

Title (en)  
COOLING PLATE FOR METALLURGIC FURNACES

Title (de)  
KÜHLPLATTE FÜR METALLURGISCHE ÖFEN

Title (fr)  
PLAQUE DE REFROIDISSEMENT POUR FOURS METALLIQUES

Publication  
**EP 1532281 A1 20050525 (DE)**

Application  
**EP 03792197 A 20030714**

Priority  
• EP 03792197 A 20030714  
• EP 0307580 W 20030714  
• EP 02018642 A 20020820

Abstract (en)  
[origin: US2005218569A1] The invention relates to a cooling plate made of copper or a low-alloy copper alloy for metallurgic furnaces provided with high-strength sheet steel on the outside of the furnace. Said cooling plate has at least one, preferably at least two, coolant channels which extend inside the cooling plate, whereby coolant tube pieces used for feeding the coolant and discharging said coolant extend through the high-strength sheet steel of the furnace and are guided in an outer direction. Retaining tubes are arranged on the cooling plate and are provided with retaining disks which are arranged outside the high-strength sheet steel of the furnace and which fix the cooling plate in the direction of the inside of the furnace. The retaining tubes and retaining disks are preferably made of steel.

IPC 1-7  
**C21B 7/10; F27B 1/24**

IPC 8 full level  
**C21B 7/10** (2006.01); **C21C 5/46** (2006.01); **F27B 1/24** (2006.01); **F27D 1/12** (2006.01); **F27D 9/00** (2006.01)

CPC (source: EP KR US)  
**C21B 7/10** (2013.01 - EP KR US); **C21C 5/4646** (2013.01 - EP US); **F27B 1/24** (2013.01 - KR); **F27D 1/12** (2013.01 - EP US); **F27D 2009/0021** (2013.01 - EP US); **F27D 2009/0048** (2013.01 - EP US); **F27D 2009/0051** (2013.01 - EP US); **F27D 2009/0062** (2013.01 - EP US)

Citation (search report)  
See references of WO 2004018713A1

Designated contracting state (EPC)  
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PT RO SE SI SK TR

DOCDB simple family (publication)  
**US 2005218569 A1 20051006; US 7537724 B2 20090526**; AT 6277 U1 20030725; AT E444378 T1 20091015; AU 2003250046 A1 20040311; AU 2003250046 B2 20100304; BR 0313444 A 20050712; CA 2495552 A1 20040304; CN 100507010 C 20090701; CN 1675382 A 20050928; DE 20213759 U1 20030213; DE 50311974 D1 20091112; EP 1391521 A1 20040225; EP 1532281 A1 20050525; EP 1532281 B1 20090930; JP 2005535865 A 20051124; JP 4358109 B2 20091104; KR 20050050092 A 20050527; MX PA05001866 A 20050603; MY 137621 A 20090227; PL 198559 B1 20080630; PL 374577 A1 20051031; RU 2005107719 A 20050827; RU 2309351 C2 20071027; TW 200403342 A 20040301; TW I265197 B 20061101; UA 77849 C2 20070115; WO 2004018713 A1 20040304; ZA 200501130 B 20061025

DOCDB simple family (application)  
**US 52560005 A 20050222**; AT 03792197 T 20030714; AT 5872002 U 20020904; AU 2003250046 A 20030714; BR 0313444 A 20030714; CA 2495552 A 20030714; CN 03819665 A 20030714; DE 20213759 U 20020905; DE 50311974 T 20030714; EP 02018642 A 20020820; EP 0307580 W 20030714; EP 03792197 A 20030714; JP 2004530020 A 20030714; KR 20057002807 A 20050218; MX PA05001866 A 20030714; MY PI20032827 A 20030728; PL 37457703 A 20030714; RU 2005107719 A 20030714; TW 92119240 A 20030715; UA 2005002446 A 20030714; ZA 200501130 A 20030714