

PATENT SPECIFICATION

Convention Date (Switzerland); May 8, 1933.

439,677

Application Date (in United Kingdom): May 7, 1934. No. 13751/34.

Complete Specification Accepted: Dec. 9, 1935.

(Under Section 91, Sub-sections (2) and (4) (a) of the Patents and Designs Acts, 1907 to 1932, a single Complete Specification was left in respect of this Application and of Application No. 13752/34 and was laid open to inspection on Nov. 9, 1934.)



COMPLETE SPECIFICATION

Improvements in or relating to Self-winding Watches

We, MEYER & STUDELI S. A., of Weisenstein-strasse, Soleure, Switzerland, a Corporation duly organised under the laws of Switzerland, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

The present invention relates to self-winding watches and more particularly to wrist watches wherein winding of the main spring is effected by means of an oscillator weight or pendulum which is pivotally mounted near the periphery of the substantially rectangular-shaped watch movement.

The object of the invention is the provision of a watch of the above type in which the winding weight is disposed relative to the watch movement so as to obtain a relatively long radius of oscillation and so as to allow of making the weight relatively heavy without unduly increasing the thickness or the diameter of the watch.

The invention consists in a self-winding wrist watch of the above type wherein the winding weight has the shape of a shallow cup the bottom of which extends over substantially the entire back of the watch movement and the side walls of the cup substantially surround the contour of the movement.

One constructional embodiment of a self winding watch is illustrated by way of example in the accompanying drawings in which,

Figure 1 is a plan view of a wrist watch movement as seen from the side of the bridges and provided with winding means according to the invention, the winding weight being shown partly broken away, and

Figure 2 is an elevation of this movement, partly drawn in section.

In the drawings, the wrist watch movement comprises a movement plate 1 on which is mounted a block 2 formed by the bridges and the wheelwork of the move-

ment. The plate 1 has a larger dimension in length and in width than the block 2 and carries adjacent to its periphery an additional bridge 3 carrying a pin 4 on which a winding weight 5 is rotatably mounted for effecting an oscillatory to-and-fro movement. The centre of oscillation 4 of the weight 5 is situated on the shorter axis of the watch in plan. When the watch is carried on the wrist of a person, this centre of oscillation 4 is thus situated on a line drawn through the centre of the watch movement and extending parallel to the longitudinal axis of the arm of the person. The weight 5 has the shape of a shallow cup having a bottom 19 which extends over substantially the entire back of the bridge work 2, and a side wall 19' surrounding the contour of the block 2, while leaving however the necessary clearance around the block that the weight can effect its oscillatory movement. The bottom 19 of the weight 5 is provided with an opening 6 within which is disposed a bridge 7 fixed to the movement block 2. This bridge 7 serves for mounting a ratchet wheel 8 a gear wheel 9 meshing with a pinion 10 turning with the ratchet 8, and a pinion 11 turning with the wheel 9 and meshing with the gearing 12 of the main spring barrel. A lever 13 is also disposed beneath the bridge 7 and is mounted on the axis of the ratchet 8 for effecting a limited movement of oscillation. This lever 13 carries a pawl 14 coacting with the ratchet 8 and is provided with a forked end 15. A spring blade 16 is secured with one end on the weight 5 while the opposite end 17 is bent downwardly at right angles to engage in the fork 15 of the lever 13. A retaining pawl 18 prevents rotation of the ratchet 8 in one direction.

When the weight 5 oscillates owing to movements of the wrist of the person wearing the watch, the spring blade 16 acts first like a rigid member and moves with the weight 5 to impart a corresponding movement of oscillation to the lever

13. The pawl 14 then drives the ratchet wheel 8 and the movement of the ratchet is transmitted by the wheels 10, 9, 11, 12 to the main spring which is thus wound up. When the spring is fully energized and its resistance against being further wound up is greater than the tension of the spring blade 16, this blade stops to move with the weight 5 but yields and the lever 13 stays immobile.

Since the winding weight 5 has the shape of a cup partly enclosing the proper watch movement, this weight can be made relatively heavy without undue increase of the thickness of the watch. Since the centre of oscillation of the weight is situated at the periphery of the movement plate 1 and outside of the movement block 2, the axis 4 can have a length equal to the entire thickness of the movement, the mounting of the weight is easy to perform, and the radius of oscillation is great. The described winding means can be utilised with ordinary existing watch movements; only a larger movement plate has to be used and an additional bridge 7 must be mounted on the movement.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

1. A self-winding wrist watch of the type in which the winding gear train is operated by an oscillatory winding weight pivotally mounted near the periphery of the substantially rectangular-shaped watch movement, characterised by the feature that the winding weight has the shape of a shallow cup the bottom of which extends over substantially the

entire block of the watch movement and the side walls of the cup substantially surround the contour of the movement.

2. A self-winding wrist watch as claimed in Claim 1, characterised in that the bottom of the winding weight is provided with an opening into which penetrates a bridge mounted on the watch movement and carrying a portion of said winding gear train.

3. A self-winding wrist watch as claimed in Claims 1 and 2, characterised in that the winding weight carries a spring having one end engaging with a rocking lever pivotally mounted on a fixed part of the watch movement and carrying means for actuating the winding gear train.

4. A self-winding wrist watch as claimed in Claim 3, characterised in that said spring is constituted by a yielding blade having one end fixed to the winding weight and the other end engaging with a fork provided on the rocking lever.

5. A self-winding wrist watch as claim in Claim 1, characterised by the feature that the axis of oscillation of the weight is situated substantially on a line drawn through the centre of the watch movement and extending parallel to the longitudinal axis of the arm of the person wearing the watch.

6. The improved self-winding wrist watch, substantially as described and substantially as shown in the accompanying drawings.

Dated this 7th day of May, 1934.

MEYER & STÜDELI S. A.,
Per: Boulton, Wade & Tennant,
111/112, Hatton Garden, London, E.C.1,
Chartered Patent Agents.

Fig. 1

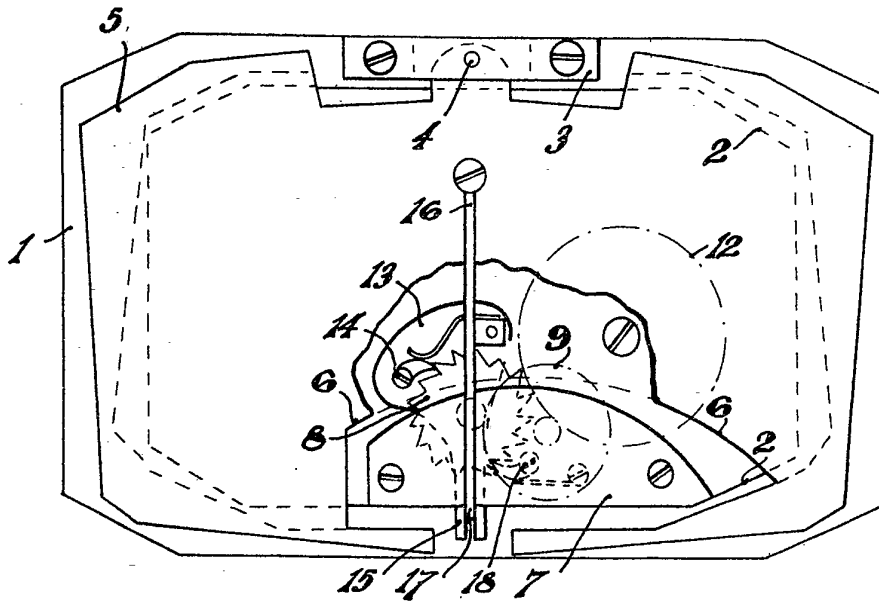
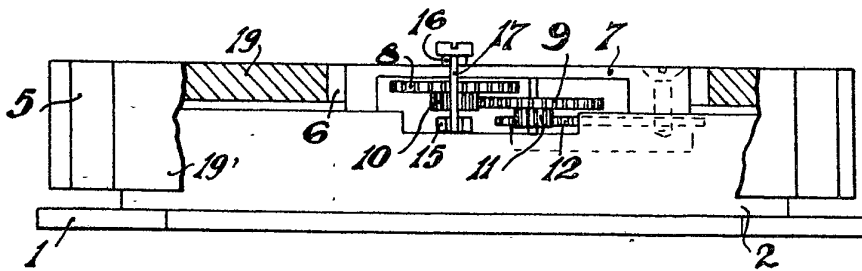


Fig. 2



[This Drawing is a reproduction of the Original on a reduced scale.]