

Title (en)
Spinning apparatus and process for manufacturing nonwoven fabric

Title (de)
Spinnvorrichtung und Verfahren zur Herstellung von Vliesstoffen

Title (fr)
Appareil de filature et procédé de fabrication d'étoffe non tissée

Publication
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Application
EP 10192653 A 20101126

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Abstract (en)
Provided are a spinning apparatus capable of stably spinning fibers having a small fiber diameter with a high productivity, an apparatus comprising the same for manufacturing a nonwoven fabric, a process for manufacturing a nonwoven fabric using the nonwoven fabric manufacturing apparatus, and a nonwoven fabric produced by the process. The spinning apparatus of the present invention comprises one or more exits for extruding liquid, which are capable of extruding a spinning liquid, and one or more exits for ejecting gas, which extend linearly and are located upstream of each of the exits for extruding liquid and which are capable of ejecting a gas, wherein a shearing force by the gas and its accompanying airstream can be single-linearly exerted on the spinning liquid extruded. The apparatus of the present invention for manufacturing a nonwoven fabric comprises a fibers collection means as well as the spinning apparatus. The process of the present invention for manufacturing a nonwoven fabric is a process using the apparatus for manufacturing a nonwoven fabric. The nonwoven fabric of the present invention is a nonwoven fabric produced by the process.

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Citation (applicant)
• JP 2005515316 A 20050526
• US 6520425 B1 20030218 - RENEKER DARRELL H [US]

Citation (search report)
• [XPI] EP 2128311 A1 20091202 - JAPAN VILENE CO LTD [JP]
• [XA] EP 0979885 A2 20000216 - ILLINOIS TOOL WORKS [US]
• [XA] WO 03062510 A1 20030731 - UNIV AKRON [US]
• [XA] US 2005056956 A1 20050317 - ZHAO RONGGUO [US], et al
• [A] EP 0265249 A2 19880427 - MITSUI PETROCHEMICAL IND [JP]
• [A] GB 1089414 A 19671101 - FREUDENBERG CARL

Cited by
CN104026786A; CN110079872A; EP3327181A4; EP3670712A4; EP2617879A1; CN103215659A; WO2017103314A1

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