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A method of heat treating high chromium cast ferrous-based alloys and a wearing element formed of a high chromium cast ferrous based alloy.

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°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 car-

bide phase in an austenitic matrix throughout the component, and

b) quenching the component at a mean rate of from 40°C/min to 3°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.

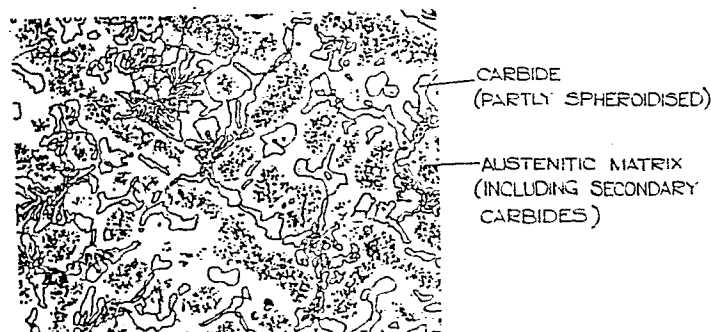


FIG.2.



EP 85 30 7389

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 4)
Y	GIESSEREI 63, no. 2, 1976, pages 25-31, Düsseldorf; D.E. DIESBURG: "Über die Risszähigkeit von Chrom-Gusseisen" * page 28, right column, lines 33-46 *	1	C 21 D 5/04
Y	--- EP-A-0 029 539 (G. FISCHER) * page 2, lines 17-26; claims 2, 3 *	1	
A	--- US-A-4 080 198 (HEYER et al.) * column 2 *		
A	--- US-A-2 773 761 (FUQUA et al.)		TECHNICAL FIELDS SEARCHED (Int. Cl. 4)
A	--- GB-A-1 111 290 (ABEC)		C 21 D 5/04
A	--- GB-A-1 466 330 (ACIERIES THOME CROMBACK) * claims 1, 4 *		
The present search report has been drawn up for all claims			
Place of search BERLIN		Date of completion of the search 24-02-1987	Examiner SUTOR W
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			



DOCUMENTS CONSIDERED TO BE RELEVANT			Page 2
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 4)
A	F. MARATRAY, no. 6, 1973, pages 99-104, Berlin; Giesserei-Praxis: Auswahl geeigneter Zusammensetzungen für weisse Chrom-Molybdän-Gusseisensorten" * page 101 *		
A	DE-B-2 207 992 (GEBR. BÖHLER & CO.) -----		
			TECHNICAL FIELDS SEARCHED (Int. Cl. 4)
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T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			