

Title (en)

High velocity powder thermal spray method for spraying non-meltable materials

Title (de)

Verfahren zum thermischen Aufspritzen von nicht schmelzbaren Materialien mit hoher Geschwindigkeit

Title (fr)

Procédé de pulvérisation de matériaux non fusibles par projection à grande vitesse des particules

Publication

EP 0375931 B1 19960110 (EN)

Application

EP 89121559 A 19891121

Priority

US 29092888 A 19881228

Abstract (en)

[origin: EP0375931A2] A method for producing a dense and tenacious coating with a thermal spray gun including a nozzle member (54) and a gas cap (14). The gas cap (14) extends from the nozzle (54) and has an inwardly facing cylindrical wall defining a combustion chamber (82) with an open end and an opposite end bounded by the nozzle. An annular flow of a combustible mixture is injected at a pressure of at least two bar above atmospheric pressure from the nozzle coaxially into the combustion chamber. An annular outer flow of pressurized air is injected from the nozzle adjacent to the cylindrical wall. Powder particles having a heat-stable, non-fusible component and a heat-softenable component, and entrained in a carrier gas, are fed axially from the nozzle into the combustion chamber. An annular inner flow of pressurized air is injected from the nozzle into the combustion chamber coaxially between the combustible mixture and the powder-carrier gas. Upon combusting the annular mixture a supersonic spray stream containing the powder is propelled through the open end to produce a coating.

IPC 1-7

C23C 4/12; B05B 7/20; C23C 4/04

IPC 8 full level

B05B 7/20 (2006.01); **B05D 1/10** (2006.01); **C23C 4/12** (2006.01)

CPC (source: EP)

B05B 7/205 (2013.01); **B05D 1/10** (2013.01); **C23C 4/129** (2016.01)

Cited by

DE4413306C1; CN117587353A; CN117643979A; EP0622471A1; US5766690A; US5958522A; EP0825272A3; FR2705040A1; EP0627267A1; US9142390B2; US9328918B2; WO9507768A1; WO2013169710A1; EP0491521B1

Designated contracting state (EPC)

CH DE FR GB IT LI

DOCDB simple family (publication)

EP 0375931 A2 19900704; **EP 0375931 A3 19911030**; **EP 0375931 B1 19960110**; BR 8906845 A 19900925; CA 2002497 A1 19900628; CN 1043641 A 19900711; DE 68925414 D1 19960222; DE 68925414 T2 19960523; JP 2924971 B2 19990726; JP H02221362 A 19900904

DOCDB simple family (application)

EP 89121559 A 19891121; BR 8906845 A 19891228; CA 2002497 A 19891108; CN 89109369 A 19891213; DE 68925414 T 19891121; JP 33523989 A 19891226