Title (en)

INDUSTRIAL FURNACE, ESPECIALLY A MULTIPLE CHAMBER VACUUM FURNACE, FOR HEAT TREATING BATCHES OF METAL WORKPIECES

Publication

EP 0151700 B1 19880629 (DE)

Application

EP 84113445 A 19841107

Priority

DE 3405244 A 19840215

Abstract (en)

[origin: US4653732A] An industrial furnace for heat-treating metallic workpieces has separate heating and cooling chambers. The latter uses a circulating cooling gas, the flow of which against or past the workpieces produces cooling or gas-quenching. The furnace may have another chamber for oil-quenching lying below the gas-cooling chamber. In order to enable the gas cooling to operate quickly and efficiently, a cooling box fed with air by ventilator fans is provided in the shape of a tunnel, with internal surfaces above and at both sides of the effective cooling space constituted by interchangeable nozzle plates (or blank plates if no nozzle openings are desired at the top or at the sides). The workpieces to be cooled rest on a platform which may be raised or lowered to adjust the distance from the top nozzle plate or lowered into an oil bath. The nozzle plates provide a choice of nozzle patterns for different articles or groups of articles to be cooled after heat treatment. The nozzle plates may have setbacks or protrusions in order to vary the spacing of the nozzle openings from the median plane of the cooling tunnel.

IPC 1-7

C21D 1/773; C21D 9/00; F27B 5/04

IPC 8 full level

C21D 1/18 (2006.01); **C21D 1/773** (2006.01); **C21D 9/00** (2006.01); **F27B 5/04** (2006.01); **F27B 9/12** (2006.01); **F27D 7/04** (2006.01)

CPC (source: EP US)

C21D 1/773 (2013.01 - EP US); **C21D 9/0062** (2013.01 - EP US)

Cited by

CN104913630A; DE102019006201A1; DE102019128267A1; DE4208485C1; DE102019204869A1

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AT FR GB IT SE

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