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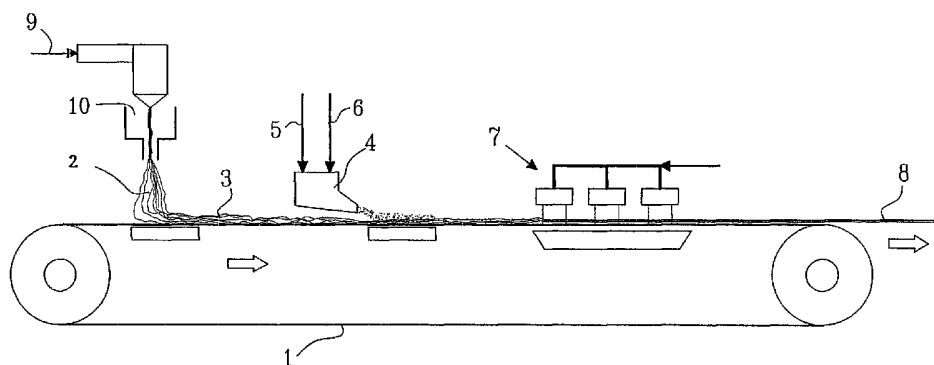
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(54) Title: A HYDROENTANGLED NONWOVEN MATERIAL



(57) Abstract: The invention teaches an improved hydroentangled well integrated composite nonwoven material, comprising 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 nm, and preferably there should be no thermal bondings between the filaments. The invention also teaches a method of producing such a nonwoven material. The nonwoven comprises a mixture of 10-50 w-% continuous filaments preferably chosen from polypropylene, polyesters and polylactides, 5-50 w-% synthetic staple fibres chosen from polyethylene, polypropylene, polyesters, polyamides, polylactides, rayon, and lyocell, and 20-85 w-% natural fibres, preferably pulp. The continuous filaments should preferably be spunlaid filaments. Some of the staple fibres and/or pulp can be coloured.

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## INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 2004/001519

## A. CLASSIFICATION OF SUBJECT MATTER

IPC7: D04H 1/46, D04H 5/02, D04H 13/00

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: D04H, B32B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

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

EPO-INTERNAL, WPI DATA, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 0238846 A2 (KIMBERLY-CLARK WORLDWIDE INC), 16 May 2002 (16.05.2002), page 3, line 13 - page 4, line 23; page 5, line 10 - line 23 --	1-12
A	US 6163943 A (JOHANSSON ET AL), 26 December 2000 (26.12.2000), column 2, line 27 - column 4, line 3 --	1-12
A	EP 0308320 A2 (JAMES RIVER CORP OF VIRGINIA), 22 March 1989 (22.03.1989), column 1, line 48 - column 5, line 15 --	1-12



Further documents are listed in the continuation of Box C.



See patent family annex.

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document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

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document member of the same patent family

Date of the actual completion of the international search

18 February 2005

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International application No.

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

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A	US 6592713 B2 (AHONIEMI), 15 July 2003 (15.07.2003), column 2, line 51 - column 4, line 31  --	1-12
A	EP 0333212 A2 (KIMBERLY-CLARK CORP), 20 Sept 1989 (20.09.1989), page 2 - page 8, figure 1  --	1-12
A	EP 0333211 A2 (KIMBERLY-CLARK CORP), 20 Sept 1989 (20.09.1989), column 6, line 24 - column 9, line 29  --	1-12
A	EP 0333228 A2 (KIMBERLY-CLARK CORP), 20 Sept 1989 (20.09.1989), page 3, line 42 - page 5, line 53  -- -----	1-12

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