

Title (en)
REFINING MOLTEN METAL

Title (de)
FEINEN VON SCHMELZFLÜSSIGEM METALL

Title (fr)
RAFFINAGE DE METAL EN FUSION

Publication
EP 1749109 B1 20090722 (EN)

Application
EP 05744383 A 20050512

Priority
• GB 2005001857 W 20050512
• GB 0410835 A 20040514
• GB 0425540 A 20041119

Abstract (en)
[origin: WO2005111247A2] A method of refining molten metal in a vessel by the reaction of oxygen with impurities in the molten metal comprises the steps of: a) ejecting at least one primary jet of oxygen from a lance positioned above the molten metal into the molten metal to react with impurities therein and to form a layer of molten slag; b) continuing to eject the primary jet of oxygen from the lance and thereby causing the primary jet of oxygen to pass through the slag layer into the molten metal; c) ejecting a plurality of secondary jets of oxygen from the lance, the secondary jet of oxygen travelling for a distance separately from the primary jet of oxygen; and d) entraining the secondary jets of oxygen into the primary jet of oxygen upstream of the entry of the primary jet of oxygen into the molten metal. A lance head for use in the method has at least one primary oxygen port and a plurality of secondary oxygen ports, the axis of the second oxygen port diverging in the direction of flow from the primary oxygen port at an angle of up to 45°. The method and lance head are particularly of use in the Basic Oxygen Steelmaking (BOS) process. If desired, a stirring gas such as argon may be mixed with the primary oxygen.

IPC 8 full level
C21C 5/32 (2006.01); **C21C 5/46** (2006.01)

CPC (source: EP KR US)
C21C 5/32 (2013.01 - EP KR US); **C21C 5/46** (2013.01 - KR); **C21C 5/4606** (2013.01 - EP US)

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

DOCDB simple family (publication)
WO 2005111247 A2 20051124; WO 2005111247 A3 20060413; AT E437245 T1 20090815; BR PI0510988 A 20071204; DE 602005015575 D1 20090903; EP 1749109 A2 20070207; EP 1749109 B1 20090722; JP 2007537355 A 20071220; KR 20070012478 A 20070125; US 2009229416 A1 20090917

DOCDB simple family (application)
GB 2005001857 W 20050512; AT 05744383 T 20050512; BR PI0510988 A 20050512; DE 602005015575 T 20050512; EP 05744383 A 20050512; JP 2007512347 A 20050512; KR 20067023784 A 20061113; US 59650005 A 20050512