

Title (en)

Cooling apparatus for hot rolled steel strip, manufacturing method for hot rolled steel strip, and production line for hot rolled steel strip

Title (de)

Kühlvorrichtung für heißgewalzte Stahlstreifen, Herstellungsverfahren für heißgewalzte Stahlstreifen und Produktionslinie für heißgewalzte Stahlstreifen

Title (fr)

Appareil de refroidissement pour bande d'acier laminée à chaud, son procédé de fabrication et sa ligne de production

Publication

EP 1889671 B1 20100310 (EN)

Application

EP 07118787 A 20020808

Priority

EP 02760588 A 20020808

Abstract (en)

[origin: EP1889671A1] The present invention relates to a cooling apparatus for hot rolled steel strip (9) comprising top surface cooling means (4b) to be provided above a hot rolled steel strip (9) transferred with transfer rollers (7) after hot rolling to cool the top surface of the hot rolled steel strip (9), and bottom surface cooling means (4a) to be provided below the hot rolled steel strip (9) to cool the bottom surface of the hot rolled steel strip (9). Each of the top surface cooling means (4b) and the bottom surface cooling means (4a) has a protective member (10a,10b) disposed close to the surface of the hot rolled steel strip (9), having at least one cooling water passage hole (11), at least one cooling water header (12a,12b) opposing the hot rolled steel strip (9) separated by the protective member (10a,10b), and cooling water jetting nozzles (15) protruding from the cooling water header (12a,12b) and adapted to jet cooling water approximately vertically toward the surface of the hot rolled steel strip (9) through the cooling water passage hole (11). The tips (16) of the cooling water jetting nozzles (15) are disposed farther from the hot rolled steel strip (9) than the surface, opposing the hot rolled steel strip (9), of the protective member (10a,10b) and the cooling water passage hole (11) is slit shaped. The longitudinal direction of the slit shaped cooling water passage hole (11) inclines in the horizontal plane with respect to the transferring direction of the hot rolled steel strip (9), and cooling water is adapted to be jetted from a plurality of cooling water jetting nozzles (15) through the slit shaped cooling water passage hole (11).

IPC 8 full level

B21B 45/02 (2006.01)

CPC (source: EP)

B21B 45/0218 (2013.01); **B21B 39/006** (2013.01); **B21B 39/10** (2013.01)

Cited by

CN104415974A; CN102228910A; CN114618894A; CN105219931A; CN103978051A; CN108889785A; EP3281705A1; EP2415536B1; EP2450116B1

Designated contracting state (EPC)

DE GB

DOCDB simple family (publication)

EP 1889671 A1 20080220; **EP 1889671 B1 20100310**; DE 60235660 D1 20100422

DOCDB simple family (application)

EP 07118787 A 20020808; DE 60235660 T 20020808