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

(11) Publication number: **0 265 273**
A3

(12) # EUROPEAN PATENT APPLICATION

(21) Application number: **87309368.6**

(51) Int. Cl.4: **C22C 38/34**

(22) Date of filing: **22.10.87**

(30) Priority: **24.10.86 JP 252978/86**

(43) Date of publication of application:
27.04.88 Bulletin 88/17

(84) Designated Contracting States:
DE FR GB IT

(88) Date of deferred publication of the search report:
18.01.89 Bulletin 89/03

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(54) **High-strength spring steel.**

(57) A high-strength spring steel which produces retained austenite less than 10 % in content by weight after quenching in steps of quenching tempering, and has high fatigue strength and relaxation resistance. The steel contains 0.30 to 0.75 % carbon, 1.0 to 4.0 % silicon, 0.5 to 1.5 % manganese, 0.1 to 2.0 % chromium, and 2.0 % or less nickel, all by weight, and iron and unavoidable impurities for the remainder. The steel further contains 0.05 to 0.5 % vanadium and/or 0.05 to 2.0 % molybdenum, as required. Preferably, the retained-austenite content is set to less than 10 % by restricting the carbon, silicon, and nickel contents as follows: $35 \times C (\%) + 2 \times Si (\%) + Ni (\%) < 23$ %. Preferably, moreover, the oxygen and nitrogen contents of the steel are restricted to 0.0010 % or less and 0.005 % or less, respectively. By doing this, the fatigue strength of the steel can be further improved.

EP 0 265 273 A3

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EUROPEAN SEARCH REPORT

Application Number

EP 87 30 9368

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	PATENT ABSTRACTS OF JAPAN, vol. 9, no. 228 (C-303)[1951], 13th September 1985; & JP-A-60 89 553 (DAIDO TOKUSHUKO K.K.) 20-05-1985 * Abstract * ---	1,3,4,5	C 22 C 38/34
Y	GB-A-1 179 074 (INTERNATIONAL NICKEL) * Page 3, table I * ---	1,3,4,5	
A	US-A-2 914 401 (CRUCIBLE STEEL) * Column 2, table I * ---	1,3	
A	WERKSTOFFKUNDE STAHL VEREIN DEUTSCHER EISENHÜTTENLEUTE, vol. 2, pages 469-477, 1985, Springer-Verlag, Berlin, DE; D. SCHREIBER et al.: "Federstähle" * Page 474, table D18.1, group A * -----	1	

TECHNICAL FIELDS SEARCHED (Int. Cl.4)

C 22 C

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	24-10-1988	WITTBLAD U.A.

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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A : technological background
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