

Title (en)
ISOCHRONOUS CLOCK RESONATOR

Title (de)
ISOCHRONER RESONATOR FÜR UHR

Title (fr)
RESONATEUR ISOCHRONE D'HORLOGERIE

Publication
EP 3254158 B1 20230705 (FR)

Application
EP 16701499 A 20160126

Priority
• EP 15153656 A 20150203
• EP 2016051486 W 20160126

Abstract (en)
[origin: WO2016124436A1] The invention relates to an isochronous timepiece oscillator mechanism (1), including a stationary mounting (2) supporting a crossmember (4) supporting N primary resonators (10) each including a mass (5) supported by a rotary flexible guide (20) attached to said crossmember (4). Each primary resonator (10) has a centre of mass (CM) which, when inoperative, is on the virtual pivoting axis (APV) of the rotary flexible guide (20) thereof and is arranged to oscillate by rotating said virtual pivoting axis (APV), said primary resonators (10) are arranged with symmetry of rotation of order N about a main axis (AP) parallel to the virtual pivoting axes (APV), and the oscillation movements of any two primary resonators (10) are out of phase with the value of the central angle formed by the respective virtual pivoting axes thereof (APV) with the main axis (AP). The invention also relates to a clock movement (100) including such an isochronous oscillator mechanism (1) and to a watch (200) including such a movement (100).

IPC 8 full level
G04B 15/02 (2006.01); **G04B 15/06** (2006.01); **G04B 15/14** (2006.01); **G04B 17/04** (2006.01); **G04B 17/06** (2006.01); **G04B 17/28** (2006.01); **G04B 43/00** (2006.01)

CPC (source: CN EP US)
G04B 15/02 (2013.01 - EP); **G04B 15/06** (2013.01 - EP); **G04B 15/14** (2013.01 - EP); **G04B 17/045** (2013.01 - CN EP US); **G04B 17/06** (2013.01 - EP US); **G04B 17/066** (2013.01 - EP US); **G04B 17/10** (2013.01 - CN); **G04B 17/28** (2013.01 - CN EP US); **G04B 43/002** (2013.01 - EP); **G04C 3/08** (2013.01 - US); **G04B 5/04** (2013.01 - US)

Citation (examination)
• EP 3035127 A1 20160622 - SWATCH GROUP RES & DEV LTD [CH]
• EP 3054358 A1 20160810 - ETA SA MFT HORLOGERE SUISSE [CH]

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)
WO 2016124436 A1 20160811; CN 106662839 A 20170510; CN 106662839 B 20190329; EP 3254158 A1 20171213; EP 3254158 B1 20230705; JP 2017514152 A 20170601; JP 6326549 B2 20180516; US 2017123380 A1 20170504; US 9983549 B2 20180529

DOCDB simple family (application)
EP 2016051486 W 20160126; CN 201680001224 A 20160126; EP 16701499 A 20160126; JP 2017507084 A 20160126; US 201615309094 A 20160126