

Title (en)

Apparatus and method for steel hardening.

Title (de)

Vorrichtung und Verfahren zum Härt(en) von Stahl.

Title (fr)

Dispositif et procédé pour le durcissement d'acier.

Publication

EP 0609073 A1 19940803 (EN)

Application

EP 94300592 A 19940127

Priority

- JP 3145693 A 19930127
- JP 5144693 A 19930217

Abstract (en)

Apparatus for steel hardening comprises a quenching region (8) wherein the quenching region surrounds a companion way of an elevator (5) in a quenching bath (2) and is separated from said quenching bath. The upper part of the quenching region is above the level of quenching fluid in the quenching bath, and an inlet for quenching fluid is provided at the lower part of the quenching region. Quenching fluid is supplied from below the steel part(s) to be hardened, which are dipped into said quenching region, and allowed to flow upwardly and overflow from the top of the quenching region into said quenching bath and thereby cool down the steel parts. <IMAGE>

IPC 1-7

C21D 1/64

IPC 8 full level

C21D 1/64 (2006.01); **C21D 1/58** (2006.01)

CPC (source: EP KR)

C21D 1/18 (2013.01 - KR); **C21D 1/64** (2013.01 - EP KR); **C21D 1/58** (2013.01 - EP)

Citation (search report)

- [X] DE 3028901 A1 19820225 - BBC BROWN BOVERI & CIE [DE]
- [X] FR 2282470 A1 19760319 - LUDWIG OFAG INDUGAS GMBH [DE]
- [A] GB 987338 A 19650324 - GIBBONS BROTHERS LTD
- [A] US 3360202 A 19671226 - TAYLOR HAROLD L, et al
- [A] US 3203470 A 19650831 - PETER AYERS

Cited by

CN108315545A; CN110055387A; CN106460077A; EP2465953B1

Designated contracting state (EPC)

DE ES FR GB IT

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