

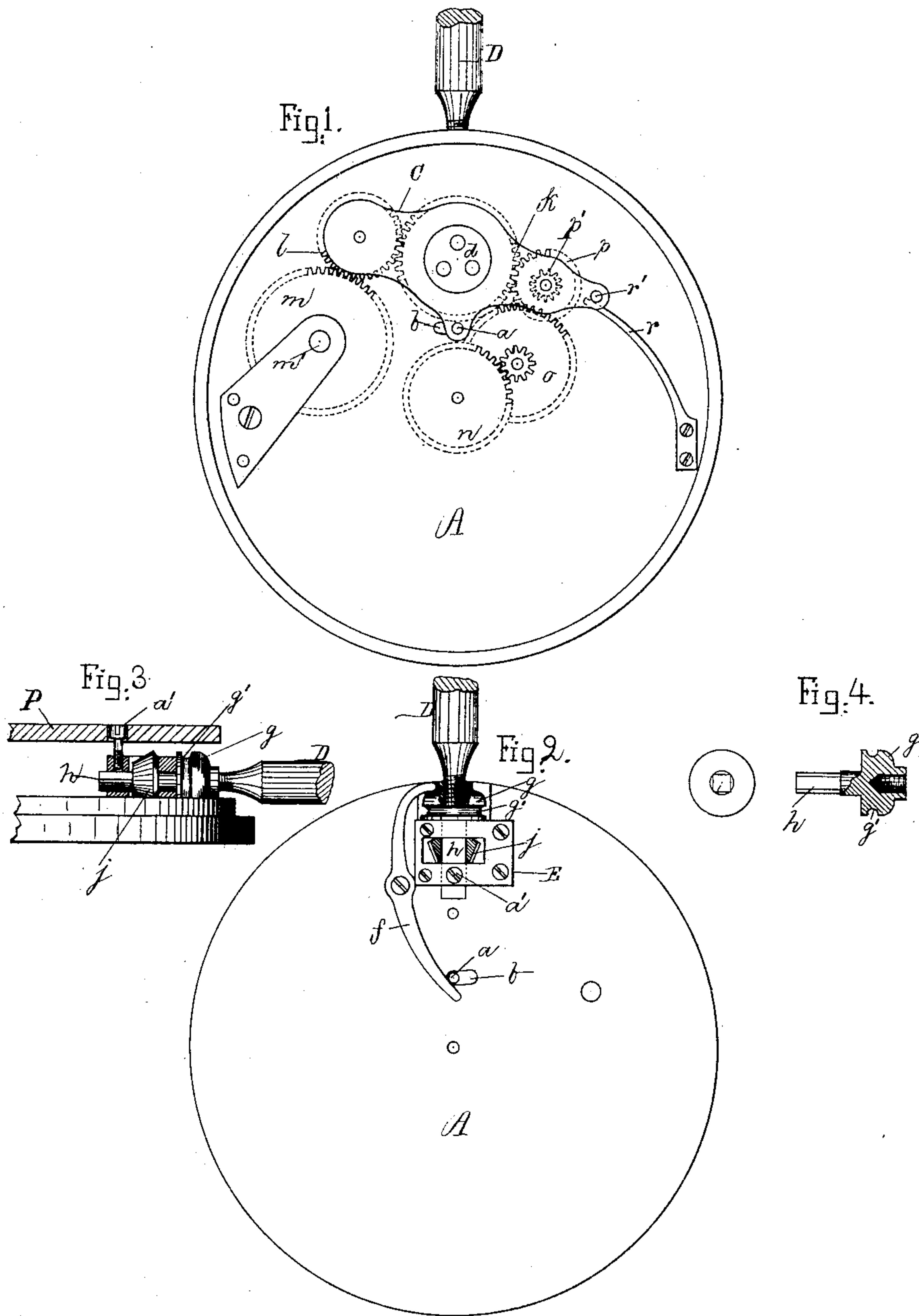
(No Model.)

C. V. WOERD.

STEM WINDING AND SETTING MECHANISM FOR WATCHES.

No. 330,537.

Patented Nov. 17, 1885.



Witnesses.

Milan F. Stevens.
Lauritz N. Möller.

Inventor.

Charles V. Woerd
by Jm^r H. Macleod
his atty.

UNITED STATES PATENT OFFICE.

CHARLES V. WOERD, OF WALTHAM, MASSACHUSETTS.

STEM WINDING AND SETTING MECHANISM FOR WATCHES.

SPECIFICATION forming part of Letters Patent No. 330,537, dated November 17, 1885.

Application filed August 13, 1885. Serial No. 174,268. (No model.)

To all whom it may concern:

Be it known that I, CHARLES V. WOERD, of Waltham, county of Middlesex, State of Massachusetts, have invented certain new and useful Improvements in Stem Winding and Setting Mechanism for Watches, of which the following is a full, clear, concise, and exact description, reference being had to the drawings accompanying and forming a part hereof, in which—

Figure 1 is a plan of the plate, showing the shifting-yoke and its relation to the winding-arbor and to the hour and minute wheels. Fig. 2 is a reverse view of the plate, showing the lever for shifting the yoke and its connection with the winding-stem. Fig. 3 is a side view of the parts around the inner end of winding-stem. Fig. 4 is a detail.

The chief object of my invention is the construction of a stem winding and setting mechanism which, when shifted from the winding to the setting movement, shall cause the slightest jump of the hands, and which shall also be simple and of easy construction; and it consists in the peculiarities hereinafter more fully described.

The invention will be readily understood from the following description of a mechanism embodying the same.

Like letters of reference indicate like parts throughout the drawings.

A is the pillar-plate. C is the shifting-yoke, which is journaled at *d* on the plate. A projection of the yoke below the pivotal point carries the pin *a*, secured thereto, which projects through the slot *b* in the plate. The projecting end of pin *a* is in contact with one end of the centrally-pivoted lever *f* on the opposite side of the plate. (See Fig. 2.) The other end of this lever bears on a crown or boss, *g*, into which is screwed the key *D*. The crown *g* is provided with a shaft, *h*, on which is secured the beveled pinion *j*, which lies in a slot in the plate and meshes with the gear *k* on the other side thereof. From this gear, as will be obvious to those skilled in the art, the winding-arbor *m'* is driven through the gears *l* and *m* when the yoke is in the position shown in Fig. 1, and the arbors carrying the hour and minute hands through the gears *n* *o* and the duplex gear *p* *p'* when the yoke is at the other

extreme of its throw, bringing the small pinion *p'* in mesh with the gear *o*. An annular groove, *g'*, is shown on the crown *g*. This operates when the crown is shifted by drawing out the key *D* to lock the lever *f* and hold the yoke positively in connection with the setting mechanism. This groove is not, however, essential, and the crown may be made plain, in which case the action of the stem *D* will be more nearly automatic—that is, after the stem is drawn out and the hands set, if the fingers are taken off it, it will slide inward again and the yoke will be again in position to operate the winding mechanism. This reverse movement of the yoke is caused by the spring *r*, screwed to the plate and bearing on the pin *r'*, which is located at one end of the yoke, as shown at Fig. 1. The winding-stem *D* is screwed into the pin *g* by movement toward the right, and the same movement toward the right is used to wind the watch. The friction of the screw-threads where the stem is screwed into the crown is sufficient to prevent the stem from unscrewing when it is turned in a reverse direction for the purpose of setting the hands. This being the case, it becomes necessary to provide some means of unscrewing the stem from the crown when it is desired to take the works out of the case. For this purpose I provide a set-screw, *a'*, which projects downward through the plate *P*, and against the bearing of the shaft *h* in the small frame *E*, as shown in Fig. 3. This set-screw does not bear on the shaft when the watch is in use. When, however, it is desired to take the works out of the case, the screw *a'* is set down on the shaft, preventing it from turning. The stem *D* may then be unscrewed and the works removed. The shaft *h* is squared at the end to receive the beveled pinion *j*.

My method of screwing the stem *D* into the crown *g* renders it very easy to fit the works to the case, since, if it is desired to shorten the stem, it is only necessary to cut a piece from the threaded portion of the stem *D*, allowing it to screw farther into the crown.

The intermediate duplex gear, *p* *p'*, on the hand-setting end of the yoke *C* enables me, by reason of the smallness of the part *p'*, which engages with the large pinion of the minute-wheel in setting the hands, to reduce the jump-

ing of the hands incidental to shifting to a minimum. It is also possible thereby to set the hands more slowly, and, therefore, more accurately, than by any mechanism now known
5 to me.

What I claim is—

1. The combination, in a watch provided with winding and hand-setting mechanism which is shifted by the outward or inward
10 movement of the crown-stem, of a boss, *g*, and the crown-stem *D*, screwed thereto, substantially as shown and described.

2. The combination, with the lever operating boss *g* and its shaft *h*, of the key *D*, screwed to said boss, and the set-screw *a'*, whereby by 15 setting in the screw *a'* the shaft and boss may be held rigid and the key *D* removed, substantially as shown and described.

CHAS. V. WOERD.

Witnesses:

WM. A. MACLEOD,
M. A. THOMPSON.