

Title (en)  
METHOD FOR MANUFACTURING A SILICON HAIRSPRING

Title (de)  
VERFAHREN ZUR HERSTELLUNG EINER SILIZIUMSPIRALE

Title (fr)  
PROCEDE DE FABRICATION D'UN SPIRAL EN SILICIUM

Publication  
**EP 4312084 A1 20240131 (FR)**

Application  
**EP 22187006 A 20220726**

Priority  
EP 22187006 A 20220726

Abstract (en)  
[origin: CN117452792A] A method for manufacturing a silicon balance spring. The invention relates to a method for producing a silicon timepiece component (1) having a functional outer profile.

Abstract (fr)  
L'invention concerne un procédé de fabrication d'une composant horloger (1) en silicium présentant un profil externe fonctionnel.

IPC 8 full level  
**G04B 13/02** (2006.01); **G04B 19/04** (2006.01); **G04B 19/10** (2006.01); **G04B 21/04** (2006.01)

CPC (source: CN EP US)  
**G04B 13/02** (2013.01 - EP); **G04B 17/066** (2013.01 - CN); **G04B 19/042** (2013.01 - EP); **G04B 19/103** (2013.01 - EP);  
**G04B 21/04** (2013.01 - EP); **G04D 3/0069** (2013.01 - US); **G04D 3/0074** (2013.01 - US)

Citation (applicant)

- EP 1722281 A1 20061115 - ETA SA MFT HORLOGERE SUISSE [CH]
- EP 2145857 A1 20100120 - SWATCH GROUP RES & DEV LTD [CH]
- EP 3181938 A1 20170621 - CSEM CENTRE SUISSE D'ELECTRONIQUE ET DE MICROTECHNIQUE SA - RECH ET DÉVELOPPEMENT [CH]
- WO 2019180177 A1 20190926 - NIVAROX SA [CH]
- WO 2019180596 A1 20190926 - PATEK PHILIPPE SA GENEVE [CH]
- WO 2019166922 A1 20190906 - CSEM CT SUISSE DELECTRONIQUE MICROTECHNIQUE SA RECH DEVELOPPEMENT [CH]

Citation (search report)  
[XI] CH 717124 A2 20210816 - NIVAROX SA [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

Designated extension state (EPC)  
BA ME

Designated validation state (EPC)  
KH MA MD TN

DOCDB simple family (publication)  
**EP 4312084 A1 20240131**; CN 117452792 A 20240126; JP 2024016797 A 20240207; JP 7564291 B2 20241008; TW 202419987 A 20240516;  
US 2024036524 A1 20240201

DOCDB simple family (application)  
**EP 22187006 A 20220726**; CN 202310927619 A 20230726; JP 2023090623 A 20230601; TW 112116433 A 20230503;  
US 202318197302 A 20230515