

Title (en)
METHOD OF MANUFACTURING STABILIZED FIBER BUNDLE, AND METHOD OF MANUFACTURING CARBON FIBER BUNDLE

Title (de)
VERFAHREN ZUR HERSTELLUNG EINES STABILISIERTEN FASERBÜNDELS UND VERFAHREN ZUR HERSTELLUNG EINES KOHLEFASERBÜNDELS

Title (fr)
PROCÉDÉ DE FABRICATION D'UN FAISCEAU DE FIBRES STABILISÉ ET PROCÉDÉ DE FABRICATION D'UN FAISCEAU DE FIBRES DE CARBONE

Publication
EP 3859060 A4 20220706 (EN)

Application
EP 19867898 A 20190912

Priority

- JP 2018183750 A 20180928
- JP 2019035858 W 20190912

Abstract (en)
[origin: EP3859060A1] A method of manufacturing a stabilized fiber bundle, including travelling an acrylic fiber bundle 2 obtained by adjacently aligning a plurality of bundles, in a hot air heating-type oxidation oven 1, with the acrylic fiber bundle being conveyed by a guide roller 4 placed on each of both sides outside the oxidation oven 1, to thereby subject the acrylic fiber bundle to a heat treatment in an oxidizing atmosphere, wherein a direction of hot air in the oxidation oven 1 is horizontal to a travelling direction of the fiber bundle, and a contact probability P between adjacent fiber bundles, defined by the following expression (1), is 2 to 18%: $P=1-p(x)-t < x < t \times 100$ wherein P represents the contact probability (%) between adjacent fiber bundles, t represents an interspace (mm) between adjacent fiber bundles, p(x) represents a probability density function of a normal distribution $N(0, \sigma < \sup > 2 < /sup >)$, σ represents a standard deviation of an amplitude of vibration, and x represents a random variable under the assumption that a median amplitude of vibration is zero. A high-quality stabilized fiber bundle and a high-quality carbon fiber bundle can be produced at high production efficiencies without any process troubles.

IPC 8 full level
D01F 9/22 (2006.01); **D01D 10/02** (2006.01); **D01F 9/32** (2006.01); **D01F 6/18** (2006.01)

CPC (source: EP KR US)
D01D 10/02 (2013.01 - EP); **D01F 9/225** (2013.01 - EP KR US); **D01F 9/32** (2013.01 - KR US); **D01F 9/328** (2013.01 - EP); **D01F 6/18** (2013.01 - EP)

Citation (search report)

- [XD] JP 2000160435 A 20000613 - MITSUBISHI RAYON CO
- See references of WO 2020066653A1

Cited by
CN114540986A

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)
EP 3859060 A1 20210804; **EP 3859060 A4 20220706**; JP 7354840 B2 20231003; JP WO2020066653 A1 20210830; KR 20210063328 A 20210601; TW 202012712 A 20200401; US 2021348305 A1 20211111; WO 2020066653 A1 20200402

DOCDB simple family (application)
EP 19867898 A 20190912; JP 2019035858 W 20190912; JP 2019550872 A 20190912; KR 20217007567 A 20190912; TW 108133655 A 20190918; US 201917277875 A 20190912