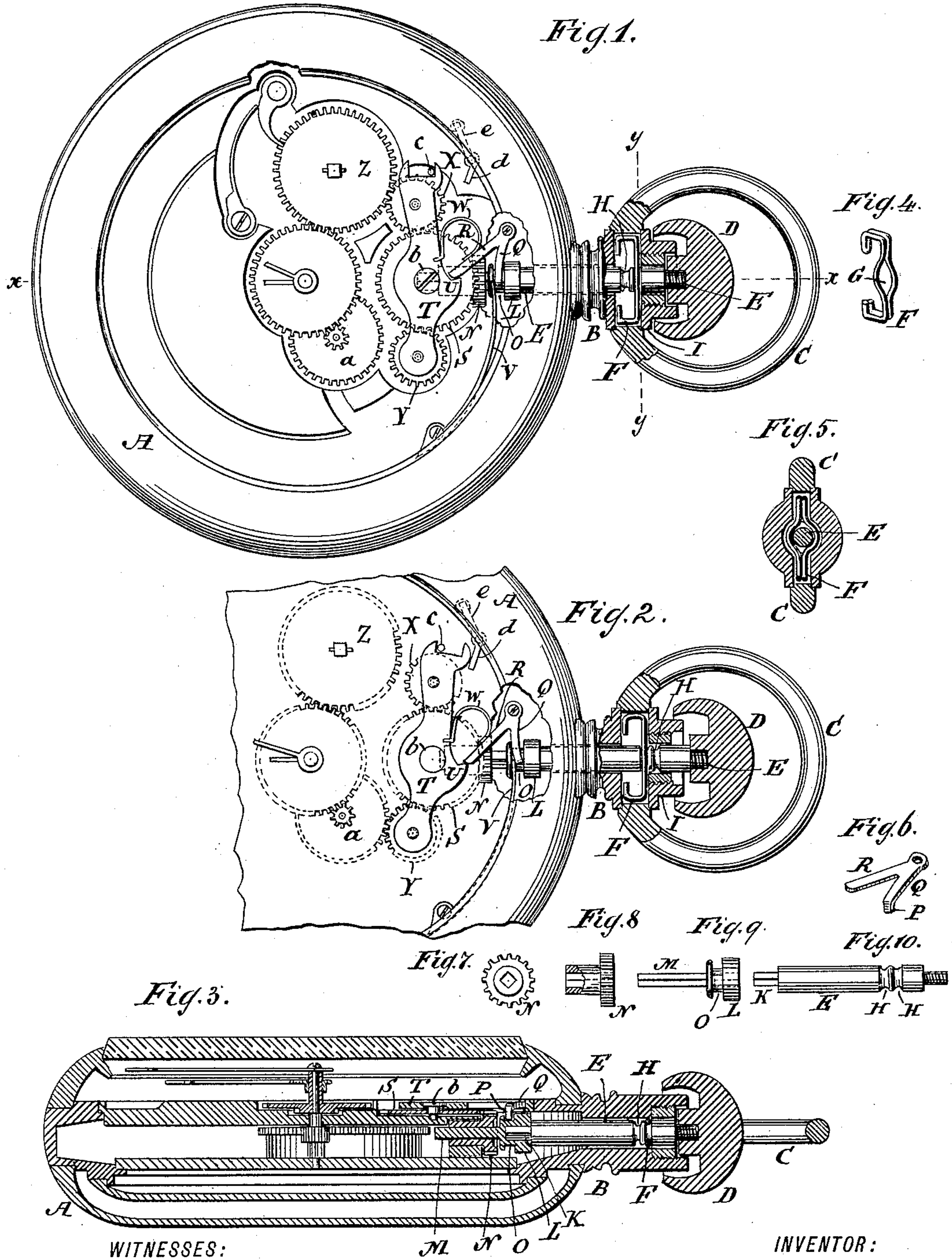


(No Model.)

E. K. BOYD.
STEM WINDING AND SETTING WATCH.

No. 408,573.

Patented Aug. 6, 1889.



WITNESSES:

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EDWARD K. BOYD, OF CHICAGO, ILLINOIS.

STEM WINDING AND SETTING WATCH.

SPECIFICATION forming part of Letters Patent No. 408,573, dated August 6, 1889.

Application filed January 31, 1889. Serial No. 298,171. (No model.)

To all whom it may concern:

Be it known that I, EDWARD K. BOYD, a subject of the Queen of Great Britain, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Pendant Winding and Setting Watches, of which the following is a specification.

This invention relates to an improvement in stem winding and setting watches; and the object of this invention is to secure a mechanism which will be simple in its operation and of durable construction, as set forth in the following specification and claims and illustrated in the accompanying drawings, in which—

Figure 1 is a face view of stem winding and setting mechanism. Fig. 2 is a view similar to Fig. 1, with parts in a different position than in Fig. 1. Fig. 3 is a section along the line $x x$, Fig. 1. Fig. 4 is a detail view of a spring. Fig. 5 is a section along the line $y y$, Fig. 1. Fig. 6 is a detail view of a lever. Fig. 7 is a plan view of a pinion. Fig. 8 is a side elevation of Fig. 7. Fig. 9 is a side elevation of a shank. Fig. 10 is a side elevation of stem-arbor.

Similar letters indicate corresponding parts.

In the drawings, the letter A indicates a watch-case.

B is the pendant, and C the ring.

The crown D is adapted to rotate the stem-arbor E, so as to wind or set the watch.

The pendant B has a recess or housing to receive a spring F. The spring F, as seen in Fig. 4, is readily made from a single piece of wire and has an eye G for the passage of the arbor E. Said stem-arbor E is capable of a certain lengthwise movement and has two stops H H, Fig. 10. When the stem-arbor E is moved lengthwise until one stop is engaged by the spring F, as seen in Fig. 1, the mechanism is in position for winding by the rotation of the stem-arbor. When said stem-arbor is moved lengthwise until the other stop is in engagement with the spring F, as seen in Fig. 2, the mechanism is in position for setting by the rotation of the stem-arbor. The lengthwise motion of the arbor E is secured by moving the crown D inward or outward until the spring F snaps into engagement

with one or the other of the stops H, whereby further lengthwise motion of the stem-arbor in such direction is prevented. The rotation of the stem-arbor E is secured by turning the crown D. To the pendant B is secured a cap-piece I, which retains the spring F in its housing.

The stem-arbor E has a square or angular shank K, Fig. 10, which sits into a corresponding socket in the head L of the shank M. Said shank M is square or angular and sits into a corresponding socket in the pinion N. The stem-arbor E and shank M are thus free to move lengthwise a certain distance independently of one another and of the pinion N while remaining in engagement, so that the rotation of the stem-arbor E will rotate the pinion N. The head L has a recess O, into which sits the lip P of the arm Q of lever Q R. The gear-wheel S, mounted in the yoke T, is engaged with the pinion N. Said yoke T has a tooth or shoulder U.

When it is desired to adjust the mechanism from the winding to the setting position, the crown D and stem-arbor E are moved outward, whereupon the spring V moves the lever Q R from the position shown in Fig. 1 to the position shown in Fig. 2. By this motion of the lever Q R the lever-arm R is caused to press upon the tooth U, so as to move the yoke T to the position shown in Fig. 2, in which position the gear-wheel Y is in gear with the setting mechanism. In this position the lever-arm R sits against the tooth U, so as to hold the yoke T in the position shown in Fig. 2. To adjust the mechanism from the setting to the winding position, the crown D and stem-arbor E are moved inward, whereby the lever Q R is moved back to the position shown in Fig. 1, thus compressing the spring W, whereby the yoke T is pressed back to the position shown in Fig. 1.

The gear-wheels X Y are mounted in the yoke T and gear into the wheel S. When the crown D is rotated, the motion is communicated through the stem-arbor E and pinion N, so as to rotate the wheels S X Y. In Fig. 1 the gear-wheel X is in gear with the wheel Z of the winding mechanism, and when in this position the crown D is properly turned

the watch will be wound up, the wheel Y meanwhile rotating idly. When the parts are in the position shown in Fig. 2, the gear-wheel Y is in gear with the wheel *a* of the setting mechanism, and when in this position the crown D is turned one way or another the watch is set forward or backward, the gear-wheel X meanwhile rotating idly. The yoke T can be made easily movable by being suitably mounted on a stud or axle *b*, while a stop *c* can be arranged to properly limit the swinging of the yoke.

The lever *d e* is adapted to lock the yoke T in the winding position. This lever is of use, for example, if the movement is out of the case, as during cleaning or repairing, since said lever *d e* can then be used to prevent the yoke from accidentally moving to the setting position. To lock the yoke by means of the lever *d e*, the arm *e* of the lever is moved by a finger or tool, so as to press the arm *d* against the yoke T, thus holding the gear-wheel X in gear with the wheel Z.

The lever-arm R, as already noticed, not only moves the yoke T to the setting position, but also locks said yoke in said position by the free end of the arm R sitting squarely against the tooth or shoulder U, Fig. 2. When moved to the position shown in Fig. 1, the arm R is moved to the deep or recessed part of the tooth U, so as to leave the yoke T free to move to the winding position.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a watch-movement, the combination, with an actuating-arbor made adjustable to and from the winding and setting position and provided with shoulders or stops H H, of a spring adapted to engage said stops to hold the arbor in position, said spring being formed of a single piece of wire and having an eye for the reception of the arbor, substantially as described.

2. In a watch-movement, the combination, with a stem-arbor E and intermediate shifting head L, having an angular opening for the shank of the stem-arbor and provided with an angular shank M, passing into the

winding-pinion N, of a lever comprising two arms Q and R, one of which engages the shifting head, and the swinging yoke T, having the tooth U to engage the other arm of the lever, substantially as described.

3. In a watch-movement, the combination, with a stem-arbor E, an intermediate shifting head L, a winding-pinion N, and a lever comprising two arms Q and R, one of which engages the shifting head, of the spring V for the lever and the swinging yoke T, having a tooth U to engage the other arm of the lever, substantially as described.

4. In a watch-movement, the combination, with a stem-arbor E, an intermediate shifting head L, a winding-pinion N, and a lever comprising two arms Q and R, one of which engages the shifting head, of the spring V for the lever, a swinging yoke T, having a tooth U to engage the other arm of the lever, and the curved spring W, extending from the yoke and acting on one arm of the lever, substantially as described.

5. In a watch-movement, the combination, with the stem-arbor E and swinging yoke T, of an intermediate shifting head L and the lever comprising the two arms Q and R, for transmitting motion from the stem-arbor to the yoke, substantially as described.

6. In a watch-movement, the combination, with a handle and a yoke for transmitting motion from the handle to the winding and setting mechanism, said yoke being provided with a tooth U, of a lever Q R, connected to the handle and adapted to engage the tooth U to move the yoke to the setting position, and a spring W, extending from the lever to the yoke, said spring when under tension tending to move the yoke to the winding position, substantially as described.

In testimony whereof I have hereunto set my hand and seal in the presence of two subscribing witnesses.

EDWARD K. BOYD. [L. S.]

Witnesses:

NEWTON A. PARTRIDGE,
WILLIAM G. GRIMES.