

Title (en)

Method of strengthening metal material and apparatus therefor.

Title (de)

Verfahren und Vorrichtung zur Verfestigung des métaux.

Title (fr)

Procédé et dispositif de renforcement des métaux.

Publication

EP 0338682 A2 19891025 (EN)

Application

EP 89302878 A 19890322

Priority

JP 6726488 A 19880323

Abstract (en)

A method of strengthening a metal material of a cast product consisting of a unidirectionally solidified structure of crystals extending long in a direction of casting, and an apparatus for realizing this method. The cast product (12) is passed through a zigzag path formed by contact with circumferential surfaces of rotatable rolls (16, 18, 22, 26, 28, 31), so that repeatedly bending deformation is applied to the cast product to thereby harden the cast product. The repeatedly bending deformation grows dislocation in crystals of the cast product competitively, so that free movement in dislocation of crystals cannot be made any more. As a result of the growth competition of crystals, a strengthened metal material is obtained.

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IPC 8 full level

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CPC (source: EP)

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Cited by

CN106061883A; CN111515284A; DE102014201096A1; US10077192B2; DE102013223883A1; DE102014219174A1; DE102012202640A1; US9209009B2; US9776876B2; DE102014222883A1; WO2016074939A1; US10301181B2; EP2620411A1; DE102012200992A1; DE102014200058A1; US9073756B2; WO2015104126A1; DE102014203814A1; US10202282B2

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