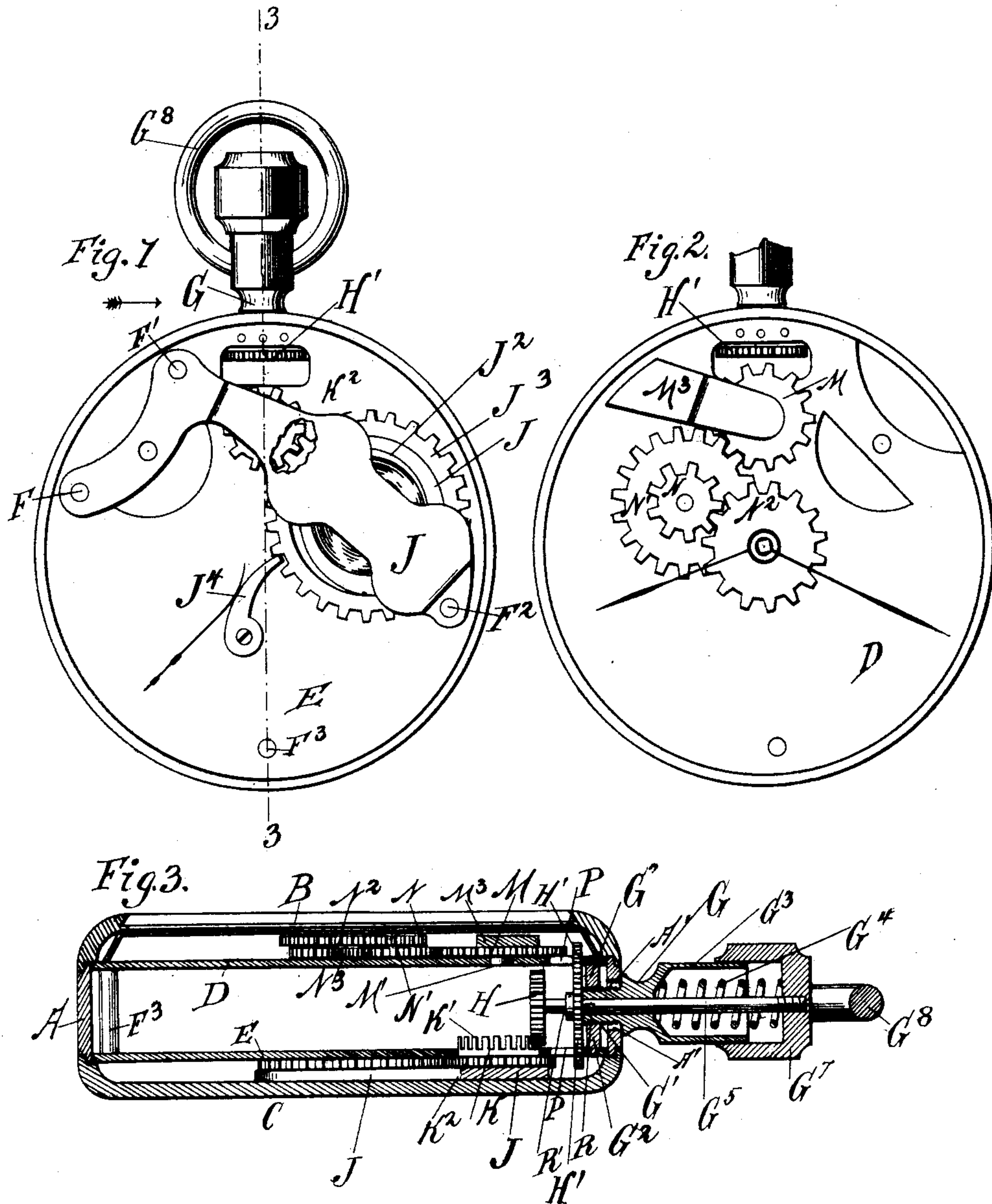


(No Model.)

J. G. BLESSING.
STEM WINDING AND SETTING WATCH.

No. 542,984.

Patented July 23, 1895.



Witnesses.

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UNITED STATES PATENT OFFICE.

JOHN G. BLESSING, OF LA SALLE, ILLINOIS, ASSIGNOR TO THE WESTERN
CLOCK MANUFACTURING COMPANY, OF SAME PLACE.

STEM WINDING AND SETTING WATCH.

SPECIFICATION forming part of Letters Patent No. 542,984, dated July 23, 1895.

Application filed August 31, 1894. Serial No. 521,800. (No model.)

To all whom it may concern:

Be it known that I, JOHN G. BLESSING, a citizen of the United States, residing at La Salle, in the county of La Salle and State of Illinois, have invented certain new and useful Improvements in Watches, of which the following is a specification.

My invention relates to watches, and particularly to watches having stem winding and setting mechanism. It is designed especially to produce a cheap and simple form of watch and one in which the works are retained in the case in the simplest possible manner.

It is illustrated in the accompanying drawings, wherein—

Figure 1 is a side view of the watch with one side of the case removed. Fig. 2 is a view of the opposite side of the watch with the dial-plate removed; and Fig. 3 is a cross-section on the line 3 3 of Fig. 1, looking in the direction indicated by the arrow.

Like parts are indicated by the same letters in all the figures.

A is a ring or cylinder having the aperture A' at one side.

B and C are the front and back plates, respectively, of the watchcase.

D and E are the plates of the works or mechanism, rigidly secured together by the pillars F, F', F², and F³.

G is a cylindrical part having a portion adapted to pass through the aperture A' and screw-threaded at G'.

G² is a brace or post rigidly inserted between the plates D and E and screw-threaded to receive the screw-threaded portion G'.

G³ is a cup-shaped end containing the spring G⁴.

G⁵ is a stem passing through the cylindrical portion G and carrying at its inner end two pinions H and H', and at its other end carrying the cap G⁷.

G⁸ is a ring pivotally secured to the cylindrical portion.

J is a bridge secured on the plate E and adapted to hold in position the drum J', which contains the winding-spring J², and has the outwardly-projecting toothed flange J³, adapted to be engaged by the spring-dog J⁴.

K is a compound gear inserted in an aperture in the plate E, and having on one side of

said plate the inwardly-projecting crown-gear K' and on the other side of the plate the laterally-projecting toothed flange K². The bridge J also holds the compound gear K in the position shown in Fig. 3.

M is a pinion having the short stud M', which is received into a suitable aperture in the plate D. This pinion is held in position by the fixed support M³. It meshes with the gear M, and by the train of gears N, N', N², and N³ is brought into operative connection with the hands, so as to turn them in either direction. The two gears H and H' are fixed rigidly upon their stem and I do not here attempt to show the details concerning their construction or the manner in which they are secured to this stem, nor the manner in which they, together with the stem, are brought into position in connection with the case and mechanism. All these details are in the domain of mechanical expedients. I have shown two apertures P and P' in the plates D and E to give room for the rotation of the pinion H'.

The use and operation of my invention are as follows: When the parts are in the position indicated in Fig. 3 the pinion H is in engagement with the crown-gear K', and since the toothed flanged K² is in engagement with the teeth on the barrel it is evident that if the stem G⁵ and pinion H be rotated in the proper direction the spring will be wound up. It is equally evident that the pinion H' is idle at such times. Now, by pushing the stem G⁵ and the pinions H and H' inwardly against the action of the spring G⁴ the pinion H will be released from the crown-gear and will be brought substantially vertically over the center thereof, while the pinion H' will be brought into operative engagement with the pinion M, and since this pinion is by a suitable train of gears in operative connection with the hands the rotation of the stem G⁵ and pinion H' will rotate the hands in either direction to set them. When the stem is released the spring retracts it to the position shown in Fig. 3. I have called the compound gear K the "winding-gear" and the pinion M, I have called the "hand-setting" pinion.

It will be observed that the distance between the two plates D and E is substantially equal to the width of the ring A. The bridges,

outside pinions, dials, hands, &c., are therefore included in and substantially fill the spaces which are included between the respective plates D and E and their opposed curved sides of the case. The pinion H is, for example, made rigid with the stem G⁵, and the stem is passed through the central aperture of the pinion H' until it has reached a point where, by means, for example, of the feather R and collar R', the pinion H' is made practically rigid with the stem. The stem is now passed into the cylindrical portion G, which latter portion is passed through the aperture A' and screwed firmly into the part G². The spiral spring is then placed in the cup G³ and the cap screwed in position on the end of the stem.

The case has but the one perforation, and the rim or ring forming the central portion of the case is clamped between the plates which are drawn firmly against it and the enlarged outer portion of the cylindrical part G. Any tendency of the said plates with their associated works to move laterally in the case is prevented by the engagement of the edges of the plate with the parts of the side pieces of the case which slightly overhang the ring, as indicated in the drawings. When the works are to be removed from the case, as, for example, to be repaired, it is only necessary to unscrew the cap G⁷ and slip the stem and pinion H' inwardly toward the center of the watch, so as to free the stem from the case, whereupon the works can be removed.

The size and proportion of the several parts are, of course, capable of great variation without departing from the spirit of my invention.

It is evident, of course, that the mechanism may be reversed, as it were, so that the gear on the stem will be normally in contact with the mechanism for winding or setting, as may be required.

I claim as new and desire to secure by Letters Patent—

1. In a watch the combination of the following elements: a winding gear, a hand-setting pinion of greater diameter than the gear, the centers of the pinion and gear being substantially in the same vertical line passing through their planes, a reciprocating stem having two pinions rigid thereon one adapted normally to engage the winding gear the

other adapted to engage the hand-setting pinion when the stem is moved so as to move the winding pinion out of engagement with the winding gear.

2. In a watch the combination of the following elements: a winding gear having an inwardly projecting crown gear adapted to rotate in an aperture in one frame plate and an outward laterally projecting toothed flange adapted to engage the barrel, a hand-setting pinion provided with a hub adapted to be received and to rotate in an aperture in the other plate, suitable supports to retain the gear and pinion in position, a reciprocating stem having two pinions rigid thereon and reciprocating in a plane substantially midway between the gear and the pinion, one of said pinions adapted to engage the crown gear and the other adapted to engage the hand setting pinion when the stem is moved so as to move the first pinion out of engagement with the crown gear.

3. In a watch the combination of a case containing a single aperture through the edge thereof, with a watch mechanism attached to a frame entirely separate from the case and adapted to be received into the case and a part having an enlarged portion exterior to the case with a screw-threaded portion adapted to pass through the aperture and be screw-threaded into the frame of the works, whereby the case is clamped between the enlarged portion and the works frame and thus the parts are separably attached together.

4. In a watch the combination of a case consisting of a central band having curved sides slightly overhanging the band, with a movement frame having two plates separated by about the width of the band and entirely separate from the case, said band provided with an aperture and said movement frame with a screw-threaded hole opposite said aperture, and a stem provided with an exterior enlarged portion to bear against the outside of the ring or band and a screw-threaded inner portion to pass through the aperture in the band and be received into the screw-threaded hole in the movement frame.

JOHN G. BLESSING.

Witnesses:

OTTO J. SEUTLEBEN,
WILLIAM PATON.