 L	20020619	SE20000004687	20001218
SE518035 C2	20020820	SE20000004687	20001218
US2002088099 AA	20020711	US20010020221	20011218
US6592713 BB	20030715	US20010020221	20011218

Priority:

SE20000004687 20001218 US20000255900P 20001218 US20010020221 20011218

Probable Assignee: SCA HYGIENE PRODUCTS AB

Assignee(s): (std): AHONIEMI HANNU ; SCA HYGIENE PROD AB ; SCA HYGIENE PRODUCTS AB

Assignee(s): SCA HYGIENE PRODUCTS S AB

Inventor(s): (std): AHONIEMI HANNU ; HANNU AHONIEMI

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

Title: DISPERSIBLE ABSORBENT PRODUCTS HAVING A MULTI-LAYERED STRUCTURE AND METHODS OF MANUFACTURE AND USE

Abstract: Source: US2002177827A [EN] A dispersible absorbent product having a mechanically weakened multi-layered structure, which comprises at least two mechanically weakened layers joined by a water responsive binder. The mechanically weakened regions enhance the dispersibility of the product in a standard toilet. Additionally, the dispersible absorbent products may be pre-moistened with a composition. The pre-moistened products are stable in storage, easily dispersible down a toilet, and deliver cleaning, conditioning, and like benefits. Methods of making such dispersible absorbent products are also disclosed.

Classifications:

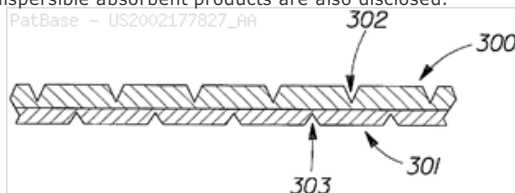
International (IPC 8-9): A61F13/15 A61F13/472 A61F13/49 A61F13/53 A61F13/551 A61F5/44 B32B3/00 B32B3/30 B32B5/00 D04H1/42 D21F11/00 (Advanced/Invention)

International (IPC 1-7): A61F101/00 A61F13/15 A61F13/20 A61F13/472 A61F13/49 A61F13/53 A61F13/551 A61F5/44 B32B3/00 B32B5/00 D04H1/42

CPC: B32B5/02 B32B7/12 B32B27/08 B32B27/28 B32B27/34 B32B27/36 B32B38/0004 B32B2038/045 B32B2038/047 B32B2307/54 B32B2307/726 B32B2367/00 B32B2377/00 B32B2432/00 B32B2535/00 B32B2555/02 B32B3/30 A61F13/15203 A61F13/15211 A61F13/15707

European: A61F13/15J A61F13/15J2 A61F13/15M6 B32B3/30

US: 162/114 162/131 604/364 604/364P 604/365 604/365S 604/383 604/385.01 604/385.010S



Family:

Publication number	Publication date	Application number	Application date
CA2444453 AA	20031015	CA2002244453	20020411
DE60245034 D1	20130725	DE20026045034	20020411
EP1392208 A1	20040303	EP20020728762	20020411
EP1392208 B1	20130529	EP20020728762	20020411
JP2004532142 T2	20041021	JP20020582850T	20020411
JP4261194 B2	20090430	JP20020582850T	20020411
US2002177827 AA	20021128	US20020124443	20020417
US7838725 BB	20101123	US20020124443	20020417
WO02085272 A1	20021031	WO2002US11628	20020411

Priority:

EP20020728762 20020411 US20010285642P 20010420 US20020124443 20020417
WO2002US11628 20020411

Probable Assignee: PROCTER AND GAMBLE CO

Assignee(s): (std): PROCTER AND GAMBLE

Assignee(s): PROCTER AND GAMBLE CO ; PROCTER AND GAMBLE CO CINCINNATI ; THE PROCTER AND GAMBLE COMPANY ; GROSS SARAH BETH ; NODA ISAO ; O DONNELL HUGH JOSEPH

Inventor(s): (std): GROSS SARA BETH ; GROSS SARAH BETH ; NODA ISAO ; O DONNELL HUGH JOSEPH

Inventor(s): O DONNELL HUGH JOSEPH CINCINNATI ; O'DONNELL HUGH JOSEPH ; NODA ISAO FAIRFIELD ; GROSS SARA BETH CINCINNATI

Agent(s): MBM AND CO; HAMPTON MATTHEW JOHN; JULIE A; JAY A; JEFFREY V

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 GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NE NL NO NZ OM PH PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TN TR TT TZ UA UG UZ VN YU ZA ZM ZW

Title: NON-WOVEN BASED ON EXPLODED OR SPLITTABLE MULTICOMPONENT FIBERS

Abstract: Source: US2007033779A [EN] A hydro-entangled non-woven based on multi-component fibers, either exploded or splittable by hydro-entangling, and a process for the obtaining of the same is described: the thus obtained non-woven has improved softness, resistance and appearance and increases the productive potential of a future industrial line.

Classifications:

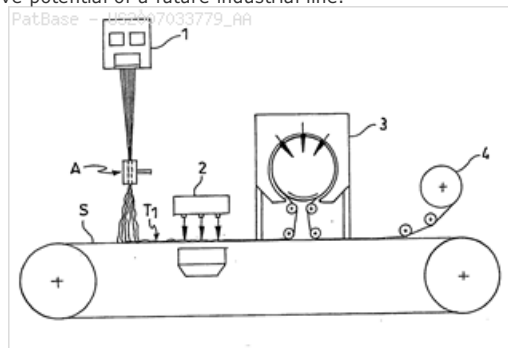
International (IPC 8-9): D04H1/425 D04H1/4266 D04H1/4291
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D04H1/498 D04H1/56 D04H1/732 D04H13/00 D04H3/02 D04H3/04
D04H3/10 D04H3/16 (Advanced/Invention);
D04H (Subclass/Invention)

International (IPC 1-7): D04H13/00 D04H3/02 D04H3/10

CPC: Y10T442/689 D04H1/4382 D04H1/425 D04H1/4266 D04H1/4291
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D04H1/732 D04H3/16 D04H13/00

European: D04H1/425 D04H1/4266 D04H1/4291 D04H1/4374
D04H1/4382 D04H1/49 D04H1/492 D04H1/495 D04H1/498 D04H1/56
D04H1/732 D04H13/00 D04H3/16

US: 28/100 28/100P 442/408 442/408S



Family:

Publication number	Publication date	Application number	Application date
DE602004045510 D1	20140828	DE200460045510T	20040416
EP1613802 A2	20060111	EP20040727975	20040416
EP1613802 B1	20140723	EP20040727975	20040416
ES2518318 T3	20141105	ES20040727975T	20040416
ITMI20030805 A1	20041018	IT2003MI00805	20030417
US2007033779 AA	20070215	US20040552163	20040416
WO04092472 A2	20041028	WO2004IT00220	20040416
WO04092472 A3	20041229	WO2004IT00220	20040416

Priority:

EP20040727975 20040416 IT2003MI00805 20030417 WO2004IT00220 20040416

Probable Assignee: AHLSTROM CORP

Assignee(s): (std): ORLANDI SPA ; ORLANDI VITTORIO ; PEDOJA ROBERTO ; SUOMINEN CORP

Assignee(s): AHLSTROM CORP ; ORLANDI S P A

Inventor(s): (std): ORLANDI VITTORIO ; PEDOJA ROBERTO

Agent(s): LANGENSKIOLD TORD KARL WALTER; CARVAJAL Y ISABEL; HOGAN AND HARTSON LLP, IP GROUP
COLUMBIA SQUARE; HOGAN AND HARTSON LLP IP GROUP COLUMBIA SQUARE

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK
DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ
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SC SD SE SG SI SK SL SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

Title: **HYDROENTANGLED** NONWOVEN MATERIAL

Abstract: Source: US2005112980A [EN] An improved **hydroentangled** well integrated composite nonwoven material, including a mixture of continuous filaments, synthetic staple fibres, and natural fibres which has a reduced twosidedness and an improved textile feeling. The synthetic staple fibres should have a length of 3 to 7 mm, and preferably there should be no thermal bondings between the filaments. The method of producing such a nonwoven material is also disclosed. The nonwoven includes a mixture of 10-50 w- percent continuous filaments preferably chosen from polypropylene, polyesters and polylactides, 5-50 w- percent synthetic staple fibres chosen from polyethylene, polypropylene, polyesters, polyamides, polylactides, rayon, and lyocell, and 20-85 w- percent natural fibres, preferably pulp.

Classifications:

International (IPC 8-9): D04H5/02 D04H5/06 (Advanced/Invention);

D04H1/46 D04H3/10 (Advanced/Non-invention);

D04H5/00 (Core/Invention);

D04H1/46 D04H3/08 (Core/Non-invention)

International (IPC 1-7): D04H5/00

CPC: Y10T442/60 Y10T442/681 Y10T442/682 Y10T442/684 Y10T442/686

Y10T442/689 Y10T442/69 Y10T442/695 Y10T442/697 Y10T442/698

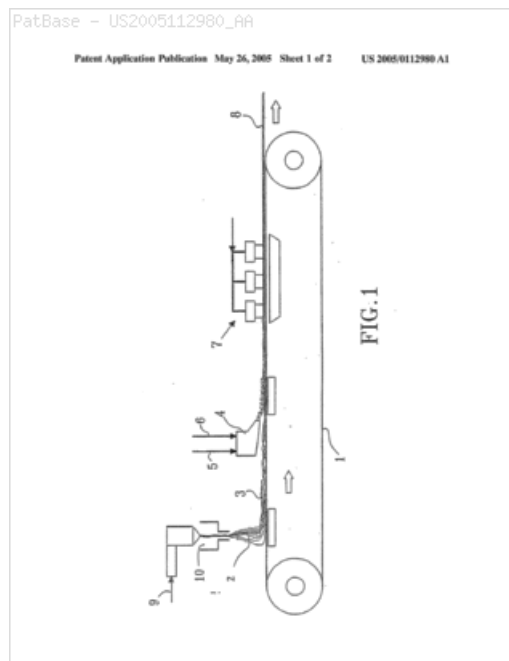
D04H5/03 D04H5/06 D04H5/08

European: D04H5/03 D04H5/06 D04H5/08

US: 442/327 442/327S 442/401 442/402 442/403 442/405 442/408

442/408S 442/409 442/409S 442/413 442/415 442/415S 442/416

442/416P



Family:

Publication number	Publication date	Application number	Application date
US2005112980 AA	20050526	US20040976884	20041101
US7432219 BB	20081007	US20040976884	20041101

Priority:

US20030515639P 20031031 US20040976884 20041101

Probable Assignee: SCA HYGIENE PRODUCTS AB

Assignee(s): (std): SCA HYGIENE PROD AB

Assignee(s): SCA HYGIENE PRODUCTS AB

Inventor(s): (std): AHONIEMI HANNU ; FINGAL LARS ; STRALIN ANDERS ; STRANDQVIST MIKAEL

Agent(s): YOUNG AND THOMPSON

Title: PHYSICAL AND MECHANICAL PROPERTIES OF FABRICS BY **HYDROENTANGLING**

Abstract: Source: US2005125908A [EN] Methods for reducing the surface pilling tendency and improving abrasion resistance of a pillable fabric are disclosed. The methods include providing a pillable fabric including fibrils extending from the surfaces thereof, **supporting** the fabric, and exposing the fabric to a **hydroentanglement** process that imparts an energy in the range of at least about 4000 to 5000 KJoules/Kg of fabric using pressures of 200 bars or greater. The presence of fibrils on the fabric surface are reduced to an amount wherein the pilling production on the fabric is less than about 20 percent after 5,000 cycles of abrasion on a Martindale device according to ASTM D4970 testing standard and the fabric remaining mass is at least about 80 percent to 90 percent after 50,000 cycles of abrasion on a Martindale device according to ASTM D4966 testing standard.

Classifications:

International (IPC 8-9): D04H1/46 D06C29/00 D06M10/00

D06M11/56 (Advanced/Invention);

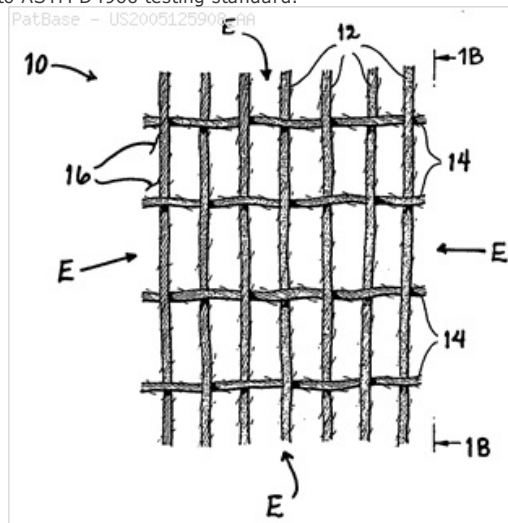
D04H (Subclass/Invention)

International (IPC 1-7): D06M10/00 D06M11/56 D06M11/56

CPC: D04H1/492 D06C29/00

European: D04H1/46B D06C29/00

US: 8/115.51 8/115.510P



Family:

Publication number	Publication date	Application number	Application date
EP1694893 A2	20060830	EP20040814253	20041215
EP1694893 A4	20071128	EP20040814253	20041215
US2005125908 AA	20050616	US20040013299	20041215
WO05059215 A2	20050630	WO2004US42047	20041215
WO05059215 A3	20060427	WO2004US42047	20041215
WO05059215 C2	20051027	WO2004US42047	20041215

Priority:

US20030529490P 20031215 US20040013299 20041215 WO2004US42047 20041215

Probable Assignee: UNIV NORTH CAROLINA STATE

Assignee(s): (std): POURDEYHIMI BEHNAM ; UNIV NORTH CAROLINA STATE

Assignee(s): NORTH CAROLINA STATE UNIV ; NORTH CAROLINA STATE UNIVERSITY

Inventor(s): (std): POURDEYHIMI BEHNAM

Agent(s): JENKINS WILSON AND TAYLOR P A

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ 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 NA NE NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SM SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

Title: BULKY SHEET AND PROCESS OF PRODUCING THE SAME

Abstract: Source: US2005255297A [EN] A bulky sheet 1 has a network sheet 11 and a nonwoven fabric-like fiber aggregate 10 having fibers arranged on at least one side of the network sheet 11. The fibers of the fiber aggregate 10 is in entanglement among themselves and with the network sheet 11 to be unitary with the network sheet 11. The network sheet 11 is three-dimensionally shaped to form a number of protrusions and depressions, and the fiber aggregate 10 is united with the network sheet 11 along the contour of the three-dimensionally shaped network sheet 11 such that the bulky sheet, as a whole, has a three-dimensional profile with a number of protrusions and depressions.

Classifications:

International (IPC 8-9): A47L13/16 B32B5/26 D04H1/42 D04H1/4374 D04H1/48 D04H1/485 D04H1/54 D04H1/559

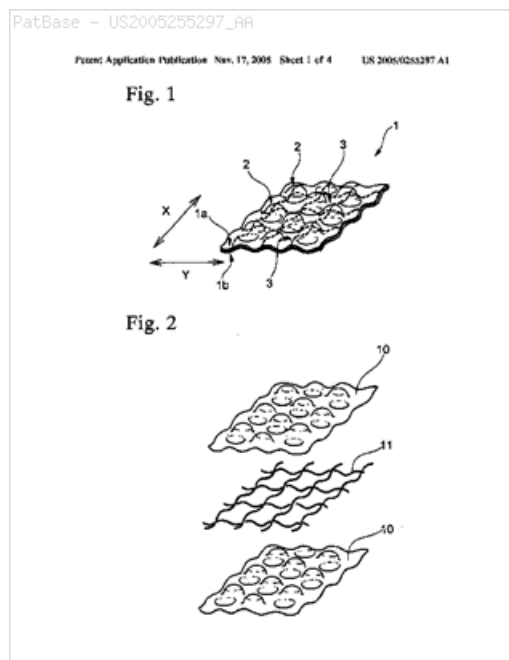
D04H13/00 (Advanced/Invention)

International (IPC 1-7): A47L13/16 B32B5/26 B65D1/00 D04H1/42 D04H1/48 D04H1/54 D04H13/00

CPC: Y10T428/24628 D04H5/03 D04H1/498 D04H1/558 D04H3/04

European: D04H13/00B2 D04H13/00B3B D04H13/00B5

US: 428/174



Family:

Publication number	Publication date	Application number	Application date
DE602005017845 D1	20100107	DE200560017845T	20050425
EP1591575 A1	20051102	EP20050009045	20050425
EP1591575 B1	20091125	EP20050009045	20050425
JP2005314842 A2	20051110	JP20040134600	20040428
JP4338578 B2	20091007	JP20040134600	20040428
US2005255297 AA	20051117	US20050115241	20050427

Priority:

JP20040134600 20040428

Probable Assignee: KAO CORP

Assignee(s): (std): KAO CORP

Inventor(s): (std): OTSUKA HIROSHI ; YANAGIDA HIROYUKI

Agent(s): VOSSIUS AND PARTNER; MATSUSHIMA YOSHIYUKI; HATORI OSAMU; BIRCH STEWART KOLASCH AND BIRCH

Designated states: DE FR GB

Title: METHOD AND APPARATUS FOR MANUFACTURING NONWOVEN FABRIC

Abstract: Source: US2008256768A [EN] The invention concerns a method and apparatus for patterning a nonwoven fabric. The method according to the invention is characterized in that the web is **supported** in the patterning phase on a perforated cylinder to which a 3-dimensional pattern has been formed substantially without removing material (patterning cylinder) for accomplishing a corresponding 3-dimensional pattern to the nonwoven fabric. The apparatus according to the invention comprises an element **supporting** the web, a vacuum system and water nozzles in order to **hydroentangle** the fibre web or combined fibre webs. The apparatus is characterized in that the element **supporting** the web is of a kind of the said pattern cylinder.

Classifications:

International (IPC 8-9): D04H1/4258 D04H1/435 D04H1/492 D04H1/495 D04H1/50 D04H1/74 D04H11/08 D04H3/04 (Advanced/Invention); D04H (Subclass/Invention)

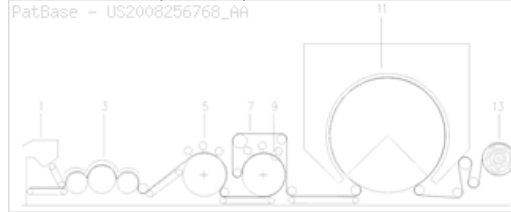
International (IPC 1-7): D04H1/46 D04H18/00

CPC: D04H1/435 D04H1/4258 D04H1/492 D04H1/495 D04H1/50 D04H1/74 D04H18/04

European: D04H1/4258 D04H1/435 D04H1/492 D04H1/495 D04H1/50 D04H1/74 D04H18/04

US: 28/102 28/102P 28/109 28/109S

PatBase - US2008256768_HH



Family:

Publication number	Publication date	Application number	Application date
EP1769113 A1	20070404	EP20050756345	20050620
FI121182 B	20100813	FI20040000848	20040618
FI20040848 A	20051219	FI20040000848	20040618
FI20040848 A0	20040618	FI20040000848	20040618
US2008256768 AA	20081023	US20050629525	20050620
WO05124001 A1	20051229	WO2005FI50224	20050620

Priority:

FI20040000848 20040618 WO2005FI50224 20050620

Probable Assignee: SUOMINEN NONWOVENS LTD

Assignee(s): (std): KORSBERG TOPI ; LAMPILA ERKKI ; SUOMINEN KUITUKANKAAT OY ; SUOMINEN NONWOVENS LTD ; TIRKKONEN ILKKA

Inventor(s): (std): KORSBERG TOPI ; LAMPILA ERKKI ; TIRKKONEN ILKKA

Agent(s): KRATZ QUINTOS AND HANSON LLP

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

Title: **HYDROENTANGLED** SPLIT-FIBRE NONWOVEN MATERIAL

Abstract: Source: US2007178795A [EN] A **hydroentangled** integrated composite nonwoven material, includes a mixture of randomized continuous filaments, splittable shortcut staple fibres, and optionally non-splittable staple fibres. The splittable fibres should be 3-16 mm long bicomponent fibres. Preferably there should be no thermal bonding points between the filaments. The nonwoven material has improved textile feeling and reduced two-sidedness. The continuous filaments should preferably be spunlaid filaments. Some of the staple fibres can be coloured. A process of producing such a nonwoven material is disclosed.

Classifications:

International (IPC 8-9): B29C41/24 B29C63/00 D04H1/00 D04H1/4382 D04H1/4391 D04H1/46 D04H1/492 D04H13/00 D04H3/033 D04H3/11 D04H5/02 D04H5/03 (Advanced/Invention); D04H13/00 (Core/Invention)

International (IPC 1-7): D04H13/00 D04H5/02

CPC: D04H3/11 D04H1/492 D04H3/033 D10B2321/022 D10B2321/021 D10B2331/02 D04H5/03 D04H1/4382 D04H1/4391 D04H13/00 Y10T442/608 Y10T442/611 Y10T442/637 Y10T442/689 Y10T442/697

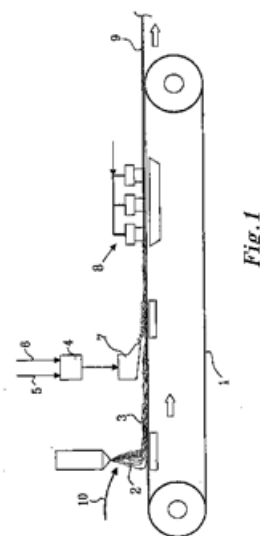
European: D04H1/4382 D04H1/4391 D04H13/00 D04H5/03

US: 19/302 264/165 264/165S 264/171.1 264/171.100S 28/104 442/334 442/337 442/361 442/361S 442/408 442/408P 442/415 442/415S

PatBase - US2007178795_AA

Patent Application Publication Aug. 2, 2007 Sheet 1 of 4

US 2007/0178795 A1



Family:

Publication number	Publication date	Application number	Application date
AT550469 E	20120415	AT20040749094T	20040629
AU2004321066 AA	20060105	AU20040321066	20040629
AU2004321066 BB	20101125	AU20040321066	20040629
DE602004037012 D1	20120516	DE200460037012T	20040629
EP1766121 A1	20070328	EP20040749094	20040629
EP1766121 B1	20120321	EP20040749094	20040629
ES2383688 T3	20120625	ES20040749094T	20040629
MXPA06014144 A1	20070307	MX2006PA14144	20040629
US2007178795 AA	20070802	US20060643902	20061222
US2015218742 AA	20150806	US20150630741	20150225
US9863073 BB	20180109	US20150630741	20150225
WO06001739 A1	20060105	WO2004SE01056	20040629

Priority:

EP20040749094 20040629 US20060643902 20061222 WO2004SE01056 20040629
US20150630741 20150225

Probable Assignee: SCA HYGIENE PRODUCTS AB

Assignee(s): (std): AHONIEMI HANNU ; FINGAL LARS ; SCA HYGIENE PROD AB ; SCA HYGIENE PRODUCTS AB ; STRAALIN ANDERS ; STRANDQVIST MIKAEL

Inventor(s): (std): STRANDQVIST MIKAEL ; STRALIN ANDERS ; STRAALIN ANDERS ; FINGAL LARS ; AHONIEMI HANNU

Inventor(s): ANDERS STRALIN ; MIKAEL STRANDQVIST ; LARS FINGAL ; HANNU AHONIEMI

Agent(s): WATERMARK INTELLECTUAL PROPERTY PTY LTD; WATERMARK PATENT AND TRADE MARKS ATTORNEYS; HOFFMANN EITL PATENT U RECHTSANWAELTE PARTMBB; VALEA AB; YOUNG AND THOMPSON; DRINKER BIDDLE AND REATH LLP

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

Title: MANUFACTURING PROCESS FOR COMBINING A LAYER OF PULP FIBERS WITH ANOTHER SUBSTRATE

Abstract: Source: US2007067973A [EN] A process for hydro-entangling a layer of fibers into a web includes the steps of conveying a web from a supply to lie against a traveling hydro-entangling fabric. A layer of fibers is deposited onto a traveling forming fabric, the forming fabric **supporting** the fiber layer from below. The forming fabric and the hydro-entangling fabric converge at a combining location where the forming fabric and hydro-entangling fabric orient and travel adjacent each other such that the fiber layer and web are sandwiched between the forming fabric and the hydro-entangling fabric with the fiber layer **supported** from below by the hydro-entangling fabric and web. The forming fabric is separated from the fiber layer after the web and overlying fiber layer are **supported** from below by the hydro-entangling fabric and the hydro-entangling fabric is conveyed through a hydro-entangling station to hydro-entangle the fibers into the web.

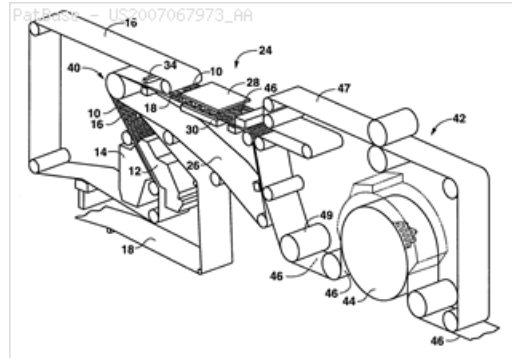
Classifications:

International (IPC 8-9): D04H1/44 D04H1/46 D04H1/492 D04H13/00 D04H3/11 D04H5/02 (Advanced/Invention); D04H1/44 D04H1/46 (Advanced/Non-invention); D04H1/00 D04H1/44 D04H1/46 D04H13/00 D04H5/00 (Core/Invention)

CPC: D04H1/498 D04H1/492

European: D04H13/00B3B

US: 28/104 28/105



Family:

Publication number	Publication date	Application number	Application date
BRPI0616739 A2	20110628	BR2006PI16739	20060602
BRPI0616739 B1	20161116	BR2006PI16739	20060602
CA2622885 AA	20080317	CA20062622885	20060602
CA2622885 C	20140325	CA20062622885	20060602
DE602006006583 D1	20090610	DE200660006583T	20060602
EP1929080 A2	20080611	EP20060771960	20060602
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KR101259780 B1	20130503	KR20087007351	20060602
KR20080048040 A	20080530	KR20087007351	20060602
MX2008003972 A1	20090227	MX20080003972	20060602
US2007067973 AA	20070329	US20050235700	20050926
US7478463 BB	20090120	US20050235700	20050926
WO07040662 A2	20070412	WO2006US21468	20060602
WO07040662 A3	20070712	WO2006US21468	20060602

Priority:

US20050235700 20050926 WO2006US21468 20060602

Probable Assignee: KIMBERLY CLARK WORLDWIDE INC

Assignee(s): (std): CONNER J MICHAEL ; KIMBERLY CLARK CO ; KIMBERLY CLARK CORP

Assignee(s): KIMBERLY CLARK WORLDWIDE INC ; CONNER J

Inventor(s): (std): CONNER J M ; CONNER J MICHAEL ; CONNER MICHAEL J

Inventor(s): CONNER J ; J MICHAEL CONNER

Agent(s): BORDEN LADNER GERVAIS LLP; DAVIES CHRISTOPHER ROBERT; DORITY AND MANNING PA

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

Title: NONWOVEN MATERIAL AND A METHOD FOR PRODUCING NONWOVEN MATERIAL

Abstract: Source: US2008261476A [EN] A nonwoven material for use as an absorbent wiping material produced by **hydroentangling** of a substrate web including at least one layer of fibres selected from amongst synthetic fibres, regenerated fibres and natural fibres, wherein the nonwoven material has a base level h_0 with protuberances on one side, the protuberances forming at least a first and a second surface structure respectively in the form of first and second from the base level h_0 . The first protuberances have a height h_1 from the base level h_0 and the second protuberances have a height h_2 from the base level h_0 , where h_2 is higher than h_1 , and each of the second protuberances occupies an area of the surface of the base level at least 4 times greater than each of the first protuberances. A method for producing the nonwoven material is also disclosed.

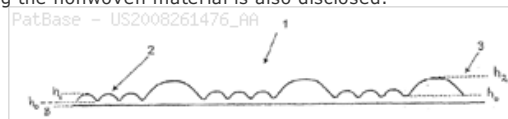
Classifications:

International (IPC 8-9): A47L13/16 A61F13/15 D04H1/46 D04H1/492 D04H1/495 D04H1/498 D04H1/732 D04H13/00 D04H3/11 D04H3/16 D04H5/03 (Advanced/Invention)

CPC: A61F13/15577 A61F2013/15983 D04H1/498 D04H3/11 D04H3/16 D04H5/03 D04H1/495 D04H1/492 D04H1/732 Y10T442/608

European: D04H1/492 D04H1/495 D04H1/498 D04H1/732 D04H3/11 D04H3/16 D04H5/03

US: 15/209.1 28/104 442/334 442/334P



Family:

Publication number	Publication date	Application number	Application date
AT515999 E	20110715	AT20050815805T	20051207
AU2005338968 AA	20070614	AU20050338968	20051207
AU2005338968 BB	20120607	AU20050338968	20051207
DE602005029018 D1	20110901	DE200560029018T	20051207
EP1962754 A1	20080903	EP20050815805	20051207
EP1962754 A4	20100623	EP20050815805	20051207
EP1962754 B1	20110713	EP20050815805	20051207
ES2371478 T3	20120103	ES20050815805T	20051207
US2008261476 AA	20081023	US20050096189	20051207
US2015250373 AA	20150910	US20150618766	20150210
US9850604 BB	20171226	US20150618766	20150210
WO07067101 A1	20070614	WO2005SE01850	20051207

Priority:

EP20050815805 20051207 US20080096189 20080605 WO2005SE01850 20051207
US20150618766 20150210

Probable Assignee: SCA HYGIENE PRODUCTS AB

Assignee(s): (std): AHONIEMI HANNU ; BURMAN DANIEL ; SCA HYGIENE PROD AB ; STRANDQVIST MIKAEL

Assignee(s): SCA HYGIENE PRODUCTS AB

Inventor(s): (std): AHONIEMI HANNU ; BURMAN DANIEL ; STRANDQVIST MIKAEL

Inventor(s): DANIEL BURMAN ; HANNU AHONIEMI ; MIKAEL STRANDQVIST

Agent(s): WATERMARK PATENT AND TRADE MARKS ATTORNEYS; WATERMARK INTELLECTUAL PROPERTY PTY LTD; AXELL KRISTINA ET AL; AXELL KRISTINA; YOUNG AND THOMPSON; DRINKER BIDDLE AND REATH LLP

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

Title: **HYDROENTANGLED** NONWOVEN MATERIAL

Abstract: Source: US2010075120A [EN] A **hydroentangled** nonwoven material (8), includes a mixture of randomized continuous filaments (3) and natural fibres (5), wherein at least part of the staple fibres and/or the continuous filaments includes thermoplastic material. The nonwoven material is bonded in a non-random bonding pattern including a plurality of bonding sites (14) in which thermoplastic material included in the nonwoven material has been caused to at least partly soften or melt to create thermal bonds between the continuous filaments. The nonwoven material includes no other thermal bonds between the filaments than provided by the non-random bonding pattern. The nonwoven material may also contain synthetic staple fibers (6).

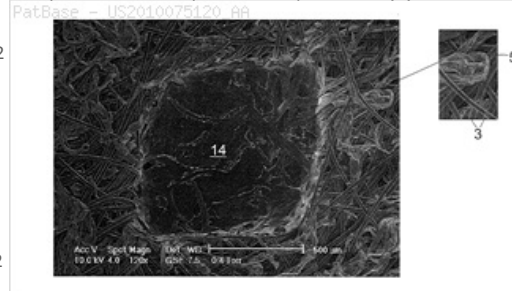
Classifications:

International (IPC 8-9): B29C65/08 B32B3/10 B32B5/26 B32B7/04 B32B9/02 D04H1/4258 D04H1/4291 D04H1/4334 D04H1/435 D04H1/4382 D04H1/46 D04H1/485 D04H1/492 D04H1/54 D04H1/62 D04H13/00 D04H3/02 D04H5/02 D04H5/03 D04H5/06 D04H5/08 (Advanced/Invention)

CPC: Y10T428/2481 D04H5/03 B32B5/26 B32B9/02 D04H1/4258 D04H1/4291 D04H1/4334 D04H1/435 D04H1/4382 D04H1/485 D04H1/492 D04H1/54 D04H3/02 D04H5/06 D04H5/08 D04H13/00 Y10T442/682 Y10T442/684 Y10T442/686 Y10T442/689 Y10T442/69

European: B32B5/26 B32B9/02 D04H1/4258 D04H1/4291 D04H1/4334 D04H1/435 D04H1/4382 D04H1/485 D04H1/492 D04H1/54 D04H13/00 D04H3/02 D04H5/03 D04H5/06 D04H5/08

US: 156/148 156/148S 156/73.2 156/73.200S 428/196 428/196P 442/402 442/403 442/405 442/408 442/409



Family:

Publication number	Publication date	Application number	Application date
AU2006351268 AA	20080605	AU20060351268	20061129
AU2006351268 BB	20130117	AU20060351268	20061129
EP2102402 A1	20090923	EP20060824487	20061129
EP2102402 A4	20101208	EP20060824487	20061129
MX2009005540 A1	20090605	MX20090005540	20061129
US2010075120 AA	20100325	US20060447397	20061129
US8389427 BB	20130305	US20060447397	20061129
WO08066417 A1	20080605	WO2006SE01353	20061129

Priority:

WO2006SE01353 20061129

Probable Assignee: SCA HYGIENE PRODUCTS AB

Assignee(s): (std): FINGAL LARS ; GUSTAFSSON ANDERS ; SCA HYGIENE PROD AB ; STANDQVIST MIKAEL ; STRANDQVIST MIKAEL ; TONDKAR KAVEH

Assignee(s): SCA HYGIENE PRODUCTS AB

Inventor(s): (std): TONDKAR KAVEH ; STRANDQVIST MIKAEL ; STANDQVIST MIKAEL ; GUSTAFSSON ANDERS ; FINGAL LARS

Inventor(s): ANDERS GUSTAFSSON ; MIKAEL STANDQVIST ; LARS FINGAL ; KAVEH TONDKAR

Agent(s): WATERMARK PATENT AND TRADE MARKS ATTORNEYS; WATERMARK INTELLECTUAL PROPERTY PTY LTD; VALEA AB; YOUNG AND THOMPSON

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

Title: FLUSHABLE MOIST WIPE OR HYGIENE TISSUE

Abstract: Source: US2012199301A [EN] A flushable moist wipe or hygiene tissue including a hydraulically entangled nonwoven material impregnated with a wetting composition. The nonwoven material contains at least 70 percent, by fibre weight, pulp fibres and the rest manmade fibres and/or natural fibres with a length of at least 6 mm. The moist wipe or hygiene tissue has a length in the machine direction which exceeds the width in the cross-machine direction with at least 25 percent. The moist wipe or hygiene tissue has a wet strength in machine direction which is at least 3 times higher than the wet strength in cross-machine direction, wherein the wet strength in cross-machine direction is between 50 and 200 N/m.

Classifications:

International (IPC 8-9): A47K10/16 A47K7/00 D04H1/26 D04H1/425 D04H1/46 D04H1/492 D04H1/498 D04H5/02 D21H11/00 D21H13/00 D21H15/06 D21H21/20 D21H27/38 (Advanced/Invention);

A47K10/32 D21H27/00 (Advanced/Non-invention)

CPC: Y10T442/2484 Y10T442/663 Y10T442/689 D21H13/00 A47K2010/3266 D04H1/26 D04H1/425 D04H1/492 D04H1/498 D21H27/002

European: D04H1/26 D04H1/425 D04H1/492 D04H1/498 D21H13/00 D21H27/00D K47K10/32W

US: 162/115 162/129 162/130 162/141 162/141S 162/146 162/149 28/104 442/118 442/384 442/408

Family:

Publication number	Publication date	Application number	Application date
AU2009354046 AA	20110421	AU20090354046	20091016
AU2009354046 BB	20150618	AU20090354046	20091016
CN102665510 A	20120912	CN200980161959	20091016
CN102665510 B	20160601	CN200980161959	20091016
CO6460718 A2	20120615	CO20120079435	20120515
ECSP12011897 A	20120731	EC2012SP11897	20120514
EP2488684 A1	20120822	EP20090850443	20091016
EP2488684 A4	20150812	EP20090850443	20091016
MA33741 B1	20121101	MA20120034858	20120511
MX2012004292 A1	20120612	MX20120004292	20091016
NZ598854 A	20130927	NZ20090598854	20091016
RU2012120079 A	20131127	RU20120120079	20091016
RU2519994 C2	20140620	RU20120120079	20091016
TN2012000119 A1	20130919	TN20120000119	20120316
US2012199301 AA	20120809	US20090500181	20091016
US8668808 BB	20140311	US20090500181	20091016
WO11046478 A1	20110421	WO2009SE51192	20091016

Priority:

CO20120079435 20120515 NZ20090598854 20091016 WO2009SE51192 20091016

Probable Assignee: SCA HYGIENE PRODUCTS AB

Assignee(s): (std): SCA HYGIENE PROD AB ; STRANDQVIST MIKAEL

Assignee(s): SCA HYGIENE PRODUCTS AB ; SKA KHAJDZHIN PRODAKTS AB

Inventor(s): (std): MIKAEL STRANDQVIST ; STRANDQVIST MIKAEL ; STRANDKVIST MIKAEHL

Agent(s): WATERMARK PATENT AND TRADE MARKS ATTORNEYS; WATERMARK INTELLECTUAL PROPERTY PTY LTD; LUZ CLEMENCIA DE PAEZ; VALEA AB; DRINKER BIDDLE AND REATH LLP

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ 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 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 PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: APERTURED WIPING CLOTH

Abstract: Source: US2011119850A [EN] The present invention provides a wiping cloth which has unique surface properties, tactile feel and enhanced wiping performance for wiping both wet and dry surfaces. The wiping cloth has a series of three-dimensional projections which encircle apertures. The wiping cloth is made from a substrate which contains a thermoplastic polymer.

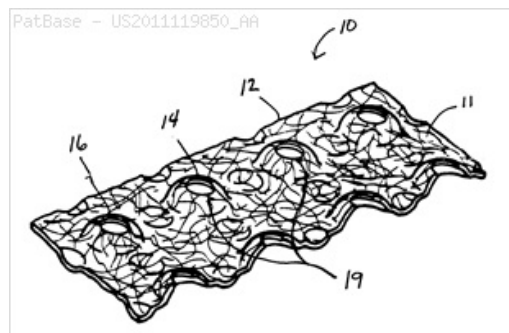
Classifications:

International (IPC 8-9): A47L25/00 (Advanced/Invention)

CPC: A47L13/16 D04H5/03

European: A47L13/16 D04H5/03

US: 15/209.1 15/209.100P



Family:

Publication number	Publication date	Application number	Application date
US2011119850 AA	20110526	US20090624669	20091124

Priority:

US20090624669 20091124

Probable Assignee: KIMBERLY CLARK WORLDWIDE INC

Assignee(s): (std): LATIMER MARGARET GWYN ; MALLORY MARY FRANCES ; SIEBERS BRUCE MICHAEL

Assignee(s): KIMBERLY CLARK WORLDWIDE INC

Inventor(s): (std): SIEBERS BRUCE MICHAEL ; MALLORY MARY FRANCES ; LATIMER MARGARET GWYN

Title: NONWOVEN WEBS WITH ENHANCED LOFT AND PROCESS FOR FORMING SUCH WEBS

Abstract: Source: US2014072767A [EN] The present invention relates to a process of forming a soft bulky nonwoven web from a batt using thermobonding and to a soft bulky nonwoven web with a bond impression pattern and shape. The process comprises several steps including feeding a batt to a nip between first and second surface of first and second roller, where at least the first of the surfaces comprises spaced apart bonding protrusions surrounded by recessed areas. The bonding protrusions and the bond impression shape in the web exhibit a ratio of the greatest measurable width to the greatest measurable length of at least 1:2.5 and the perimeters thereof comprise a convex portion. The bonding protrusions are symmetric and/or have a certain angle to the machine direction.

Classifications:

International (IPC 8-9): A61F13/15 A61F13/49 A61F13/51 D04H D04H1/54 D04H1/541 D04H1/542 D04H1/544 D04H1/559 D04H1/56 D04H3/005 D04H3/08 D04H3/10 D04H3/14 D04H3/147 (Advanced/Invention);

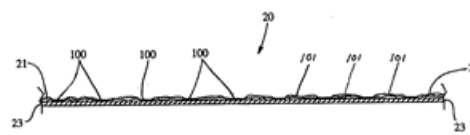
D04H1/54 D04H1/56 (Core/Invention);
D04H (Subclass/Invention)

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European: D04H1/544 D04H1/56 D04H3/14 D04H3/147

US: 264/103 428/156

PatBase - US2014072767_AA



Family:

Publication number	Publication date	Application number	Application date
AR085540 AA	20131009	AR2012P100966	20120323
BR112013024590 A2	20161220	BR20131124590	20120323
CN103459693 A	20131218	CN201280014631	20120323
CN103459693 B	20161130	CN201280014631	20120323
CZ20110163 A3	20121003	CZ20110000163	20110325
DE602012013880 D1	20160303	DE201260013880T	20120323
EP2689058 A1	20140129	EP20120714569	20120323
EP2689058 B1	20160113	EP20120714569	20120323
IN03132KN2013 A	20140214	IN2013KN03132	20131024
JP2014514465 T2	20140619	JP20140500285T	20120323
JP6148662 B2	20170614	JP20140500285T	20120323
KR20140029417 A	20140310	KR20137028230	20120323
MX2013011007 A1	20140327	MX20130011007	20120323
PE12452014 A1	20140929	PE20130002086	20120323
RU2013147027 A	20150427	RU20130147027	20120323
RU2587790 C2	20160620	RU20130147027	20120323
TH142711 A	20150827	TH20131005285	20120323
US2014072767 AA	20140313	US20120006534	20120323
WO12130414 A1	20121004	WO2012EP01274	20120323
ZA201309347 A	20140730	ZA20130009347	20131022

Priority:

CZ20110000163 20110325 EP20120714569 20120323 WO2012EP01274 20120323

Probable Assignee: PEGAS NONWOVENS SRO

Assignee(s): (std): DE BEER ANTONIUS LAMBERTUS JOHANNES ; ISELE OLAF ERIK ALEXANDER ; KASPARKOVA PAVLINA ; KLASKA FRANTISEK ; KUMMER JIRI ; PEGAS NONWOVENS S R O ; XU HAN ; MECL ZDENEK ; PEGAS NONWOVENS SRO ; PEGAS NONWOVENS S R O

Assignee(s): PEGAS NONWOVENS SRO

Inventor(s): (std): ANTONIUS LAMBERTUS JOHANNES DE BEER ; DE BEER ANTONIUS LAMBERTUS JOHANNES ; FRANTISEK KLASKA ; HAN XU ; ISELE OLAF ERIK ALEXANDER ; JIRI KUMMER ; KASPARKOVA PAVLINA ; KLASKA FRANTISEK ; KUMMER JIRI ; MECL ZDENEK ; OLAF ERIK ALEXANDER ISELE ; PAVLINA KASPARKOVA ; XU HAN ; ZDENEK MECL ; SYUJ KHAN ; METSL ZDENEK ; MCEL ZDENEK ; KUMMER YURIJ ; KLASKA FRANTISEK ; ISELE OLAF ERIK ALEXANDER ; DE BIR ANTONIUS LAMBERTUS JOHANNES ; BEER ANTONIUS LAMBERTUS JOHANNES DE

Inventor(s): DE BEER ANTONIUS LAMBERTUS JOHANNES LOVELAND ; ISELE OLAF ERIK ALEXANDER WEST CHESTER ; XU HAN CINCINNATI

Agent(s): FREISCHEM AND PARTNER PATENTANWALTE MBB ; ZEMANOVA VERONIKA ; OGURA MASAOKI ; OGURA AND CO

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ 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 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 PE PG PH PL PT QA RO RS RU RW 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

Abstract: Source: US2015327745A [EN] A cleaning sheet (1) includes a hydrophilic fiber aggregate (11) and a hydrophobic fiber aggregate (12) disposed on both sides of the hydrophilic fiber aggregate (11). The hydrophobic fiber aggregate (12) has its constituent fibers (14) entangled with one another, entering the hydrophilic fiber aggregate (11), and entangled with fibers (13) of the hydrophilic fiber aggregate (11). The cleaning sheet (1) is three-dimensionally textured with a plurality of protrusions (2) and a plurality of depressions (3) on both sides thereof. The protrusions (2) on one side correspond to the depressions (3) on the other side, and the depressions (3) on one side correspond to the protrusions (2) on the other side. The cleaning sheet (1) has linear bonds (15) where the hydrophilic fiber aggregate (11) and the hydrophobic fiber aggregate (12) are bonded to each other.

US: 15/209.1 28/104 28/123



Publication number	Publication date	Application number	Application date
■ CN104349703 A	20150211	CN201380028026	20130326
■ CN104349703 B	20180213	CN201380028026	20130326
■ ID201601921 A	20160325	ID2014P0007395	20130326
■ JP2014004328 A2	20140116	JP20130044247	20130306
■ JP6253238 B2	20171227	JP20130044247	20130306
■ RU2014152976 A	20160720	RU20140152976	20130326
■ RU2608283 C2	20170117	RU20140152976	20130326
■ SG11201405612Q A1	20141030	SG20141105612	20130326
■ TH145874 A	20160304	TH20141006939	20130326
■ TW201350637 A	20131216	TW20130112401	20130408
■ TWI539051 B	20160621	TW20130112401	20130408
■ US2015327745 AA	20151119	US20130388143	20130326
■ WO13179747 A1	20131205	WO2013P58763	20130326

JP20120121126 20120528 JP20130044247 20130306 WO2013JP58763 20130326

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 IS IT KE KG KM KN KP KR KZ LA LC 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 SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: METHOD FOR PRODUCING A FLUSHABLE **HYDROENTANGLED** MOIST WIPE OR HYGIENE TISSUE

Abstract: Source: US2017022667A [EN] A method for producing a flushable **hydroentangled** moist wipe or hygiene tissue including the steps of: dry-, wet-, or foam-forming a fibrous web on a moving **support**, **hydroentangling** said fibrous web in a **hydroentangling** station to form a **hydroentangled** nonwoven web is disclosed. The moving **support** includes a plurality of protruding elongated elements protruding above the surface of the moving **support**. The protruding elements will produce weakenings in the **hydroentangled** web.

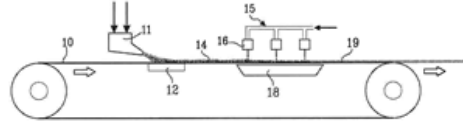
Classifications:

International (IPC 8-9): A47K10/16 A61F13/15 D04H1/46 D04H1/492 D04H1/495 D04H1/732 D04H18/04 D21H13/08 D21H25/00 D21H27/00 (Advanced/Invention)

CPC: D21H13/08 D04H1/492 D04H1/495 D04H1/732 D04H18/04 D21H27/00

US: 162/109

PatBase - US2017022667_AA



Family:

Publication number	Publication date	Application number	Application date
AU2014390092 AA	20151015	AU20140390092	20140408
AU2014390092 BB	20170713	AU20140390092	20140408
CN106164355 A	20161123	CN201480077625	20140408
CO20160003876 A2	20170410	CO20160003876	20161104
EP3129537 A1	20170215	EP20140888827	20140408
EP3129537 A4	20170913	EP20140888827	20140408
MX2016013060 A1	20170126	MX20160013060	20140408
US2017022667 AA	20170126	US20140302214	20140408
US9822487 BB	20171121	US20140302214	20140408
WO15156712 A1	20151015	WO2014SE50432	20140408

Priority:

WO2014SE50432 20140408

Probable Assignee: SCA HYGIENE PRODUCTS AB

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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

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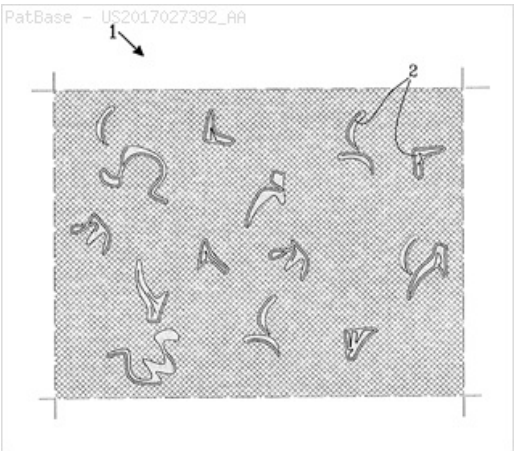
Abstract: Source: US2017027392A [EN] A flushable wipe or hygiene tissue includes a hydraulically entangled nonwoven material impregnated with a wetting composition, wherein the nonwoven material includes cellulose pulp fibers and/or manmade staple fibers. The nonwoven material includes disintegration elements having a projected surface area between 2 and 50 mm2 and an aspect ratio (L/D) between 1 and 10. The disintegration elements may be selected from the following group: botanical elements, paper containing a wet-strength agent, nonwoven material, and film material, and will result in a material that is more readily disintegratable when flushed in a sewer.

Classifications:

International (IPC 8-9): A47K10/16 A47K7/03 D04H1/413 D04H1/425 D04H1/492 D04H1/732 D21H21/14 D21H21/20 D21H21/50 D21H21/52 D21H27/00 (Advanced/Invention)

CPC: A61F13/15211 A47K7/03 D21H21/20 D04H1/413 D04H1/425 D04H1/492 D04H1/732 D21H21/52

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Publication number	Publication date	Application number	Application date
AU2014390093 AA	20151015	AU20140390093	20140408
AU2014390093 BB	20170119	AU20140390093	20140408
CN106164373 A	20161123	CN201480077624	20140408
CO20160003860 A2	20170209	CO20160003860	20161104
EP3129552 A1	20170215	EP20140888854	20140408
EP3129552 A4	20171018	EP20140888854	20140408
MX2016013059 A1	20170126	MX20160013059	20140408
US2017027392 AA	20170202	US20140302230	20140408
WO15156713 A1	20151015	WO2014SE50433	20140408

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Probable Assignee: SCA HYGIENE PRODUCTS AB

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