

Title (en)

Roll cooling and/or lubricating device for cold strip rolling mills, in particular fine strip and foil rolling mills

Title (de)

Walzenkühl- und/oder Schmiervorrichtung für Kaltbandwalzwerke, insbesondere Feinband- und Folienwalzwerke

Title (fr)

Dispositif pour refroidir et/ou lubrifier des cylindres de laminaires pour feuillards à froid, notamment feuillards fins et feuilles minces

Publication

EP 1142652 A3 20040102 (DE)

Application

EP 01107352 A 20010324

Priority

DE 20006508 U 20000408

Abstract (en)

[origin: EP1142652A2] Cold strip mill roll cooling and/or lubricating equipment comprises retractable, displaceable and rotatable nozzle beams with regulated adjustable spray nozzles. Roll cooling and/or lubricating equipment for a cold strip mill comprises nozzle beams which are associated with the individual rolls and which incorporate spray nozzles with control valves, the beams being adjustable independently of one another transverse to the strip travel direction parallel to the strip plane and relative to their associated rolls for regulating tension across the strip width by altering the effective roll barrel diameter and/or for influencing the roll lubrication by pressure, quantity and/or temperature regulated rolling oil or emulsion supply. The nozzle beams (7, 8) can be linearly displaced by adjusting cylinders (26) in the direction of their longitudinal axes transverse to the travel direction (a) of the strip (6) and can be swivelled about their longitudinal axes by a rotary drive (29). Positioning devices are provided on the or each mill stand (1) for moving the nozzle beams (7-10) from a retracted position into the operating position on the rolls (2-5) and vice-versa. The spray nozzle control valves are operated with time delays and each spray nozzle (11) has a nozzle stem which is inserted in a corresponding opening in the nozzle beam front wall section facing a roll, is sealed in the nozzle beam, has a nozzle head inserted (preferably screwed) into a bore in its front end and has one or more nozzle openings and a fore-chamber. A rotary slide, which can rotate about the longitudinal axes of the spray nozzles (11), is mounted in a central bore of the nozzle stem and has a blind bore which is open to the nozzle head. The blind bore region of the slide has an entry opening which aligns with a corresponding nozzle stem or nozzle head opening in the open position of the spray nozzle (11) and which is closed by the wall of the nozzle stem or nozzle head in the closed position of the spray nozzle, the slide also having an adjusting device at the rotary slide end adjacent the nozzle head.

IPC 1-7

B21B 37/32; B21B 27/10

IPC 8 full level

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CPC (source: EP US)

B21B 37/32 (2013.01 - EP US); **B21B 45/0233** (2013.01 - EP US); **B21B 39/02** (2013.01 - EP US); **B21B 2015/0064** (2013.01 - EP US); **B21B 2027/103** (2013.01 - EP US)

Citation (search report)

- [AD] DE 3419261 A1 19851128 - ACHENBACH BUSCHHUETTEN GMBH [DE]
- [A] EP 0542640 A1 19930519 - UNITED ENGINEERING INC [US], et al
- [A] GB 2207373 A 19890201 - SVATOS JOSEPH DONALD
- [A] EP 0374538 A2 19900627 - NORANDAL USA INC [US]
- [A] DE 9418359 U1 19950112 - ACHENBACH BUSCHHUETTEN GMBH [DE]
- [A] DE 19503544 A1 19960808 - ACHENBACH BUSCHHUETTEN GMBH [DE]
- [A] US 5460023 A 19951024 - GINZBURG VLADIMIR B [US]
- [A] PATENT ABSTRACTS OF JAPAN vol. 018, no. 217 (M - 1594) 19 April 1994 (1994-04-19)

Cited by

CN106311754A; CN111250549A; CN112170481A; CN109892117A; RU2730826C1; CN103658201A; CN111687212A; DE102009040876A1; US9999960B2; US10814365B2; US10953447B2; US11007557B2; WO2019241550A1; EP3251762A1; WO2017207622A1; US11440067B2

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