

Title (en)

THERMALLY COMPENSATED HAIRSPRING MADE FROM CERAMIC COMPRISING SILICON IN THE COMPOSITION OF SAME AND METHOD FOR ADJUSTING SAME

Title (de)

WÄRMEKOMPENSIERTE SPIRALFEDER AUS KERAMIK MIT SILICIUM IN DER ZUSAMMENSETZUNG DAVON UND VERFAHREN ZU ANPASSUNG DAVON

Title (fr)

RESSORT SPIRAL THERMOCOMPENSÉ EN CÉRAMIQUE COMPRENANT L'ÉLÉMENT SILICIUM DANS SA COMPOSITION ET SON PROCÉDÉ DE RÉGLAGE

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Application

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Abstract (en)

[origin: WO2015113973A1] The invention concerns a hairspring (1) intended to equip a balance-hairspring resonator of a movement of a timepiece or another precision instrument, the hairspring (1) comprising a core (2) made from a ceramic material comprising silicon in the core of same and comprising a cross-section, the core (2) having a first stiffness (k_A) and a first thermoelastic coefficient (β_A); and a coating (4) made from silicon dioxide of thickness (t_R) and at least partially covering the core (2), the coating (4) having a second thickness (k_R) and a second thermoelastic coefficient (β_R) of opposite sign to the first thermoelastic coefficient (β_A); in which the cross-section of the core (2) and the thickness (t_R) of the coating (4) can be adjusted separately in such a way as to obtain a desired value for the thermoelastic coefficient of the hairspring ($\beta_{S<0>}$) and a thickness of the hairspring (k_S). The invention also concerns a balance-hairspring resonator comprising the hairspring and a balance wheel and a method for adjusting the hairspring. The hairspring has invariant expansion and elasticity properties.

IPC 8 full level

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