

H. R. SMITH & R. FOLSOM.

Improvement in Stem-winding and Setting Watches.

No. 121,260.

Patented Nov. 28, 1871.

Fig. 1.

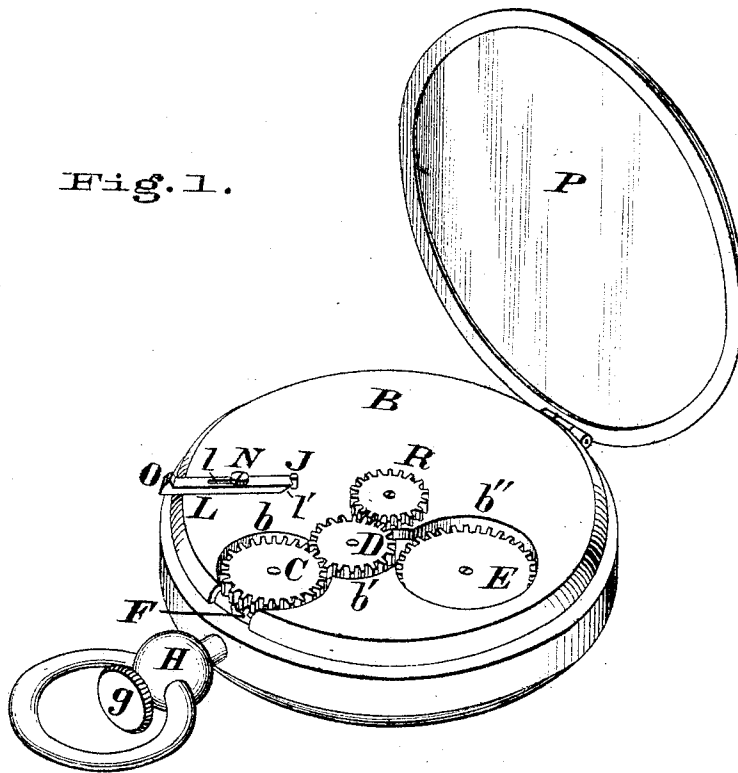


Fig. 2.

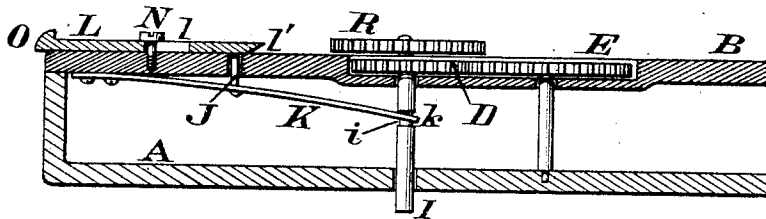
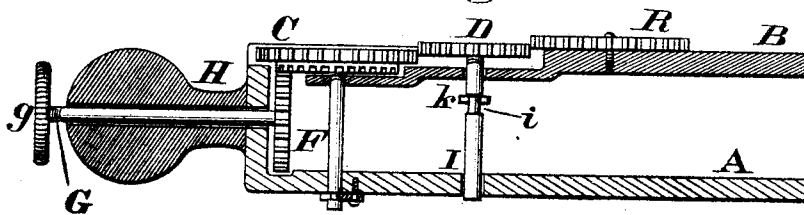


Fig. 3.



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Attest.

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UNITED STATES PATENT OFFICE.

HARRY R. SMITH AND RUFUS FOLSOM, OF CINCINNATI, OHIO.

IMPROVEMENT IN STEM-WINDING AND SETTING WATCHES.

Specification forming part of Letters Patent No. 121,260, dated November 28, 1871.

To all whom it may concern:

Be it known that we, HARRY R. SMITH and RUFUS FOLSOM, of Cincinnati, Hamilton county, Ohio, have invented an Improvement in Stem-Winding and Setting Watches, of which the following is a specification:

This invention relates to a form of stem-winding and setting watch mechanism having one or more intermediate wheels that serve to connect the inner end of the operating stem, with which they are constantly in gear, alternately, with either the winding or setting mechanism of the watch, the said intermediate wheels revolving parallel with the dial-plate, and one of them very shiftable perpendicularly to said plate, in the manner and by the instrumentalities hereinafter to be described.

Figure 1 is a perspective view of a watch embodying our improvement, the dial being removed and the front-back opened. Fig. 2 is an enlarged vertical section in the plane of the spring-slide, the shiftable wheel, and the winding-barrel, the spring-slide being represented as shoved in. Fig. 3 is a similar section in the plane of the winding-stem.

A represents the balance-plate, and B the dial-plate of a watch movement, the plate B being recessed at *b b' b''* for the reception of a contrate-wheel, C, an intermediate wheel, D, shiftable longitudinally, and the wheel E of the winding or mainspring-barrel. The wheel D is, through the medium of the contrate-wheel C, constantly in mesh with the pinion F upon the inner end of the winding-stem G, which latter traverses the pendant H, and is provided with the customary milled head *g*. The stem G also serves as an ordinary pusher to operate the case-spring of the watch. The shiftable intermediate wheel D is secured to a shaft, I, which is journaled in the plates A and B so as to revolve parallel with said plates and yet be capable of being shifted perpendicularly thereto. This shaft I is scored at *i* to receive the forked end *k* of a spring, K, whose other extremity is secured to the under side of plate B. Attached to spring K, and projecting upward through an aperture in plate B, is a pin, J, which, when the spring-slide L is shoved in, depresses said spring, as shown in Fig. 2. This slide piece is secured to plate B by a screw, N, which traverses a slot, *l*, and the

outer end of said spring-slide has a beveled head, O, while its inner end is furnished with an undercut, *V*.

By this arrangement the intermediate wheel D, while preserved in a condition of parallelism with the dial-plate, and in gear with the contrate-wheel, is rendered capable of being shifted in the line of its axis so as to gear either with the winding-wheel E or with the setting-wheel R. When the front-back P is closed its inwardly-projecting rim is brought in contact with the beveled head O of the slide piece L so as to force it in, and this act depresses the pin J and spring K so as to draw down the intermediate wheel D and cause it to gear with the wheel E.

It will be seen that, in the normal condition of the watch, the wheel E is in geared connection with the pendent stem G, so that by simply rotating the latter the watch is wound.

Whenever it is desired to set the watch the spring-slide L is pulled out, and as soon as the end *V* thereof has passed beyond the pin J there is no longer anything to maintain the spring in its sprung condition, and it accordingly flies up and, in so doing, throws the wheel D out of gear with the wheel E, and into gear with the cannon-pinion R or minute-wheel. Any rotation of the stem G will now have no effect on the winding mechanism, but will be effective to set the hands either forward or backward, as desired. The intermediate wheel D, being shifted axially, has no effect to disturb the adjustment of the hands by the act of ungearing, as it would be liable to if shifted in direction of its plane.

In the drawing, the wheel E of the winding-barrel is represented as being journaled in the dial-plate B; but it is evident that said wheel can, if necessary, be journaled in the balance-plate A, in which case the shaft I would carry two pinions, of which the upper one would perform the same functions as the one D, here shown, while the lower one would gear with the wheel upon plate A. As here arranged, the forward shift of the wheel D brings it in gear with the setting and its backward shift with the winding-wheel, but the reverse of this may take place, if desired. The push-piece V may be provided with inclined or wedge-shaped faces for operating upon the shafts of wheels S and T so as to produce a simultaneous but opposite movement of said

wheels, although any other preferred mechanical device may be employed instead of said push-piece.

We do not claim, broadly, a clutch by which the movement of the winding-stem is communicated to the setting-wheel or disconnected therefrom at will by opening or closing the case.

We claim herein as new and of our invention—

The described arrangement of the intermediate wheel D, revolving parallel and shiftable perpendicularly to the dial-plate, said wheel remaining permanently in gear with the contrate-wheel

C that meshes with the pinion F upon the winding-stem, and being capable of being placed in gear with either the winding-wheel E or the hand-pinion R by means of the shifting mechanism J K L N O or its equivalent, for the objects stated.

In testimony of which invention we hereunto set our hands.

HARRY R. SMITH.
RUFUS FOLSOM.

Witnesses:

JOHN KILOH,
JAMES H. LAYMAN.

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