

Title (en)
Method for maintaining and adjusting a clock piece resonator

Title (de)
Wartungs- und Regulierungsverfahren eines Uhrenresonators

Title (fr)
Procédé d'entretien et de régulation d'un résonateur d'horlogerie

Publication
EP 2908184 A1 20150819 (FR)

Application
EP 14155425 A 20140217

Priority
EP 14155425 A 20140217

Abstract (en)
[origin: WO2015121014A1] Method for servicing and regulating the frequency of an horology resonator mechanism (1) about its natural frequency (ω_0), characterized in that use is made of at least one regulator device (2) acting on said resonator mechanism (1) with a periodic movement. Said periodic movement imposes a periodic modulation of the resonant frequency and/or of the Q factor/or of the position of the quiescent point of said resonator mechanism (1), with a regulating frequency (ω_R) that is comprised between 0.9 and 1.1 times the value of an integer multiple of said natural frequency (ω_0), said integer being greater than or equal to 2 and less than or equal to 10. Said periodic movement imposes a periodic modulation of the Q factor of said resonator mechanism (1) by acting on the losses and/or the damping and/or the friction of said resonator mechanism (1).

Abstract (fr)
Procédé d'entretien et de régulation d'un mécanisme résonateur (1) d'horlogerie autour de sa fréquence propre ($\dot{E}0$), caractérisé en ce qu'on met en oeuvre au moins un dispositif régulateur (2) agissant sur ledit mécanisme résonateur (1) avec un mouvement périodique. Ledit mouvement périodique impose une modulation périodique de la fréquence de résonance et/ou du facteur de qualité et/ou du point de repos dudit mécanisme résonateur (1), avec une fréquence de régulation ($\dot{E}R$) qui est comprise entre 0.9 fois et 1.1 fois la valeur d'un multiple entier de ladite fréquence propre ($\dot{E}0$), ledit entier étant supérieur ou égal à 2.

IPC 8 full level
G04B 17/26 (2006.01)

CPC (source: EP RU US)
G04B 17/04 (2013.01 - US); **G04B 17/045** (2013.01 - EP US); **G04B 17/06** (2013.01 - US); **G04B 17/063** (2013.01 - US);
G04B 17/066 (2013.01 - US); **G04B 17/26** (2013.01 - EP RU US); **G04B 17/32** (2013.01 - US); **G04B 17/325** (2013.01 - EP US)

Citation (applicant)
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• D. RUGAR; P. GRUTTER: "Mechanical parametric amplification and thermomechanical noise squeezing", PRL, vol. 67, 1991, pages 699, XP000238493, DOI: doi:10.1103/PhysRevLett.67.699
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