

(No Model.)

A. G. WISEMAN.
WATCH WINDING DEVICE.

No. 320,609.

Patented June 23, 1885.

Fig. 1.

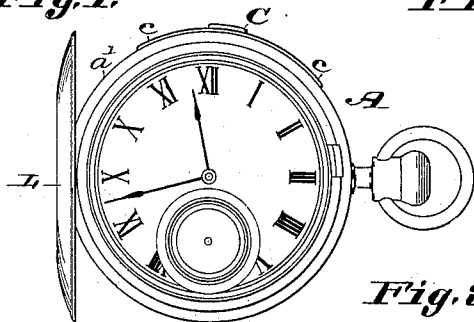


Fig. 2.

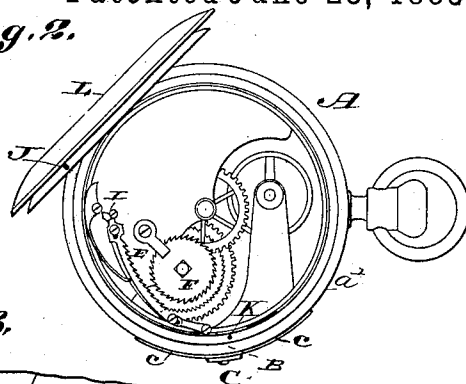


Fig. 3.

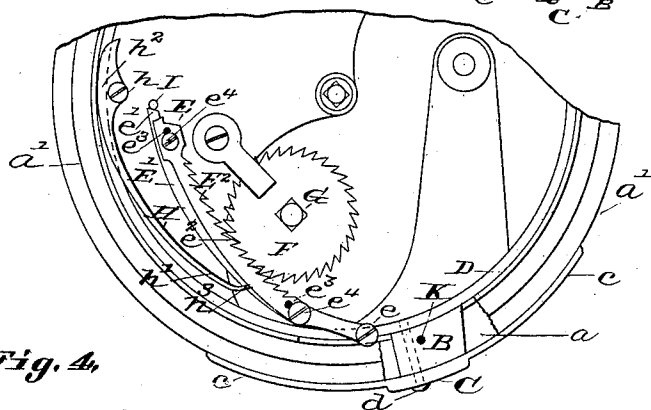


Fig. 4.

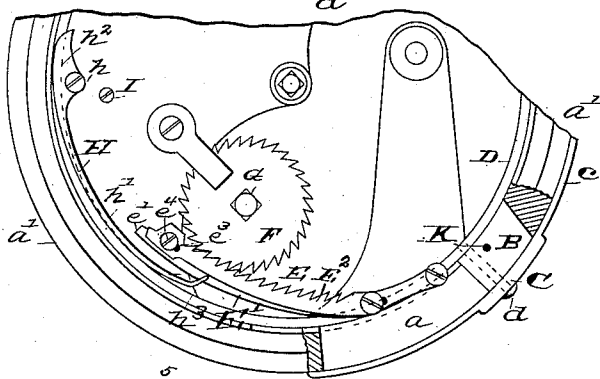


Fig. 5.

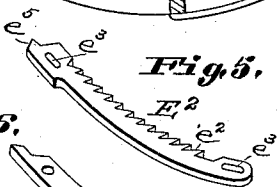


Fig. 6.

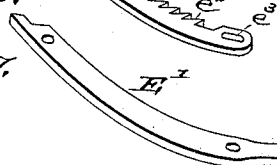


Fig. 7.



Attest:
Charles Pickles
J. W. Hoke.

Inventor:
Arthur G. Wiseman
by C. D. Woody atty

UNITED STATES PATENT OFFICE.

ARTHUR G. WISEMAN, OF WEBSTER GROVES, MISSOURI.

WATCH-WINDING DEVICE.

SPECIFICATION forming part of Letters Patent No. 320,609, dated June 23, 1885.

Application filed January 26, 1885. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR G. WISEMAN, of Webster Groves, St. Louis county, Missouri, have made a new and useful Improvement in Watches, of which the following is a full, clear, and exact description.

The improvement relates to the winding mechanism of the watch. By means of it watches which have been constructed to be wound with a key can be adapted to be wound by an attachment permanently connected with the watch.

The accompanying drawings, making part of this specification, illustrate a watch having the improvement.

Figure 1 is a face view of a watch having the improvement, the case being opened. Fig. 2 is a view of the opposite side of the watch, the outer and the inner case being opened. Fig. 3 is a view, upon an enlarged scale, of that part of the watch with which the improvement is immediately connected, the view being similar to that of Fig. 2, and showing the pawl as at the commencement of its forward stroke. Fig. 4 is a view similar to that of Fig. 3, but showing the parts as at the termination of the forward stroke of the pawl. Fig. 5 is a view in perspective of that portion of the pawl which engages with the ratchet. Fig. 6 is a view in perspective of the main part of the pawl, and Fig. 7 is a view in perspective of the spring used to effect the engagement of the pawl with the ratchet.

The same letters of reference denote the same parts.

The watch A, Figs. 1, 2, is of a familiar form, saving as modified by the improvement in question.

B represents a block held and adapted to be moved to and fro in a slot, *a*, in the rim *a'* of the watch, as indicated by its two positions shown, respectively, in Fig. 3 and in Fig. 4. The block at its outer side is extended to form, or is provided with or has attached thereto, a projection or boss, C, which extends outward from the rim sufficiently to form a shoulder against which the finger can be pressed and the boss thereby be moved along the rim of the watch. The boss is extended at *c* and *c'* beyond the ends of the block B, to form a cover for the slot *a* as the block and boss are moved forward and backward in and upon the watch-

rim. At its inner side the block is connected with a ring, D, which is held loosely in the watch just within the rim. The block, boss, and ring are conveniently fastened together, so as to permit of them being moved as one piece by means of the bolt *d*.

E represents a pawl, which at *e* is jointed to the ring, and whose free end is adapted to be moved into engagement with the ratchet F. This ratchet is fastened to the ordinary winding-shaft, G, and therefore if the ratchet is rotated the winding of the watch is effected.

The rotation of the ratchet is accomplished by means of the above-described mechanism in connection with the spring H, which at *h* is fastened to the frame-work of the watch, and whose end *h'* is adapted to press the pawl into engagement with the ratchet, saving as hereinafter explained. As the boss, block, ring, and pawl are moved backward, the teeth of the pawl ride upon the ratchet-teeth; but when moved in the opposite direction the pawl-teeth engage with the ratchet-teeth and the ratchet is rotated. It is essential, however, that the winding-shaft and ratchet, after the winding is accomplished, be left free to unwind as the watch is used. To this end the pawl at the end of its backward stroke is disengaged from the ratchet, and preferably in the following manner: The end *e'* of the pawl is beveled, and as the pawl is moved backward the end *e'* encounters a stop, I, Figs. 3, 4, and the free end of the pawl is thereby moved toward the rim *a'* and disengages from the ratchet. When the pawl is drawn forward, the end *e'*, as soon as it passes the stop I, is moved from the rim, and the engagement of the pawl with the ratchet is re-established.

As the pawl-teeth are liable as the pawl is moved against the ratchet to encounter the points of the ratchet-teeth, and in consequence not to become engaged with the ratchet-teeth, the pawl is preferably made in two parts, E' and E². The main part E' is the one which is attached to the ring D and encounters the stop I. The other part, E², is the one which has the pawl-teeth *e²*. It is slotted at *e³* *e³*, and it is connected with the part E' by means of the screws *e⁴* *e⁴*, which pass through the slots *e³* *e³* and are screwed into the part E'. The two parts E' and E² thus connected are moved as one part toward and from the ratchet by

the spring H; but in the direction of the length of the pawl the part E² at every stroke of the pawl has a movement upon the part E' equal to the length of the slots e³ e²—that is, after the pawl-teeth have caught on the ratchet-teeth the part E² slips upon the part E' until the ends of the slots are reached, whereupon the part E² is drawn forward and the ratchet is rotated. Now, by reason of the part E² being adapted to thus slip upon the part E', a better opportunity is provided for the pawl-teeth to become engaged, and the pawl at every forward stroke operates to rotate the ratchet.

The spring H bears against the back of the part E'. It is preferably provided with the extension h³, which projects over the part E', as shown in Figs. 3, 4, and serves as a guard to hold the pawl down in place, and so as to keep the pawl-teeth in the plane of the ratchet. The spring is also widened at h², so as to project over the ring D and hold it down in its place.

The position of the pawl when deflected toward the rim by means of the stop I is shown in Fig. 2. The stop and the parts E' E² are all so relatively shaped and connected as to cause the part E², by reason of its end e³ coming against the stop, to be slipped forward (that is, in the direction of the block B) upon the part E'.

The pawl E, after the winding of the watch has been accomplished, should not only be disengaged, but should remain disengaged from the ratchet until the time for another winding. To this end the case L of the watch is provided

with a pin, J, which by closing the case engages in a hole, K, in the block when the latter is in the position shown in Fig. 2. The block and pawl therefore remain in that position until the case is opened again, which movement must precede the winding of the watch.

I claim—

1. The combination, in a watch, of the slot-
ted rim a', the block B, the boss C, the ring D,
the pawl E, the spring H, the stop I, and the
ratchet F, as and for the purpose described.

2. The combination, in a watch, of the ring
D, the pawl E, the ratchet F, the spring H,
and the stop I, substantially as described.

3. The combination, in a watch, of the ring
D, the pawl E, the ratchet F, and the stop I,
as and for the purpose specified.

4. The combination, in a watch, of the ring
D, the pawl E, made in the two parts E' and
E², constructed as described, the ratchet F,
and the spring H, substantially as set forth.

5. The combination of the spring H, widened
at h², and the ring D, as and for the purpose
set forth.

6. The combination of the ring D, the part
E', the part E², having the end e³, and the stop
I, as described.

7. The combination of the case L, the pin J,
and the block B, having the hole K, as and for
the purpose described.

Witness my hand this 23d January, 1885.

ARTHUR G. WISEMAN.

Witnesses:

C. D. MOODY,

A. K. FASSETT.