

Title (en)
PROCESS FOR CASE HARDENING METALLIC ARTICLES

Publication
EP 0080124 A3 19840822 (DE)

Application
EP 82110429 A 19821111

Priority
DE 3146042 A 19811120

Abstract (en)
[origin: EP0080124A2] 1. A method of case-hardening metallic workpieces, in which the workpieces are subjected to the action of a carbonaceous gas mixture, to which one or more carbonaceous gas component(s) is (are) added in pulsating manner during the action on the workpieces, characterised in that the addition of the carbonaceous gas component(s) is interrupted after a plurality of cycles which in each case consist of a phase of the pulsating addition of carbonaceous gas and a subsequent phase without the addition of carbonaceous gas, and is only resumed after the expiry of a pause which lasts longer than a cycle by a factor of 10 to 100.

IPC 1-7
C23C 11/00

IPC 8 full level
C23C 8/06 (2006.01); **C23C 8/22** (2006.01); **C23C 8/32** (2006.01)

CPC (source: EP)
C23C 8/06 (2013.01); **C23C 8/22** (2013.01)

Citation (search report)
• [A] DE 618026 C 19350830 - EWALD HANUS
• [A] DE 726134 C 19421007 - RENAULT LOUIS
• [A] DE 2851982 A1 19800612 - DEGUSSA
• [A] FR 1164640 A 19581013 - ELINO IND OFENBAU CARL HANF &
• [E] EP 0049530 A1 19820414 - LINDE AG [DE], et al

Cited by
WO2012048669A1; FR2821362A1; CN103556106A; DE102007047074A1; EP2034038A3; EP0408511A1; FR2656003A1; EP1160349A1; FR2681332A1; EP2541176A3; EP2541177A3; US7118634B2; US6547888B1; WO0155470A3; WO03097893A1; WO02068707A1; US8828150B2

Designated contracting state (EPC)
BE CH DE FR GB IT LI NL

DOCDB simple family (publication)
EP 0080124 A2 19830601; EP 0080124 A3 19840822; EP 0080124 B1 19860924; AT 373294 B 19840110; AT A84282 A 19830515; AU 548340 B2 19851205; AU 9040182 A 19830526; BR 8206714 A 19831004; DE 3146042 A1 19830526; DE 3273483 D1 19861030; ES 517532 A0 19830801; ES 8307921 A1 19830801; GR 77758 B 19840925; NO 823887 L 19830524; ZA 828553 B 19830928

DOCDB simple family (application)
EP 82110429 A 19821111; AT 84282 A 19820304; AU 9040182 A 19821111; BR 8206714 A 19821119; DE 3146042 A 19811120; DE 3273483 T 19821111; ES 517532 A 19821119; GR 820169832 A 19821116; NO 823887 A 19821119; ZA 828553 A 19821119