Title (en)

HOROLOGICAL HAIRSPRING MADE OF A NI-HF ALLOY

Title (de)

UHRSPIRALFEDER AUS NI-HF-LEGIERUNG

Title (fr)

SPIRAL HORLOGER EN ALLIAGE NI-HF

Publication

EP 3889691 A1 20211006 (FR)

Application

EP 21170773 A 20190507

Priority

- EP 21170773 A 20190507
- EP 19173114 A 20190507

Abstract (en)

[origin: CN111913380A] A method for manufacturing a balance spring intended to equip a balance of a horological movement, including a step of producing a blank made of a niobium and hafnium alloy including between 5 and 60wt %, preferably between 5 and 30 wt %, and more preferably between 8 and 12 wt % hafnium, a step of annealing and cooling the blank, at least one step of deforming the annealed blank in order to forma wire. The method includes, before the deformation step, a step of depositing, on the blank, a layer of a ductile material chosen from the group consisting of copper, nickel, cupronickel, cupro-manganese, gold, silver, nickel-phosphorus Ni-P and nickel-boron Ni-B, in order to facilitate the wire shaping operation. The invention further relates to a balance spring which is produced by the manufacturing method.

Abstract (fr)

La présente invention concerne un spiral horloger composé d'un alliage Ni-Hf et comportant également des basses pourcentages en poids de Ti, Zr, Ta et W.

IPC 8 full level

G04B 17/06 (2006.01); **C22C 27/02** (2006.01); **C22F 1/18** (2006.01)

CPC (source: CN EP US)

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Citation (search report)

- [I] EP 1258786 A1 20021120 - ROLEX MONTRES [CH]
- [A] EP 0886195 A1 19981223 - ROLEX MONTRES [CH]

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EP 19173114 A 20190507; CN 202010372078 A 20200506; EP 21170773 A 20190507; JP 2020068864 A 20200407; US 202016831913 A 20200327