

Title (en)

COOLING DEVICE FOR COOLING A METAL STRIP

Title (de)

KÜHLVORRICHTUNG ZUM KÜHLEN EINES METALLBANDES

Title (fr)

DISPOSITIF DE REFROIDISSEMENT POUR LE REFROIDISSEMENT D'UN FEUILLARD MÉTALLIQUE

Publication

EP 2162246 A1 20100317 (DE)

Application

EP 08759198 A 20080612

Priority

- EP 2008004693 W 20080612
- DE 102007029802 A 20070627
- DE 102007055475 A 20070821

Abstract (en)

[origin: CA2683560A1] The invention relates to a cooling device (100) for cooling a metal strip (200) following reshaping in a cold rolling stand (200) having at least one nozzle (112) for spraying a cooling medium (400) onto the surface of the metal strip (200). In order to make such known cooling devices more effective and more efficient, the invention proposes providing a plate (500) which, in an operational position, is arranged parallel to the surface of the metal strip (200) at the outlet of the cold rolling stand (300), and proposes arranging the nozzle in the operation position in such a way that the cooling medium is sprayed at an acute spray angle .alpha. into a cavity between the surface of the metal strip and the opposite plate with a spray direction (R) counter to the running direction (L) of the metal strip.

IPC 8 full level

B21B 45/02 (2006.01)

CPC (source: EP KR US)

B21B 45/02 (2013.01 - KR); **B21B 45/0218** (2013.01 - EP US); **B21B 1/28** (2013.01 - EP US); **B21B 1/36** (2013.01 - EP US);
B21B 45/0233 (2013.01 - EP US)

Citation (search report)

See references of WO 2009000421A1

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MT NL NO PL PT RO SE SI SK TR

Designated extension state (EPC)

AL BA MK RS

DOCDB simple family (publication)

DE 102007055475 A1 20090108; AU 2008267452 A1 20081231; AU 2008267452 A8 20100325; AU 2008267452 B2 20110331;
BR PI0810919 A2 20160719; BR PI0810919 A8 20170509; CA 2683560 A1 20081231; CA 2683560 C 20121023; CN 101687236 A 20100331;
CN 101687236 B 20121205; EP 2162246 A1 20100317; EP 2162246 B1 20120815; ES 2392001 T3 20121203; JP 2010524697 A 20100722;
JP 5100826 B2 20121219; KR 101158327 B1 20120622; KR 20090122956 A 20091201; MX 2009011263 A 20091105; PL 2162246 T3 20130131;
RU 2414977 C1 20110327; TW 200902179 A 20090116; TW I412412 B 20131021; US 2010132424 A1 20100603; US 8511126 B2 20130820;
WO 2009000421 A1 20081231; ZA 200905997 B 20100428

DOCDB simple family (application)

DE 102007055475 A 20070821; AU 2008267452 A 20080612; BR PI0810919 A 20080612; CA 2683560 A 20080612;
CN 200880021778 A 20080612; EP 08759198 A 20080612; EP 2008004693 W 20080612; ES 08759198 T 20080612;
JP 2010504585 A 20080612; KR 20097019581 A 20080612; MX 2009011263 A 20080612; PL 08759198 T 20080612;
RU 2010102519 A 20080612; TW 97122140 A 20080613; US 45230608 A 20080612; ZA 200905997 A 20090827