

Title (en)

Martensitic stainless steel article and method for producing the same.

Title (de)

Gegenstand aus martensitisches rostfreies Stahl und Verfahren zu ihrer Herstellung.

Title (fr)

Article en acier martensitique inoxydable et procédé pour sa fabrication.

Publication

EP 0508574 A1 19921014 (EN)

Application

EP 92301473 A 19920221

Priority

US 68382591 A 19910411

Abstract (en)

A martensitic stainless steel having an improved combination of strength, toughness, corrosion resistance and machinability, and particularly adapted for use in the manufacture of holder blocks, frames, backers and similar articles for anchoring molds and dies. The steel has a hardness within the range of 30 to 40 HRC and is consisting of, in weight percent, up to 0.09% carbon, up to 0.09% nitrogen, 0.02 to 0.09% carbon plus nitrogen, up to 4.50% manganese, up to 0.05% phosphorus, 0.05 to 0.25% sulfur, up to 1.0% silicon, 1.00 to 4.00% nickel, 11.00 to 14.00% chromium, 0.25 to 1.00% molybdenum, up to 1.00% copper, balance iron and incidental impurities. Articles made from this steel may be austenitized at temperatures within the range of 1500 to 1750 DEG F for about 1 hour per inch of thickness and either oil quenched or air cooled to achieve a martensitic structure. Thereafter, the article may be tempered or stress-relieved at a temperature between 500 and 850 DEG F for about 1 hour per inch of thickness with a minimum of 2 hours. After these heat treatments, the article will exhibit a hardness between 30 and 40 HRC, preferably 35 to 40 HRC for higher strength applications, along with a drill machinability rating equal to or greater than 100. <IMAGE>

IPC 1-7

C22C 38/44

IPC 8 full level

C21D 6/00 (2006.01); **C22C 38/00** (2006.01); **C22C 38/44** (2006.01)

CPC (source: EP)

C22C 38/44 (2013.01)

Citation (search report)

- [X] EP 0170598 A1 19860205 - UGINE ACIERS [FR]
- [Y] FR 1478469 A 19670428 - CRUCIBLE STEEL CO AMERICA
- [YD] US 3720545 A 19730313 - STEVEN G, et al
- [A] EP 0039052 A1 19811104 - TOKYO SHIBAURA ELECTRIC CO [JP]

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CN102719627A; EP1233080A1; FR2872825A1; US6893608B2; US9267197B2; WO2009024069A1; WO2006016043A3; KR100500263B1

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