(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) Publication number: **0 144 907**
A3

(12) # EUROPEAN PATENT APPLICATION

(21) Application number: **84114386.0**

(22) Date of filing: **28.11.84**

(51) Int. Cl.⁴: **C 21 D 5/00**
C 22 C 37/04

(30) Priority: **05.12.83 JP 228327/83**

(43) Date of publication of application:
19.06.85 Bulletin 85/25

(88) Date of deferred publication of search report: **05.11.86**

(84) Designated Contracting States:
DE FR GB

(71) Applicant: **NISSAN MOTOR CO., LTD.**
No.2, Takara-cho, Kanagawa-ku
Yokohama-shi Kanagawa-ken 221(JP)

(72) Inventor: **Jimbo, Yoshio**
Tateno-shataku 3-403
No. 1-11, Futaba Yokosuka City(JP)

(72) Inventor: **Sayashi, Mamoru**
No. 2-18-7-310, Ikego
Zushi City(JP)

(74) Representative: **Patentanwälte Grünecker, Dr. Kinkeldey, Dr. Stockmair, Dr. Schumann, Jakob, Dr. Bezold, Meister, Hilgers, Dr. Meyer-Plath**
Maximilianstrasse 58
D-8000 München 22(DE)

(54) **Method of producing austempered spheroidal graphite cast iron body.**

(57) An excellently austempered spheroidal graphite cast iron body, which may be a thick-wall body, is obtained by using a spheroidal graphite cast iron composition consisting essentially of 3.0-4.0 wt% of C, 1.5-3.0 wt% of Si, 0.3-0.8 wt% of Mn, 0.3-2.0 wt% of Cu, 0.005-0.2 wt% of a spheroidizing agent such as Mg, Ca or Ce, 0-0.1 wt% of Mo, 0-0.3 wt% of Ni and the balance of Fe, and by accomplishing the cooling of the cast iron body from the austenite stabilizing temperature to the bainite transformation temperature at an adequate cooling rate so as to avoid precipitation of pearlite, preferably at a cooling rate between 10°C/sec and 0.64°C/sec. Best results are obtained by performing the cooling in a fluidized bed furnace.

EP 0 144 907 A3

European Patent Office

EUROPEAN SEARCH REPORT

0144907
Application number

EP 84 11 4386

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)
X	GIESSEREI-PRAXIS, no. 18, 25th September 1979, pages 355-366, Fachverlag Schiele & Schön GmbH, Berlin, DE; E. DORAZIL: "Zwischenstufenumwandeln von Gusseisen mit Kugelgraphit" * Page 356, table 1 *	1,4-6	C 21 D 5/00 C 22 C 37/04
X	EP-A-0 018 445 (H. MÜHLBERGER) * Claims; page 3 *	1,2,4-6	
X	FR-E- 89 010 (RENAULT) * Page 1; examples *	1,3,4,6	
X	FR-A-2 192 184 (KYMIN OSAKEYHTIÖ-KYMMENE AB) * Claims; figures *	1,4,6	TECHNICAL FIELDS SEARCHED (Int. Cl.4) C 21 D
A	METAL SCIENCE AND HEAT TREATMENT, vol. 18, no. 5/6, May/June 1976, pages 503-506, Plenum Publishing Corp., New York, US; L.A. SOLNTSEV et al.: "Effect of heating temperature on microstructure and properties of magnesium cast iron"		
A	GB-A- 840 490 (GOETZEWERKE)		

-/-

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	14-08-1986	MOLLET G.H.J.

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

EPO Form 1503 03 82

BAD ORIGINAL

European Patent Office

0144907

Application number

EP 84 11 4386

EUROPEAN SEARCH REPORT

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)
A	DE-B-1 012 317 (RENAULT)		

TECHNICAL FIELDS SEARCHED (Int Cl.4)

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	14-08-1986	MOLLET G.H.J.

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

EPO Form 1503 03.82

BAD ORIGINAL