

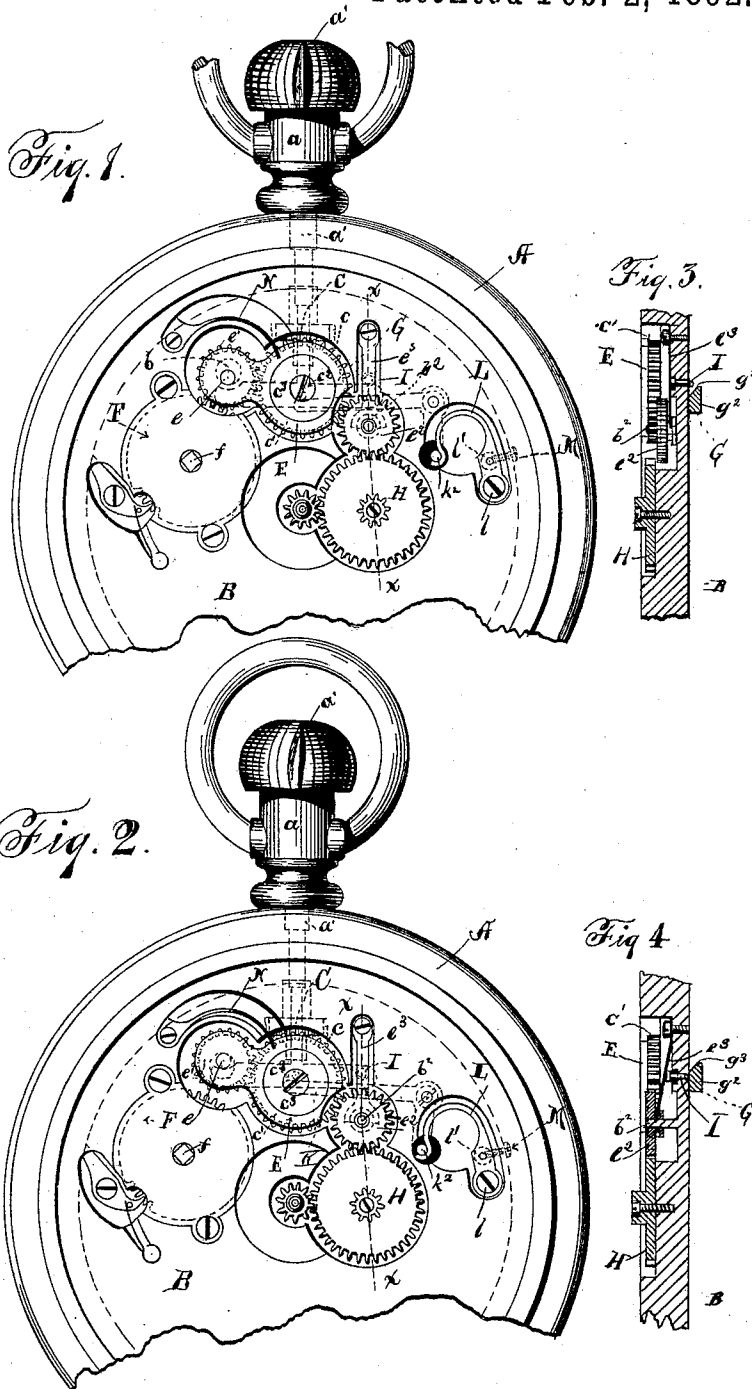
(No Model.)

2 Sheets—Sheet 1.

T. F. SHERIDAN.
STEM WINDING AND SETTING WATCH.

No. 467,998.

Patented Feb. 2, 1892.



Witnesses.
Philip H. Gasi.
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(No Model.)

2 Sheets—Sheet 2.

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Fig 5

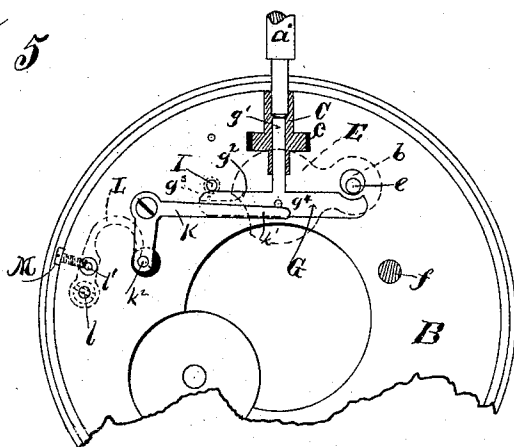


Fig. 6,

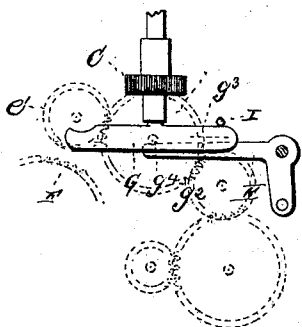
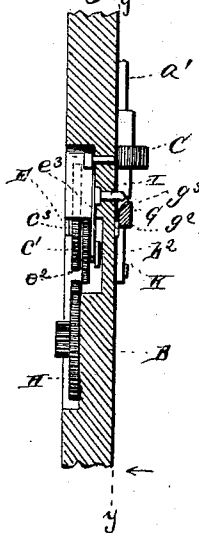


Fig. 7,



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UNITED STATES PATENT OFFICE.

THOMAS F. SHERIDAN, OF SPRINGFIELD, ILLINOIS.

STEM WINDING AND SETTING WATCH.

SPECIFICATION forming part of Letters Patent No. 467,998, dated February 2, 1892.

Application filed January 18, 1890. Renewed July 16, 1891. Serial No. 399,680. (No model.)

To all whom it may concern:

Be it known that I, THOMAS F. SHERIDAN, a citizen of the United States, residing at Springfield, in the county of Sangamon and State of Illinois, have invented certain new and useful Improvements in Stem Winding and Setting Watches, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to that class of stem-winding and stem-setting watches provided with stem-driven trains connected with the winding and hands-setting or dial wheels.

The principal object of my invention is to provide a simply-constructed watch-movement of the class referred to, in which the gear-wheel forming part of the connection between the stem-driven pinion and the winding-wheels is carried by an oscillating yoke, and in which the gear-wheel forming part of the connection between the stem-driven pinion and the dial-wheels is entirely disconnected from said yoke, so that oscillating movements of the latter have no effect whatever upon it.

My invention has also for its object to provide means of simple construction whereby when the movement is out of the case engagement of the stem-driven train either with the winding or hands-setting or dial wheels may be effected, the construction being such that the parts will stay in either of the engagements desired when placed in such engagement.

In the accompanying drawings, Figure 1 is a plan or face view of a watch-movement embodying my invention and with the parts in position for connecting the pendant-arbor with the mainspring-arbor. Fig. 2 is a similar view, but with the mechanism in position to engage the pendant-arbor with the dial-wheels. Fig. 3 is a section on line *x x* of Fig. 1; and Fig. 4, a section on line *x x*, Fig. 2. Fig. 5 is a reverse side view from that shown in Fig. 1. Fig. 6 is a detail view of the sliding bar, the lever for lifting the same, and some adjacent parts. Fig. 7 is a partial sectional view of the pillar-plate, showing some of the parts mounted thereon.

A denotes the center band of a watch-case provided with a pendant *a*, and B is the pil-

lar-plate of a watch-movement, said plate being fitted to and secured to said band in the usual manner.

Within the pendant *a* is the stem-arbor *a'*, provided with the usual corrugated cap at its outer end. The inner end of the said arbor is engaged axially with the stem of a pinion C, journaled in suitable bearings on the lower side of the pillar-plate B, and having a toothed periphery extending through an opening *c* of said plate. Suitably pivoted to the pillar-plate is a gear-wheel *c'*, with which the pinion C is in engagement.

E denotes a pivoted yoke attached to the pillar-plate by a screw *c²* and a cap *c³*, said yoke being provided at one end with a pin *e*, passing through an opening *b* in the pillar-plate, and on which pin on the upper or face side of the pillar-plate and on the lower or rear side of the yoke E is journaled a gear-wheel *e'*, adapted to be thrown into engagement with the winding-wheel F of the mainspring-arbor *f*. Thus when the said yoke is moved to the positions shown in Figs. 1 and 2, the wheel *e'* may be thrown into engagement with or be disengaged from the winding-wheel F, the spring N, engaging said yoke, normally holding the said wheel *e'* in engagement with said winding-wheel.

G denotes a sliding bar provided with an arm *g'*, entering an axial recess in the pinion C, which forms a bearing for said bar to steady it in its rectilinear movements, the arm *g²* of the said sliding bar being provided with a beveled portion *g³*, and the said bar having near its center a pin *g⁴*.

K is a bell-crank lever, the upper or longer arm of which is in engagement with the pin *g⁴* of the sliding bar G and the lower or shorter arm of which is provided with a pin *k²*, engaged by the free end of a spring L, pivotally attached at *l* to the pillar-plate B, and provided with a pin *l'*, which is engaged by a screw M, tapped to the edge of the pillar-plate.

The pillar-plate is provided with a pin *b²*, on which is journaled a sliding or shifting gear-wheel *e²*, provided with a grooved hub engaged by the free forked end of a spring *e³*, attached to the pillar-plate and normally tending to press the said shifting gear-wheel

inward toward the bottom of the recess in the pillar-plate in which it is located.

I is a sliding pin the head of which is beneath the spring e^3 , said pin passing through the pillar-plate and being provided with a beveled or rounded projecting end adapted to be engaged by the beveled portion g^3 of the arm g^2 to force the said pin against the said spring e^3 , thereby moving the shifting gear-wheel from the position shown in Fig. 3, in which it is in engagement only with the gear-wheel c' , into the position shown in Fig. 4, in which it will be in engagement both with the gear-wheel c' and with the setting-wheel H, forming part of the dial-train.

The operation of my invention is as follows: When the stem-arbor is pressed inward to its limit, the sliding bar G will be depressed, so that it is disengaged from the pin e , carried by the pivoted yoke E, thereby permitting the spring N to hold said yoke in such position that the gear-wheel e' is in engagement with the winding-wheel F. In this depressed position of the sliding bar G its beveled portion g^3 is disengaged from the end of the pin I, projecting through the pillar-plate, as shown in Figs. 3 and 7, thereby permitting the spring e^3 to hold the wheel e^2 out of engagement with the dial-wheel H. When the stem-arbor is lifted or pulled outward to its limit, the spring L, pressing on the pin k^2 , carried by the bell-crank lever K, turns said lever on its pivot, causing its arm k' , which is in engagement with the pin g^4 on the sliding bar G, to lift the said sliding bar into engagement with the pin e , carried by the pivoted yoke E, thereby turning the said yoke on its pivot, so as to remove the wheel e' from engagement with the winding-wheel F. As the said sliding bar is lifted, its beveled portion g^3 engages the projecting end of the pin I, thus moving said pin and the spring e^3 with which it is in contact to the position shown in Fig. 4, thereby shifting the wheel e^2 on its pin b^2 into position to engage the dial-wheel H, the said wheel e^2 being, it will be understood, also in gear with the wheel c' , which is in mesh with the pinion C, so that the movement of the stem-arbor may now be transmitted to the dial-wheels for the purpose of setting the hands. When the movement is out of the case, the screw M, when in its innermost position in engagement with the pin l' , carried by the pivoted spring L, gives the said spring a suitable tension to cause the sliding bar G to be lifted and the stem-driven train to be held in connection with the dial-wheels; but when the said screw is withdrawn from engagement with the said pin l' or is removed from the pillar-plate B it relieves the tension of said spring, and the stem-driven train is then allowed to connect with the winding-wheel through the action of the spring N, as hereinbefore described. I thus provide means whereby a stem-driven train comprising a gear-wheel which is entirely disconnected from a pivotal yoke may

be connected either with the winding-wheels or dial-wheels both when the movement is in the case and when it is removed therefrom.

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. In a stem winding and setting watch, the combination, with a stem-arbor and a pinion driven thereby, of winding and setting stem-driven trains, a pivoted yoke carrying a gear-wheel forming part of the winding-train, a shifting gear-wheel forming part of the setting-train and operated independently of said yoke, a sliding bar operated by the stem-arbor, a spring normally holding said shifting gear-wheel disengaged from the other wheels of the setting-train, and suitable connections whereby said sliding bar is caused to vibrate said yoke to disconnect the winding-train and to force said shifting gear-wheel positively into operative connection with the setting or dial wheels.

2. In a stem winding and setting watch, the combination, with a stem-arbor and a pinion operated thereby, of stem-driven winding and setting trains, a shifting gear-wheel forming part of the setting-train, and a sliding bar having a portion directly engaged by said stem-arbor and having another portion serving to actuate said shifting-wheel and force it positively into operative connection with the setting or dial wheels.

3. In a stem winding and setting watch, the combination, with a stem-arbor and a pinion operated thereby, of stem-driven winding and setting trains, a pivoted yoke carrying a gear-wheel forming part of the winding-train, a shifting gear-wheel independent of said yoke and forming part of the setting-train, a spring normally holding said shifting gear-wheel disengaged from the dial-wheels, a sliding bar operated directly by the stem-arbor and serving to force the said shifting-wheel positively into operative engagement with the dial-wheels, a lever engaging said sliding bar and serving to lift it when the arbor is pulled outward, and a spring engaging said lever to cause it to raise the said sliding bar.

4. In a stem-winding and setting watch, the combination, with a stem-arbor and a pinion driven thereby, of winding and setting trains, a shifting gear-wheel forming part of the setting-train, a sliding bar G, having a beveled portion g^3 , a shifting gear-wheel e^3 , forming part of the setting-train, a spring e^3 , serving to disconnect said shifting-wheel from the dial or setting wheels, and a pin I, engaged by the said beveled portion of the said sliding bar and serving to throw the said shifting gear-wheel into operative engagement with the dial-wheels when the said sliding bar is lifted.

5. In a stem winding and setting watch, the combination, with a stem-arbor and a pinion driven thereby, of winding and setting trains operated by said pinion, a shifting gear-wheel forming part of the setting-train, a slid-

ing bar G, having an arm axially entering the stem of said pinion and arranged to engage the stem-arbor, a bell-crank lever K for lifting said sliding bar, and a spring L to operate said bell-crank lever.

6. In a stem winding and setting watch, the combination, with stem winding and setting trains and a pinion for operating the same, of a pivoted yoke, a gear-wheel carried thereby and forming part of the winding-train, a shifting gear-wheel forming part of the setting-train, the pivoted spring L and suitable connections between said spring and said yoke and shifting gear-wheel, and the screw M, by which tension may be applied to said spring, the latter being so arranged that when the movement is out of the case and the said screw is withdrawn from said spring the tension of the latter will be relaxed, so that the gear-wheel carried by said pivoted yoke will be in engagement with the winding-wheel.

7. In a stem winding and setting watch, the combination, with a stem-driven pinion, of winding and setting trains, a pivoted yoke

carrying a gear-wheel forming part of the winding-train, said yoke being provided with a suitable projection, a spring engaging said yoke to cause the said gear-wheel to engage the winding-wheel, a shifting gear-wheel entirely disconnected from said yoke and forming part of the dial or setting train, a spring for shifting said wheel out of engagement with the dial-wheels, a sliding bar to engage the said projection on the pivoted yoke, a pin arranged to be engaged by said sliding bar and serving to throw the said shifting-wheel into engagement with the dial-wheels, a bell-crank lever K, serving to lift said sliding bar, the pivoted spring L, engaging the said bell-crank lever, and the screw M, by which suitable tension may be applied to said spring when desired.

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

THOMAS F. SHERIDAN.

Witnesses:

FRED I. GETTY,
A. L. WARNER.