

Title (en)

PROCESS FOR SURFACE-HARDENING BY REMELTING CAST IRON CYLINDERS

Publication

**EP 0161408 A3 19860723 (DE)**

Application

**EP 85102673 A 19850308**

Priority

DE 3418555 A 19840518

Abstract (en)

[origin: EP0161408A2] 1. Process for the remelt-hardening of the surfaces of cylinders of carbon-containing cast iron, in particular of cylinders of a reciprocating internal combustion engine, the surfaces being melted locally by means of an energy source along one or more substantially annular hardening paths and subsequently solidifying ledeburitically, characterized in that a) a TIG burner (12) is used as energy source, b) the TIG burner is operated with periodically varying energy density at a defined pulse frequency, c) the pulse frequency and the feed rate of the TIG burner are matched in such a way that the locally melted, scale-shaped segments (22) are repeatedly melted with a degree of overlap of 20 % to 90 %, in particular around 60 %.

IPC 1-7

**C21D 1/09**; **C21D 5/00**; **C21D 9/14**

IPC 8 full level

**C21D 1/09** (2006.01); **C21D 5/00** (2006.01); **C21D 9/00** (2006.01); **C21D 9/14** (2006.01)

CPC (source: EP)

**C21D 1/09** (2013.01); **C21D 5/00** (2013.01); **C21D 9/14** (2013.01)

Citation (search report)

- [A] DE 2811400 A1 19790920 - AEG ELOTHERM GMBH
- [A] DE 2134662 A1 19730125 - TEVES THOMPSON GMBH
- [X] PATENTS ABSTRACTS OF JAPAN, Band 6, Nr. 266 (C-142) [1144], 25. Dezember 1982; & JP - A - 57 158 319 (TOYOTA JIDOSHA KOGYO K.K.) 30.09.1982
- [XP] METAL SCIENCE AND HEAT TREATMENT, Band 26, Nr. 9/10, Oktober/November 1984, Seiten 673-675, Plenum Publishing Corp., New York, US; V.S. VELIKIKH et al.: "Influence of the coefficient of overlapping of hardening "spots" on the residual stresses after laser treatment"

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EP1700923A1

Designated contracting state (EPC)

DE FR GB IT

DOCDB simple family (publication)

**DE 3418555 C1 19850725**; DE 3569751 D1 19890601; EP 0161408 A2 19851121; EP 0161408 A3 19860723; EP 0161408 B1 19890426; JP H0149773 B2 19891026; JP S60245725 A 19851205

DOCDB simple family (application)

**DE 3418555 A 19840518**; DE 3569751 T 19850308; EP 85102673 A 19850308; JP 10037285 A 19850510