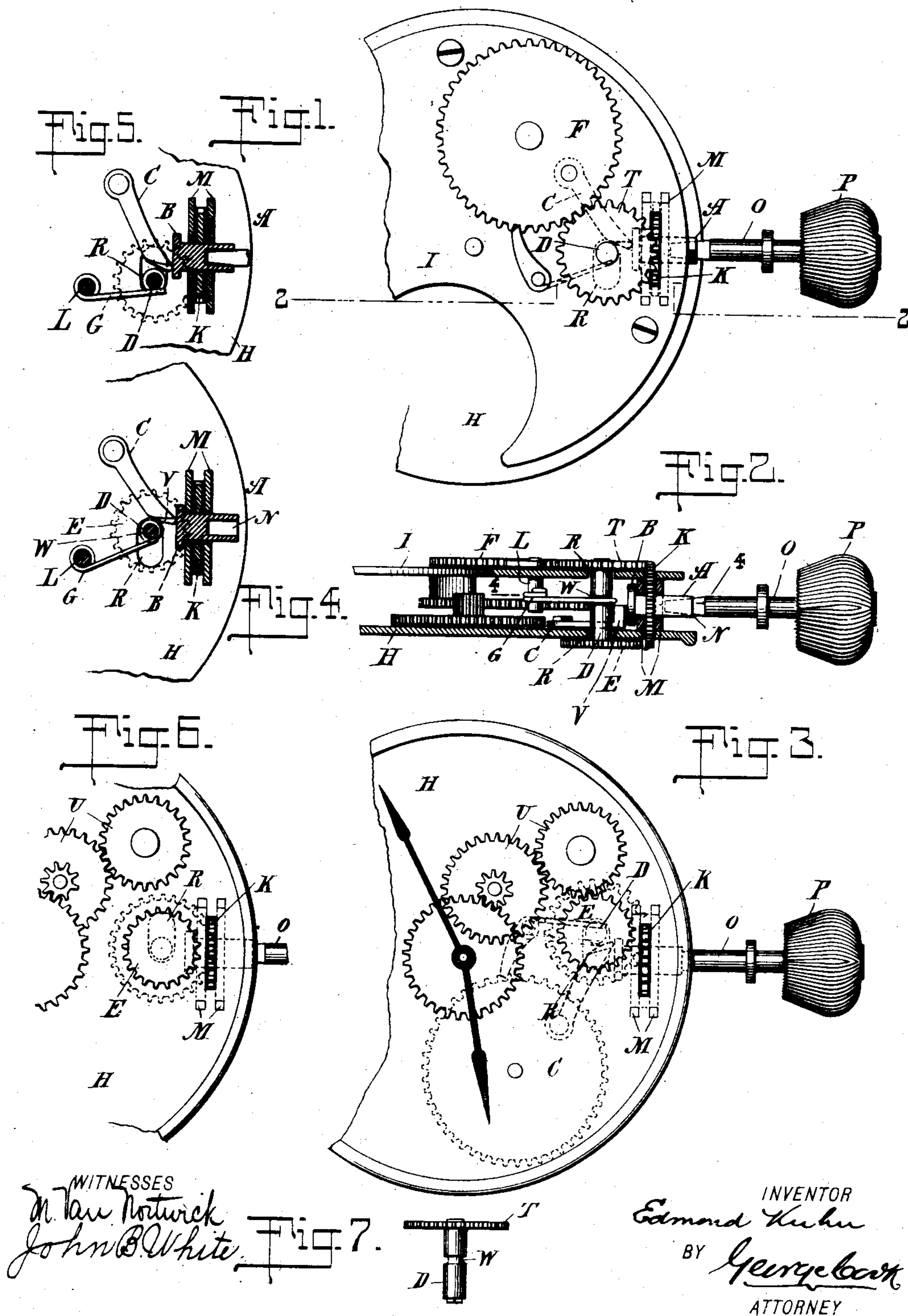


No. 870,109.

PATENTED NOV. 5, 1907.

E. KUHN.
STEM WINDING AND SETTING WATCH.
APPLICATION FILED JUNE 8, 1907.



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STEM WINDING AND SETTING WATCH.

No. 870,109.

Specification of Letters Patent.

Patented Nov. 5, 1907.

Application filed June 6, 1907. Serial No. 377,501.

To all whom it may concern:

Be it known that I, EDMOND KUHN, a citizen of the United States, and a resident of East Orange in the county of Essex and State of New Jersey, have made and invented certain new and useful Improvements in Stem Winding and Setting Watches, of which the following is a specification.

My invention relates to an improvement in stem winding and setting watches, the object being to provide means for winding and setting the watch which shall be simple and inexpensive, and which will operate with certainty and with little or no danger of getting out of order.

With these and other ends in view, my invention consists in certain novel features of construction and combinations of parts, as will be hereinafter fully described and pointed out in the claims.

In the accompanying drawings Figure 1 is a plan view of a part of a watch movement showing the parts in their normal or winding positions. Fig. 2 is a sectional view on the line 2—2 of Fig. 1. Fig. 3 is a plan view of the opposite side of the watch from that shown in Fig. 1, the parts being shown in their setting positions. Figs. 4 and 5 are detail views of a part of the mechanism showing the same in its several adjustments. Fig. 6 is a view similar to Fig. 3, the parts being shown in their winding positions, and Fig. 7 is a detail view of the movable shaft and intermediate winding pinion.

Referring to the drawings, A represents a winding arbor which is rotatably and slidably mounted in the spacing members M, the inner end of said arbor being provided with an enlargement or head B, and the outer end with a squared recess N, which is adapted to receive the winding stem O, to which the crown P is attached. Mounted upon, and rotatable with said arbor, and having sliding connection therewith, is a stem wheel K, said wheel being located between the spacing members M and extending through slots formed in the pillar plate H and top plate I, as shown in Fig. 2. D is a rotatable shaft, the ends of which extend through slots R formed in the top plate I and pillar plate H, said slots registering with one another and being elongated, as shown in Figs. 1, 3, 4 and 5, thereby permitting bodily movement of the shaft in a lateral direction, for the purpose hereinafter set forth.

On the end of the shaft D, which extends through the top plate I, is secured an intermediate winding pinion T, which when the shaft is in its normal position, meshes with the stem wheel K, and the main winding pinion F, as shown in Fig. 1, and on the other end of said shaft, which extends through the pillar plate H, is secured an intermediate setting pinion E, which is normally out of mesh with the setting train of gears U, as shown in Fig. 5, said pinion E being of smaller diam-

eter than the intermediate winding pinion T, whereby it will not engage the stem wheel K, as clearly shown in Figs. 3 and 5.

The main winding pinion F, and the setting train of gears U are located on opposite sides of the diametrical line which passes through the winding arbor and the stem, from which it will be seen that when the shaft D is moved laterally from its winding position, shown in Figs. 1 and 5, to its setting position, shown in Fig. 3, the intermediate winding pinion T will be moved out of mesh with the main winding pinion F, while remaining in engagement with the stem wheel K, and the intermediate setting pinion E will be thrown into engagement with the setting train U.

From the above description it will be understood that if the crown is rotated when the shaft D is in its normal position, the winding mechanism will be operated, while if the crown is rotated after the shaft has been moved to its alternate or setting position, the setting mechanism will be actuated.

The means whereby the shaft D is moved from its normal to its setting position, will now be described: Pivoted to the inner side of the plate H is a lever C, the free end of which is provided with the lip V, extending between the shaft D, upon which it bears, and the head B of the winding arbor A, as clearly shown in Fig. 4. It will be understood that when the winding arbor is pressed inwardly, the head or enlargement B, pressing upon the lip V of the lever C, will cause the latter to move or shift the shaft D from its normal or winding position to its setting position, this movement of the shaft occurring by reason of the lip V bearing upon the rounded or curved surface of the shaft, said shaft moving in a direction at right angles to the axis of the winding stem and arbor. In moving or shifting this shaft it necessarily carries with it the intermediate winding and setting pinions secured tightly to the ends thereof, and as before described, causes the intermediate winding pinion T to disengage from the main winding pinion F, throwing into mesh the intermediate setting pinion E with the setting train of gears U.

From the foregoing description it will be understood that when the parts are in their normal positions, the several pinions are in proper adjustment for winding the movement, and that by a slight pressure upon the crown P, the several parts are thrown into proper relative positions for setting the hands, the pressure upon the crown P being continued during the rotation thereof and the setting of the hands.

This construction and arrangement of parts is exceedingly simple and effective, and also economical, in that many of the parts constituting the setting mechanism of a watch movement as ordinarily con-

structed and wherein the winding stem is pulled outwardly instead of pressed inwardly as in the present case, may be omitted.

When the pressure is released from the crown P, the shaft is returned to its normal position through the agency of a spring G, one end of which rests in a circular groove W formed in the shaft D, and the opposite end of which is attached to a pin L secured to the top plate I. The tension of the spring G is such that it may be easily overcome when pressure is applied to the winding arbor A, but is sufficient to return the shaft and the winding arbor to their normal positions when the pressure is removed.

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

1. In a watch movement, the combination with a winding arbor, of a laterally movable rotatable shaft, means adapted to engage said arbor and shaft for moving the latter when said arbor is pressed inwardly, and means for automatically returning the parts to their normal winding positions when the pressure on the winding arbor is relieved, substantially as described.
2. In a watch movement, the combination with a longitudinally movable winding arbor, of a laterally movable shaft having intermediate winding and setting pinions rigidly secured thereto, means adapted to engage said winding arbor and shaft for moving the latter out of its winding into its setting position when said arbor is pressed inwardly, and a spring engaging said shaft for automatically returning the latter to its normal or winding position when the pressure on the winding arbor is relieved, substantially as described.
3. In a watch movement, the combination with a wind-

ing arbor, of a laterally movable shaft, and a single lever, the free end of which lies between and is adapted to engage with said shaft and said winding arbor, whereby said shaft will be caused to move when pressure is applied to said arbor and lever, substantially as described.

4. In a watch movement, the combination with a longitudinally movable winding arbor having a head on the inner end thereof, of a shaft mounted in elongated openings formed in the top and pillar plates, a lever pivoted to one of said plates and having its free end adapted to engage with said shaft and head, whereby when said arbor is pressed inwardly said shaft will be moved in a direction at right angles to the axis of said winding arbor, and means for automatically returning the parts to their normal positions when the pressure on the arbor is relieved, substantially as described.

5. In a watch movement, the combination with a longitudinally movable winding arbor having a head formed on the inner end thereof, of a top and pillar plates provided with lateral elongated openings, a shaft the ends of which are mounted in said elongated openings and having tightly secured thereto the intermediate winding and setting pinions, a lever pivoted at one end to one of said plates, the free end being adapted to engage with said head and shaft whereby when the winding arbor is pressed inwardly said shaft will be moved in a direction at right angles thereto, and a spring engaging said shaft for returning the parts to their normal positions when the pressure on the winding arbor is relieved, substantially as described.

Signed at New York, borough of Manhattan, in the county of New York, and State of New York, this 3rd day of June, A. D. 1907.

EDMOND KUHN.

Witnesses:

M. VAN NORTWICK,
JOHN B. WHITE.