

Title (en)
Method and apparatus for making a spunbonded nonwoven

Title (de)
Verfahren und Vorrichtung zur Herstellung eines Spinnvlieses

Title (fr)
Procédé et installation pour la fabrication d'un nontissé du type spunbonded

Publication
EP 1178142 B1 20030716 (DE)

Application
EP 01113039 A 20010529

Priority
DE 10036047 A 20000725

Abstract (en)
[origin: EP1178142A1] To produce a spun-bonded nonwoven fabric, melt spun polymer filaments are delivered in a falling curtain parallel to each other with an aerodynamic take-off and drawing action. The band of filaments (8), taken from the drawing channel (12) or a bobbin, are carried by an airstream with periodic direction changes in lateral side movements. The airstream is aligned at an angle to the band of filaments, in an alternating sequence as seen on a horizontal plane. To produce a spun-bonded nonwoven fabric, there are pauses between the airstream flow direction changes. The air blowing direction is at right angles to the band of filaments, at 15 degrees to the horizontal plane and at a downwards angle of 15 degrees on the vertical plane. The air blowing direction is at the front or the rear of the band of filaments. After movement through the alternating airstream flows, the filaments are given an additional movement through guide surfaces which have a periodic filament deflection action e.g. swing flaps and the like. An Independent claim is included for an assembly to produce spun-bonded nonwoven fabrics with at least one blower shaft (3) under the drawing channel, in front of and/or behind the band of filaments. It has air outlet jets (10,11) aligned at an angle to the band of filaments. Preferred Features: The air blower jets are in at least two parallel rows, with the jets in one row on an opposing orientation to the jets of the other row. The air flow can be blocked to each of the air jet rows, using a hollow rotating roller fitted with longitudinal slits. The roller is within a longitudinal channel, filled with compressed air and linked to a compressed air supply. The air jets can be formed by exchangeable corrugated sheet inserts, with the corrugations at an angle to the longitudinal axis of the sheets, laid in the jet wall. The sealing wall has overlaid longitudinal slits, which correspond with the slits in the hollow roller. The blower shaft has an air build-up zone, between the jet and sealing walls to the roller. The air build-up zone is separated into two chambers (15,16) by a dividing wall (14), for the upper and lower slits and jets. The jets deliver airstreams at the same angle in each row of 10-60 degrees and preferably 45 degrees . An adjustable air guide plate (2) is at the side of the band of filaments opposite the blower shaft, in the air blowing direction. An adjustable and mechanical air guide is under the blower shaft, to control the airstream flow direction, using a swing wing flap (22) or shells.

IPC 1-7
D04H 3/16

IPC 8 full level
D04H 1/56 (2006.01); **D04H 3/16** (2006.01)

CPC (source: EP US)
D01D 5/0985 (2013.01 - EP US); **D04H 3/16** (2013.01 - EP US); **Y10T 442/681** (2015.04 - EP US)

Designated contracting state (EPC)
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR

DOCDB simple family (publication)
EP 1178142 A1 20020206; EP 1178142 B1 20030716; AT E245217 T1 20030815; CA 2354050 A1 20020125; CA 2354050 C 20061031; DE 10133790 A1 20020328; DE 10133790 B4 20081120; DE 50100381 D1 20030821; ES 2201002 T3 20040316; JP 2002088632 A 20020327; JP 3581842 B2 20041027; PL 202460 B1 20090630; PL 348710 A1 20020128; PT 102643 A 20020130; TW 587115 B 20040511; US 2002043739 A1 20020418; US 2005098266 A1 20050512; US 6887331 B2 20050503; US 7191813 B2 20070320

DOCDB simple family (application)
EP 01113039 A 20010529; AT 01113039 T 20010529; CA 2354050 A 20010725; DE 10133790 A 20010716; DE 50100381 T 20010529; ES 01113039 T 20010529; JP 2001221681 A 20010723; PL 34871001 A 20010717; PT 10264301 A 20010706; TW 90115505 A 20010627; US 1628704 A 20041217; US 91173001 A 20010724