

Title (en)

METHOD FOR OBSERVING INSIDE OF MOLTEN IRON REFINING FURNACE AND TUYERE FOR OBSERVING INSIDE OF FURNACE

Title (de)

VERFAHREN UND ÖFFNUNGEN ZUR BEOBACHTUNG DES INNEREN EINES FLÜSSIGEISEN-FEINUNGSOFFEN

Title (fr)

PROCEDE PERMETTANT D'OBSERVER A L'INTERIEUR D'UN FOUR D'AFFINAGE DE FER EN FUSION ET TUYERE PERMETTANT D'OBSERVER A L'INTERIEUR DE CE FOUR

Publication

EP 1291444 A1 20030312 (EN)

Application

EP 01936979 A 20010612

Priority

- JP 0104975 W 20010612
- JP 2000175591 A 20000612
- JP 2000175592 A 20000612

Abstract (en)

[origin: US2002180124A1] It is possible to stably observe the temperature and/or composition of molten iron in a refining furnace by opening a tuyere for observation at all times according to the state of refining. There is provided a method of observing the inside of a molten metal refining furnace comprising the steps of: using a single tube tuyere for observing the temperature and/or composition of molten iron in the refining furnace via a tube penetrating refractories of a furnace wall and/or furnace bottom of the molten iron refining furnace by detecting electromagnetic waves radiated from molten metal at a forward end of the tuyere under a non-contact condition; and using an inert gas or an oxidizing gas, alone or mixed, according to the opening condition of the forward end of the tuyere.

IPC 1-7

C21C 5/48; **C21C 5/46**

IPC 8 full level

C21C 5/46 (2006.01); **F27D 21/02** (2006.01); **C21C 5/48** (2006.01); **F27B 3/28** (2006.01); **F27D 21/00** (2006.01)

CPC (source: EP KR US)

C21C 5/4673 (2013.01 - EP US); **C21C 5/48** (2013.01 - KR); **F27D 21/02** (2013.01 - EP US); **C21C 5/48** (2013.01 - EP US); **F27B 3/28** (2013.01 - EP US); **F27D 21/0014** (2013.01 - EP US)

Cited by

US7616338B2

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 2002180124 A1 20021205; AR 028710 A1 20030521; AU 6275301 A 20011224; AU 757791 B2 20030306; BR 0106724 A 20020423; CA 2381584 A1 20011220; CN 1383454 A 20021204; EP 1291444 A1 20030312; EP 1291444 A4 20040317; JP 5014555 B2 20120829; KR 20020025219 A 20020403; TW 558568 B 20031021; WO 0196617 A1 20011220

DOCDB simple family (application)

US 4972002 A 20020207; AR P010102786 A 20010612; AU 6275301 A 20010612; BR 0106724 A 20010612; CA 2381584 A 20010612; CN 01801695 A 20010612; EP 01936979 A 20010612; JP 0104975 W 20010612; JP 2002510729 A 20010612; KR 20027001891 A 20020209; TW 90114044 A 20010611