

Title (en)  
METHOD FOR CHARGING STARTING MATERIAL INTO BLAST FURNACE

Title (de)  
VERFAHREN ZUM LADEN EINES AUSGANGSMATERIALS IN EINEN HOCHOFEN

Title (fr)  
PROCÉDÉ DE CHARGEMENT D'UNE MATIÈRE PREMIÈRE DANS UN FOURNEAU

Publication  
**EP 2851435 A4 20151230 (EN)**

Application  
**EP 13790679 A 20130517**

Priority  
• JP 2012114866 A 20120518  
• JP 2013003171 W 20130517

Abstract (en)  
[origin: EP2851435A1] A method for charging blast furnace raw material into a blast furnace, comprising, when charging blast furnace raw material including coke and ore material such as sinter, pellet, or lump ore into the blast furnace using a rotating chute, forming a central coke layer at a shaft central portion of the blast furnace; and forming a mixed layer of the coke and the ore material on the outside of the central coke layer with a coke mixing ratio varying in a continuous or stepwise manner from the shaft of the blast furnace towards the furnace wall in the blast furnace radial direction. The method ensures gas permeability in the blast furnace, stabilizes blast furnace operations, and improves thermal efficiency even when an operation to blow in a large amount of pulverized coal is performed.

IPC 8 full level  
**C21B 5/00** (2006.01); **C21B 7/20** (2006.01)

CPC (source: EP KR)  
**C21B 5/00** (2013.01 - KR); **C21B 5/001** (2013.01 - KR); **C21B 5/006** (2013.01 - EP); **C21B 5/007** (2013.01 - EP KR);  
**C21B 5/008** (2013.01 - EP KR); **C21B 7/18** (2013.01 - KR); **C21B 7/20** (2013.01 - EP)

Citation (search report)  
• [X1] EP 1445334 A1 20040811 - JFE STEEL CORP [JP]  
• [X1] JP S6196017 A 19860514 - KOBE STEEL LTD  
• [X1] JP S60110804 A 19850617 - NIPPON STEEL CORP  
• [X1] SU 1475927 A1 19890430 - DN METALL INST [SU]  
• See references of WO 2013172045A1

Cited by  
US11680748B2

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 2851435 A1 20150325; EP 2851435 A4 20151230; EP 2851435 B1 20190731**; CN 104302784 A 20150121; JP 5910735 B2 20160427;  
JP WO2013172045 A1 20160112; KR 20150004879 A 20150113; WO 2013172045 A1 20131121

DOCDB simple family (application)  
**EP 13790679 A 20130517**; CN 201380025051 A 20130517; JP 2013003171 W 20130517; JP 2014515506 A 20130517;  
KR 20147032829 A 20130517