

Title (en)

Process for manufacturing magnetic steel strip by direct casting.

Title (de)

Verfahren zur Herstellung von magnetischen Stahlbändern durch Direktgiessen.

Title (fr)

Procédé d'élaboration d'une bande d'acier magnétique par coulée directe.

Publication

EP 0540405 A1 19930505 (FR)

Application

EP 92402903 A 19921026

Priority

FR 9113499 A 19911031

Abstract (en)

Process for manufacturing a magnetic steel strip which has a thickness of less than 5 mm and contains, in composition by weight, more than 2 % of silicon, less than 0.1 % of carbon and elements which inhibit secondary recrystallisation in an appropriate quantity, the remainder being iron, obtained by direct casting on a cylinder or between two cylinders, which process is characterised in that a crystallisation structure is created, comprising {110} <001> oriented grains as a skin, that is to say at the surface of the quenching zone, due to the abrupt cooling of the steel in contact with the roll(s), the surface temperature of which is lower than 400 DEG C. <IMAGE>

Abstract (fr)

Procédé d'élaboration d'une bande d'acier magnétique ayant une épaisseur inférieure à 5 mm et contenant, en composition pondérale, plus de 2% de silicium, moins de 0,1% de carbone et des éléments inhibiteurs de recristallisation secondaire en quantité convenable, le reste étant du fer, obtenue par coulée directe sur un cylindre ou entre deux cylindres, procédé caractérisé en ce qu'on crée une structure de cristallisation comportant des grains orientés {110} <001> en peau, c'est-à-dire à la surface de la zone de trempe, par le refroidissement brutal de l'acier en contact avec le ou les cylindres, dont la température de surface est inférieure à 400°C. <IMAGE>

IPC 1-7

B22D 11/06; C21D 8/12

IPC 8 full level

C21C 1/02 (2006.01); **B22D 11/06** (2006.01); **B22D 27/20** (2006.01); **C21D 8/12** (2006.01)

CPC (source: EP US)

B22D 11/06 (2013.01 - EP US); **C21D 8/1211** (2013.01 - EP US); **C21D 8/1233** (2013.01 - EP US); **C21D 8/1266** (2013.01 - EP US); **C21D 8/1272** (2013.01 - EP US)

Citation (applicant)

EP 0390160 A1 19901003 - NIPPON STEEL CORP [JP]

Citation (search report)

- [A] EP 0095352 A2 19831130 - KAWASAKI STEEL CO [JP]
- [AD] EP 0390160 A1 19901003 - NIPPON STEEL CORP [JP]
- [A] US 3115430 A 19631224 - JACKSON JOHN M, et al
- [A] US 3061486 A 19621030 - JACKSON JOHN M
- [A] PATENT ABSTRACTS OF JAPAN vol. 15, no. 6 (M-1066)8 Janvier 1991 & JP-A-2 258 149 (NIPPON STEEL) 18 Octobre 1990
- [A] IRON AND STEEL ENGINEER. vol. 67, no. 7, Juillet 1990, PITTSBURGH US pages 51 - 55 J.A.BURGO ET AL 'Thermal design and analysis of a twin-roll caster'

Cited by

DE19745445C1; US7198682B2; WO0250318A1

Designated contracting state (EPC)

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

DOCDB simple family (publication)

EP 0540405 A1 19930505; EP 0540405 B1 19970122; AT E148175 T1 19970215; CZ 284160 B6 19980916; CZ 327992 A3 19940316; DE 4236359 A1 19930506; DE 69216994 D1 19970306; DE 69216994 T2 19970612; DK 0540405 T3 19970210; ES 2099233 T3 19970516; FR 2683229 A1 19930507; FR 2683229 B1 19940218; GR 3023079 T3 19970730; HU 214854 B 19980629; HU 9203426 D0 19930301; HU T71567 A 19951228; JP 2863679 B2 19990303; JP H06142851 A 19940524; PL 171088 B1 19970328; PL 296412 A1 19930712; RO 114349 B1 19990330; RU 2105074 C1 19980220; SK 281332 B6 20010212; SK 327992 A3 19950711; UA 26031 C2 19990226; US 5417772 A 19950523

DOCDB simple family (application)

EP 92402903 A 19921026; AT 92402903 T 19921026; CS 327992 A 19921030; DE 4236359 A 19921028; DE 69216994 T 19921026; DK 92402903 T 19921026; ES 92402903 T 19921026; FR 9113499 A 19911031; GR 970400747 T 19970408; HU 9203426 A 19921030; JP 29448192 A 19921102; PL 29641292 A 19921029; RO 9201362 A 19921030; RU 92004372 A 19921030; SK 327992 A 19921030; UA 93002909 A 19930615; US 96743992 A 19921028