

Title (en)

Method of refining magnetic domains of electrical steels.

Title (de)

Verfahren zur Veredelung der magnetischen Bereiche von elektrischen Stählen.

Title (fr)

Procédé pour raffiner des domaines magnétiques d'aciers électriques.

Publication

EP 0345936 A1 19891213 (EN)

Application

EP 89304300 A 19890428

Priority

- US 20571188 A 19880610
- US 20605188 A 19880610

Abstract (en)

A method is provided for refining the magnetic domain wall spacing of grain-oriented silicon steel sheet having an insulation base coating thereon by removing portions of the base coating to expose a line pattern of the underlying silicon steel substantially transverse to the rolling direction of the steel, applying a metallic contaminant to the steel, the exposed steel being free of thermal and plastic stresses, and thereafter annealing the steel and contaminant thereon at time and temperatures of about 1400 DEG F or more in a protective atmosphere to diffuse sufficient and controlled amounts of the contaminant into the steel to produce a permanent pore to effect heat resistant domain refinement and reduce core loss. A barrier coating may be applied to the base coating to seal the base coating prior to applying the metallic contaminant.

IPC 1-7

C21D 8/12; **C21D 9/46**; **C23C 10/04**; **H01F 1/04**

IPC 8 full level

C23C 22/00 (2006.01); **C21D 8/12** (2006.01); **C21D 9/46** (2006.01); **C23C 10/04** (2006.01); **C23C 26/00** (2006.01); **H01F 1/147** (2006.01); **H01F 1/18** (2006.01)

CPC (source: EP)

C21D 8/1294 (2013.01); **C23C 10/04** (2013.01); **C23C 26/00** (2013.01); **H01F 1/14783** (2013.01)

Citation (search report)

- [A] US 3990923 A 19761109 - TAKASHINA KIKUO, et al
- [A] US 3932235 A 19760113 - FOSTER KARL
- [A] EP 0193324 A2 19860903 - KAWASAKI STEEL CO [JP]

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GB2533446A; EP0869190A1; US6103022A; US10344349B2; US6364963B1; US10297384B2; US10309004B2

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EP 0345936 A1 19891213; **EP 0345936 B1 19950830**; BR 8902713 A 19900123; DE 68924000 D1 19951005; DE 68924000 T2 19960314; JP H02118023 A 19900502; MX 166083 B 19921217

DOCDB simple family (application)

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