(No Model.) 2 Sheets—Sheet 1.

H. ABBOTT.

INTERCHANGEABLE STEM WINDING WATCH MOVEMENT.

No. 432,291. Patented July 15, 1890.

Fig. 1

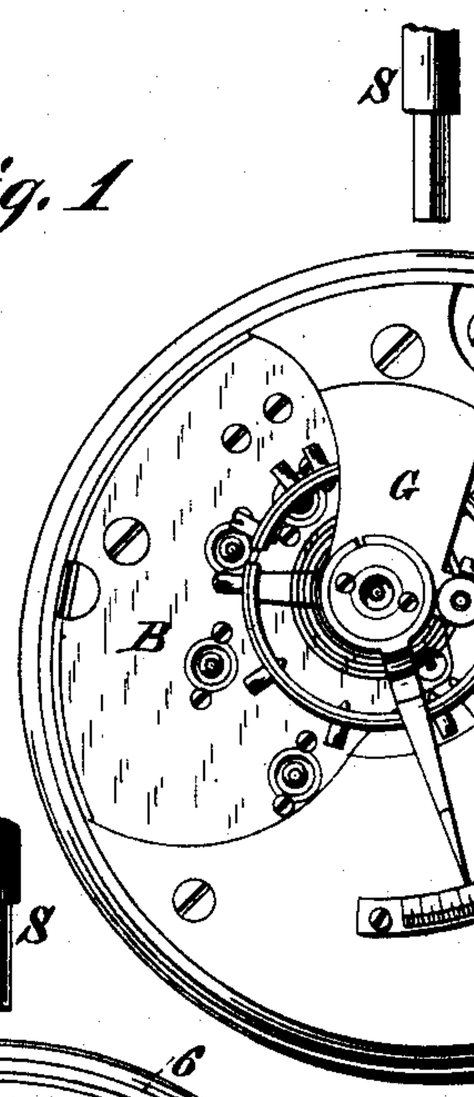

Fig. 2

Fig. 3

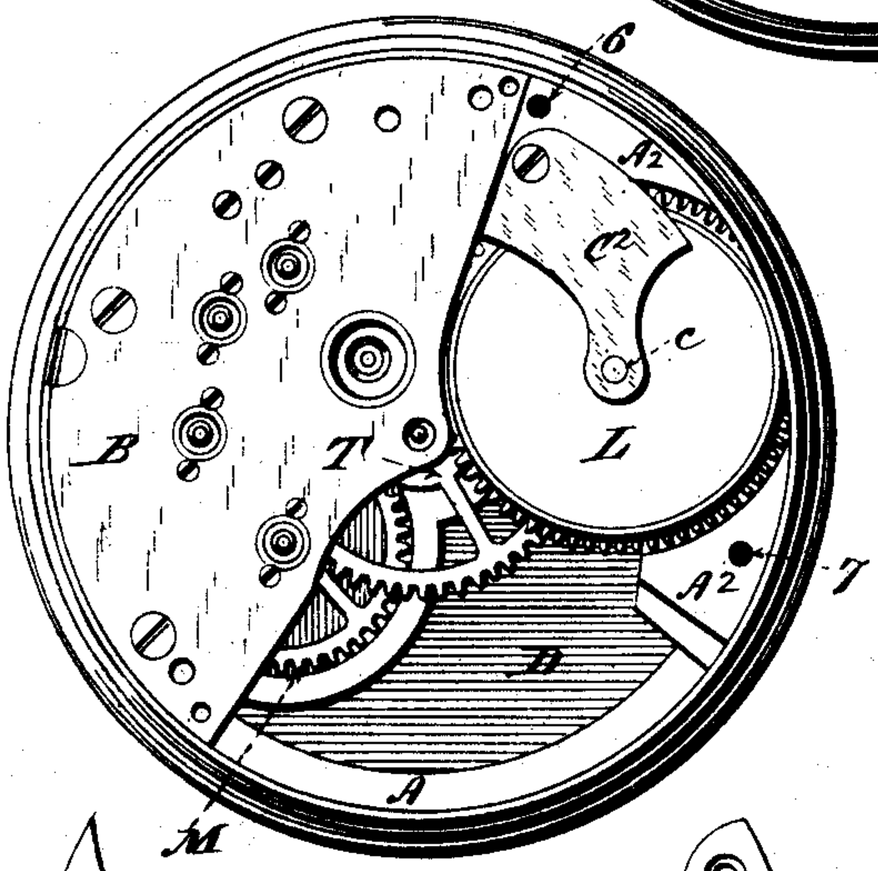

Fig. 4

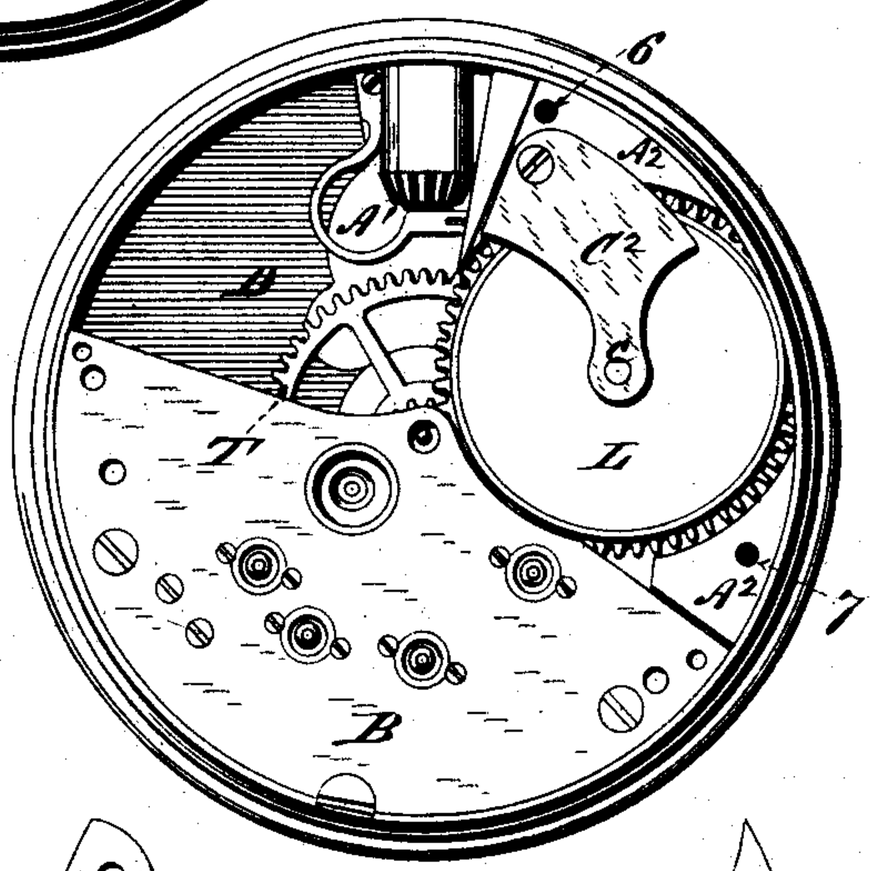

Fig. 5

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by Walter D. Edmonds,
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(No Model.) 2 Sheets—Sheet 2.

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INTERCHANGEABLE STEM WINDING WATCH MOVEMENT.

No. 432,291. Patented July 15, 1890.

Fig. 6.

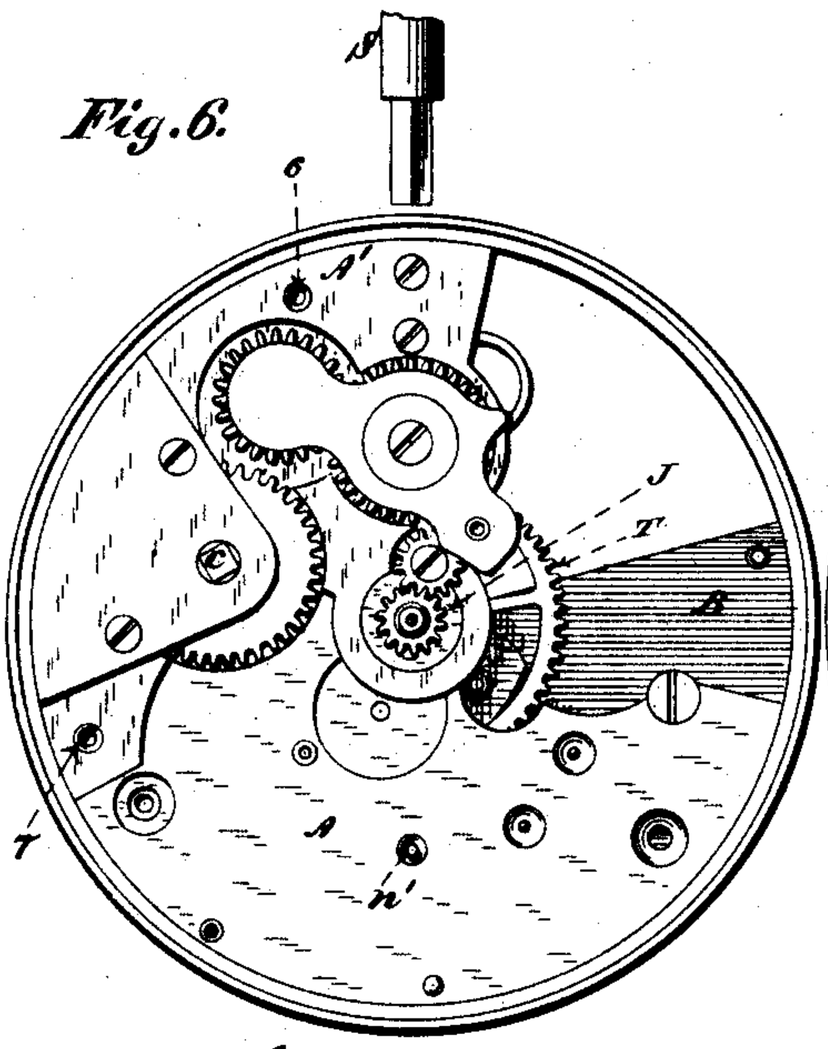


Fig. 7.

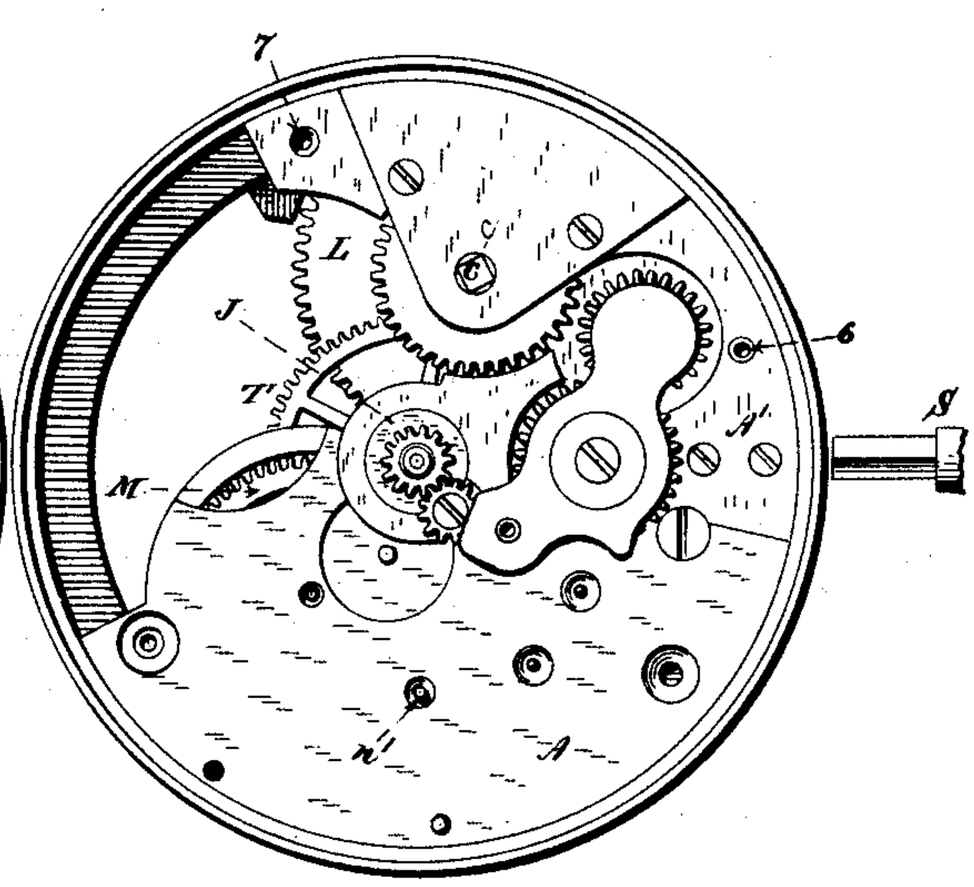


Fig. 8.

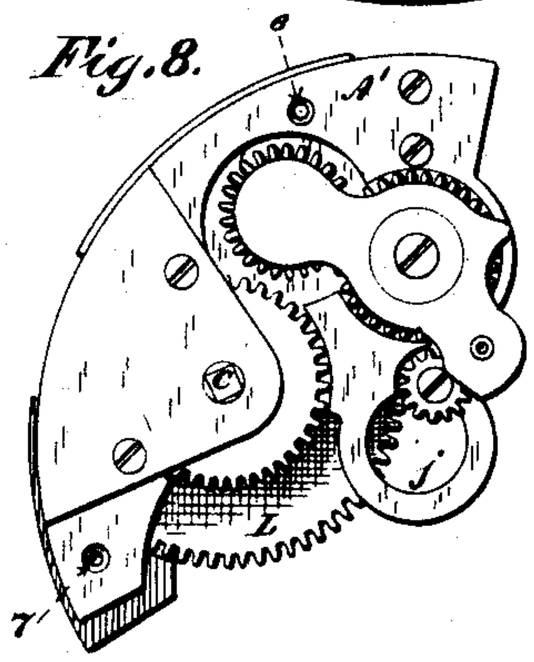


Fig. 10.

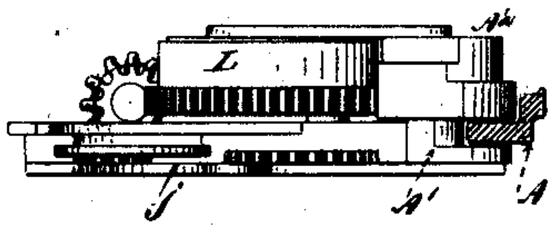


Fig. 9.

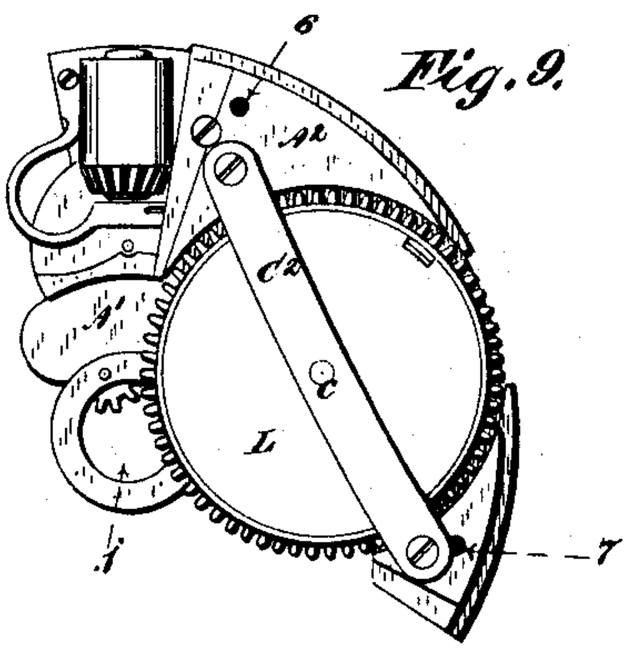
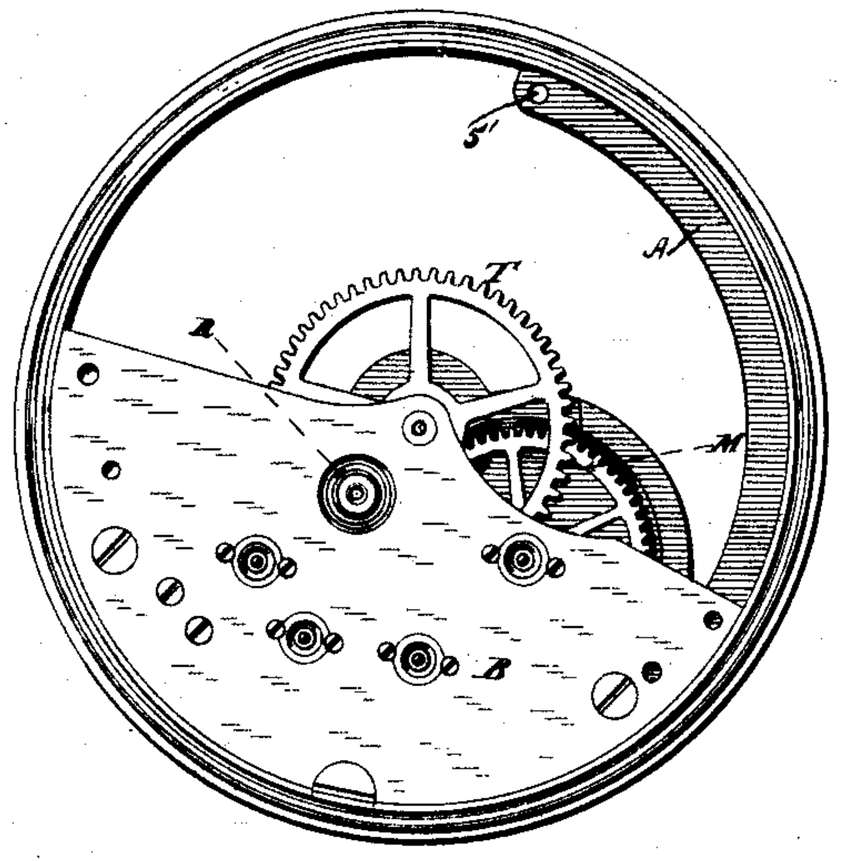


Fig. 11.



Witnesses:
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Walter Edmonds
his attorney.

UNITED STATES PATENT OFFICE.

HENRY ABBOTT, OF NEWARK, NEW JERSEY.

INTERCHANGEABLE STEM-WINDING-WATCH MOVEMENT.

SPECIFICATION forming part of Letters Patent No. 432,291, dated July 15, 1890.

Application filed January 21, 1889. Serial No. 297,594. (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 and 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 or in 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 of the dial at the pendant, or in a hunting-case with the figure III at the pendant, the fourth staff carrying the seconds-hand in each instance 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, and 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 and the main wheel, spring, and barrel, the other set supporting and having journaled therein or thereon the remainder of the train and the escapement, and said sets of plates or frames being adjustable with relation to each other in such manner that the stem may be placed in a line with the fourth pinion of the train and center of the watch, or that the said stem may be placed on a line at right angles to a line passing through the said fourth pinion and center.

My invention also consists in providing a watch-movement with a pair of plates or frames supporting a portion of the active mechanism of the watch and another pair of plates or frames supporting another portion of said mechanism, said pairs being so constructed, placed, and secured relatively to each other that without interrupting the running of the watch, and without other operation than the removal of a single screw, the sliding into new position of one of said pairs, and the replacement of said screw, the winding-stem of the movement may be placed and secured either in a line with the center of the watch and the figure XII of the dial or on a line with the center of the watch and the figure III of the dial.

My invention further consists in details of construction, as hereinafter more fully described.

In the accompanying drawings, which form a part of my specification, Figure 1 is a plan view of a "full-plate" stem-winding-watch movement containing my improvement and showing the back of the movement or the side opposite the dial side. Fig. 2 is a similar view, but with the balance, balance-cock, and the plate C′ removed, and with the sliding pair of plates or frames so placed that the fourth pinion is on a line at right angles to a line passing through the stem and center. Fig. 3 is a view similar to Fig. 2, but with the sliding plates or frames so placed that the fourth pinion is on a line with the stem and center. Fig. 4 is a plan view of the upper side of the plate C′, shown separated from the main plates of the watch. Fig. 5 is the reverse side of Fig. 4. Fig. 6 is a view of the dial side of the watch with the dial removed and with the sliding frame in the same position as shown in Fig. 3. Fig. 7 is the same view of the watch as Fig. 6, but with the sliding frame in the same position as in Fig. 2. Fig. 8 is a view of the sliding frame separated from the main plates of the watch, showing the side toward the dial and having the winding mechanism and the mainspring-barrel attached to it. Fig. 9 is the reverse side of Fig. 8. Fig. 10 is an edge view of the sliding frame with parts attached to it. Fig. 11 is a view of the main plates of the watch containing a portion of the train, but with the sliding frame separated from it.

Similar letters and figures of reference indicate like parts in each of the views.

A is the main pillar-plate of the watch, of usual shape, except that it is provided with an opening in that part where the winding mechanism and barrel are usually attached and journaled.

B is the main top plate covering about one-half the surface of the watch and having

journaled between it and the pillar-plate A the center, third, fourth, and scape wheels and the fork and pallets.

C′ is a plate used as a cover for the opening containing the sliding frame, and is secured to the plate B near the extremity of each of its crescent-shaped horns by steady-pins and screws. C′ is also provided with a recess C^3, Fig. 5, on its under side sufficient to clear barrel cock or bridge C^2.

D is the dial, which is secured to the plate A in the usual manner.

G is the balance-cock, between which and the potance R of the plate B the balance-wheel is journaled in the usual manner.

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, the third wheel; *n′*, the fourth pinion, which carries the seconds-hand; T, the center wheel; S, the stem.

A′ is the main plate of the sliding frame, and is provided with an annular opening *j*, which fits over the hub J, formed on the plate A, and around which hub the sliding frame turns in moving from one position to the other. The two parts A′ and A^2 of the sliding frame are secured together, and, as illustrated in Fig. 10, grasp closely from above and below the flange-like portion of the pillar-plate A so firmly as to prevent their vertical but not their lateral movement on said flange.

5 is a screw, preferably of sufficient length to reach entirely through the cover C′, plate A^2, flange on pillar-plate A, and into the plate A′ of the sliding frame. When the said frame is in the position indicated in Figs. 3 and 6, the screw 5 will pass through the hole 6 therein. When the said frame is in the position indicated in Figs. 2 and 7, the screw 5 will pass through the hole 7 therein. The screw may be threaded in the plate A′ of the swinging frame or in the flange of plate A. (Shown at 5′ in Fig. 11.) When this screw 5 is inserted and turned home, the sliding frame in either position will be firmly pinched between the cover C′ and the flange of main plate A, and the entire structure, including both sliding frame and main frame of the movement, will be rigidly secured together.

The barrel L is journaled to the sliding frame in exactly the same manner as usually journaled to the main plates in a watch of ordinary construction and may be of usual diameter and height. Any desired style of stem-winding mechanism may be mounted upon the sliding frame in the same manner as usually mounted upon the main plates of a watch of ordinary construction.

The variety of winding mechanism illustrated in the drawings is that now most used in full-plate open-face watches, and will be understood by any person skilled in the art without a detailed description.

The hub J, formed on the main plate A, being concentric with the center pinion, it will be evident that the depth at which the gearing of the said center pinion and the barrel interlock with each other will remain the same in transit to or from and in either position in which the sliding frame may be finally placed, as hereinafter described.

The operation of my invention is as follows, viz: The movement being in the condition shown in Fig. 1, I remove the screw 5 and turn the sliding frame ninety degrees, or one-quarter of a revolution, to the left and until the stem falls in line with the center and the fourth pinion. I replace the screw, and the movement will then be in condition for use in an open case. The reverse of this operation will be performed in changing from an open to a hunting case movement. These changes of position in the parts may be effected while the watch is running and without disturbing the balance-wheel or the hands. If the watch is provided with a "dust-band," the latter may be secured to the sliding frame by means of screws or otherwise, and thus slide or turn with it, or it may be secured to the main plates of the watch and provided with two holes, through one of which the stem may be inserted in either of the aforesaid positions. A convenient way of causing the sliding frame to turn, as described, is to insert therein the stem and use the latter as a handle or lever.

Among the advantages of my improvements are the following: The very great simplicity of the method of changing the position of the sliding frame, as aforesaid, enables the heretofore comparatively difficult and complicated operation of changing a stem-winding movement from an open to a hunting case watch to be performed by an almost inexperienced and unskilled person. My improvement will also, besides this, prove of great advantage to dealers in watches, in that by its use they will be enabled to supply the demand upon them for both open and hunting case watches without carrying in stock more than a single variety or "line" of movements, and it will also prove of great advantage to manufacturers of watches, in that it will enable them also to supply such demand from a similarly-limited stock, and with one kind or equipment of machinery to produce "watch materials" for use in either hunting or open-face watches.

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, an adjustable frame or carriage supporting and having journaled within and upon it the winding mechanism and the main wheel, spring, and barrel, said frame or carriage being connected with and having pivotal bearing upon the main plate or plates of the watch, and adapted to be secured to said main plate or plates in such positions that the stem may be in a line with the fourth pinion of the train and center, or that said stem may be on a line substantially at right angles to said line of said fourth pinion and center, substantially as shown and described, and for the purpose specified.

2. In a stem-winding-watch movement, a swinging or revolving frame or carriage supporting and having journaled within or upon it the winding mechanism and the main wheel, spring, and barrel, said frame or carriage being connected with and having pivotal bearing upon the main plate or plates of the watch and adapted to be revolved or swung relatively to said main plate or plates and to be secured thereto in such positions that the stem may be in a line with the fourth pinion of the train and center, or that said stem may be on a line substantially at right angles to said line of said fourth pinion and center, substantially as and for the purposes described.

3. In a stem-winding-watch movement, a pivoted swinging or revolving frame or carriage carrying the winding mechanism and the main wheel, spring, and barrel, in combination with the main plate or plates of the watch carrying the remainder of the active mechanism of the watch, substantially as and for the purpose described.

4. In a stem-winding-watch movement, a pivoted swinging or revolving frame or carriage carrying the winding mechanism and the main wheel, spring, and barrel, in combination with the main plate or plates carrying the remainder of the active mechanism of the movement, said frame or carriage being adapted to be secured to said main plate or plates in such positions that the stem may be placed on a line with the fourth pinion and center to adapt said movement for use in an open case and that said stem may be placed in a line substantially at right angles to the line of said fourth pinion and center to adapt said movement for use in a hunting-case, substantially as shown and described.

5. In a stem-winding-watch movement, a pair of plates or frames carrying a portion of the active mechanism of the watch, combined with another pair of plates or frames carrying another portion of said mechanism, one of said pairs provided with pivotal bearings relatively to the other, a supporting-flange, and a securing screw or pin, said pairs of plates or frames being so movable and adjustable with relation to each other that the stem may be placed on a line with the fourth pinion and center to adapt said movement for use in an open case and that said stem may be placed in a line substantially at right angles to the line of said fourth pinion and center to adapt said movement for use in a hunting-case, substantially as shown, and for the purposes specified.

6. In a stem-winding-watch movement, two sets of plates or frames, one set supporting a portion of the active mechanism of the watch and the other the remaining portion of said active mechanism, and said sets adapted to revolve or partially revolve relatively to each other, in combination with supporting-flange A and securing-screw 5, substantially as and for the purposes specified.

7. In a stem-winding-watch movement, two sets of plates or frames, one set supporting a portion of the active mechanism of the watch and the other the remaining portion of said active mechanism, and said sets adapted to revolve or partially revolve relatively to each other, in combination with a supporting-flange A, substantially as and for the purposes described.

8. In a stem-winding-watch movement, two sets of plates or frames, one set supporting a portion of the active mechanism of the watch and the other the remaining portion of said active mechanism, and said sets adapted to revolve or partially revolve relatively to each other, in combination with a securing-screw 5, substantially as and for the purposes described.

HENRY ABBOTT.

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WM. C. DICK.