Title (en)

PROTECTION OF BLADES OF A MECHANICAL WATCH RESONATOR

Title (de)

SCHUTZ DER PLATTEN EINES RESONATORS EINER MECHANISCHEN ARMBANDUHR

Title (fr)

PROTECTION DES LAMES D'UN RÉSONATEUR DE MONTRE MÉCANIQUE

Publication

EP 3324247 B1 20191127 (FR)

Application

EP 17196269 A 20171013

Priority

- EP 16199012 A 20161116
- CH 15122016 A 20161116

Abstract (en)

[origin: US2018136609A1] Strip resonator for a mechanical watch movement, comprising a structure, an oscillating inertial element, and elastic strips forming a flat bearing for the inertial element, and a flat, anti-shock device arranged to protect each strip from rupture in the event of a shock, and including a first prestressed flexible element arranged to allow a variation in length during the expansion or contraction of a strip within a range of lengths corresponding to normal operation of this strip under the action of a stress of intensity lower than a first threshold, and to prevent the expansion or contraction of this strip when it is subjected to a tensile or respectively compressive stress of intensity higher than the first threshold, and the resonator includes, for the three-dimensional anti-shock protection of the strips, in an axial direction perpendicular to a main plane, axial protection means, which include, on the one hand, axial banking members for limiting the axial travel of at least one inertial element, and on the other hand, an axial anti-shock device comprising a second axially prestressed flexible element.

IPC 8 full level

G04B 17/04 (2006.01)

CPC (source: CH CN EP US)

G04B 17/04 (2013.01 - CN); **G04B 17/045** (2013.01 - CH EP US); **G04B 17/10** (2013.01 - US); **G04B 31/02** (2013.01 - US); **G04B 43/002** (2013.01 - CH US)

Cited by

EP3561607A1; EP4343450A1; EP3438762A3; EP4012506A1; US10935933B2; US11409245B2; WO2020016131A1; EP3561609B1

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)

US 10216149 B2 20190226; **US 2018136609 A1 20180517**; CH 713164 A2 20180531; CH 713164 B1 20211029; CH 713165 A2 20180531; CH 713165 B1 20211029; CH 713166 A2 20180531; CH 713166 B1 20211029; CH 713167 A2 20180531; CH 713167 B1 20211029; CN 108073065 A 20180525; CN 108073065 B 20191203; EP 3324247 A1 20180523; EP 3324247 B1 20191127; JP 2018081094 A 20180524; JP 6453982 B2 20190116

DOCDB simple family (application)

US 201715793145 A 20171025; CH 12462017 A 20171013; CH 12472017 A 20171013; CH 12482017 A 20171013; CH 12492017 A 20171013; CN 201711130960 A 20171115; EP 17196269 A 20171013; JP 2017213503 A 20171106