

Title (en)

Method and installation for the cementation of metallic alloy articles at low pressure.

Title (de)

Verfahren und Anlage zum Aufhärten eines Werkstückes aus einer metallischen Legierung unter niedrigem Druck.

Title (fr)

Procédé et installation de cémentation de pièces en alliage métallique à basse pression.

Publication

EP 0465333 B1 19950301 (FR)

Application

EP 91401792 A 19910701

Priority

FR 9008330 A 19900702

Abstract (en)

[origin: EP0465333A1] A fuel mixture is employed, consisting of hydrogen and ethylene in a proportion of 2 to 60% by volume of ethylene and the furnace is heated between 820 DEG and 1100 DEG C. <??>The plant comprises a so-called double-vacuum furnace (50) consisting of a vessel (55) with its internal device for distributing the case-hardening gases, an annular space (56) surrounding the vessel, a cover through which pass conduits for pumping and delivering hydrogen (51) and ethylene (52) opening into the various stages of the vessel at a number of uniformly spaced places, thermocouples (TC) and a microcomputer (61). <??>Application to motor vehicle components. <IMAGE>

IPC 1-7

C23C 8/22; C23C 8/20

IPC 8 full level

C23C 8/22 (2006.01)

CPC (source: EP US)

C23C 8/22 (2013.01 - EP US)

Citation (examination)

METALL TRANS B 13 B JUNE 82 pp. 267-273

Cited by

FR2763604A1; EP0885980A3; FR2847591A1; FR2827875A1; WO03012156A1; US10156006B2; US10934611B2; US9617632B2; US10246766B2; US11035032B2

Designated contracting state (EPC)

AT BE CH DE DK ES GB GR IT LI LU NL SE

DOCDB simple family (publication)

EP 0465333 A1 19920108; EP 0465333 B1 19950301; AT E119214 T1 19950315; CA 2046052 A1 19920103; CA 2046052 C 20011030; DE 69107708 D1 19950406; DE 69107708 T2 19950921; ES 2071251 T3 19950616; FR 2663953 A1 19920103; FR 2663953 B1 19930709; US 5205873 A 19930427

DOCDB simple family (application)

EP 91401792 A 19910701; AT 91401792 T 19910701; CA 2046052 A 19910702; DE 69107708 T 19910701; ES 91401792 T 19910701; FR 9008330 A 19900702; US 72413491 A 19910701