

Title (en)  
Turbomachine with shaft cooling

Title (de)  
Strömungsmaschine mit gekühlter Rotorwelle

Title (fr)  
Turbomachine avec arbre refroidie

Publication  
**EP 0984138 B1 20051026 (DE)**

Application  
**EP 99810710 A 19990809**

Priority  
DE 19839592 A 19980831

Abstract (en)  
[origin: EP0984138A2] The cooling blades (12) incorporate air guide channels which in the area of the blade points (15) issue into blow-out apertures (14). Cooling air (K) is thrust out of the blow-out apertures (14) and comes into contact with the rotor shaft (18) at high speed.

IPC 1-7  
**F01D 5/08**; **F01D 25/12**; **F01D 5/18**

IPC 8 full level  
**F01D 5/08** (2006.01); **F01D 5/18** (2006.01); **F01D 11/10** (2006.01); **F01D 11/16** (2006.01)

CPC (source: EP US)  
**F01D 5/08** (2013.01 - EP US); **F01D 5/187** (2013.01 - EP US); **F01D 11/10** (2013.01 - EP US); **F01D 11/16** (2013.01 - EP US);  
**F05D 2260/201** (2013.01 - EP US)

Cited by  
EP3205817A1; WO2011054758A1; US8517676B2; EP2551490A1; US9004853B2; JP2013024248A

Designated contracting state (EPC)  
DE GB

DOCDB simple family (publication)  
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US 6224328 B1 20010501

DOCDB simple family (application)  
**DE 19839592 A 19980831**; DE 59912702 T 19990809; EP 99810710 A 19990809; US 37190499 A 19990811