

Aug. 11, 1942.

B. PELLATON

2,292,475

TIMEPIECE WITH AUTOMATIC WINDING

Filed Oct. 7, 1940

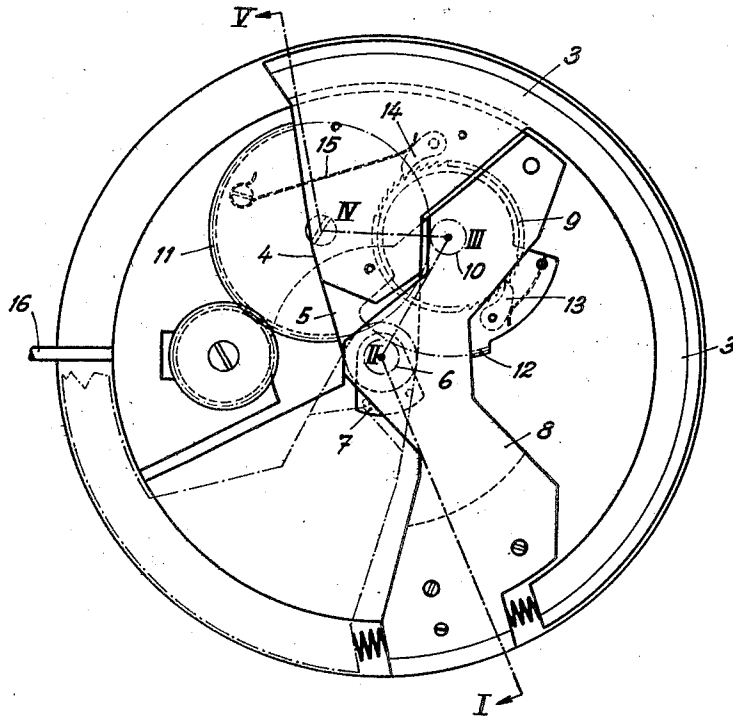


Fig. 1.

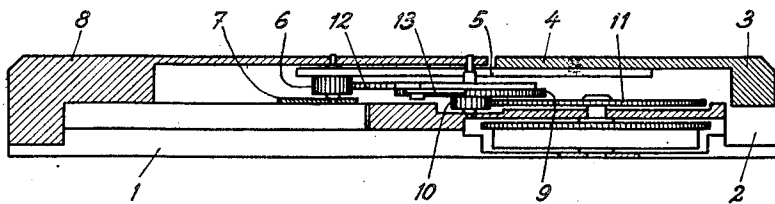


Fig. 2.

Inventor,
B. Pellaton
By: Glascoep Downing & Silb
Hls.

UNITED STATES PATENT OFFICE

2,292,475

TIMEPIECE WITH AUTOMATIC WINDING

Benjamin Pellaton, Grenchen, Switzerland, assignor to the firm Eterna S.-A., Grenchen, Switzerland, a joint-stock company of Switzerland

Application October 7, 1940, Serial No. 360,173
In Switzerland September 12, 1939

1 Claim. (Cl. 58—82)

This invention relates to timepieces having a swinging member for automatic winding. It has been found that the position of this member in the interior of the watch is not inconsequent to the operation of the automatic winding mechanism. The rapidity of winding is greatly influenced by the amplitude and the active force of the oscillations of this member and tests have proved that this active force and the amplitude reach their maximum values if the swinging member oscillates practically at the same distance on both sides of the stem.

An object of the invention is therefore, to provide a swinging member which oscillates practically at the same distance on both sides of the stem.

A further object is to place all the parts necessary for the winding under a single auxiliary cock which allows of the adaptation of the automatic winding mechanism to existing calibers without changing these latter.

Another object is to provide, between the pinion of the swinging member and the winding ratchet, a single movable part on whose shaft a toothed segment is loosely mounted meshing the pinion of the member and carrying a pawl engaging, at one direction of rotation of the segment only, a great wheel forming an element of said movable part.

Other objects and features will be apparent as the following description proceeds, reference being had to the accompanying drawing in which

Fig. 1 is a top view of an embodiment of the timepiece and

Fig. 2 is a section taken on line I—II—III—IV—V of Fig. 1.

A swinging member 3 is fixed to a steel plate 5 by means of an arm 4, said member being adapted to oscillate in the annular space 2 provided on the plate 1. The steel plate 5 is riveted onto the pinion 6 driven by the swinging member 3 once in the one and once in the other direction.

On the one side this pinion 6 is pivotally mounted on the cock of the center wheel, which cock, for this purpose, is provided with a steel plate 7 and, on the other side, on an auxiliary cock 8 mounted on the cock of the center wheel. Besides, this cock 8 carries the upper bearing of a movable part the great wheel 9 of which is a ratchet wheel and the pinion 10 of which engages the winding ratchet 11 that is, the wheel which is fixed to the shaft of the barrel in a well-known manner.

A toothed segment 12 loosely mounted on the shaft of the movable part 9, 10 meshes pinion 6 and carries a pawl 13 engaging the teeth of

wheel 9. A second pawl 14, pivoted on a stationary portion of the movement, under the effect of a spring 15, engages the ratchet wheel 9.

The swinging member 3 is disposed in such a way in relation to the stem 16 of the wrist-watch illustrated, that, when the wrist of the wearer is in its most frequent position, this member is in the zero position (symmetry axis) of the possible pendulous motion. The most frequent position of the wrist carrying the watch is that of the forearm hanging slightly forward. In this position the stem of the watch lies slightly forward and downward. In other words: In the described position of the wrist, preferably of the left wrist, the symmetry axis of the pendulous motion, seen from the side of the dial, is turned to the left with regard to the stem by about the angle between the perpendicular position and the position of the forearm.

The winding is carried out in the same way as in all watches of this kind: The oscillations of the member 3 are transmitted to the central pinion 6, from here to the toothed segment 12 which is coupled with the movable part 9, 10 by means of the pawl 13, but in one direction of rotation only. The movements of the movable part 9, 10 are transmitted to the spring of the barrel by means of the pinion 10 and the winding ratchet 11. The winding position acquired is maintained by the pawl 14.

In the construction represented the whole winding mechanism is held in the timepiece by means of the cock 8 which also carries the buffer springs for the swinging member. On removing this cock the whole mechanism is accessible. This greatly facilitates the mounting and repairing and allows of the adaptation of the automatic winding mechanism to existing calibers.

What I claim is:

In a wrist-watch, a winding ratchet, an automatic mechanism adapted to drive said winding ratchet, comprising a pivotally mounted pinion, a swinging member fixed to said pinion in such a way that it lies in the zero position of its pendulous motion when the wrist of the wearer, in its turn, is in its most frequent position, a rotatable shaft, a further pinion fixed to said shaft, adapted to engage said winding ratchet, a great wheel fixed to said shaft, a toothed segment loosely mounted on said shaft and adapted to engage said pivotally mounted pinion, and a pawl on said toothed segment, adapted to cooperate with said great wheel and effective to drive the latter in one direction of rotation only.

BENJAMIN PELLATON,