

Title (en)

Spinning device for manufacturing a yarn using an air vortex

Title (de)

Spinnvorrichtung zur Herstellung eines gesponnenen Fadens mittels eines umlaufenden Luftstroms

Title (fr)

Dispositif pour la production d'un fil utilisant un flux d'air en vortex

Publication

EP 1329542 A2 20030723 (DE)

Application

EP 02025458 A 20021115

Priority

DE 10201577 A 20020117

Abstract (en)

A spinning device has an adjustment device for controlling a helical wrapping angle of fiber ends around the spindle and an acute wrapping angle of fibers around a yarn, and a control device for controlling the adjustment device between a setting for spinning start process and setting(s) for normal spinning operations. The spinning device also includes a housing, sliver guidance element(s), and a hollow spindle. A spinning device comprises a housing (2) having inlet opening for receiving a sliver, silver guidance element(s) arranged downstream of inlet opening (7), and a hollow spindle through which a formed yarn is withdrawn. The spindle has a conical spindle head, and openings in the area of spindle inlet for injecting circulating air flow into the housing. The circulating air flow comprises a linear airflow component in yarn traveling direction, and a twisting airflow component in helical orientation about the yarn for wrapping free fiber ends of sliver helically around the spindle head to be subsequently wrapped around the yarn at an acute angle with respect to the yarn traveling direction as the yarn is drawn off through the spindle. An adjustment device (17) adjusts the linear flow component as a function of yarn withdrawal speed, and controls a helical wrapping angle of fiber ends around the spindle and the acute angle of wrapping the fibers around the yarn. A control device (23) controls the adjustment device between a setting for the spinning start process and setting(s) for normal spinning operations.

Abstract (de)

Die Spinnvorrichtung zur Herstellung eines gesponnenen Fadens mittels eines umlaufenden Luftstroms in einem Gehäuse weist eine Verstelleinrichtung (17) auf, mittels der durch Einstellen der Längskomponente eines Luftstromes abhängig von der Abzugsgeschwindigkeit die Winkellage der um einen Spindelkopf gewickelten Faserenden und damit die Winkellage der Umwindefasern um den hergestellten Faden gesteuert wird. Die Erfindung ermöglicht es, auch während der Anspinnphase bei der Herstellung eines gesponnenen Fadens mittels eines umlaufenden Luftstroms ein Garn mit der erforderlichen Garnfestigkeit herzustellen. <IMAGE>

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CPC (source: EP US)

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Cited by

CH706923A1; EP1431432A1; CN106222819A; EP4389947A1; LU503239B1; US7080502B2; WO2008095631A1; WO2007033717A1; WO2013138875A1

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