

Title (en)
VANE MADE OF COMPOSITE MATERIAL HAVING A THREE-DIMENSIONAL WOVEN FIBROUS REINFORCEMENT AND TWO-DIMENSIONAL WOVEN SKIN AND METHOD FOR MANUFACTURING SAME

Title (de)
LEITSCHAUFEL AUS VERBUNDMATERIAL MIT DREIDIMENSIONALER GEWEBTER FASERVERSTÄRKUNG UND ZWEIDIMENSIONALER GEWEBTER HAUT UND VERFAHREN ZUR HERSTELLUNG DAVON

Title (fr)
AUBE EN MATERIAU COMPOSITE A RENFORT FIBREUX TISSE TRIDIMENSIONNEL ET PEAU TISSEE BIDIMENSIONNEL ET SON PROCEDE DE FABRICATION

Publication
EP 4168653 A1 20230426 (FR)

Application
EP 21736632 A 20210609

Priority
• FR 2006378 A 20200618
• FR 2021051035 W 20210609

Abstract (en)
[origin: WO2021255366A1] A vane (10) for an aeronautical gas turbine engine comprises, in a longitudinal direction (DL), a blade root (11), a shank (12) and a blade body (13), the blade body extending in the longitudinal direction between the shank (12) and a vane tip (14) and in a transverse direction (DT) between a leading edge (40) made of metal material and a trailing edge (131). The vane comprises a vane core (20) made of composite material having a three-dimensional woven fibrous reinforcement forming the vane root, the shank and a part of the blade body (21). The vane also comprises a skin (30) made of composite material having a two-dimensional woven fibrous reinforcement surrounding the blade body part (21) of the vane core (20), the skin being interposed between the leading edge (40) made of metal material and a front edge of the blade body part of the vane core so as to define a thinned leading-edge portion, the skin comprising one or more two-dimensional woven plies, each wound around the blade body part of the vane core, the skin also defining a thinned trailing edge.

IPC 8 full level
F01D 5/14 (2006.01); **B29C 70/48** (2006.01); **F01D 5/28** (2006.01); **F04D 29/32** (2006.01)

CPC (source: EP US)
B29C 65/00 (2013.01 - EP); **B29C 70/20** (2013.01 - EP); **B29C 70/222** (2013.01 - US); **B29C 70/34** (2013.01 - US); **B29C 70/48** (2013.01 - EP); **B29C 70/86** (2013.01 - EP US); **B29C 73/10** (2013.01 - EP); **B29D 99/0025** (2013.01 - EP); **F01D 5/005** (2013.01 - US); **F01D 5/147** (2013.01 - EP US); **F01D 5/282** (2013.01 - EP US); **F01D 5/286** (2013.01 - EP); **F04D 29/322** (2013.01 - EP); **F04D 29/324** (2013.01 - EP); **B29C 70/24** (2013.01 - EP); **B29K 2307/04** (2013.01 - US); **B29K 2705/00** (2013.01 - US); **B29L 2031/08** (2013.01 - EP); **B29L 2031/082** (2013.01 - US); **B29L 2031/7504** (2013.01 - EP); **F05D 2220/32** (2013.01 - US); **F05D 2220/36** (2013.01 - EP); **F05D 2230/23** (2013.01 - US); **F05D 2230/40** (2013.01 - EP); **F05D 2230/80** (2013.01 - US); **F05D 2240/30** (2013.01 - US); **F05D 2240/303** (2013.01 - EP); **F05D 2300/603** (2013.01 - EP); **F05D 2300/6034** (2013.01 - EP); **Y02T 50/60** (2013.01 - EP)

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

Designated extension state (EPC)
BA ME

Designated validation state (EPC)
KH MA MD TN

DOCDB simple family (publication)
FR 3111658 A1 20211224; **FR 3111658 B1 20220715**; CN 115768966 A 20230307; CN 116134212 A 20230516; EP 4168653 A1 20230426; EP 4168654 A1 20230426; FR 3111659 A1 20211224; FR 3111659 B1 20220826; US 11982209 B2 20240514; US 12037922 B2 20240716; US 2023193766 A1 20230622; US 2023258093 A1 20230817; WO 2021255366 A1 20211223; WO 2021255378 A1 20211223

DOCDB simple family (application)
FR 2006378 A 20200618; CN 202180043648 A 20210615; CN 202180058634 A 20210609; EP 21736632 A 20210609; EP 21737724 A 20210615; FR 2006676 A 20200625; FR 2021051035 W 20210609; FR 2021051067 W 20210615; US 202118009881 A 20210615; US 202118010751 A 20210609