

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 form a 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

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CPC (source: CN EP US)

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**G04B 17/066** (2013.01 - CN EP US)

Citation (search report)

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

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JP 2020183940 A 20201112; US 11550263 B2 20230110; US 2020356057 A1 20201112

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