

Title (en)  
HARD PARAMAGNETIC STAINLESS STEEL AND METHOD FOR MANUFACTURING SAME

Title (de)  
HARTER PARAMAGNETISCHER EDELSTAHL UND VERFAHREN ZUR HERSTELLUNG DAVON

Title (fr)  
ACIER INOXYDABLE DUR PARAMAGNETIQUE ET SON PROCEDE DE FABRICATION

Publication  
**EP 4240884 A1 20230913 (FR)**

Application  
**EP 21773723 A 20210906**

Priority  
• EP 20206523 A 20201109  
• EP 2021074505 W 20210906

Abstract (en)  
[origin: WO2022096178A1] The present invention relates to a paramagnetic stainless steel with a chemical composition comprising by weight: -  $20 \leq \text{Cr} \leq 40\%$ , -  $3 \leq \text{Ni} \leq 20\%$ , -  $0 \leq \text{Mn} \leq 15\%$ , -  $0 \leq \text{Al} \leq 5\%$ , -  $3 < \text{Mo} \leq 15\%$ , -  $0 \leq \text{W} \leq 5\%$ , -  $0 \leq \text{Cu} \leq 2\%$ , -  $0 \leq \text{Si} \leq 5\%$ , -  $0 \leq \text{Ti} \leq 1\%$ , -  $0 \leq \text{Nb} \leq 1\%$ , -  $0 \leq \text{C} \leq 0.1\%$ , -  $0 \leq \text{N} \leq 0.5\%$ , -  $0 \leq \text{S} \leq 0.5\%$ , -  $0 \leq \text{P} \leq 0.1\%$ , the remainder being iron and possible impurities each having a content less than or equal to 0.5%, said steel having a hardness between 575 and 900 HV10. The invention also relates to a part, in particular a watch component made of this steel and to the method for manufacturing the part.

IPC 8 full level  
**C22C 38/44** (2006.01); **C21D 6/00** (2006.01); **C21D 6/02** (2006.01); **C22C 38/00** (2006.01); **C22C 38/02** (2006.01); **C22C 38/42** (2006.01); **C22C 38/48** (2006.01); **C22C 38/50** (2006.01); **C22C 38/58** (2006.01)

CPC (source: EP US)  
**B22F 10/28** (2021.01 - EP); **B22F 10/64** (2021.01 - EP US); **B33Y 10/00** (2014.12 - EP); **B33Y 40/20** (2020.01 - EP US); **B33Y 70/00** (2014.12 - EP US); **C21D 1/18** (2013.01 - US); **C21D 6/004** (2013.01 - EP US); **C21D 6/02** (2013.01 - EP); **C21D 9/0068** (2013.01 - US); **C22C 33/0278** (2013.01 - EP); **C22C 38/001** (2013.01 - US); **C22C 38/002** (2013.01 - US); **C22C 38/004** (2013.01 - EP); **C22C 38/02** (2013.01 - EP US); **C22C 38/04** (2013.01 - US); **C22C 38/06** (2013.01 - US); **C22C 38/42** (2013.01 - EP US); **C22C 38/44** (2013.01 - EP US); **C22C 38/48** (2013.01 - EP US); **C22C 38/50** (2013.01 - EP US); **C22C 38/58** (2013.01 - EP); **B22F 10/28** (2021.01 - US); **B22F 10/66** (2021.01 - US); **B33Y 10/00** (2014.12 - US); **C21D 2211/001** (2013.01 - EP US); **C21D 2211/005** (2013.01 - US); **C22C 2202/02** (2013.01 - US); **Y02P 10/25** (2015.11 - EP)

Citation (search report)  
See references of WO 2022096178A1

Designated contracting state (EPC)  
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)  
BA ME

Designated validation state (EPC)  
KH MA MD TN

DOCDB simple family (publication)  
**EP 3995600 A1 20220511**; CN 116507744 A 20230728; EP 4240884 A1 20230913; JP 2023542696 A 20231011; US 2023279530 A1 20230907; WO 2022096178 A1 20220512

DOCDB simple family (application)  
**EP 20206523 A 20201109**; CN 202180070511 A 20210906; EP 2021074505 W 20210906; EP 21773723 A 20210906; JP 2023518759 A 20210906; US 202118043837 A 20210906