

Title (en)
MECHANICAL TIMEPIECE WITH REGULATOR ACTUATING MECHANISM

Title (de)
MECHANISCHE UHR MIT EINEM REGLERBETÄTIGUNGSMECHANISMUS

Title (fr)
HORLOGE MECANIQUE COMPORTANT UN MECANISME D'ACTIONNEMENT DE REGULATEUR

Publication
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Application
EP 00902140 A 20000208

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Abstract (en)
[origin: EP1158373A1] A mechanical timepiece of the present invention has a movement structured having a mainspring constituting a power source for the mechanical timepiece, a train wheel rotating due to a rotation force of the mainspring upon being rewound, an escape/speed-control device for controlling rotation of the train wheel, the escape/speed-control device including a balance with hairspring alternately repeating right and left rotation, an escape wheel and pinion rotating based on rotation of the train wheel and a pallet fork controlling rotation of the escape wheel and pinion based on operation of the balance with hairspring. The balance with hairspring includes a stud mainspring, a stud stem and a stud wheel. The mechanical timepiece of the invention further comprises a time count section to count time having a quartz oscillator constituting source oscillation, an IC including a frequency-dividing section to input an output signal outputted due to oscillation of said quartz oscillator and output a signal concerning a time by frequency-dividing the signal, and a power source to operate said IC; a watch error section for detecting a watch error of said mechanical timepiece; and a watch-error adjusting section including a regulator operating based on a count signal counted by said time count section and an operation state signal representative of a watch error detected by said watch-error detecting section. The regulator is rotated by the motor based on a operation state signal. With this structure, the vibration period of the balance with hairspring can be varied making possible to accurately adjust the watch error of the mechanical timepiece. <IMAGE>

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Citation (search report)
• [X] US 3937001 A 19760210 - BERNEY JEAN-CLAUDE
• [A] US 4091302 A 19780523 - YAMASHITA SHIRO
• [A] US 2921252 A 19600112 - SCHIAVONE EDWARD L
• [A] PATENT ABSTRACTS OF JAPAN vol. 008, no. 023 (P - 251) 31 January 1984 (1984-01-31)
• See references of WO 0148566A1

Cited by
US7891862B2; US11599065B2; WO2008011738A3

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