

Title (en)

Five-high rolling mill, multi high rolling mill skinpass rolling mill, and rolling method of multi-high rolling mill.

Title (de)

Fünfwalzen-Walzwerk, Mehrwalzen-Walzwerk, Nachwalzwerk und Walzverfahren eines Mehrwalzen-Walzwerkes.

Title (fr)

Laminoir à cinq cylindres, à cylindres multiples, laminoir d'écrouissage et procédé de laminage pour un laminoir à cylindres multiples.

Publication

EP 0400568 A2 19901205 (EN)

Application

EP 90110143 A 19900529

Priority

- JP 13605289 A 19890531
- JP 24216289 A 19890920

Abstract (en)

A five-high rolling mill includes upper and lower work rolls of substantially the same diameter; upper and lower backup rolls supporting the upper and lower work rolls and having a larger diameter than that of the work rolls; an intermediate roll located between one of the upper and lower work rolls and the associated backup roll and having a diameter larger than that of the work roll and smaller than that of the backup roll and a drum length larger than the maximum sheet width of a rolled material; work roll bending devices provided on the respective roll ends of the upper and lower work rolls; and intermediate roll bending devices provided on the roll ends of the intermediate roll. A skinpass rolling mill includes upper and lower work rolls of substantially the same and large diameter; upper and lower backup rolls supporting the work rolls, respectively; an intermediate roll located between the upper work roll and the upper backup roll and having a diameter within a range between the diameters of the upper rolls; roll bending devices respectively provided on the roll ends of the intermediate roll; and roll bending devices respectively provided on the roll ends of the upper and lower work rolls, wherein the intermediate roll has a larger drum length than the maximum sheet width of a rolled material and smaller than the drum length of the work roll, and the roll bending devices for the lower work roll are at least provided with a decrease bender mechanism. A multi-high rolling mill includes upper and lower work rolls of substantially the same diameter and also a certain number of supporting rolls and a different number of supporting rolls for respectively supporting the work rolls so that sections of the rolling mill above and below a rolled material have sets of the rolls in different numbers; roll bending devices installed on the supporting roll directly supporting the work roll in one of the roll sets having the larger number of the rolls; and roll bending devices installed on the respective work rolls of the upper and lower roll sets, wherein the supporting roll in the one roll set having the larger number of the rolls, the work roll in the roll set, and the work roll in the other roll set having the smaller number of the rolls are controlled with control degrees of values gradually increasing in this order. A rolling method in a multi-high rolling mill is applied to a multi-high rolling mill including upper and lower work rolls of substantially the same diameter, upper and lower backup rolls supporting the work rolls, respectively, and an intermediate roll located between one of the upper and lower work rolls and the associated backup roll, wherein roll bending devices installed on the intermediate roll and roll bending devices installed on the work roll in the roll set where the intermediate roll is disposed are all actuated to control a composite sheet of a rolled material over its entire width, and roll bending devices installed on the work roll which is directly supported by the backup roll are actuated to control the sheet crown of the rolled material at its side end portions, thereby performing both the composite shape control of the rolled material and the control of the widths of the side end portions of the rolled material which are not to be rolled.

IPC 1-7

B21B 13/14; **B21B 37/00**

IPC 8 full level

B21B 13/14 (2006.01); **B21B 37/38** (2006.01); **B21B 3/00** (2006.01); **B21B 13/02** (2006.01)

CPC (source: EP)

B21B 13/14 (2013.01); **B21B 37/38** (2013.01); **B21B 3/00** (2013.01); **B21B 2013/026** (2013.01)

Cited by

CN108723089A

Designated contracting state (EPC)

DE FR GB IT

DOCDB simple family (publication)

EP 0400568 A2 19901205; **EP 0400568 A3 19930127**; **EP 0400568 B1 19970813**; DE 69031246 D1 19970918; DE 69031246 T2 19980115

DOCDB simple family (application)

EP 90110143 A 19900529; DE 69031246 T 19900529