Title (en)

MANUFACTURING METHOD OF A TIMEPIECE SPIRAL SPRING MADE OF TITANIUM

Title (de)

HERSTELLUNGSVERFAHREN EINER SPIRALFEDER EINES UHRWERKS AUF TITANBASIS

Title (fr)

PROCÉDÉ DE FORMATION D'UN RESSORT SPIRALE D'HORLOGERIE À BASE TITANE

Publication

EP 3671359 B1 20230426 (FR)

Application

EP 18215265 A 20181221

Priority

EP 18215265 A 20181221

Abstract (en)

[origin: US2020201254A1] A spiral timepiece spring with a two-phase structure, made of a niobium and titanium alloy, and method for manufacturing this spring, including: producing a binary alloy containing niobium and titanium, with: niobium: the remainder to 100%; titanium: strictly greater than 60% and less than or equal to 85% by mass of the total, traces of components from among O, H, C, Fe, Ta, N, Ni, Si, Cu, Al; applying deformations alternated with heat treatments until a two-phase microstructure is obtained comprising a solid solution of niobium with β-phase titanium and a solid solution of niobium with α-phase titanium, the α-phase titanium content being greater than 10% by volume, wire drawing to obtain wire able to be calendered; calendering or insertion into a ring to form a mainspring, in a double clef shape before it is wound for the first time, or winding to form a balance spring.

IPC 8 full level

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CPC (source: CN EP KR RU US)

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