Title (en)

ABRASIVE SURFACED ARTICLE FOR HIGH TEMPERATURE SERVICE

Publication

EP 0166676 B1 19901114 (EN)

Application

EP 85630097 A 19850620

Priority

- US 62442184 A 19840625
- US 62444684 A 19840625

Abstract (en)

[origin: EP0166676A2] A very thin abrasive material (26) on a substrate (24, 28) is comprised of ceramic particulates (30) contained within a metal matrix (36) The particulates extend fully through the matrix from the substrate surface (32) to the machined free surface (44) of the abrasive. In a representative 0.38 mm abrasive the particulates are sized nominally at 0.42-0.50 mm and have an aspect ratio of less than 1.9 to 1. This enables a high density of particulates, in the range 33-62 per cm<2>, while at the same time ensuring good bonding in that most of the particulates are fully surrounded by matrix. When the abrasive is applied to the tip of a superalloy gas turbine engine blade (20), about 10-50% of the matrix metal is removed after machining. This allows the machined ceramic particulates (30) to project into space and to thus better interact with ceramic abradable seals. In the preferred practice of the invention the particulates are alumna coated silicon carbide contained in a nickel superalloy matrix.

IPC 1-7

B24D 3/06; F01D 5/20

IPC 8 full level

B32B 15/04 (2006.01); **B32B 18/00** (2006.01); **C23C 4/18** (2006.01); **F01D 5/20** (2006.01)

CPC (source: EP KR)

B24D 3/00 (2013.01 - KR); **C23C 4/18** (2013.01 - EP); **F01D 11/12** (2013.01 - EP)

Cited by

CH699312A1; AU583516B2; EP0273852A3; EP0238434A3; EP0254667A1; EP0509758A1; US5545431A; CN116201759A; EP0287370A1; US4808055A; US7799388B2; EP0467821A1; EP2971533A4; IT201900003691A1; WO2007108793A1; WO2010018174A1; EP3546703A1; WO2019185713A1; US8206792B2; US7799111B2; DE102008056741A1; EP3546702A1; WO2019185526A1; US8628597B2; WO2014151101A1; US8961632B2; US9926794B2; WO2020182349A1; EP2313615B1; EP2317078B1

Designated contracting state (EPC)

BE CH DE FR GB IT LI NL SE

DOCDB simple family (publication)

EP 0166676 A2 19860102; **EP 0166676 A3 19870805**; **EP 0166676 B1 19901114**; AU 4396085 A 19860102; AU 583516 B2 19890504; BR 8503041 A 19860311; DE 3580525 D1 19901220; ES 295927 U 19871201; ES 295927 Y 19880516; HK 24991 A 19910412; IE 56633 B1 19911023; IE 851550 L 19851225; IL 75564 A0 19851031; IL 75564 A 19880229; IN 163804 B 19881112; JP H0555295 B2 19930816; JP S6119351 A 19860128; KR 860000125 A 19860125; KR 930010150 B1 19931015; MX 165846 B 19921207; PT 80693 A 19850701; PT 80693 B 19870105; SG 7691 G 19910405

DOCDB simple family (application)

EP 85630097 A 19850620; AU 4396085 A 19850621; BR 8503041 A 19850625; DE 3580525 T 19850620; ES 295927 U 19850624; HK 24991 A 19910404; IE 155085 A 19850621; IL 7556485 A 19850619; IN 465CA1985 A 19850621; JP 13884185 A 19850625; KR 850004466 A 19850624; MX 20576885 A 19850625; PT 8069385 A 19850624; SG 7691 A 19910213