

Title (en)  
TIMEPIECE COMPRISING A MECHANICAL OSCILLATOR WHOSE AVERAGE FREQUENCY IS SYNCHRONISED TO THAT OF A REFERENCE ELECTRONIC OSCILLATOR

Title (de)  
UHR, DIE EINEN MECHANISCHEN OSZILLATOR UMFASST, DESSEN DURCHSCHNITTliche FREQUENZ MIT DER EINES ELEKTRONISCHEN REFERENZOSZILLATORS SYNCHRONISIERT IST

Title (fr)  
PIÈCE D'HORLOGERIE COMPRENANT UN OSCILLATEUR MÉCANIQUE DONT LA FRÉQUENCE MOYENNE EST SYNCHRONISÉE SUR CELLE D'UN OSCILLATEUR ÉLECTRONIQUE DE RÉFÉRENCE

Publication  
**EP 3620867 B1 20220105 (FR)**

Application  
**EP 18192469 A 20180904**

Priority  
EP 18192469 A 20180904

Abstract (en)  
[origin: US2020073331A1] A mechanical oscillator, formed of a mechanical resonator and a device for maintaining oscillation, and an auxiliary oscillator forming a reference time base including a synchronisation device arranged to slave the medium frequency of the mechanical oscillator on that of the auxiliary oscillator. The synchronisation device includes an electromagnetic braking device which is formed of a coil and at least one permanent magnet and arranged such that an induced voltage is generated between the terminals of the coil in each alternation of the oscillation of the mechanical resonator. The synchronisation device is arranged to be able to reduce momentarily the impedance between the terminals of the coil during distinct time intervals, any two successive time intervals exhibiting between the respective starts thereof a time distance substantially equal to a positive whole number multiplied by half of a set-point period for the mechanical oscillator.

IPC 8 full level  
**G04C 3/04** (2006.01)

CPC (source: CN EP US)  
**G04B 17/06** (2013.01 - US); **G04B 17/20** (2013.01 - CN); **G04C 3/04** (2013.01 - EP); **G04C 11/081** (2013.01 - US); **G04C 11/084** (2013.01 - CN)

Cited by  
US11815857B2; EP4009119A1; EP4174586A1; CN116068872A

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DOCDB simple family (publication)  
**EP 3620867 A1 20200311**; **EP 3620867 B1 20220105**; CN 110874049 A 20200310; CN 110874049 B 20210601; JP 2020038206 A 20200312; JP 6951389 B2 20211020; US 11687041 B2 20230627; US 2020073331 A1 20200305

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**EP 18192469 A 20180904**; CN 201910827874 A 20190903; JP 2019153408 A 20190826; US 201916520402 A 20190724