

Title (en)  
Device for injecting preheated air into a shaft furnace

Title (de)  
Vorrichtung zum Einblasen vorgewärmter Luft in einen Schachtofen

Title (fr)  
Dispositif d'injection d'air préchauffé dans un four à cuve

Publication  
**EP 0618301 B1 19980812 (FR)**

Application  
**EP 94101358 A 19940131**

Priority  
LU 88241 A 19930331

Abstract (en)  
[origin: EP0618301A1] Device for injecting preheated air into a shaft furnace consisting of a number of separate tubular components (10, 12) including an external armouring (18) made of steel and an internal lining made of cast refractory concrete (2), connected in pairs by a spherical joint and a compensator (16). The spherical joint (14) includes a convex ball (24) integrally attached to a first tubular component and capable of pivoting in a concave socket (26) integrally attached to a second tubular component. At least the convex ball (24) of the spherical joint includes a profiled refractory brick (28) anchored in the interior refractory lining (20) made of cast refractory concrete. <IMAGE>

IPC 1-7  
**C21B 7/16**

IPC 8 full level  
**C21B 9/14** (2006.01); **C21B 7/16** (2006.01); **F27D 7/04** (2006.01); **F27D 7/06** (2006.01)

CPC (source: EP US)  
**C21B 7/163** (2013.01 - EP US)

Cited by  
CN107228249A; LU91897B1; CN103930572A; EA026147B1; US9169525B2; WO2013068333A1; KR101492483B1

Designated contracting state (EPC)  
AT ES FR GB IT NL

DOCDB simple family (publication)  
**EP 0618301 A1 19941005**; **EP 0618301 B1 19980812**; AT E169684 T1 19980815; BR 9400898 A 19941122; CZ 283132 B6 19980114; CZ 73894 A3 19950816; DE 4404316 A1 19941006; DE 4404316 C2 20021121; ES 2121101 T3 19981116; LU 88241 A1 19941003; SK 281401 B6 20010312; SK 36794 A3 19941005; US 5462433 A 19951031

DOCDB simple family (application)  
**EP 94101358 A 19940131**; AT 94101358 T 19940131; BR 9400898 A 19940325; CZ 73894 A 19940329; DE 4404316 A 19940211; ES 94101358 T 19940131; LU 88241 A 19930331; SK 36794 A 19940328; US 21222994 A 19940314