

Title (en)
DEVICE AND METHOD FOR LOADING AND UNLOADING A HEAT TREATMENT FURNACE

Title (de)
VORRICHTUNG UND VERFAHREN ZUM BE- UND ENTLADEN EINES WÄRMEBEHANDLUNGSOFENS

Title (fr)
DISPOSITIF ET PROCÉDÉ POUR CHARGER ET DÉCHARGER UN FOUR DE TRAITEMENT THERMIQUE

Publication
EP 2121993 B1 20100714 (DE)

Application
EP 08843334 A 20081128

Priority
• EP 2008066472 W 20081128
• DE 102008000056 A 20080114

Abstract (en)
[origin: US2010143080A1] The invention relates to a device for loading and unloading a heat treatment furnace and to a corresponding method. Heat treatment furnaces are normally loaded and unloaded by means of a so-called elevator. During unloading, a removed workpiece is usually lowered by means of the elevator into an oil bath, in which it is then removed from the elevator. Oil is then transferred into the furnace chamber via the oil-covered elevator. Such an application of oil is avoided by means of a device comprising a frame rack having a first and a second level, which are disposed parallel above each other, and are connected to each other by means of a plurality of frame braces, wherein the first and the second levels have a plurality of openings and the frame braces have guide means. The device further comprises a plurality of lifting braces that are connected by a lifting mechanism and are supported vertically movably in the guide means, wherein each lifting brace has carriers at a first and a second position, wherein the carriers are aligned on the lifting braces such that they can be moved in the associated levels in or through the openings upon a vertical movement of the lifting braces. The device further comprises a retaining means disposed on a frame brace, which limits the vertical movement of the corresponding lifting brace.

IPC 8 full level
C21D 1/63 (2006.01); **F27B 9/16** (2006.01); **F27D 3/12** (2006.01)

CPC (source: EP US)
C21D 1/63 (2013.01 - EP US); **C21D 9/0018** (2013.01 - EP US); **F27B 9/16** (2013.01 - EP US); **F27D 3/12** (2013.01 - EP US)

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 MT NL NO PL PT RO SE SI SK TR

DOCDB simple family (publication)
US 2010143080 A1 20100610; US 8298474 B2 20121030; AT E474068 T1 20100715; CN 101849025 A 20100929; CN 101849025 B 20120425; DE 102008000056 A1 20090723; DE 502008000949 D1 20100826; EP 2121993 A1 20091125; EP 2121993 B1 20100714; PL 2121993 T3 20101231; RU 2419051 C1 20110520; SI 2121993 T1 20101130; WO 2009100791 A1 20090820

DOCDB simple family (application)
US 59706908 A 20081128; AT 08843334 T 20081128; CN 200880017843 A 20081128; DE 102008000056 A 20080114; DE 502008000949 T 20081128; EP 08843334 A 20081128; EP 2008066472 W 20081128; PL 08843334 T 20081128; RU 2009140143 A 20081128; SI 200830072 T 20081128