

Title (en)
Two-piece molded fan

Title (de)
Geformter Lüfter in zwei Teiler

Title (fr)
Ventilateur moulé à deux-pièces

Publication
EP 1416164 A2 20040506 (EN)

Application
EP 03256648 A 20031022

Priority
US 28720902 A 20021104

Abstract (en)
A two-piece molded fan assembly is produced having overlapping fan blades using an axial draw technique. The two halves are then removed from the mold and coupled together to form the two-piece fan. By molding the fan as two pieces, a fan blade can be produced that wraps around the outside of the housing and overlaps with each other in a quick and easy manner using a simple mold design. The two pieces are formed such that the a portion of each overlapping blade is formed on both halves of the assembly so that the die casting tool can be removed along a central axis defining the fan assembly without contacting the respective portion of the fan blades, therein greatly simplifying the manufacturing techniques. The die casting of the front and rear portions of a two-piece fan assembly is performed such that the front portion includes the section of the overlapping fan blades and a front hub portion and the rear portion includes the section of the overlapping fan blades and a rear hub portion. The front and rear portions with flat sections defined by a relative positioning plane, are coupled to form the assembly. The method involves determining a relative positioning plane extending through the overlapping fan blades (16) and central hub (12) of the two-piece fan assembly (10) such that the front portions (34) and the rear portions of the blades are located on the respective sides of the relative positioning plane.

IPC 1-7
F04D 29/32

IPC 8 full level
F01P 5/02 (2006.01); **B22C 9/06** (2006.01); **B22C 9/22** (2006.01); **B22D 17/00** (2006.01); **F04D 29/02** (2006.01); **F04D 29/28** (2006.01); **F04D 29/30** (2006.01); **F04D 29/32** (2006.01)

CPC (source: EP US)
F04D 29/023 (2013.01 - EP US); **F04D 29/325** (2013.01 - EP US); **F05D 2230/21** (2013.01 - EP US); **F05D 2230/51** (2013.01 - EP US); **Y10T 29/49327** (2015.01 - EP US)

Cited by
WO2015077988A1; US9102048B2; US9545712B2

Designated contracting state (EPC)
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PT RO SE SI SK TR

DOCDB simple family (publication)
EP 1416164 A2 20040506; **EP 1416164 A3 20050406**; JP 2004156591 A 20040603; US 2004083609 A1 20040506

DOCDB simple family (application)
EP 03256648 A 20031022; JP 2003345599 A 20031003; US 28720902 A 20021104