

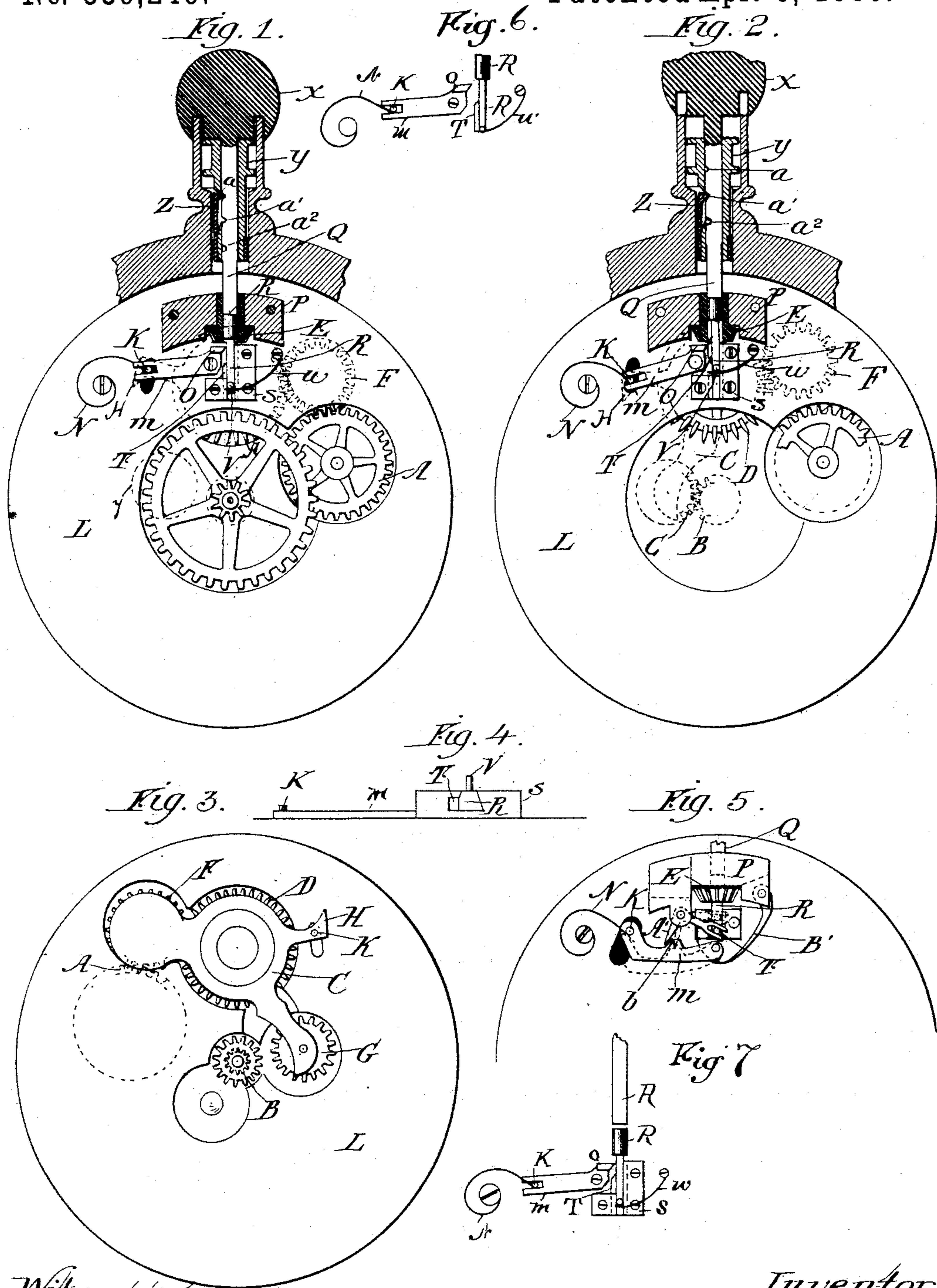
(Model.)

H. VENT.

STEM WINDING AND SETTING MECHANISM.

No. 339,246.

Patented Apr. 6, 1886.



Witnesses:

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UNITED STATES PATENT OFFICE.

HENRY VENT, OF CHICAGO, ILLINOIS.

STEM WINDING AND SETTING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 339,246, dated April 6, 1886.

Application filed May 19, 1885. Serial No. 165,991. (Model.)

To all whom it may concern:

Be it known that I, HENRY VENT, a citizen of the United States of America, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Stem-Winding Devices for Watches, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to improvements in watches, and more especially to that class of watches in which the hand-setting and winding mechanism is operated from a suitable winding bar situated within the pendant or stem of the watch.

The object of the invention is to arrange this winding-bar in such a manner that there will be no positive connection between it and the mechanism employed for winding the watch or setting the hands, whereby the watch movements and cases are made interchangeable as may be desired.

In carrying out the invention it consists in having the operating mechanism in gear with the winding-wheel when the movement is detached from the watch-case, and also when in place in the case, provided it is not desired to set the hands; and the invention further consists in the novel construction and arrangement, with respect to the winding-stem, of a bar forming part of the movement, and arranged to form connection between the winding-bar and the mechanism for operating the winding-wheel or that employed for setting the hands; and the invention further consists in the novel construction of the winding-bar and its combination with suitable devices situated in the watch-pendant whereby it may be arranged and held in place to wind the watch, to set the hands, or to be entirely free of the movement.

Reference will be made to the accompanying drawings, in which Figure 1 represents a front view of a stem winding and setting watch with the winding mechanism in gear; Fig. 2, a similar view with the setting mechanism in gear; Fig. 3, a rear view of Fig. 1; Fig. 4, a detail of parts, and Fig. 5 a detail of a modification; and Figs. 6 and 7, enlarged detail views.

Like letters refer to like parts in each view.

In the drawings, A represents the winding-wheel, and B the pinion mounted upon the arbor of the watch-hands. C is a pivoted yoke provided with a central wheel, D, arranged to mesh with the winding-pinion E.

Mounted in arms of yoke C are wheels F G, arranged to engage, respectively, with winding-wheel A and hand-setting pinion B, according to the position of the yoke C. This yoke is also provided with a third arm, H, upon which is mounted a pin, K, which passes through a suitable opening in the plate L.

Pivoted upon plate L, as shown in Figs. 1, 2, is an arm, M, the free end of which is forked, as shown, the pin K being inserted into such fork, and the arm itself being held in the position shown in Fig. 1 by a spring, N, unless some pressure is brought to bear upon it.

By the arrangement of parts as thus far described it will be seen that if no pressure is applied to arm M the winding mechanism will always be in gear. Arm M is provided with a projection or knob, O, on the opposite side of its pivot to that occupied by the forked end referred to, this knob to be referred to hereinafter.

The winding-pinion E, hereinbefore referred to, is mounted in a suitable block, P, secured to plate L, and has a central opening in line with the winding-bar Q.

Situated within the opening of pinion E, and adapted to a lengthwise adjustment, is a bar, R, round for a certain distance from its top or outer end, and formed in the shape of a dovetail for the remainder of its length. The dovetail section of bar R is arranged to move in a groove formed in a guide, S, also mounted upon plate L. Upon one side face the dovetail section of bar R is provided with a lug, T, which also moves in a groove formed in guide S, said guide, however, being suitably broken away on that side of the bar to give full play to the arm M, hereinbefore referred to. Bar R, at a point near its lower or inner end, is also provided with a pin or stud, V, with which one end of a spring, W, is adapted to engage, said spring being arranged to force the bar upwardly or outwardly when no opposition is offered.

The winding-bar Q, hereinbefore referred

to, is situated in the watch-pendant, and at its outer or upper end is secured to the knob X, as is customary. This winding-bar is square in shape, and for almost its entire length in the pendant is surrounded by a sleeve, Y, through which a square opening is formed longitudinally. There is secured to sleeve Y a spring-arm, Z, provided with a bent free end, which passes through an opening in the sleeve, and is adapted to engage with any one of three notches, a a' a'' , which are formed in one face of winding-bar Q. The winding-bar passes down through the pendant, and is adapted to enter the opening in winding-pinion E when desired. It will be understood that when the bent end of spring-arm Z enters one of the notches of the winding-bar the sleeve to which such arm is secured will revolve with the bar; but when any lengthwise movement of the winding-bar is desired the sleeve will remain stationary and the spring arm enter one of the other notches.

The operation of the device will be readily understood. When it is desired to detach the movement from the case, the winding-bar is drawn out until the spring-arm enters the lowermost or innermost notch, the bar being thus drawn out sufficiently to allow of the detachment of the movement, and the parts of the movement being so arranged that when thus removed from the case the winding mechanism will be in gear.

With the movement in the watch-case the normal position of the parts is such as to still have the winding mechanism in gear, the winding-bar being pushed in until the spring-arm engages with the uppermost or outermost notch.

When it is desired to put the setting mechanism in gear, the bar is drawn out until the spring-arm engages with the middle notch, where the bar is held. This removes the pressure from bar R, which is then operated upon by spring W. As this bar is moved its lug T contacts with the lug O of arm M, and serves to operate the said arm, and through it and the intermediate connections the yoke C, the yoke being thus shifted and the setting mechanism put in gear.

In Fig. 5 I have shown a modified arrangement and construction of parts. In this arrangement the arm M is provided with a projection, b , at or about its center, there being

a suitable notch formed upon this projection. The lug of bar R is done away with, and the forked arm of a bell-crank lever, A', is connected with the stud T of such bar, the remaining arm of such lever being arranged to operate the arm M. When the parts are in the position shown in Fig. 5, the winding mechanism is in gear. By pulling the winding-bar out the pressure is removed from bar R, and such bar forced outwardly by a spring, B', this operation forcing one arm of lever A' against the projection b of arm M, the end of such arm entering the notch of such projection, and the yoke C shifted to put the setting mechanism in gear. By pulling out the winding-bar still farther the arm of lever A' is forced past projection b and the winding mechanism again put in gear by spring N.

What I claim is—

1. The combination, with a pivoted yoke of a watch-movement, its wheels, and the winding and setting wheels, of a pivoted arm connected with such yoke and provided on one end with a lug, a winding-pinion, a bar situated in an opening in such pinion and provided with a lug to engage the lug of the pivoted arm, and a winding bar arranged to operate the parts, but with no positive connection therewith, as set forth.

2. The combination, with winding-bar Q and bar R, provided with lug T, of pivoted arm M, provided with lug O, and yoke C, connected with such arm M, as set forth.

3. The combination, with winding-bar Q and bar R, provided with lug T and stud V, of spring W, pivoted arm M, provided with lug O, spring N, and yoke C, as set forth.

4. The combination, with winding-bar Q, bar R, provided with lug T and stud V, of grooved guide-block S, spring W, pivoted arm M, provided with lug O, spring N, and yoke C, as set forth.

5. The combination, with notched winding-bar Q, yoke C, and intermediate mechanism for operating the yoke from the winding-bar, of spring arm Z, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY VENT.

Witnesses:

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