

Title (en)

A process and apparatus for the combined thermal treatment of metallic materials and articles.

Title (de)

Verfahren und Vorrichtung zum kombinierten Wärmebehandeln metallischer Stoffe und Teile.

Title (fr)

Procédé et appareil pour le traitement thermique combiné des matériaux métalliques et des articles.

Publication

EP 0524156 A1 19930120 (EN)

Application

EP 92830325 A 19920619

Priority

IT RM910533 A 19910716

Abstract (en)

A process for the treatment of metallic materials and articles comprising, in combination with a known type thermal treatment, the exposure of the article to the aeroacoustic action of a pulse gaseous stream in the field of sonic frequencies, at an acoustic pressure of at least 150 dB. Said action is preferably achieved by arranging the article to be treated at the interior of the resonator of a suitable apparatus, operating as a gasdynamic acoustic generator. <IMAGE>

IPC 1-7

C21D 1/04

IPC 8 full level

C21D 1/04 (2006.01); **C21D 1/62** (2006.01); **C22F 1/00** (2006.01); **C22F 3/00** (2006.01)

CPC (source: EP)

C21D 1/04 (2013.01); **C21D 1/62** (2013.01); **C22F 1/00** (2013.01); **C22F 3/00** (2013.01)

Citation (search report)

- [A] WO 9005275 A1 19900517 - INFRASONIK AB [SE]
- [A] DE 767719 C 19530409 - DORTMUND HOERDER HUETTENVER A
- [A] FR 1093064 A 19550429 - NAPIER & SON LTD
- [A] US 3276918 A 19661004 - BERTWIN LANGENECKER
- [A] US 3398944 A 19680827 - GUT BOUCHER RAYMOND MARCEL
- [X] STAHL UND EISEN. vol. 109, no. 13, 3 July 1989, DUSSELDORF DE page 623; N. N.: 'Walzdrahtk}hlung mit Infraschall'

Cited by

US6843957B2; CN111534767A; RU203378U1; US7431779B2; US7301123B2; US7344609B2; US7276824B2

Designated contracting state (EPC)

AT BE CH DE DK ES FR GB GR LI LU MC NL PT SE

DOCDB simple family (publication)

EP 0524156 A1 19930120; CA 2073618 A1 19930118; IT 1249682 B 19950309; IT RM910533 A0 19910716; IT RM910533 A1 19930116

DOCDB simple family (application)

EP 92830325 A 19920619; CA 2073618 A 19920710; IT RM910533 A 19910716