

Title (en)
DOUBLE WALL LANCE

Title (de)
ZWEI-RÖHRIGE LANZE

Title (fr)
LANCE A DOUBLE CORPS

Publication
EP 3421618 A1 20190102 (EN)

Application
EP 18181898 A 20120301

Priority
• JP 2011279954 A 20111221
• EP 12860851 A 20120301
• JP 2012055893 W 20120301

Abstract (en)
A lance 4 for injecting a fuel through a tuyere 3 is a double tube. Pulverized coal is injected through an inner tube 21 of the double wall lance 4. Oxygen is injected through an outer tube 22 of the double wall lance 4. Notches 23 are formed in a injecting front end of the inner tube 21 of the double wall lance 4. The concentration of oxygen in a gas composed of a carrier gas for the pulverized coal and a gas injected through the outer tube is 35% by volume or more. Even in an operation using pulverized coal having a volatile matter content of 25 mass% or less at a high pulverized coal ratio of 150 kg/t or more, the combustion temperature can be increased, and consequently CO 2 emissions can be reduced. The specific oxygen consumption can be suppressed by decreasing the oxygen concentration to less than 70% by volume. The notches 23 may be circumferentially evenly spaced in the inner tube 21 of the double wall lance 4 and further improve combustion efficiency.

IPC 8 full level
C21B 5/00 (2006.01); **C21B 7/00** (2006.01); **C21B 7/16** (2006.01); **F27D 3/16** (2006.01)

CPC (source: EP)
C21B 5/003 (2013.01); **C21B 7/163** (2013.01); **F27D 3/16** (2013.01); **F27D 2003/169** (2013.01)

Citation (applicant)
• JP 4074467 B2 20080409
• KR 20020047359 A 20020622 - POSCO [KR]
• JP H06100912 A 19940412 - KAWASAKI STEEL CO

Citation (search report)
• [I] WO 2008006764 A1 20080117 - WURTH PAUL SA [LU], et al
• [A] JP 2000192119 A 20000711 - KOBE STEEL LTD
• [A] CN 102268496 A 20111207

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)
EP 2796566 A1 20141029; EP 2796566 A4 20151202; EP 2796566 B1 20180829; AU 2012355194 A1 20140724; AU 2012355194 B2 20150903; BR 112014015336 A2 20170613; BR 112014015336 A8 20170613; BR 112014015336 B1 20190514; CN 104024440 A 20140903; CN 104024440 B 20160120; EP 3421618 A1 20190102; EP 3421618 B1 20230913; EP 4283233 A1 20231129; IN 1261KON2014 A 20151016; KR 101629123 B1 20160609; KR 20140109964 A 20140916; TW 201326405 A 20130701; TW I487791 B 20150611; WO 2013094230 A1 20130627

DOCDB simple family (application)
EP 12860851 A 20120301; AU 2012355194 A 20120301; BR 112014015336 A 20120301; CN 201280063993 A 20120301; EP 18181898 A 20120301; EP 23184934 A 20120301; IN 1261KON2014 A 20140611; JP 2012055893 W 20120301; KR 20147019598 A 20120301; TW 101106750 A 20120301