

Title (en)

Rolling mill having work roll shifting function

Title (de)

Walzwerk mit einer Arbeitswalzenverlagerungsfunktion

Title (fr)

Laminoir doté d'une fonction de commutation de cylindre de travail

Publication

EP 2772321 A1 20140903 (EN)

Application

EP 14001890 A 20100701

Priority

- JP 2009176038 A 20090729
- EP 10006802 A 20100701

Abstract (en)

A rolling mill having a work roll shifting function comprises a rolling stand (11 to 16, 210) with a pair of upper and lower work rolls (22a, 22b; 121a, 121b) and roll shifting means (40, 50, 140) for shifting the work rolls in an axial direction thereof. The pair of upper and lower work rolls each have, at one end of a roll body portion (31a, 32a; 131a, 132a), a tapering portion (31b, 32b; 131b, 132b) having a roll diameter gradually decreasing toward a tip of the work roll. The pair of upper and lower work rolls clamp a strip (1) while having the tapering portions located on opposite sides from each other in an axial direction thereof. In the work rolls, at least surfaces of the roll body portions are formed of a ceramic material or a cemented carbide and formed to have 1200 HV or more in terms of Vickers hardness. The rolling stand is a reversing rolling stand for performing multi-pass multiple rolling while inverting a transport direction of the strip. The roll shifting means are adapted to shift the work rolls stepwise every time the strip is passed.

IPC 8 full level

B21B 13/14 (2006.01); **B21B 27/02** (2006.01); **B21B 27/03** (2006.01)

CPC (source: EP)

B21B 13/142 (2013.01); **B21B 27/021** (2013.01); **B21B 27/032** (2013.01); **B21B 1/32** (2013.01); **B21B 31/18** (2013.01); **B21B 38/04** (2013.01); **B21B 2261/06** (2013.01); **B21B 2263/02** (2013.01); **B21B 2267/06** (2013.01); **B21B 2267/26** (2013.01); **B21B 2269/12** (2013.01)

Citation (applicant)

- JP 2009034690 A 20090219 - NISSHIN STEEL CO LTD
- JP 3444063 B2 20030908

Citation (search report)

- [Y] US 2004206147 A1 20041021 - NISHI HIDETOSHI [JP], et al
- [Y] WO 2008155320 A1 20081224 - SIEMENS AG [DE], et al
- [Y] US 2674140 A 19540406 - EGER OSCAR A
- [Y] DE 10208389 A1 20030626 - HITACHI LTD [JP]
- [A] JP H08215721 A 19960827 - NIPPON STEEL CORP

Designated contracting state (EPC)

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

DOCDB simple family (publication)

EP 2292341 A2 20110309; **EP 2292341 A3 20120502**; **EP 2292341 B1 20151216**; CN 101987326 A 20110323; CN 101987326 B 20140423; EP 2772321 A1 20140903; EP 2772321 B1 20160406; JP 2011025299 A 20110210; JP 5683082 B2 20150311

DOCDB simple family (application)

EP 10006802 A 20100701; CN 201010237324 A 20100722; EP 14001890 A 20100701; JP 2009176038 A 20090729