

Title (en)  
Gas turbine blade

Title (de)  
Turbinenschaufel einer Gasturbine

Title (fr)  
Aube pour une turbine à gaz

Publication  
**EP 0899425 A2 19990303 (DE)**

Application  
**EP 98810770 A 19980811**

Priority  
DE 19738065 A 19970901

Abstract (en)  
A cooling system for a gas turbine blade has two sets of cooling ducts; a closed set of ducts (10) which cools the rear part of the blade and an open set of ducts (11) which cools the leading part of the blade. The closed ducts are supplied with a cooling fluid, which can be steam. The open ducts are supplied with air or steam, and the cooling flow is guided over the suction side (4) of the blade via tangential exit vents (22). Other cooling vents (25) are on the leading edge of the blade. The closed ducts are linked at set points, to maintain a good circulation, even with part of a duct blocked. Likewise the two ducts of the open cooling system are linked by connecting ducts (18) spaced along the blade.

Abstract (de)  
Kühlung einer Turbinenschaufel mittels eines geschlossenen und eines offenen Kühlsystems, dies wird dadurch erreicht, dass der Innenraum (8) des Schaufelkörpers (3), im Bereich der saugseitigen Wand (4), der druckseitigen Wand (5) und der Schaufelaustrittskante (7) ein geschlossenes Dampfkühlsystem (9) mit zumindest einem Kühlkanal (10,27,28) aufweist. Im Bereich der Schaufeleintrittskante (6) ist dagegen ein offenes Kühlsystem (11) mit zumindest einem Kühlkanal (14,15) und mehreren den Schaufelkörper (3) durchdringenden Filmkühlöffnungen (22) ausgebildet.  
<IMAGE>

IPC 1-7  
**F01D 5/18**; **F02C 7/16**

IPC 8 full level  
**F01D 5/18** (2006.01); **F02C 7/16** (2006.01)

CPC (source: EP US)  
**F01D 5/187** (2013.01 - EP US)

Citation (applicant)  
• DE 3642789 A1 19870625 - UNITED TECHNOLOGIES CORP [US]  
• EP 0698723 A2 19960228 - GEN ELECTRIC [US]

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