

Title (en)  
FURNACE FOR THE HEAT TREATMENT OF IRON AND STEEL PARTS

Publication  
**EP 0344413 B1 19930512 (DE)**

Application  
**EP 89104384 A 19890313**

Priority  
DE 3818471 A 19880531

Abstract (en)  
[origin: EP0344413A1] In a furnace for the heat treatment of charges of iron and steel parts, a cylindrical, vertically aligned heating chamber (2) in which a plurality of vertically aligned heating elements (7) are situated is arranged inside a furnace housing (1). In order to accelerate the heating-up of the charge (6) arranged inside these heating elements (7), particularly in the lower temperature range, the heating elements (7) are of tubular shape and are provided at their lower end with an outlet opening. The gas conveyed by a fan (11) flows through the heating elements (7), heats up convectively in the process and then passes into the interior of the heating chamber (2). In the upper temperature range, the heating elements (7) give off their heat as radiation directly to the charge (6), the furnace then being able to work in vacuum operation. <IMAGE>

IPC 1-7  
**C21D 1/767**; **C21D 1/773**

IPC 8 full level  
**C21D 1/767** (2006.01); **C21D 1/773** (2006.01); **F27D 7/04** (2006.01); **F27D 11/02** (2006.01)

CPC (source: EP US)  
**C21D 1/767** (2013.01 - EP US); **C21D 1/773** (2013.01 - EP US); **F27D 7/04** (2013.01 - EP US); **F27D 11/02** (2013.01 - EP US)

Citation (examination)  
EP 0313889 A1 19890503 - DEGUSSA [DE]

Cited by  
EP0662519A1; WO2023150814A1

Designated contracting state (EPC)  
CH DE FR GB LI SE

DOCDB simple family (publication)  
**EP 0344413 A1 19891206**; **EP 0344413 B1 19930512**; DE 3818471 A1 19891221; DE 58904311 D1 19930617; US 4970372 A 19901113

DOCDB simple family (application)  
**EP 89104384 A 19890313**; DE 3818471 A 19880531; DE 58904311 T 19890313; US 35940789 A 19890531