Title (en)

Multistage continuous carburizing and quenching furnace and continuous carburizing and quenching method

Title (de)

Mehrstufiger Ofen und Verfahren zum kontinuierlichen Aufkohlen und Abschrecken

Title (fr)

Four mulit-étages et procédé pour la carburation en continue et la trempe

Publication

EP 1612291 B1 20080123 (EN)

Application

EP 05013682 A 20050624

Priority

JP 2004187556 A 20040625

Abstract (en)

[origin: EP1612291A1] A carburizing zone 11, a diffusion zone 12, and a temperature lowering zone 13 are sequentially disposed in a furnace. The furnace interior is divided into first- to fourth-stage carburizing furnace areas I to IV by first- to fourth-stage transport roller conveyors 14-1 to 14-4 and carrying-out roller conveyors 15-1 to 15-5. Heat treatment pallets 50 on which metallic materials are respectively placed are loaded into the respective carburizing furnace areas I to IV in accordance with a preset order of the carburizing furnace areas at an interval corresponding to a quenching cycle, so as to perform uniform carburizing without variations in the respective carburizing furnace areas I to IV. The heat treatment pallets 50 from temperature lowering zones 13-1 to 13-4 in the respective carburizing furnace areas I to IV are immersed in a quenching medium in a quenching zone 21 in the aforementioned order of the carburizing furnace areas, so as to perform uniform quenching without variations.

IPC 8 full level

C23C 8/20 (2006.01); **C21D 9/00** (2006.01); **C23C 8/80** (2006.01)

CPC (source: EP)

C21D 9/0062 (2013.01); **C23C 8/20** (2013.01); **C23C 8/80** (2013.01); **F27B 9/025** (2013.01); **F27B 9/20** (2013.01); C21D 9/0018 (2013.01); C21D 9/005 (2013.01); C21D 9/0056 (2013.01); F27B 9/38 (2013.01); F27D 2003/0065 (2013.01)

Cited by

CN114182194A; CN102564117A; CN114134453A; CN113843417A; WO2017036053A1

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