(No Model.)

H. ABBOTT.

INTERCHANGEABLE STEM WINDING WATCH MOVEMENT.

No. 432,290. Patented July 15, 1890.

Fig. 1.

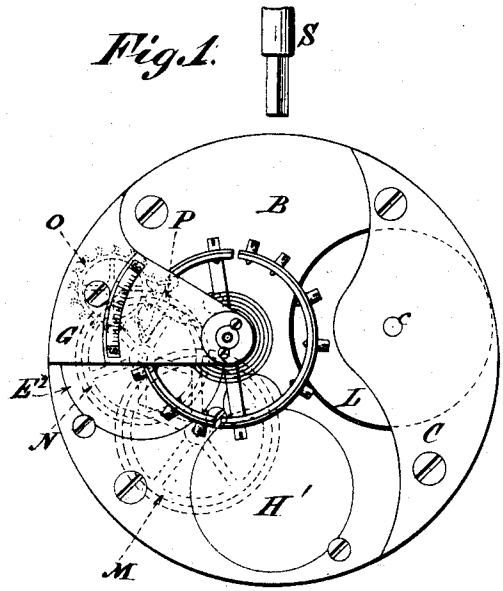


Fig. 2.

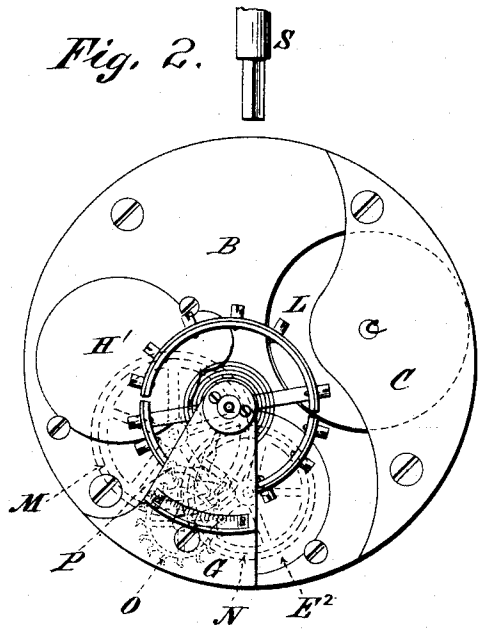


Fig. 3.

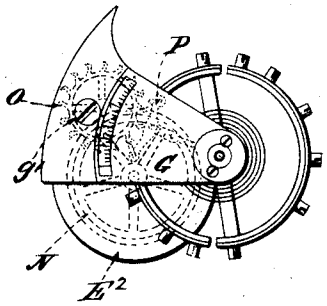
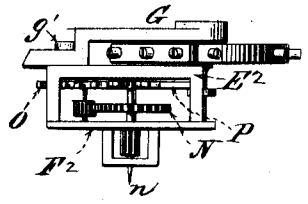


Fig. 4.



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UNITED STATES PATENT OFFICE.

HENRY ABBOTT, OF NEWARK, NEW JERSEY.

INTERCHANGEABLE STEM-WINDING-WATCH MOVEMENT.

SPECIFICATION forming part of Letters Patent No. 432,290, dated July 15, 1890.

Application filed January 21, 1889. Serial No. 297,593. (No model.)

To all whom it may concern:

Be it known that I, HENRY ABBOTT, a citizen of the United States, residing at Newark, in the county of Essex, State of New Jersey, have invented certain new and useful Improvements in Watch-Movements, of which the following is a specification.

My invention relates to that class of stem-winding-watch movements which are adapted to be used either in an open-face or a hunting-case.

The object of my invention is to produce a stem-winding-watch movement which shall conform to the styles now in popular demand, and which shall at the same time be equally well adapted for use either in an open case with the figure XII at the pendant or in a hunting-case with the figure III at the pendant, the fourth staff carrying the seconds-hand in each case being retained in its usual and proper position on a line drawn across the watch-face and passing through the figure XII point and the center of the face, my said improved stem-winding-watch movement being so constructed as not to limit the free use of proper-proportioned mainspring-barrel or other parts of the train or of any desired style of stem-winding mechanism.

To this end my invention consists in providing a stem-winding-watch movement with two sets of plates or frames, one set supporting and having journaled therein or thereon the winding mechanism, the main wheel, spring and barrel, the center wheel, and the third wheel, the other set supporting and having journaled therein or thereon the remainder of the train and the escapement. Said sets of plates or frames are adjustable with relation to each other in such manner that the fourth pinion of the train may be placed in a line with the stem and center to adapt the movement for use in an open case, and that the fourth pinion may be placed on a line at right angles to the line passing through the stem and center to adapt the movement for use in a hunting-case.

In the accompanying drawings, which form a part of this specification, Figure 1 is a plan view of a watch-movement of the style usually denoted "full-plate" containing my improvement, in which the separable frame E^2 F^2, carrying the fourth wheel, escape-wheel, fork and pallets, and the balance-wheel is placed upon the left side of the third wheel in such position that the pinion of said fourth wheel is on a line at right angles to a line passing through the stem and center of the movement. Fig. 2 is a similar view, but with the separable frame E^2 F^2 placed on the right side of the third wheel in such position that the pinion of the fourth wheel falls in a line drawn through the stem and center of the watch. Fig. 3 is a plan view of the separable frame and parts mounted thereon, but detached from the main plates of the watch. Fig. 4 is an elevation of said separable frame and the parts attached to it.

Similar letters of reference indicate like parts throughout the different views.

B is the main top plate of the watch-movement.

C is the barrel-bridge.

G is the balance-cock.

L is the "barrel," so called, constituting, as usual, combination of main wheel and confining and retaining surfaces, within which is contained the mainspring.

M is the third wheel.

N is the fourth wheel.

O is the escape-wheel.

P is the pallets and fork.

S is the stem.

E^2 is the top plate of the separable frame, and is rigidly united with the bottom plate F^2 of said frame by the usual well-known means—such as pillars and screws, for instance, as shown in Fig. 4.

The balance-cock G is secured to the plate E^2 of said separable frame by means of the screw g'. The lower plate F^2 of said separable frame is provided with an extension, in which the pinion n of the fourth wheel M is journaled.

The top plate B of the movement is provided with two openings corresponding in general shape with the shape of the plate E^2 of the separable frame. Said openings are located on either side of the pivot-bearing of the third wheel M, and their edges are preferably flanged. The separable frame E^2 F^2 is rigidly secured to the main plate B in either of said openings by means of screws or oth-

erwise and in such position with relation to the third wheel M that the proper depth of gearing between the pinion *n* and said third wheel M shall be maintained in either position. The parts must also be so proportioned or so placed that lines drawn from center of watch through the two positions which said fourth pinion may occupy shall inclose a segment of ninety degrees. H′ is a plate corresponding in shape to one of the openings made in the said main plate B for the reception of the separable frame E^2 F^2, and is used to cover the unoccupied opening in said plate B, and is secured thereto by screws in the same manner as the said frame E^2 F^2.

The dial of the watch, which it is not thought necessary to illustrate in these drawings, is secured to the movement on the opposite side from that shown in Figs. 1 and 2 by any of the well-known methods, either by a bezel, which snaps over the edge of the movement, or by being secured with pillars or screws, and is adapted to be placed upon the movement with its opening for the seconds-pivot *n* in either of the positions indicated in Figs. 1 or 2.

Any of the well-known styles of stem-winding mechanism may be employed in a watch containing my herein-described improvement, as the space usually occupied by such stem-winding mechanism is not in any manner abridged or curtailed. The stem, however, will always enter the movement in the same position with reference to the mainspring-barrel and the center and third wheels whether the movement be arranged for use in a hunting or in an open case.

The operation of my invention is as follows: The movement being in the condition indicated in Fig. 1 and adapted for use in a hunting-case, it is desired to arrange it for use in an open case. I first let down the mainspring. I next detach and remove the separable frame E^2 F^2. I next remove the cover H′ and secure it in position over the opening in plate B formerly occupied by separable frame E^2 F^2, and the latter with its attached parts I reinsert through the opening in plate B formerly covered by H′, and there secure it in its new position, as shown in Fig. 2. The seconds-pivot *n* of the fourth wheel will now occupy a position on a line drawn through the stem and the center of the watch, and the movement will be in condition for use in an open case. The reverse of the foregoing operation should be followed in changing the arrangement of movement to adapt it for use in a hunting-case.

It will be apparent to any person skilled in the art of watch-making that my separable frame E^2 F^2 may be, by modifications in its general form, adapted to be applied to the style of watch-movement known as a "three-quarter plate;" also, to the style of watch known as a "bridge-movement."

In describing the structure, operation, and function of the various parts and details of watch-movements in combination with which my improvements are applied and used as aforesaid I have not deemed it necessary to specifically describe every minute part of "watch material," nor those parts thereof which are so plainly required in order to render those mentioned by me operative that any person skilled in the art must necessarily understand that the use thereof in the combinations described by me is intended and, in fact, necessary, and I wish, therefore, to be understood in all parts of this specification, including the claims, to intend the mention and use of all ordinary screws, stay-pins, hair-springs, fastenings, pinions, arbors, pivots, jewels, casings, letterings, hands, sockets, &c., which are necessarily incident in the manufacture of watches and watch-movements to the use of those parts which I have specifically described; nor do I, by anything herein contained, intend to limit my invention in mere matters of form or relative size of parts.

Considered in its broadest aspect my invention consists in the devising and utilizing of two sets of plates or frames for the purpose of enabling stem-winding-watch movements to be interchangeably used in open-face and hunting-case watches, as aforesaid, each of said sets carrying a part of the mechanism of the watch, and so movable and adjustable in relation to each other as to admit of use in either open-face or hunting-case watches without substantially other change than the moving of one of said sets of plates. This broad aspect of my invention is, of course, shown in my present drawings and specification; but I have not claimed it here, because the same has been already broadly claimed in another pending application relating to the same subject-matter of invention.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a stem-winding-watch movement, the combination of two sets of plates or frames, one set supporting and having journaled therein or thereon the winding mechanism, the main wheel, spring and barrel, the center wheel, and the third wheel, the other set supporting and having journaled therein or thereon the remainder of the train and the escapement, said sets of plates or frames being adjustable with relation to each other in such manner that the fourth pinion of said train may be placed in line with the stem and center of the watch or on a line at right angles to said line, substantially as shown, and for the purpose specified.

2. In a stem-winding-watch movement, the combination of two sets of plates or frames, the first of said sets supporting and having journaled therein or thereon the winding mechanism, the main wheel, spring and barrel, the center wheel, and the third wheel, the other set supporting and having journaled therein or thereon the remainder of the train and the escapement, and the second of said

sets being adapted to be so secured to said first set that the fourth pinion of the watch may occupy a position either at the right or at the left of said third wheel, whereby the watch may be adapted for use in an open or in a hunting case, substantially as described.

3. In a stem-winding-watch movement, the main plate B, provided with an opening on either side of the third-wheel bearing, in combination with the separable frame E^2 F^2, substantially as described, and for the purpose specified.

4. In a stem-winding-watch movement, the separable frame E^2 F^2, adapted to have journaled within or upon it the fourth wheel, escape-wheel, fork, pallets and balance-wheel, the said separable frame being adapted to be secured to the main plate of the watch in such positions that the said watch-movement may be adapted for use either in an open-case with its fourth pinion on a line with the stem and center or in a hunting-case with its fourth pinion on a line at right angles to said line of stem and center, substantially as described.

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