

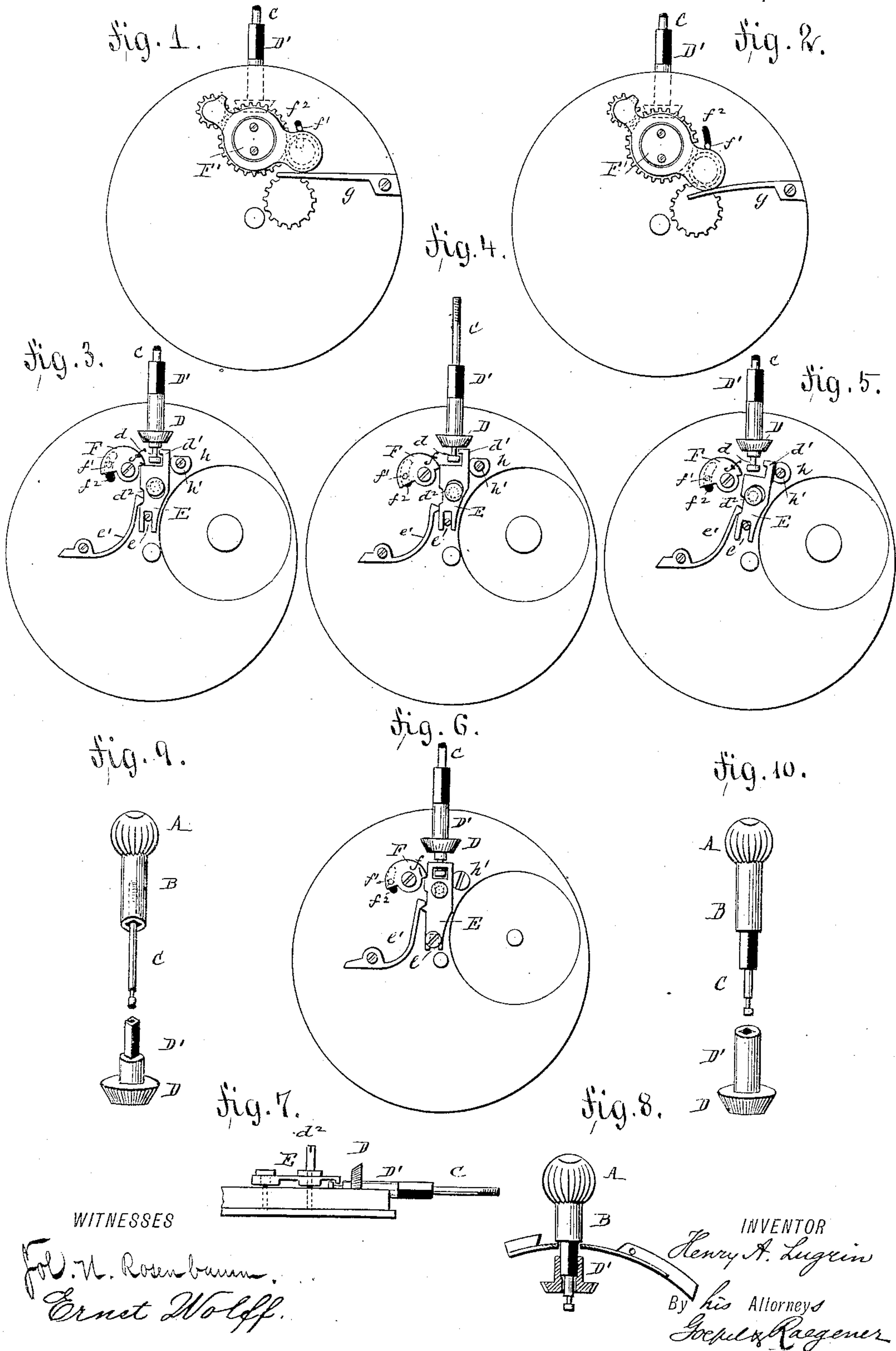
(Model.)

H. A. LUGRIN.

STEM WINDING AND SETTING WATCH.

No. 334,179.

Patented Jan. 12, 1886.



UNITED STATES PATENT OFFICE.

HENRY A. LUGRIN, OF NEW YORK, N. Y.

STEM WINDING AND SETTING WATCH.

SPECIFICATION forming part of Letters Patent No. 334,179, dated January 12, 1886.

Application filed May 15, 1885. Serial No. 165,559. (Model.)

To all whom it may concern:

Be it known that I, HENRY A. LUGRIN, of the city, county, and State of New York, have invented certain new and useful Improvements in Hand-Setting Attachments for Stem-Winding Watches, of which the following is a specification.

This invention has reference to an attachment to stem-winding watches, whereby the setting of the hands is accomplished by a shifting motion of the key-pipe and crown without any special shifting-lever; and the invention consists of a hand-setting attachment to stem-winding watches, which is operated by the crown and key-pipe and a spindle connected to the key-pipe and to a slide-piece that operates a fulcrumed lever, which latter shifts the winding and setting mechanism of the movement so as to throw it into mesh with the spring-barrel or with the hand-setting gear-wheel.

The invention consists, further, of certain details of construction and combination of parts, as will be more fully described hereinafter, and finally be pointed out in the claims.

In the accompanying drawings, Figures 1 and 2 represent front views of a watch-movement, showing the winding and setting mechanism respectively in position for winding the spring-barrel and for setting the hands. Figs. 3, 4, and 5 are rear elevations of the movement, showing the winding and setting mechanism respectively in a position for winding up the spring-barrel in a position for setting the hands, and in a position for permitting the removal of the shifting-spindle. Figs. 6 and 7 show an end elevation and side view of a modified form of the winding and setting mechanism. Fig. 8 shows the key-pipe applied to a spring for retaining the front cap of a hunting-case, and Figs. 9 and 10 show the connection of the key-pipe and spindle with the barrel of the winding bevel-pinion.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents the crown; B, the key-pipe, and D the winding bevel-pinion usually employed in stem-winding watches. Through the key-pipe B and the hollow shank D' of the winding-pinion D is passed a spindle, C, which is screwed or otherwise attached at its upper end to the key-

pipe. The shank D' of the winding-pinion D is provided either at its outside with a square portion, so as to fit into a socket of the key-pipe, as shown in Fig. 9, or the shank D' is made in the form of a square socket for receiving the lower square end of the key-pipe, as shown in Fig. 10. The lower end of the spindle C is provided with an annular groove, *d*, which is engaged by a finger, *d'*, of a slide-piece, E, that moves by an elongated slot at its middle part on a fulcrum, *d''*. The lower end of the slide-piece E is recessed and guided along on a fixed pin, *e*. A click, *e'*, engages a notch in the side of the slide-piece E, so as to retain the same while in lowered position, or by friction when in raised position, as shown in Figs. 3 and 4. It also serves for the purpose of throwing the slide-piece E sidewise on the pin *e* when it is to be disconnected from the spindle. The slide-piece E is slotted at its middle part, and retained on the bottom plate by a screw-stud, *d*, the slotted middle part giving sufficient play for the lateral shifting of the slide-piece. The slide-piece E engages a shoulder, *f*, of a fulcrumed lever, F, which lever is located sidewise of the slide-piece E, and provided at its opposite end with a fixed pin, *f'*, that passes through a slot, *f''*, of the main plate of the movement to the other side of the same and engages a centrally-guided oscillating yoke, F', that carries a central gear-wheel and intermeshing pinions, one at each side of the gear-wheel, as customary in stem-winding watches. The central gear-wheel of the yoke F' meshes with the winding bevel-pinion Q, and transmits motion by the pinions either to the spring-barrel or to the hand-setting gear, as required.

In place of the yoke any other intermediate mechanism for winding the spring-barrel or setting the hands may be employed. By taking hold of the crown and pulling the same in upward direction the spindle C shifts the slide-piece E, and moves thereby the intermediate lever, F, which oscillates the yoke F', so as to throw the pinion at one end of the same out of mesh with the spring-barrel, while throwing the pinion at its opposite end into gear with the hand setting gear-wheel, as shown in Fig. 2. In the raised position of the spindle the slide-piece E is retained by the pressure of the shoulder of the lever F, as shown in

Fig. 4, so that the latter cannot return to its position until the slide-piece clears the shoulder. By pressing upon the crown the spindle moves the slide-piece E in downward direction, whereby the lever F and yoke F' are returned, by the action of a spring, *g*, pressing on the lower end of the yoke, into their normal position, so that the pinion next to the spring-barrel is thrown again into mesh with the same, while the pinion at the opposite end is thrown out of gear with the hand-setting gear-wheel, as shown in Fig. 1.

When it is desired to take the movement out of the case, the key-pipe and spindle are removed by simply disconnecting the slide-piece E from the lower end of the spindle, which is accomplished by turning the sleeve *h* on its fixed stud *h'* until the straight side of the sleeve faces the slide-piece, so that the latter may be moved sidewise on its fulcrum, as shown in Fig. 5. The finger *d'* at the upper end of the slide-piece E clears the lower end of the spindle, so that the same may be detached from the movement. By replacing the spindle, and then turning the sleeve *h* on the stud *h'*, so that the round portion of the sleeve bears on the slide-piece and then screwing fast the sleeve, the connection of the slide piece with the spindle is re-established. In this position the sleeve *h* forms a steadying-piece for the slide-piece E, as shown in Figs. 3 and 4. The sleeve just described may be dispensed with, and in place thereof the slide-piece provided with a slotted upper end, which is thrown into engagement with the grooved lower end of the spindle by a screw-stud, *d*², as shown in Figs. 6 and 7. By unscrewing the screw-stud the slide-piece is raised and thereby the connection with the spindle interrupted.

When the movement is inclosed by a hunting-case, the key-pipe has to depress or release the spring of the front cap, which is obtained by arranging the spring between the key-pipe and shank of the pinion and passing the key-pipe and spindle through a hole of the spring, as shown in Fig. 1.

By the arrangement described the hands can be set directly by the crown and key-pipe by simply shifting the latter up and down without the use of a separate lever for setting the yoke before the turning of the crown.

The advantages of my improved hand-setting attachment are that it can be applied to the movement without requiring any fitting to the case and that the yoke-shifting lever is dispensed with, and the winding of the main-spring or setting of the hands accomplished entirely by the shifting and turning action of the crown and key-pipe.

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

1. The combination of a key-pipe, a spindle attached thereto, a winding-pinion having a hollow shank for the spindle, a winding and setting attachment, a slide-piece engaging the lower end of the spindle, and a fulcrumed lever connecting the slide-piece with the winding and setting mechanism, whereby the latter engages either the spring-barrel or the hand-setting gear, substantially as set forth.

2. The combination of a key-pipe, a spindle attached thereto, a winding-pinion having a hollow shank for the spindle, a slide-piece connected to the lower end of the spindle, a fulcrumed lever having a shoulder pressing against the slide-piece, and a winding and setting mechanism operated by said lever so as to engage either the spring-barrel or the hand-setting gear, substantially as set forth.

3. The combination of the key-pipe, a spindle attached thereto, a winding-pinion having a hollow shank fitted to the key-pipe, a fulcrumed and slotted slide-piece engaging the lower end of the spindle, and an axially-turning cam-screw, whereby the slide-piece may be laterally shifted for detaching the spindle from the movement, substantially as set forth.

4. The combination of a key-pipe, a spindle attached thereto, a winding bevel-pinion having a hollow shank fitted to the key-pipe, a fulcrumed and slotted slide-piece engaging the lower end of the spindle, a spring pressing on the slide-piece, and an axially-turning screw-stud having a sleeve with straight side, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

HENRY A. LUGRIN.

Witnesses:

PAUL GOEPEL,
SIDNEY MANN.