

Title (en)  
Turbomachine with shaft cooling

Title (de)  
Strömungsmaschine mit gekühlter Rotorwelle

Title (fr)  
Turbomachine avec arbre refroidie

Publication  
**EP 0984138 A3 20020123 (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)

Citation (search report)  
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• [A] US 3635586 A 19720118 - KENT NELSON H, et al  
• [A] US 3703808 A 19721128 - STEARNS ELDON M  
• [A] US 4213296 A 19800722 - SCHWARZ FREDERICK M [US]  
• [A] PATENT ABSTRACTS OF JAPAN vol. 007, no. 133 (M - 221) 10 June 1983 (1983-06-10)

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US 6224328 B1 20010501

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