Title (en)

PERMEABLE MgO NOZZLE

Title (de)

DURCHLÄSSIGE MGO-DÜSE

Title (fr)

TUYERE PERMEABLE EN OXYDE DE MAGNESIUM

Publication

EP 0471757 B1 19970319 (EN)

Application

EP 90907721 A 19900430

Priority

- US 34639789 A 19890501
- US 9002331 W 19900430

Abstract (en)

[origin: WO9013379A1] An immersion nozzle (10) for continuous metal casting having an elongated nozzle body (12) formed from a porous, gas permeable refractory material. The nozzle body has a conduit (18) extending longitudinally therethrough and an inner surface (20) which defines the conduit. The nozzle body also includes an outer surface defining a predetermined body profile and channels (24, 26, 28, 30) formed in the outer surface (16) of the nozzle body. A metallic housing (14) encases the nozzle body and has an inner surface (32) dimensioned to substantially conform to the profile of the nozzle body. The housing is secured to the nozzle body by a refractory mortar (40) which forms a rigid relatively air-tight layer between the housing and the nozzle body, wherein the channel means form internal passages in the nozzle. A port (34) is provided on the housing in registry with the channels in the nozzle body. The port is connectable to a source of inert gas, which is operable to force the gas into the passages and into the porous refractory material.

IPC 1-7

B22D 11/10; B22D 41/58

IPC 8 full level

B22D 11/10 (2006.01); **B22D 41/50** (2006.01); **B22D 41/52** (2006.01); **B22D 41/58** (2006.01)

CPC (source: EP KR)

B22D 11/10 (2013.01 - KR); **B22D 41/50** (2013.01 - EP)

Citation (examination)

JP S5945066 A 19840313 - NIPPON STEEL CORP, et al

Designated contracting state (EPC)

AT BE CH DE DK ES FR GB IT LI LU NL SE

DOCDB simple family (publication)

WO 9013379 A1 19901115; AT E150348 T1 19970415; AU 5661690 A 19901129; CA 2063994 A1 19901102; CA 2063994 C 20010612; DE 69030256 D1 19970424; DE 69030256 T2 19971023; DK 0471757 T3 19970922; EP 0471757 A1 19920226; EP 0471757 A4 19921230; EP 0471757 B1 19970319; ES 2101697 T3 19970716; JP H04507377 A 19921224; KR 920702644 A 19921006; RU 2070474 C1 19961220

DOCDB simple family (application)

US 9002331 W 19900430; AT 90907721 T 19900430; AU 5661690 A 19900430; CA 2063994 A 19900430; DE 69030256 T 19900430; DK 90907721 T 19900430; EP 90907721 A 19900430; ES 90907721 T 19900430; JP 50779890 A 19900430; KR 910701975 A 19911031; SU 5010455 A 19900430