

Title (en)
DEVICE FOR INJECTING A TREATMENT GAS INTO A MOLTEN METAL

Title (de)
VORRICHTUNG ZUM INJEKTIEREN EINES BEHANDLUNGSGASES IN EINE METALLSCHMELZE

Title (fr)
DISPOSITIF D'INJECTION D'UN GAZ DE TRAITEMENT DANS UN METAL LIQUIDE

Publication
EP 1532284 B1 20091125 (FR)

Application
EP 03758283 A 20030827

Priority
• FR 0302591 W 20030827
• FR 0210675 A 20020828

Abstract (en)
[origin: US2005253315A1] The invention relates to a device (8) which is used to inject a treatment gas into a molten metal contained in a tank (1) and which is designed to be fixed in one of the walls of said tank. The inventive device comprises at least one injection nozzle (18) which is equipped with an end hole (19). Said device is characterised in that it comprises a mobile means (14) which can be manoeuvred from outside of the injection device and which is used to unblock the aforementioned end hole of the nozzle.

IPC 8 full level
C22B 21/06 (2006.01); **B22D 1/00** (2006.01); **B22D 41/42** (2006.01); **C21C 7/072** (2006.01); **C22B 9/05** (2006.01); **C22B 26/22** (2006.01); **F27D 3/16** (2006.01); **F27D 27/00** (2010.01)

CPC (source: EP US)
B22D 1/005 (2013.01 - EP US); **B22D 41/42** (2013.01 - EP US); **C22B 9/05** (2013.01 - EP US); **C22B 21/064** (2013.01 - EP US)

Citation (examination)
SU 863188 A1 19810915 - VAVILOV VLADIMIR V [SU], et al

Designated contracting state (EPC)
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PT RO SE SI SK TR

DOCDB simple family (publication)
US 2005253315 A1 20051117; US 7364690 B2 20080429; AT E449873 T1 20091215; AU 2003274293 A1 20040319;
AU 2003274293 B2 20080814; BR 0313807 A 20050712; CA 2495766 A1 20040311; CA 2495766 C 20110201; DE 60330249 D1 20100107;
EP 1532284 A1 20050525; EP 1532284 B1 20091125; ES 2335098 T3 20100322; FR 2843974 A1 20040305; FR 2843974 B1 20050128;
JP 2005537389 A 20051208; JP 4594090 B2 20101208; MX PA05002119 A 20050606; PL 198454 B1 20080630; PL 374638 A1 20051031;
PT 1532284 E 20100114; RU 2005108599 A 20051027; RU 2316605 C2 20080210; SI 1532284 T1 20100226; WO 2004020679 A1 20040311

DOCDB simple family (application)
US 52411905 A 20050210; AT 03758283 T 20030827; AU 2003274293 A 20030827; BR 0313807 A 20030827; CA 2495766 A 20030827;
DE 60330249 T 20030827; EP 03758283 A 20030827; ES 03758283 T 20030827; FR 0210675 A 20020828; FR 0302591 W 20030827;
JP 2004532234 A 20030827; MX PA05002119 A 20030827; PL 37463803 A 20030827; PT 03758283 T 20030827; RU 2005108599 A 20030827;
SI 200331726 T 20030827