

Title (en)
Refractory nozzle

Title (de)
Feuerfester Ausguss

Title (fr)
Buse réfractaire

Publication
EP 1275453 B1 20041201 (DE)

Application
EP 02009195 A 20020425

Priority
DE 10132575 A 20010710

Abstract (en)
[origin: US2003011112A1] A refractory nozzle is provided for arrangement in the wall of metallurgic vessels, especially for steel melts. The nozzle has a passage opening with an upper end and a bottom end, an inside wall of a solid electrolyte material enclosing the passage opening. At least one electrode is arranged on an outer side of the solid electrolyte material facing away from the passage opening and having connecting lines leading electro-conductively therefrom. Thermal insulating material at least partially encloses the outer side of the solid electrolyte material and the electrode. The at least one electrode is essentially made of a metal which has a melting point of at least about 1400° C. and/or of at least one of its oxides.

IPC 1-7
B22D 41/60; B22D 41/54

IPC 8 full level
B22D 41/52 (2006.01); **B22D 41/54** (2006.01); **B22D 41/60** (2006.01); **C21C 5/46** (2006.01); **C21C 7/00** (2006.01); **F27D 3/14** (2006.01)

CPC (source: EP KR US)
B22D 41/54 (2013.01 - KR); **B22D 41/60** (2013.01 - EP US)

Designated contracting state (EPC)
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR

DOCDB simple family (publication)
US 2003011112 A1 20030116; US 6772921 B2 20040810; AT E283747 T1 20041215; BR 0202571 A 20030429; BR 0202571 B1 20131029;
CA 2384211 A1 20030110; CA 2384211 C 20100112; CA 2651258 A1 20030110; CA 2651258 C 20100803; CN 1202930 C 20050525;
CN 1396024 A 20030212; DE 10132575 C1 20020704; DE 50201658 D1 20050105; EP 1275453 A2 20030115; EP 1275453 A3 20031126;
EP 1275453 B1 20041201; ES 2229007 T3 20050416; JP 2003053518 A 20030226; JP 3766645 B2 20060412; KR 100596086 B1 20060705;
KR 20030007078 A 20030123

DOCDB simple family (application)
US 19190302 A 20020708; AT 02009195 T 20020425; BR 0202571 A 20020709; CA 2384211 A 20020430; CA 2651258 A 20020430;
CN 02123093 A 20020612; DE 10132575 A 20010710; DE 50201658 T 20020425; EP 02009195 A 20020425; ES 02009195 T 20020425;
JP 2002196954 A 20020705; KR 20020039680 A 20020709