

Title (en)

Sliding layer for a barrel spring made of a composite material

Title (de)

Gleitschicht für Uhrzugfeder aus Verbundmaterial

Title (fr)

Revêtement anti-friction pour ressort de barillet en matériau composite

Publication

EP 2602671 A1 20130612 (FR)

Application

EP 11192835 A 20111209

Priority

EP 11192835 A 20111209

Abstract (en)

The spring (1) has a coating (3) including a thermoplastic or thermosetting polymer, where the spring is made of a material including a polymer matrix containing fibers. The thermoplastic or thermosetting polymer includes a slow polymerization type epoxy resin, where the volume fraction of fibers in the polymer matrix is between 30 percent and 75 percent, preferably between 45 percent and 55 percent. The fibers are S or S2 type glass fibers, where the thickness of the coating is between 3 mm and 20 mm, or equal to a quarter of the width of a fiber. An independent claim is also included for a method for manufacturing a barrel spring.

Abstract (fr)

Ressort de barillet pour organe moteur pour un mouvement d'horlogerie, ledit ressort de barillet étant réalisé dans un matériau comprenant une matrice de polymère contenant des fibres, ledit ressort de barillet comportant un revêtement comprenant un polymère thermodurcissable ou thermoplastique. Le ressort de barillet proposé permet de réduire les frottements des spires du ressort de barillet et le revêtement possède une bonne cohésion.

IPC 8 full level

G04B 1/14 (2006.01)

CPC (source: EP US)

G04B 1/145 (2013.01 - EP US)

Citation (applicant)

C-A REYMONDIN ET AL.: "Théorie d'horlogerie", 1998, FÉDÉRATION DES ECOLES TECHNIQUES

Citation (search report)

- [Y] DE 102005054314 A1 20070524 - UNIV ROSTOCK [DE]
- [Y] US 4464216 A 19840807 - GARDINER RICHARD J [US]
- [Y] US 2979417 A 19610411 - GUSTAV KRUGER, et al
- [Y] GB 864531 A 19610406 - INST DR INC REINHARD STRAUMANN
- [Y] GB 894591 A 19620426 - STRAUMANN INST AG

Cited by

FR3010804A1; CH709705A1; WO2015039881A3

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

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

EP 2602671 A1 20130612; CN 104081294 A 20141001; EP 2788821 A1 20141015; EP 2788821 B1 20190410; HK 1198343 A1 20150402; JP 2015500474 A 20150105; US 2014355395 A1 20141204; WO 2013083494 A1 20130613

DOCDB simple family (application)

EP 11192835 A 20111209; CN 201280060582 A 20121130; EP 12794714 A 20121130; EP 2012074139 W 20121130; HK 14111837 A 20141124; JP 2014545190 A 20121130; US 201214361238 A 20121130