

Title (en)

Temperature compensated hairspring-balance oscillator

Title (de)

Unruh-Spiralfeder-Oszillator mit Temperaturkompensation

Title (fr)

Oscillateur balancier-spiral compensé en température

Publication

EP 1605182 B1 20100602 (FR)

Application

EP 04405355 A 20040608

Priority

EP 04405355 A 20040608

Abstract (en)

[origin: EP1605182A1] The oscillator has a balance and a hairspring that is made of quartz substrate whose cut is determined in order to compensate thermal drifts of the hairspring, where the thickness of spring coils is modulated. The modulation of the thickness is linearly varied from the center of the hairspring to a balance-spring stud. The cut of the substrate is a cut with single or double rotation.

IPC 8 full level

F16F 1/10 (2006.01); **G04B 17/06** (2006.01)

CPC (source: EP US)

G04B 17/066 (2013.01 - EP US)

Cited by

CH701846A1; CH706087A1; CN105738034A; EP2154583A1; EP2523053A1; EP2703909A1; EP2717103A1; EP2703910A3; CN104704431A; US8348497B2; WO2014053336A1; US9030920B2; US9188958B2; JP2015534071A; EP3056948B1

Designated contracting state (EPC)

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DOCDB simple family (publication)

EP 1605182 A1 20051214; EP 1605182 B1 20100602; EP 1605182 B8 20100714; AT E470086 T1 20100615; CN 100564927 C 20091202; CN 1985103 A 20070620; DE 602004027471 D1 20100715; HK 1106570 A1 20080314; JP 2008501967 A 20080124; US 2008008050 A1 20080110; US 7682068 B2 20100323; WO 2005124184 A1 20051229

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EP 04405355 A 20040608; AT 04405355 T 20040608; CN 200580023374 A 20050602; DE 602004027471 T 20040608; EP 2005052520 W 20050602; HK 07111842 A 20071101; JP 2007526416 A 20050602; US 62883105 A 20050602