

(No Model.)

4 Sheets—Sheet 1.

A. H. POTTER.
STEM WINDING AND SETTING WATCH.

No. 418,381.

Patented Dec. 31, 1889.

Fig. 1.

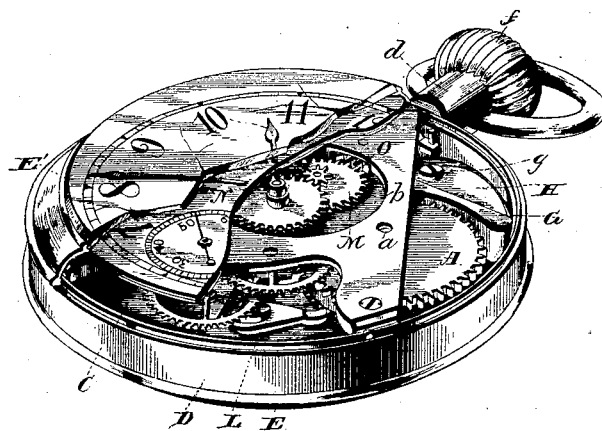
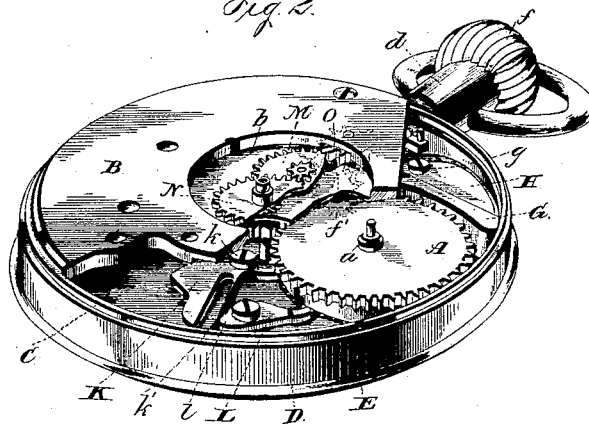


Fig. 2.



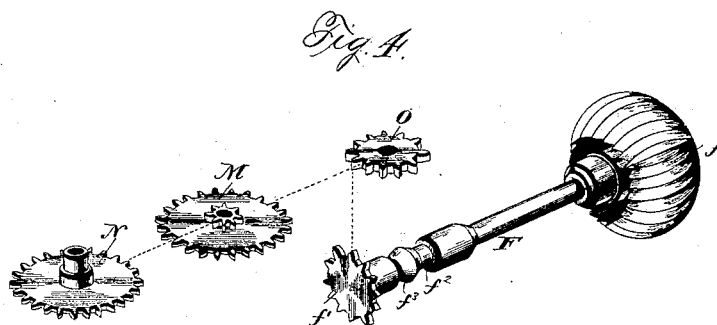
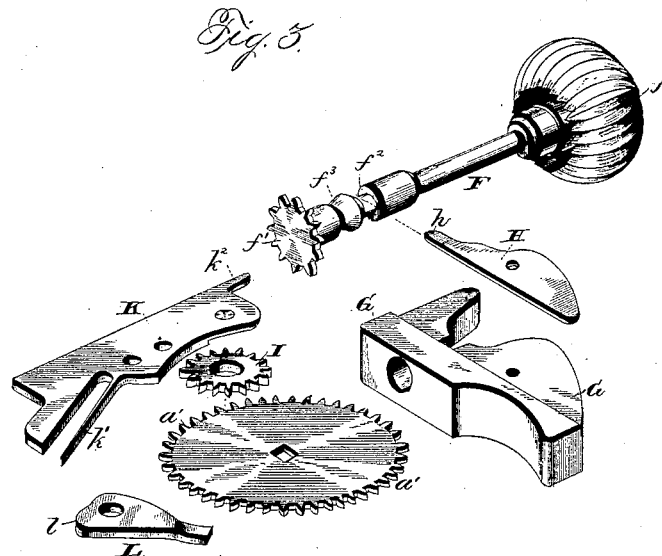
Witnesses
Chas Williamson
Henry C. Hazard

Inventor
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Fig. 5.

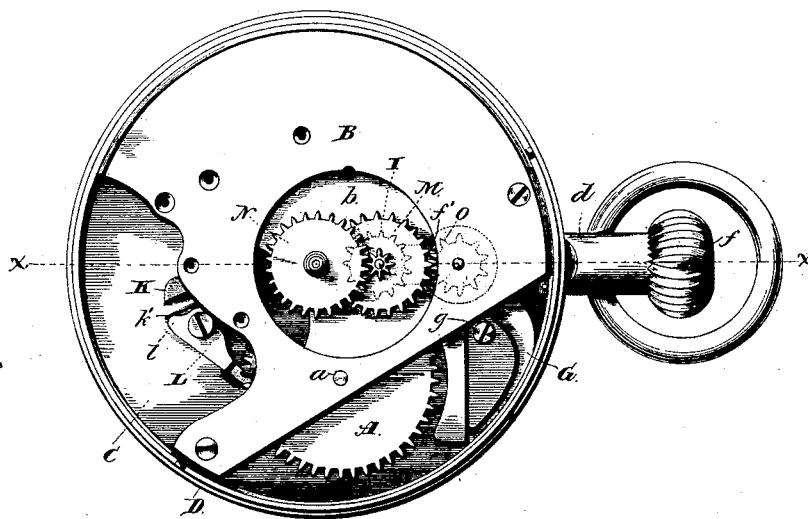
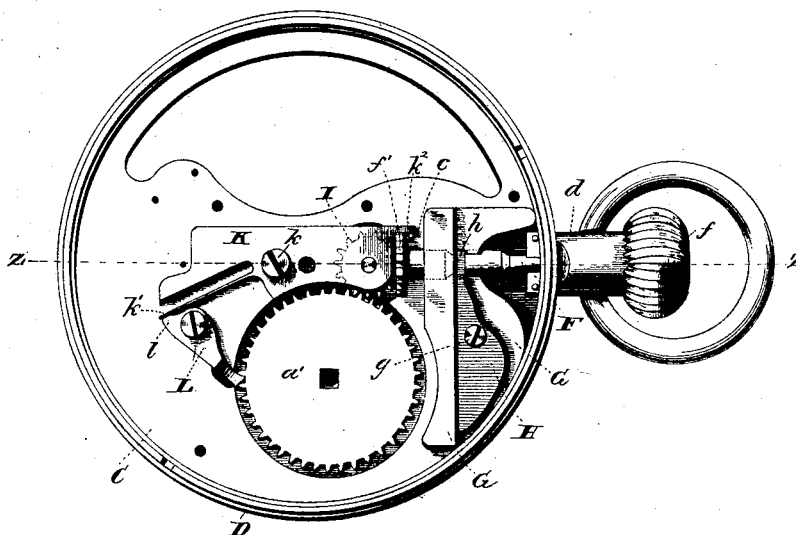


Fig. 6.



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Fig. 7.

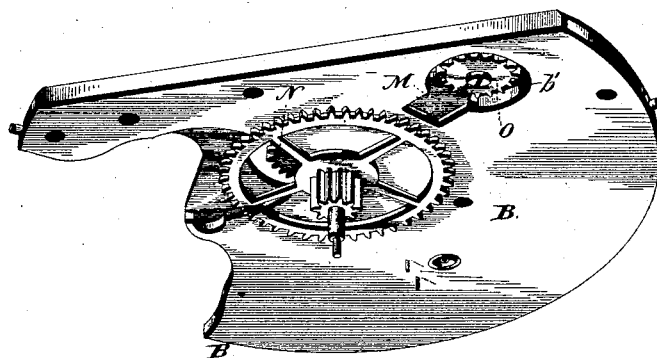


Fig. 8.

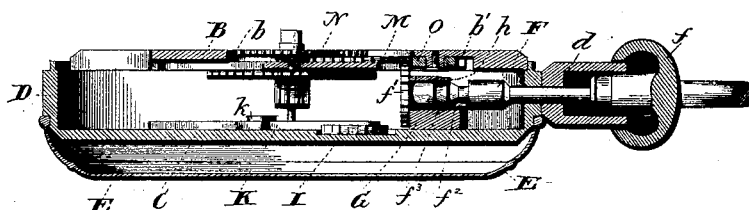
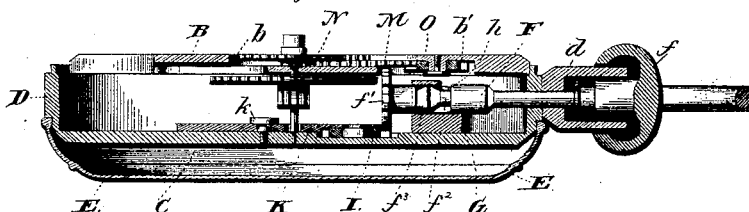


Fig. 9.



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UNITED STATES PATENT OFFICE.

ALBERT H. POTTER, OF GENEVA, SWITZERLAND, ASSIGNOR TO THE TRENTON WATCH COMPANY, OF TRENTON, NEW JERSEY.

STEM WINDING AND SETTING WATCH.

SPECIFICATION forming part of Letters Patent No. 418,381, dated December 31, 1889.

Application filed January 29, 1889. Serial No. 297,919. (No model.)

To all whom it may concern:

Be it known that I, ALBERT H. POTTER, of Geneva, in the canton of Geneva, Switzerland, have invented certain new and useful Improvements in Stem Winding and Setting Watches; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of my watch from the front side, a portion of the bezel and dial being broken away to show the interior construction. Fig. 2 is a like view of the same with the bezel and dial removed and a portion of the front plate broken away. Fig. 3 is an enlarged perspective view of the stem-arbor and the connecting mechanism used for winding the mainspring, said parts being separated from the case and movement. Fig. 4 is a like view of said stem-arbor and the connecting mechanism employed for setting the hands. Fig. 5 is a plan view from the front of the watch with the dial removed and the stem-arbor arranged for setting the hands. Fig. 6 is a like view of the same with the front plate also removed and the stem-arbor arranged for winding the mainspring. Fig. 7 is a perspective view from the inner side of the front plate with the center wheel and arbor and the dial-wheels in position, and Figs. 8 and 9 are respectively sections upon lines *xx* and *zz* of Figs. 5 and 6.

Letters of like name and kind refer to like parts in each of the figures.

The design of my invention is to enable the operations of winding a watch and setting its hands to be easily effected through a manipulation of a journaled stem-arbor; and to such end my invention consists, principally, in the means employed for journaling the stem-arbor and locking the same in different longitudinal positions, substantially as and for the purpose hereinafter specified.

It consists, further, in the means employed for journaling the wheel, which is located between and connects the stem-driven wheel with the winding-wheel, substantially as and for the purpose hereinafter set forth.

It consists, further, in the combined pivotal yoke, ratchet-spring, and pawl-spring, sub-

stantially as and for the purpose hereinafter shown and described.

It consists, finally, in details of construction substantially as and for the purpose hereinafter specified.

In the carrying of my invention into practice I employ a watch in which a going-barrel A and an ordinary time-train driven thereby are journaled between a front plate B and back plate C, and the whole contained within a case that is composed of a center D, a back cover E, and a glass bezel E'. The center D is provided with the usual pendant *d*, within which is journaled a stem-arbor F, that has upon its outer end a crown *f*. Said arbor extends into the interior of the case and has its inner portion journaled within a bridge G, which bridge has the form shown in Figs. 3 and 4, and is secured in place by means of a screw *g*, that passes through the same and into a threaded opening in the back plate C.

The stem-arbor F has secured upon its inner end a spur-wheel *f'*, and has such length as to enable it to be moved longitudinally within its bearings a distance equal to nearly three times the thickness of said wheel. It is held with a yielding pressure at the limit of its longitudinal motion in each direction by means of a spring H, that rests upon the upper side of the bridge G, (where it is held in place by the screw *g*,) and at its end *h* engages with one of two circumferential grooves *f*² and *f*³, that are formed in said arbor.

Upon the rear end of the mainspring-arbor *a* is the usual winding-wheel *a'*, which is engaged by a small toothed wheel I, that is journaled upon one end of a yoke K, which yoke is pivoted upon the back plate C, and is capable of such motion upon its pivotal bearing *k* as to cause said wheel I to be engaged with or removed from engagement with said wheel *a'*. Upon the portion of the yoke K opposite to the wheel I is formed a spring-arm *k'*, that at its outer end bears against the tail end *l* of a pawl L, and operates to hold such pawl with a yielding pressure in engagement with the teeth of the winding-wheel *a'*, so as to prevent the latter from turning rearward. Said spring-arm also operates to hold said yoke normally in position to cause said

wheels I and a' to be engaged when the former is turned forward, while permitting of their separation when said wheel I is turned rearward. A pin c , projecting upward from the back plate C, is engaged by a lug k^2 , that projects from the contiguous end of said yoke and operates as a stop to insure the required engagement of the teeth of said wheels a' and I and to prevent the same from bottoming when engaged.

The relative positions of the wheels f' and I when the stem-arbor F is at the inner limit of its longitudinal motion are such as to cause their teeth to engage, so that when said arbor is rotated in one direction the main-spring-arbor will be rotated and the main-spring wound, while the rotation of said arbor in an opposite direction will cause the teeth of said wheel I to slip or "back-ratchet" over the teeth of the winding-wheel a' .

The watch-movement is provided with the usual dial-wheels M and N, which are contained within a recess b in the outer side of the front plate B. The intermediate dial-wheel M is located in a line with the pendant d , and is engaged by the teeth of a spur-wheel O, that is pivoted within a recess b' in the inner face of said front plate, the relative depths of said recesses b and b' being such as to cause the upper face of said wheel O to be flush with the upper face of said wheel M. The wheel O has about twice the thickness of the wheel M, so that the teeth of the former extend considerably below the lower face of the latter and are engaged by the teeth of the stem-arbor wheel f' when the stem-arbor is moved to the outer limit of its longitudinal motion. When thus arranged, the rotation of said stem-arbor will cause said wheel f' to impart motion to said wheel O and the latter to rotate said wheel M, so as to move the hands of the watch and enable the same to be set.

Having thus described my invention, what I claim is—

1. As an improvement in stem-winding watches, the stem-arbor journaled within the

case-pendant and within a bridge that is located within the case and provided within its periphery with parallel annular grooves, in combination with a spring-detent which is secured in place upon the bridge by the screw that confines the same in position, and has its free end adapted to engage with either of said grooves as said stem-arbor is moved longitudinally within its bearings, substantially as and for the purpose specified.

2. In combination with the pivoted yoke which journals the intermediate winding-wheel and with the retaining-pawl of the winding-wheel, a spring-arm which is attached to or forms part of said yoke and bearing upon said pawl operates to simultaneously hold the latter in yielding engagement with said winding-wheel and to hold said yoke at one limit of its motion, substantially as and for the purpose set forth.

3. As a means for communicating a rotary motion of the stem-arbor to the dial-wheels, a spur-wheel which is secured upon the end of said stem-arbor, and an intermediate wheel which has twice the thickness of the intermediate dial-wheel and is journaled in the same plane therewith, with its teeth in simultaneous engagement with the teeth of said intermediate dial-wheel and with the teeth of said stem-arbor wheel, substantially as and for the purpose shown and described.

4. In combination with the bridge which operates to journal the inner end of the stem-arbor and with the spring-latch that operates to lock said arbor in longitudinal position, a single screw which passes through said spring-latch and bridge and operates to confine said parts in place upon the movement-plate, substantially as and for the purpose shown.

In testimony that I claim the foregoing I have hereunto set my hand this 10th day of January, 1889.

ALBERT H. POTTER.

Witnesses:

THEO. F. JACKSON,
ERNEST H. JACKSON.