

Title (en)

Method and device for heating workpieces

Title (de)

Verfahren und Vorrichtung zum Erwärmen von Werkstücken

Title (fr)

Dispositif et procédé destinés au chauffage de pièces à usiner

Publication

EP 2204460 A3 20120314 (DE)

Application

EP 09015769 A 20091221

Priority

DE 102009004089 A 20090105

Abstract (en)

[origin: EP2204460A2] The method comprises heating workpieces (105) in an oven (101) in horizontal oven plains, which are arranged vertical to each other. The oven plains exist in a height, where each oven plain is formed for the reception of the workpieces. The workpieces are obtained after heating in a defined sequence on the oven plain. The oven plains are vertically movable for the reception of the heated workpieces so that the respective height of the oven plain changes. The oven plain is vertically moved gradually so that the height of the respective oven plain corresponds to a firmly defined retrieval height. The method comprises heating workpieces (105) in an oven (101) in horizontal oven plains, which are arranged vertical to each other. The oven plains exist in a height, where each oven plain is formed for the reception of the workpieces. The workpieces are obtained after heating in a defined sequence on the oven plain. The oven plains are vertically movable for the reception of the heated workpieces so that the respective height of the individual oven plain changes. The oven plain is vertically moved gradually so that the height of the respective oven plain from which the workpiece is obtained corresponds to a firmly defined retrieval height. The respective oven plain exists for a time duration of greater than zero on the retrieval height. The layer of the oven plain is fixed in related to oven and the oven is vertically moved for obtaining the heated workpiece from the oven plain through adjusting means (106). The layer of the oven plain is changeable in related to oven and the oven plain is vertically movable for obtaining the heated workpiece through the adjusting means within the oven. A lifting system or a rail system is used as the adjusting means. The workpiece is obtained by a transfer device on the retrieval height from the oven plain. The transfer device receives the workpiece during obtaining on the defined retrieval height and horizontally transports on the defined retrieval height. A new workpiece to be heated is subjected in the oven plane after obtaining the heated workpiece from the oven plain. The workpieces are subjected for heating in the oven plain in drawer elements and the workpiece is obtained from the drawer elements. An independent claim is included for a device for the treatment of workpieces.

IPC 8 full level

C21D 9/00 (2006.01); **F27B 9/14** (2006.01)

CPC (source: EP)

C21D 9/0018 (2013.01); **C21D 9/005** (2013.01); **C21D 9/0068** (2013.01); **F27B 9/142** (2013.01); **C21D 1/673** (2013.01)

Citation (search report)

- [X] DE 19948606 A1 20010412 - SEHO SYSTEMTECHNIK GMBH [DE]
- [X] US 6227848 B1 20010508 - IMAI KAZUHIRO [JP]
- [A] DE 102006020781 B3 20071122 - BENTELER AUTOMOBILTECHNIK GMBH [DE]
- [A] JP S58141322 A 19830822 - ROZAI KOGYO KK

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DE102010027439C5; CN104736729A; JP2015537114A; US10099870B2; WO2014053550A1

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK SM TR

Designated extension state (EPC)

AL BA RS

DOCDB simple family (publication)

EP 2204460 A2 20100707; **EP 2204460 A3 20120314**; **EP 2204460 B1 20141210**; DE 102009004089 B3 20101209; ES 2530515 T3 20150303; HU E025061 T2 20160128

DOCDB simple family (application)

EP 09015769 A 20091221; DE 102009004089 A 20090105; ES 09015769 T 20091221; HU E09015769 A 20091221