

Title (en)

A METHOD OF HEAT TREATING HIGH CHROMIUM CAST FERROUS-BASED ALLOYS AND A WEARING ELEMENT FORMED OF A HIGH CHROMIUM CAST FERROUS BASED ALLOY

Publication

**EP 0178894 A3 19870624 (EN)**

Application

**EP 85307389 A 19851015**

Priority

GB 8426222 A 19841017

Abstract (en)

[origin: EP0178894A2] A method of heat treating a component formed of a high-chromium cast ferrous-based alloy consisting of 11-28 wt% chromium, 1 - 3.6 wt% carbon and at least 0.2 wt% molybdenum and/or at least 0.6 wt% tungsten, the remainder (apart from any incidental ingredients and impurities) being iron, said method comprising the steps of:- a) holding said component at a temperature between the solidus temperature of the alloy and 1050 DEG C for a period of time not exceeding 3 days in a non-oxidising atmosphere or vacuum so as to produce a partially spheroidised hard carbide phase in an austenitic matrix throughout the component, and b) quenching the component at a mean rate of from 40 DEG C/min to 3 DEG C/min in the critical temperature range in order to retain the austenitic matrix. Before heat treatment, carbon and chromium form a hard sharp, angular carbide phase and the molybdenum and/or tungsten serves to increase the rate of change in the morphology of the carbide phase during heat treatment from sharp angularity to a partly spheroidised morphology.

IPC 1-7

**C21D 5/04**

IPC 8 full level

**C21D 6/00** (2006.01); **C22C 37/06** (2006.01)

CPC (source: EP)

**C21D 6/002** (2013.01); **C22C 37/06** (2013.01)

Citation (search report)

- [Y] EP 0029539 A1 19810603 - FISCHER AG GEORG [CH]
- [A] US 4080198 A 19780321 - HEYER BRUCE A, et al
- [A] US 2773761 A 19561211 - FUQUA JOHN H, et al
- [A] GB 1111290 A 19680424 - ABEC CORP
- [A] GB 1466330 A 19770309 - THOME CROMBACK ACIERIES
- [A] DE 2207992 B1 19730111
- [Y] GIESSEREI 63, no. 2, 1976, pages 25-31, Düsseldorf; D.E. DIESBURG: "Über die Risszähigkeit von Chrom-Gusseisen"
- [A] F. MARATRAY, no. 6, 1973, pages 99-104, Berlin; Giesserei-Praxis: Auswahl geeigneter Zusammensetzungen für weisse Chrom-Molybdän-Gusseisensorten"

Cited by

DE3818350A1; CN112338171A; US2023313331A1; WO2005014238A1; WO9817834A1

Designated contracting state (EPC)

AT BE CH DE FR GB IT LI LU NL SE

DOCDB simple family (publication)

**EP 0178894 A2 19860423**; **EP 0178894 A3 19870624**; GB 2167438 A 19860529; GB 2167438 B 19881123; GB 8525382 D0 19851120

DOCDB simple family (application)

**EP 85307389 A 19851015**; GB 8525382 A 19851015