

No. 612,913.

Patented Oct. 25, 1898.

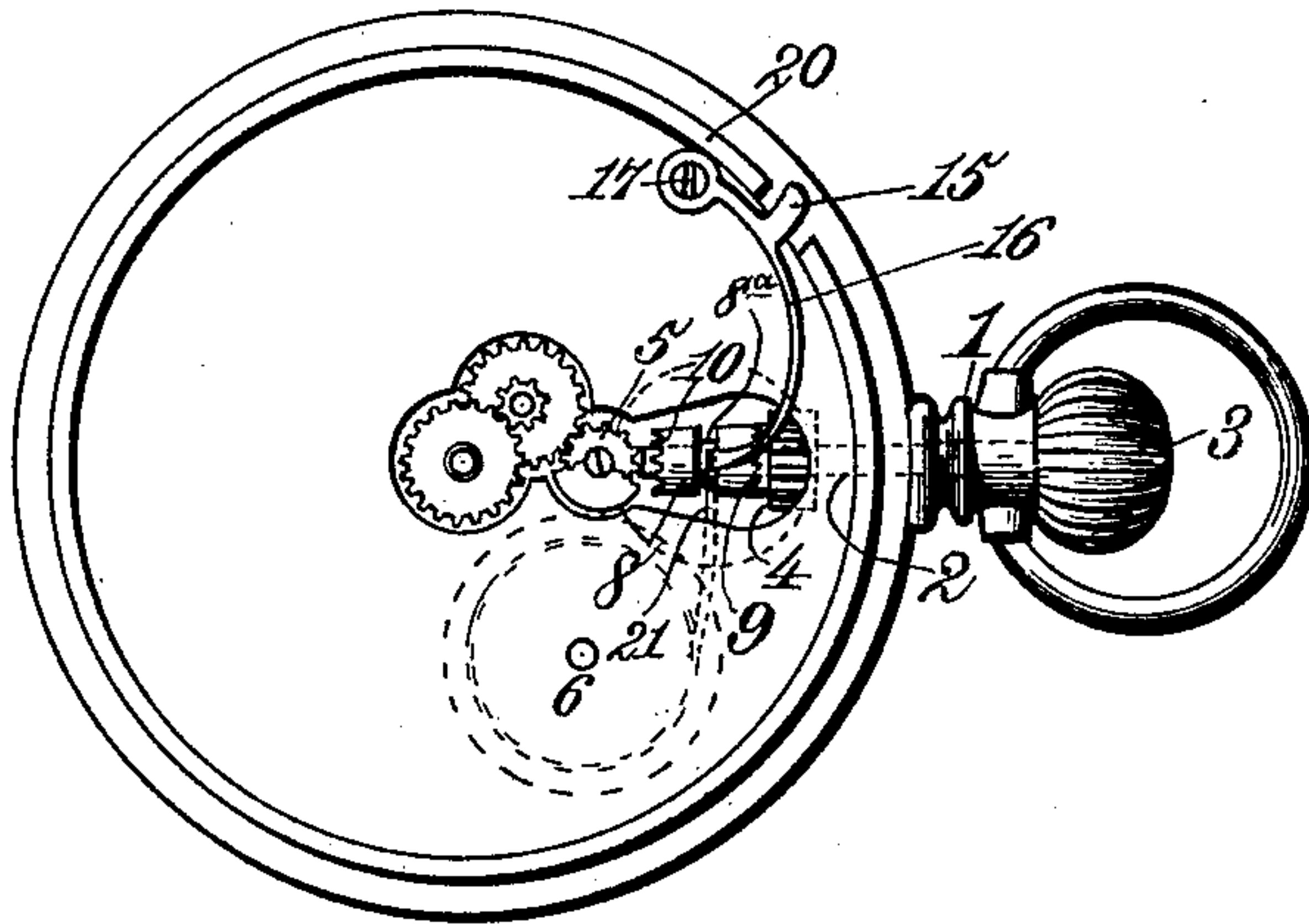
F. C. RIES.

STEM WINDING AND SETTING WATCH.

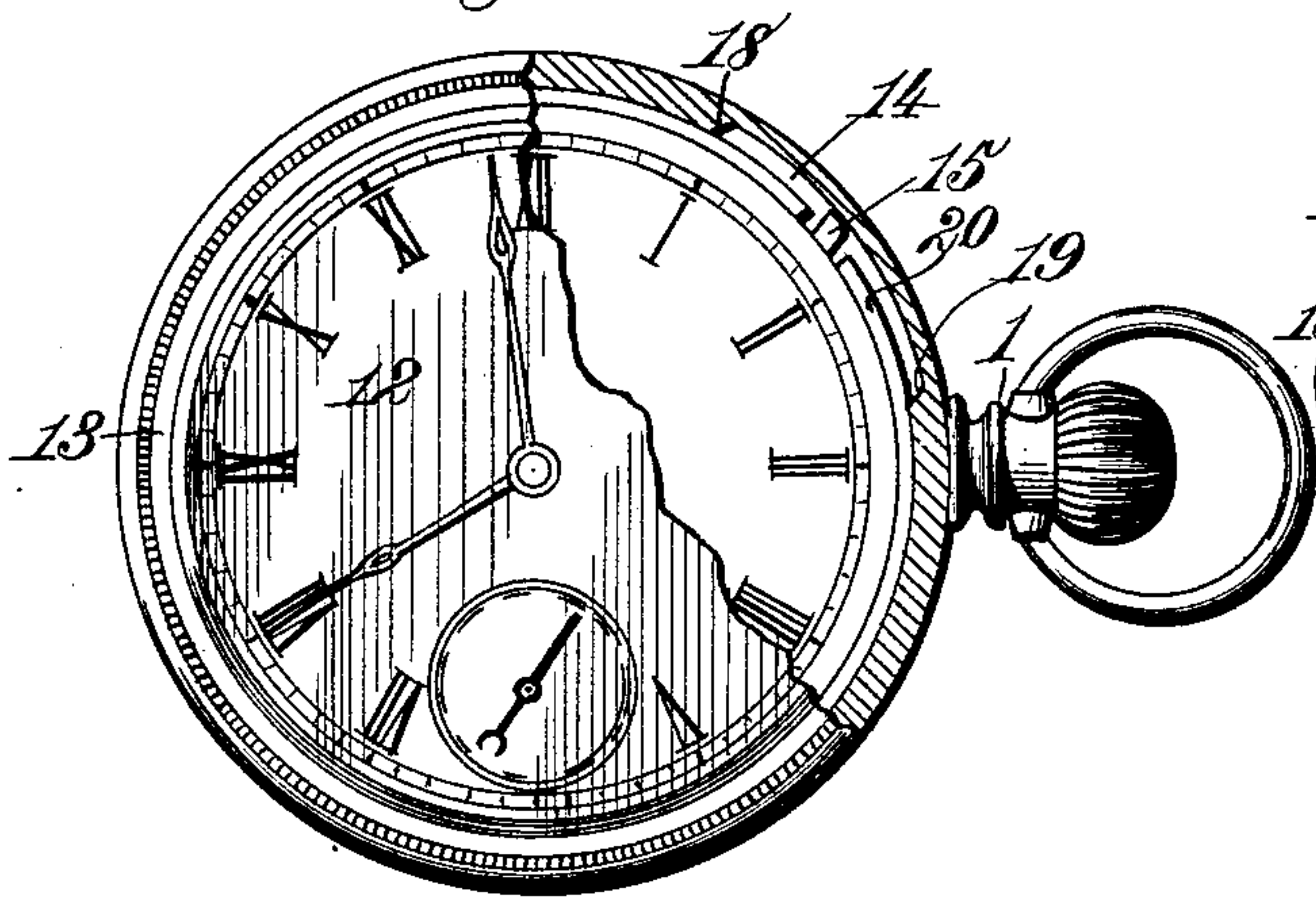
(Application filed Mar. 3, 1898.)

(No Model.)

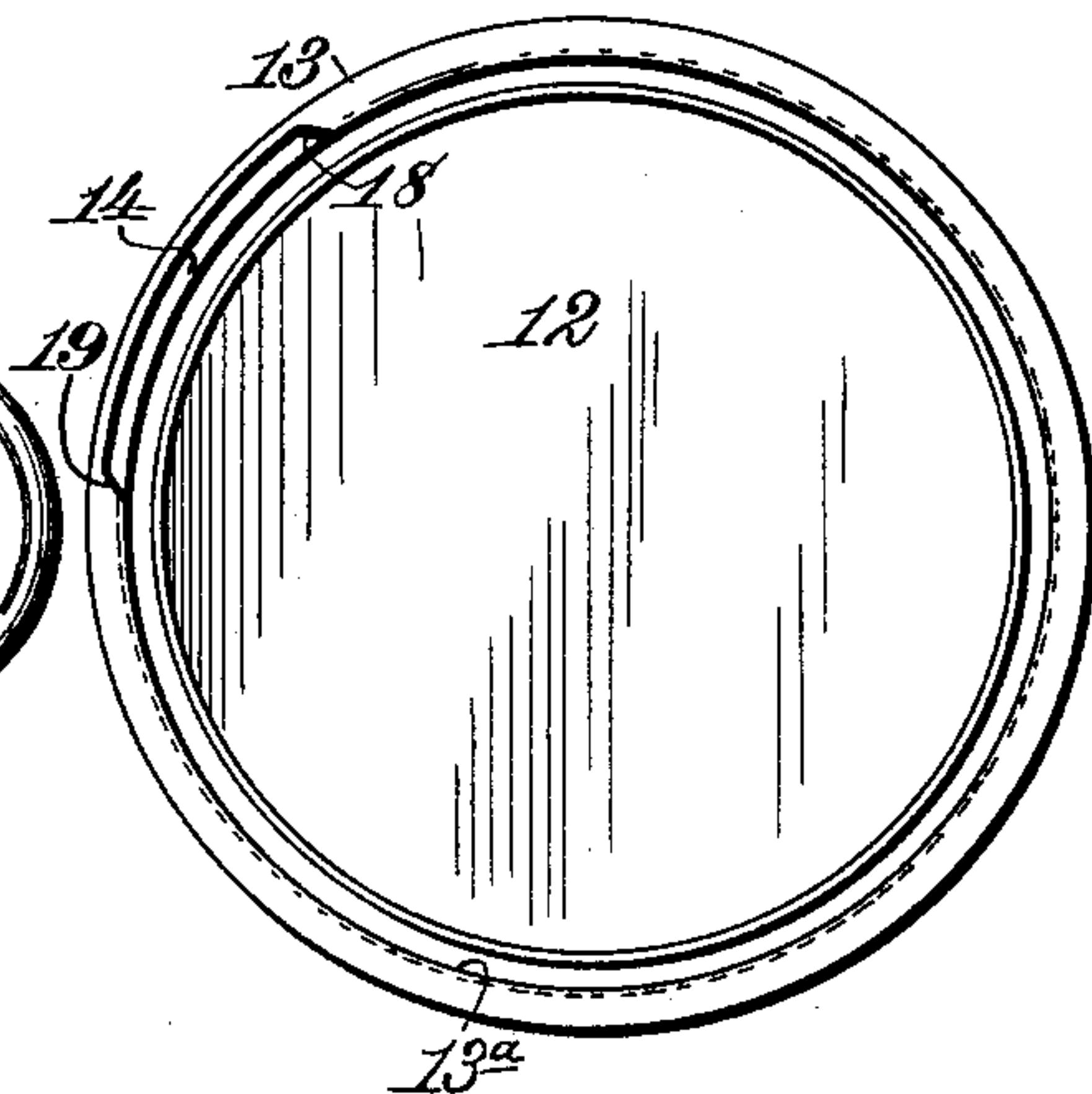
*Fig. 1.*



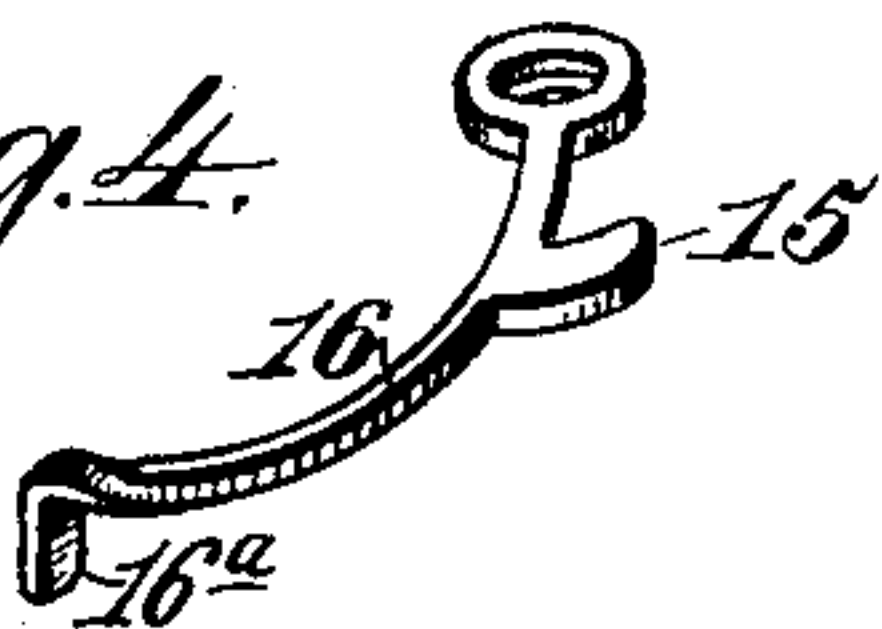
*Fig. 2.*



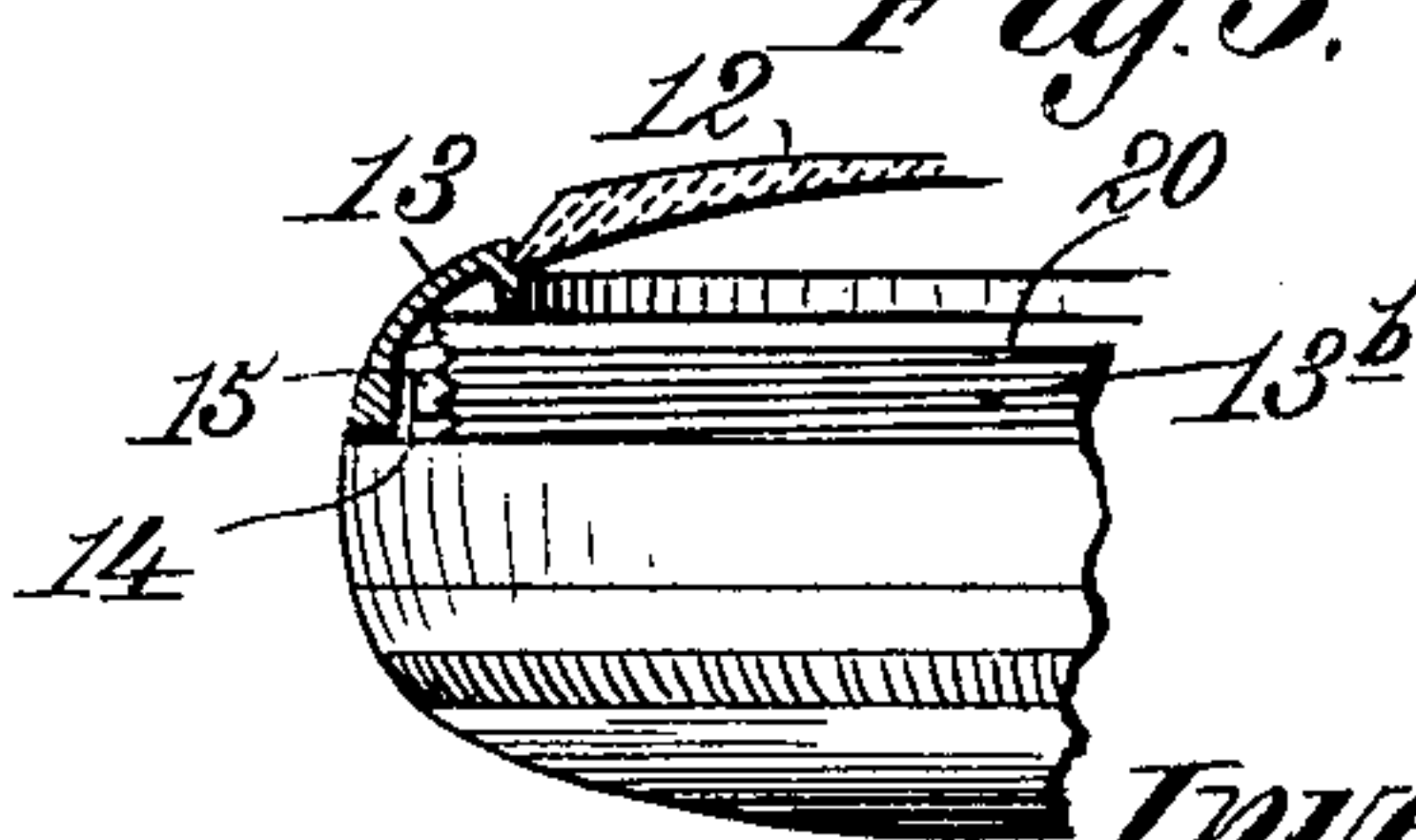
*Fig. 3.*



*Fig. 4.*



*Fig. 5.*



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# UNITED STATES PATENT OFFICE.

FREDERICK C. RIES, OF MACON, GEORGIA.

## STEM WINDING AND SETTING WATCH.

SPECIFICATION forming part of Letters Patent No. 612,913, dated October 25, 1898.

Application filed March 3, 1898. Serial No. 672,439. (No model.)

*To all whom it may concern:*

Be it known that I, FREDERICK C. RIES, a citizen of the United States, residing at Macon, in the county of Bibb and State of Georgia, have invented new and useful Improvements in Stem Winding and Setting Watches, of which the following is a specification.

This invention relates to that class of stem winding and setting watches having crystal-carrying bezels or front covers, and has for its object to provide novel, simple, efficient, durable, and economical means for throwing either the winding or the setting mechanism into and out of action as may be required to wind or set the watch. This object is accomplished in the manner and by the means hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1 is a detail plan view of a watch embodying my invention, the crystal-carrying bezel or front cover, the dial, and the hands being omitted. Fig. 2 is a sectional plan view showing the crystal-carrying bezel in position and partly in section to clearly illustrate the segmental recess in its inner surface for engaging and releasing the lever-spring by which the clutch-sleeve is operated to throw either the winding or the setting mechanism into and out of action. Fig. 3 is a plan view looking at the inside of the bezel. Fig. 4 is a detail perspective view of the lever-spring, and Fig. 5 is a detail sectional edge view of the watchcase.

The views in the drawings are somewhat magnified to more clearly illustrate the parts constituting my invention.

In order to enable those skilled in the art to make and use my invention, I will now describe the same in detail, referring to the drawings, wherein—

The numeral 1 indicates the pendant of a watch, and 2 the winding and setting stem, extending through and rotatable in the pendant. The stem is provided at its outer end with a crown-piece 3 and carries a pinion 4, loosely mounted thereupon and serving when turned to transmit motion in the usual manner or by any suitable intermediate mechanism to the mainspring-arbor 6. A gear or pinion 5 when turned serves to transmit motion as usual or by suitable mechanism to the

watch-hands. The pinion 4 is thrown into or out of gear with the stem 2 through the medium of a clutch-sleeve 8, keyed or splined upon and concentric with the stem between the said pinion 4 and the pinion or gear 5. The outer extremity of the clutch-sleeve is constructed or provided with clutch-teeth 9 to engage clutch-teeth on the adjacent or inner side of the loose pinion 4, while the inner end of the clutch-sleeve is constructed or provided with clutch-teeth 10 to engage the teeth of the gear or pinion 5. The clutch-sleeve 8 is controlled through the medium of a lever-spring and a bezel or cover which turns on the watchcase, as I will now proceed to describe in detail.

In the drawings I have represented the cover as composed of a crystal 12, mounted, as usual, in a bezel 13, which is internally screw-threaded, as at 13<sup>a</sup>, and screws upon a screw-threaded portion 13<sup>b</sup> of the watchcase, as usual. If desired, however, this cover may consist of an ordinary closing-cap, of any suitable metal or material, screwed to the watchcase in the same manner as the bezel. The inner surface of the bezel or cover is cut away to provide a comparatively long segmental recess 14, having its end portions gradually rounded off and flush with the inner surface of the bezel, as at 18 and 19.

The segmental recess 14 is designed to receive and accommodate a rounded or other suitably-shaped lug 15, formed with or provided on a lever-spring 16, which, as here shown, is bow-shaped and at one extremity is pivoted to a fixed part of the watch-movement through the medium of a screw-pivot 17, while the other extremity is loosely engaged with the sleeve 8, so that the sleeve is susceptible of rotating, the construction being such that if the lug be pressed inward the lever-spring will yieldingly force the clutch-sleeve inward on the stem to disengage its toothed extremity 9 from the clutch-teeth of the pinion 4 and cause its toothed extremity 10 to engage the teeth of the gear or pinion 5. The connection of the lever-spring with the clutch-sleeve is effected, as here shown, by providing the sleeve with an annular groove 8<sup>a</sup>, into which extends a comparatively small finger or lug 16<sup>a</sup> on the inner extremity of the lever-spring. The lever-



spring 16 is positively operated to move the clutch-sleeve 8 in the manner above described through the medium of the bezel, which is adapted to turn upon the watchcase by reason of the screw-threaded connection of these parts. When the bezel is tightly screwed into position on the watchcase, the rounded or other suitably-shaped lug 15 lies approximately central between the ends of the recess 14, and in this position or in any position of the lug between the rounded end portions 18 and 19 of the recess 14 the lever-spring is released and the clutch-sleeve 8 is moved outward by the action of a clutch-spring 21, lying between the plates of the watch and having one extremity entering the annular groove 8<sup>a</sup> in the clutch-sleeve. When the lever-spring is forced inward by turning the bezel or cover, the clutch-spring is moved inward and placed under tension, so that when the lever-spring is released, as above stated, the resiliency of the clutch-spring throws the clutch-sleeve outward into engagement with the loose pinion 4 and out of engagement with the gear or pinion 5. While I prefer to employ the clutch-spring 21, it is not indispensable, in that the lever-spring itself may be made to throw the clutch-sleeve outward. If it is desired to set the watch, the bezel is turned a limited distance in the direction in which it is turned to unscrew the same from the watchcase, and consequently the rounded end portion 19 of the recess 14 will act upon the rounded or other suitably-constructed lug 15 and press the same inward, thereby pressing the lever-spring inward and causing it to shift the clutch-sleeve 8 out of engagement with the pinion 4, which transmits motion to the mainspring-arbor, and into engagement with the pinion 5, which transmits motion to the hands of the watch. The pinion 5 will now turn with the clutch-sleeve to transmit motion to the hands of the watch. After the watch has been set the bezel is slightly turned in the direction required to screw it tight upon the watchcase, and thereupon the lug 15 is released, and the clutch-sleeve and lever-spring are moved out by the action of the clutch-spring 21, as before stated.

The clutch-sleeve and the teeth on the pinions 4 and 5 constitute a clutch by which either the winding or the setting mechanism may be thrown into or out of action, as may be required. Normally the clutch-sleeve is moved outward to engage the pinion 4, so that the winding mechanism is in gear with the stem and the watch can be wound at any time.

In my invention the winding-stem has no longitudinal motion, and therefore the position of the hands cannot be changed by the longitudinal movement of the stem caused by an accidental pull-out of the stem or by wear incident to some constructions having a spring to constantly press the stem outward.

In my improved construction no metric accuracy is required with reference to the longitudinal position of the stem, and,

moreover, there are fewer parts employed, and consequently less liability of the parts being disarranged. The recess in the inner surface of the bezel or cover releases the lever-spring when the bezel or cover is screwed tight, and this lever-spring is only acted upon when the hands are to be set. The lever-spring is of such form and is so constructed, as will be obvious from the drawings, that a limited motion of the bezel produces sufficient motion of the lever-spring to impart considerable motion to the clutch-sleeve, and the lever-spring acts as a spring and a lever after it has moved the clutch-sleeve to the limit of its inward movement, thus holding the clutch firm while setting the hands.

In the arrangement of the lever-spring represented in the drawings the case-flange of the watchcase is cut away to permit the rounded or other suitably-shaped lug 15 to project through the flange and enter the recess 14 in the inner surface of the bezel. I do not, however, limit myself to this particular construction, nor to the exact form or shape of the lever-spring, nor to the precise configuration of the recess in the bezel, as the essential features reside in a lever-spring operated by turning the bezel or cover upon a watchcase for actuating a clutch to throw either the winding or setting mechanism into or out of action. Further, I do not confine myself to operating the lever-spring by the front bezel or cover, as it may be operated by the back cover, nor do I confine myself to forming the segmental recess in the screw-threaded part of the bezel or cover, as the recess may be formed in the edge of the bezel or cover, as will be obvious.

Having thus described my invention, what I claim is—

1. The combination with a watch having a crystal-carrying bezel screwed upon the case, a rotatable stem geared to the winding and setting mechanisms, and a clutch-sleeve rotating with and movable longitudinally on said stem, of a lever-spring secured at one end, engaged at its other end direct with the clutch-sleeve and constructed near its secured end with an outwardly-projecting lug, operated upon by the bezel when it is turned upon the watchcase to throw the clutch-sleeve into, or out of operative connection with the winding or the setting mechanism, substantially as described.

2. The combination with a watchcase, of a bezel rotatable on said case and having its inner surface constructed with a segmental recess, a rotatable stem geared to the winding and setting mechanisms, a clutch-sleeve rotatable with said stem and movable longitudinally thereon, and a lever-spring secured at one end, engaged at its opposite end with said clutch-sleeve and constructed near its secured end with an outwardly-projecting lug extending into the said segmental recess of the bezel and operated by the latter to yieldingly force the lever-spring inward when



the bezel is turned in one direction to throw the clutch-sleeve into operative connection with the setting devices and out of operative connection with the winding devices, substantially as described.

3. The combination with a watch, of a crystal-carrying bezel screwed upon the case and having its inner surface constructed with a segmental recess, a rotatable stem geared to the winding mechanism, a clutch-sleeve rotating with and movable longitudinally of the stem, and a lever-spring having a projecting

lug normally lying in the said segmental recess and operated by the direct action of the bezel when turned in one direction on the watch-case to actuate the clutch-sleeve, substantially as and for the purposes described.

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

FREDERICK C. RIES.

Witnesses:

GEORGE W. ROWELL,  
WELDEN A. HARDING.