

Title (en)  
SHAFT FURNACE

Title (de)  
SCHACHTOFEN

Title (fr)  
FOUR VERTICAL

Publication  
**EP 1105542 B1 20040107 (DE)**

Application  
**EP 99934663 A 19990712**

Priority  
• AT 139298 A 19980813  
• EP 9904875 W 19990712

Abstract (en)  
[origin: WO0009765A1] The invention relates to a shaft furnace, especially a direct reduction shaft furnace, with a charge of lump materials (2), especially materials containing iron oxide and/or spore iron, which can be introduced into the furnace from above and also comprising a plurality of inlets (3) for a reduction gas arranged on a plane in the region of the lower third part of the furnace, whereby the profile of the furnace has an extended diameter (7) and a cavity (8) is formed between the gas inlets (3) and the charge (2). The inventive furnace enables gas to be supplied and distributed in a uniform manner along the periphery of said furnace.

IPC 1-7  
**C21B 13/02**; **C21B 13/14**; **F27B 1/10**

IPC 8 full level  
**C21B 13/02** (2006.01); **F27B 1/10** (2006.01); **F27B 1/16** (2006.01)

CPC (source: EP KR US)  
**C21B 7/02** (2013.01 - KR); **C21B 13/02** (2013.01 - EP US); **F27B 1/10** (2013.01 - EP US)

Designated contracting state (EPC)  
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

DOCDB simple family (publication)  
**WO 0009765 A1 20000224**; AT 407192 B 20010125; AT A139298 A 20000515; AU 5035999 A 20000306; AU 756280 B2 20030109; BR 9912796 A 20010502; CA 2338069 A1 20000224; CA 2338069 C 20050111; CN 1243835 C 20060301; CN 1312861 A 20010912; CZ 2001506 A3 20011017; CZ 299007 B6 20080402; DE 59908260 D1 20040212; EP 1105542 A1 20010613; EP 1105542 B1 20040107; ID 27806 A 20010426; JP 2002522641 A 20020723; JP 4467796 B2 20100526; KR 100641466 B1 20061031; KR 20010072469 A 20010731; MY 123031 A 20060531; PL 193740 B1 20070330; PL 346054 A1 20020114; RU 2226552 C2 20040410; SK 1782001 A3 20011008; SK 286273 B6 20080606; TR 200100405 T2 20010723; TW 490490 B 20020611; UA 60371 C2 20031015; US 6511629 B1 20030128; ZA 200100679 B 20020327

DOCDB simple family (application)  
**EP 9904875 W 19990712**; AT 139298 A 19980813; AU 5035999 A 19990712; BR 9912796 A 19990712; CA 2338069 A 19990712; CN 99809599 A 19990712; CZ 2001506 A 19990712; DE 59908260 T 19990712; EP 99934663 A 19990712; ID 20010320 A 19990712; JP 2000565198 A 19990712; KR 20017001884 A 20010213; MY PI9903130 A 19990726; PL 34605499 A 19990712; RU 2001107018 A 19990712; SK 1782001 A 19990712; TR 200100405 T 19990712; TW 88112031 A 19990715; UA 01031477 A 19990712; US 76278501 A 20010411; ZA 200100679 A 20010124