

Title (en)  
Holorological hairspring

Title (de)  
Spiralfeder einer Uhr

Title (fr)  
Spiral d'horlogerie

Publication  
**EP 2690507 A1 20140129 (FR)**

Application  
**EP 12178020 A 20120726**

Priority  
EP 12178020 A 20120726

Abstract (en)  
The assembly (1) has a stud (3) that is fixed to a plate (2), and a hairspring (4) that is wound in turns between an interior end (7) that is fixed to a shroud (9). An exterior end (8) is arranged interdependent of the stud. The stud and the shroud comprise a braking unit (10) to collaborate with a turn (61) when the hairspring accelerates through contraction or extension at a rate higher than a set point rate. A resultant stiffness of the hairspring is altered upon local coupling of the turn with the braking unit. An independent claim is also included for a clock element.

Abstract (fr)  
Ensemble horloger (1) comportant un piton (3) fixé à une platine (2), et un spiral d'horlogerie (4) avec un brin (5) enroulé en spires (6) entre une extrémité intérieure (7) fixée à une virole (9) et mobile en pivotement autour d'un axe de pivotement (D), et une extrémité extérieure (8) solidaire dudit piton (3). Ledit piton (3) ou/et ladite virole (9) comporte des moyens de freinage (10) agencés pour coopérer avec au moins une première spire (61) parmi lesdites spires (6) lors d'accélération en contraction ou en extension dudit spiral (4) supérieures à des valeurs de consigne, pour modifier la rigidité résultante dudit spiral (4) lors de la modification de son nombre de spires actives par couplage local d'au moins ladite première spire (61) avec lesdits moyens de freinage (10).

IPC 8 full level  
**G04B 17/06** (2006.01); **G04B 17/26** (2006.01); **G04B 17/34** (2006.01)

CPC (source: EP KR RU US)  
**G04B 15/14** (2013.01 - KR US); **G04B 17/06** (2013.01 - EP KR US); **G04B 17/26** (2013.01 - EP KR US); **G04B 17/325** (2013.01 - KR US); **G04B 17/34** (2013.01 - US); **G04B 17/345** (2013.01 - EP KR US); **G04B 17/06** (2013.01 - RU)

Citation (applicant)  
EP 2434353 A1 20120328 - MONTRES BREGUET SA [CH]

Citation (search report)  
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• [XAI] EP 1857891 A1 20071121 - PATEK PHILIPPE SA [CH]  
• [XAI] EP 1818736 A1 20070815 - SWATCH GROUP RES & DEV LTD [CH]  
• [A] US 3041819 A 19620703 - ENSIGN GEORGE G, et al

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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 2690507 A1 20140129; EP 2690507 B1 20141231**; CN 104487905 A 20150401; CN 104487905 B 20170915; HK 1208740 A1 20160311; JP 2015519581 A 20150709; JP 2016075696 A 20160512; JP 5938146 B2 20160622; JP 6085355 B2 20170222; KR 101545470 B1 20150825; KR 20150014536 A 20150206; RU 2015103386 A 20160820; RU 2618739 C2 20170511; US 2015153711 A1 20150604; US 9164484 B2 20151020; WO 2014016094 A1 20140130

DOCDB simple family (application)  
**EP 12178020 A 20120726**; CN 201380039611 A 20130704; EP 2013064108 W 20130704; HK 15109414 A 20150924; JP 2015237639 A 20151204; JP 2015516650 A 20130704; KR 20157001346 A 20130704; RU 2015103386 A 20130704; US 201314406772 A 20130704