

(No Model.)

C. V. WOERD, Dec'd.

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STEM WINDING AND SETTING MECHANISM.

No. 430,099.

Patented June 10, 1890.

Fig. 1.

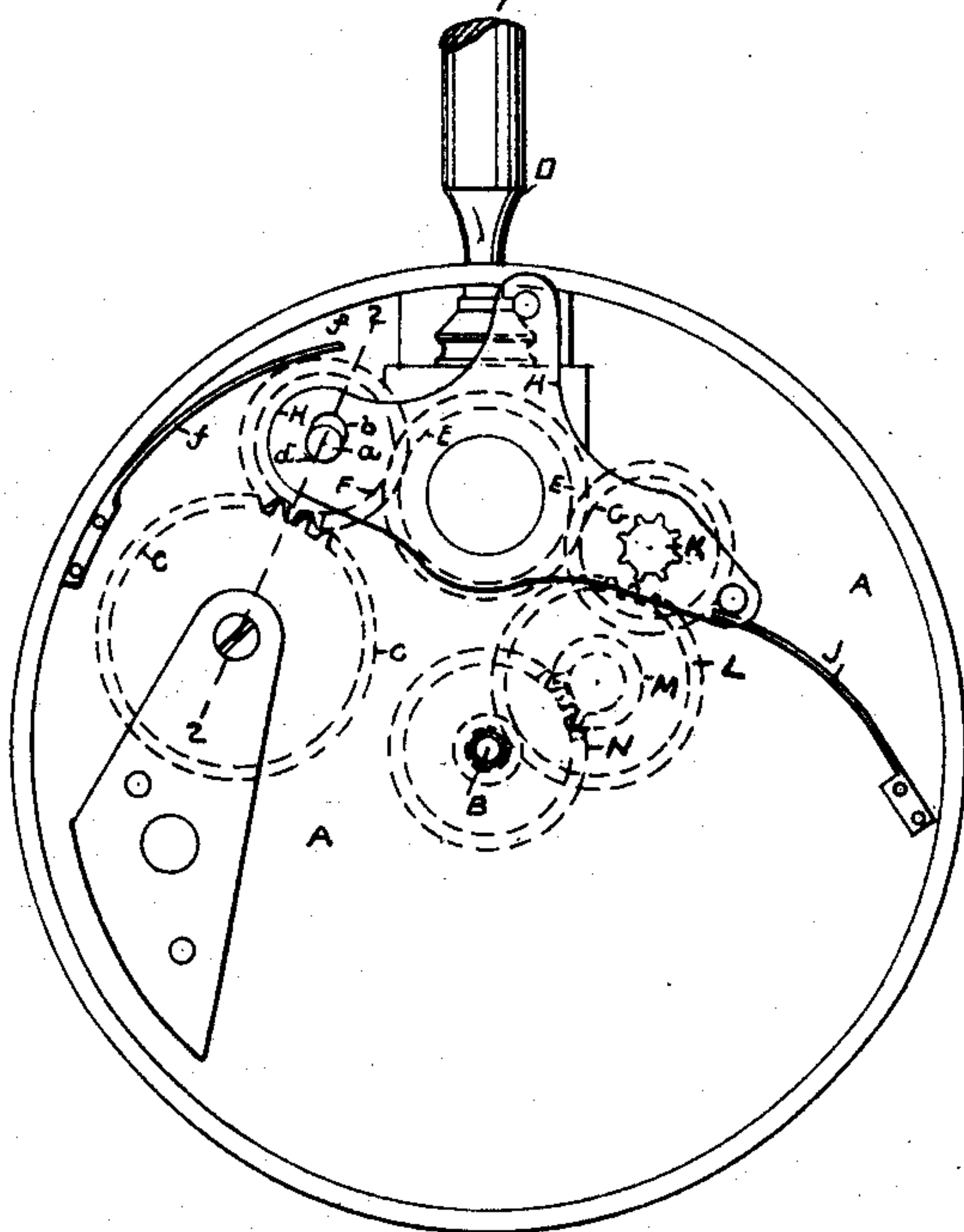
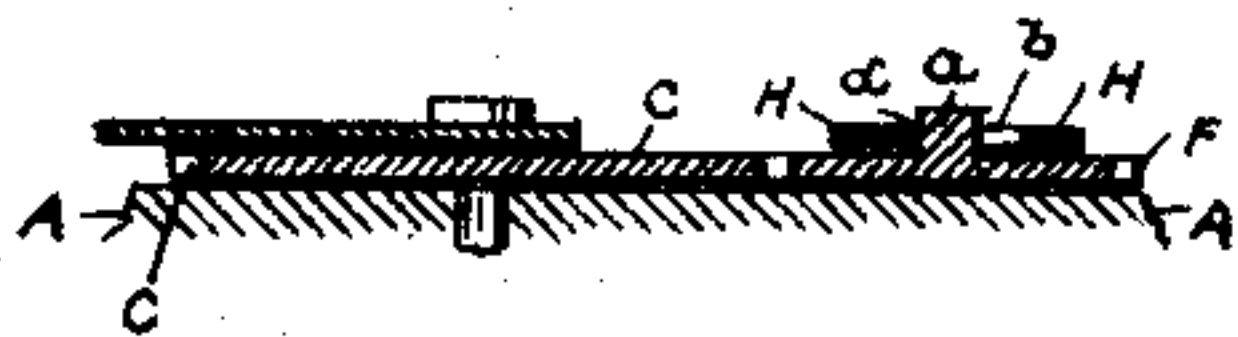


Fig. 2.



WITNESSES.

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# UNITED STATES PATENT OFFICE.

CHARLES V. WOERD, OF WALTHAM, MASSACHUSETTS; DANIEL O'HARA  
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## STEM WINDING AND SETTING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 430,099, dated June 10, 1890.

Application filed February 13, 1888. Serial No. 263,888. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES V. WOERD, of Waltham, in the county of Middlesex and State of Massachusetts, have invented certain  
5 new and useful Improvements in Stem Winding and Setting Watches, of which the following is a full, clear, and exact description.

This invention more particularly relates to the stem-winding and hand-setting mechanism of the Letters Patent of the United States issued to me, dated May 11, 1886, No. 341,786, although, as will be obvious, it is applicable to other forms of such mechanism.

This invention consists in the adaptation,  
5 as hereinafter described, of the gear-wheel, of the train of gear-wheels carried by the swinging yoke, which meshes the gear-wheel of the mainspring-arbor for movement to and fro on the yoke, and thereby into and out of  
0 mesh with the gear-wheel of the mainspring-arbor, and in the application, as hereinafter described, to said to-and-fro-moving gear of a spring which is held on the pillar-plate of the watch-movement, and otherwise is arranged to press said gear in a direction toward the wheel of the mainspring-arbor, all as pointed out in the claim.

In the drawings forming part of this specification, Figure 1 is a plan view of the pillar-plate of a watch-movement and of the mechanism of this invention. Fig. 2 is a section in detail on line 2 2, Fig. 1.

In the drawings, A is the pillar-plate.

B is the hand-arbor.

5 C is the gear-wheel of the mainspring-arbor.

D is the winding-stem having a bevel-pinion (not shown) to mesh a bevel crown-wheel (not shown) concentric and turning as one  
0 with a gear-wheel E of a train of gear-wheels, otherwise composed of gear-wheels F and G, meshing the gear-wheel E on its opposite sides, and of gear-wheels K L M N, connecting gear-wheel G with the hand-arbor of the watch-movement, and H is a swinging yoke carrying the gear-wheels E, F, G, and K, and J is a spring pressing upon the swinging yoke to confine the gear-wheel F in mesh with the gear-wheel C of the mainspring-arbor.

0 So far as described, and all otherwise, ex-

cept as to the gear-wheel F, and hereinafter particularly explained, the same as ordinary and as well known, and more particularly as illustrated and described in the schedule annexed to the aforesaid Letters Patent of the  
5 United States, to which reference is hereby had for a more perfect understanding thereof, *a* is the arbor of the gear-wheel F, and *b* is the bearing for the arbor *a*, and, as shown, is located on the swinging yoke H. The arbor  
60 *a* is round, and, as shown, it is held on the gear F. The bearing *b* is elongated, or, in other words, it is in the form of a slot and of a width equal or substantially equal to and  
65 of a length greater than the diameter of the arbor *a*, and such as to allow a movement of the arbor along its length toward and away from the axis of rotation of the gear-wheel C of the mainspring-arbor, sufficiently in the one  
70 case to positively mesh the gear-wheel F with gear-wheel C, (the arbor then preferably being at rest against the end *d* of its bearing *b*, which is toward gear-wheel C,) and in the other case to practically place gear-wheel F out of mesh with gear-wheel C.

75 *f* is a bent spring at one end secured to pillar-plate, and at its free end arranged to press simply with sufficient force upon the periphery of the laterally-moving gear-wheel F to hold said gear-wheel against accidental lateral play  
80 on the yoke in a direction away from the axis of the mainspring-arbor, while offering no practical resistance to the free movement of the gear-wheel E on the yoke in the direction to place it out of mesh with the gear-wheel C of  
85 the mainspring-arbor, as will hereinafter appear.

With the gear-train in connection with the mainspring-arbor, then, if the winding-stem is turned in the direction to wind the main-  
90 spring, the gear-wheel F of said train then has positive mesh with the gear-wheel C of the mainspring-arbor, and if it is turned in the other and opposite direction said gear-wheel F, because of said elongated bearing *b* for its  
95 arbor *a*, then moves on the yoke H out of its mesh with the wheel C of mainspring-arbor.

In the escape of wheel F from its mesh with the wheel C of mainspring-arbor, when the winding-stem is turned in the opposite direc- 100



tion to that for winding the mainspring, all as has been described, the swinging yoke H remains stationary, obviously an important advantage, and, further, all undue and unnecessary wear and strain on the teeth of wheels C F and on the yoke H and its spring J are obviated.

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

In a stem-winding and hand-setting mechanism comprising a train of gearing connecting the winding-stem with both the hand and mainspring arbors and in part carried by a swinging yoke H, and arranged normally to be in connection with the mainspring-arbor and out of connection with the hand-arbor and to be placed out of connection with mainspring-arbor and into connection with hand-arbor by suitably swinging said yoke therefor, the combination, with the arbor *a* of one

wheel F of said train, and which arbor is round, of an elongated bearing *b* therefor located on said yoke H, and in width equal or substantially equal, and in length greater than the diameter of the arbor and located for the arbor to be free to move along its length in one direction toward and in the other direction away from and thus to place its gear-wheel into and out of connection with the mainspring-arbor, and a spring *f*, suitably held and arranged to press said gear-wheel F in a direction toward the end *d* of the slotted bearing *b* for its arbor, substantially as described, for the purposes specified.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

CHAS. V. WOERD.

Witnesses:

ALBERT W. BROWN,  
MARION E. BROWN.