

Title (en)
TURBO FAN AND AIR CONDITIONER

Title (de)
TURBOLÜFTER UND KLIMAANLAGE

Title (fr)
TURBOVENTILATEUR ET CLIMATISEUR

Publication
EP 1933040 B1 20160810 (EN)

Application
EP 06811172 A 20061004

Priority
• JP 2006319832 W 20061004
• JP 2005293705 A 20051006

Abstract (en)
[origin: EP1933040A1] The present invention is directed to obtain a turbofan in which a main plate and blades are integrally formed of a thermosetting resin, and which has high reliability in strength and achieves reduced noise. A turbofan includes: a disc-shaped main plate 2; a projected hub 2a for mounting a motor in a space formed by making a center portion of the main plate 2 project in a rotation axis direction; a plurality of blades 3 each of which is vertically provided in the projecting direction of the hub 2a using an outer-periphery-side flat part of the main plate 2 as a base; and a plurality of motor cooling holes 5 which is formed in the hub 2a and communicates with the space in which the motor is mounted. A thermoplastic resin is made to flow in a plurality of hub runners 9a provided radially in the hub 2a, thereby forming the hub 2a, and the motor cooling holes 5 are disposed so as to avoid a resin merging portion A formed between neighboring hub runners 9a.

IPC 8 full level
F04D 29/02 (2006.01); **F04D 29/28** (2006.01); **F04D 29/30** (2006.01); **F24F 1/0067** (2019.01); **F24F 13/24** (2006.01)

CPC (source: EP US)
F04D 29/023 (2013.01 - EP); **F04D 29/282** (2013.01 - EP); **F24F 1/0067** (2019.01 - EP US); **F05D 2300/43** (2013.01 - EP); **F24F 13/24** (2013.01 - EP)

Cited by
CN104456883A; EP4166792A4; US11781441B2; US9829009B2; WO2022055112A1; US11041502B2; US11242864B2; US11873831B2

Designated contracting state (EPC)
ES GB

DOCDB simple family (publication)
EP 1933040 A1 20080618; **EP 1933040 A4 20150318**; **EP 1933040 B1 20160810**; CN 100559031 C 20091111; CN 101099044 A 20080102; EP 2980414 A1 20160203; EP 2980414 B1 20200527; ES 2589903 T3 20161117; ES 2800055 T3 20201223; JP 2010216486 A 20100930; JP 4559472 B2 20101006; JP 5121887 B2 20130116; JP WO2007040236 A1 20090416; WO 2007040236 A1 20070412

DOCDB simple family (application)
EP 06811172 A 20061004; CN 200680001759 A 20061004; EP 15181444 A 20061004; ES 06811172 T 20061004; ES 15181444 T 20061004; JP 2006319832 W 20061004; JP 2007511737 A 20061004; JP 2010140391 A 20100621