(No Model.)

B. FRESE.

STEM WINDING AND SETTING WATCH.

No. 350,425. Patented Oct. 5, 1886.

Fig. 2.

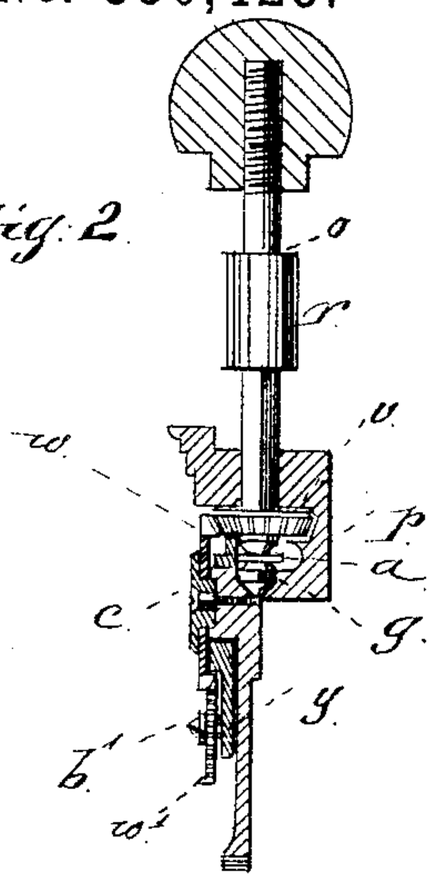


Fig. 1.

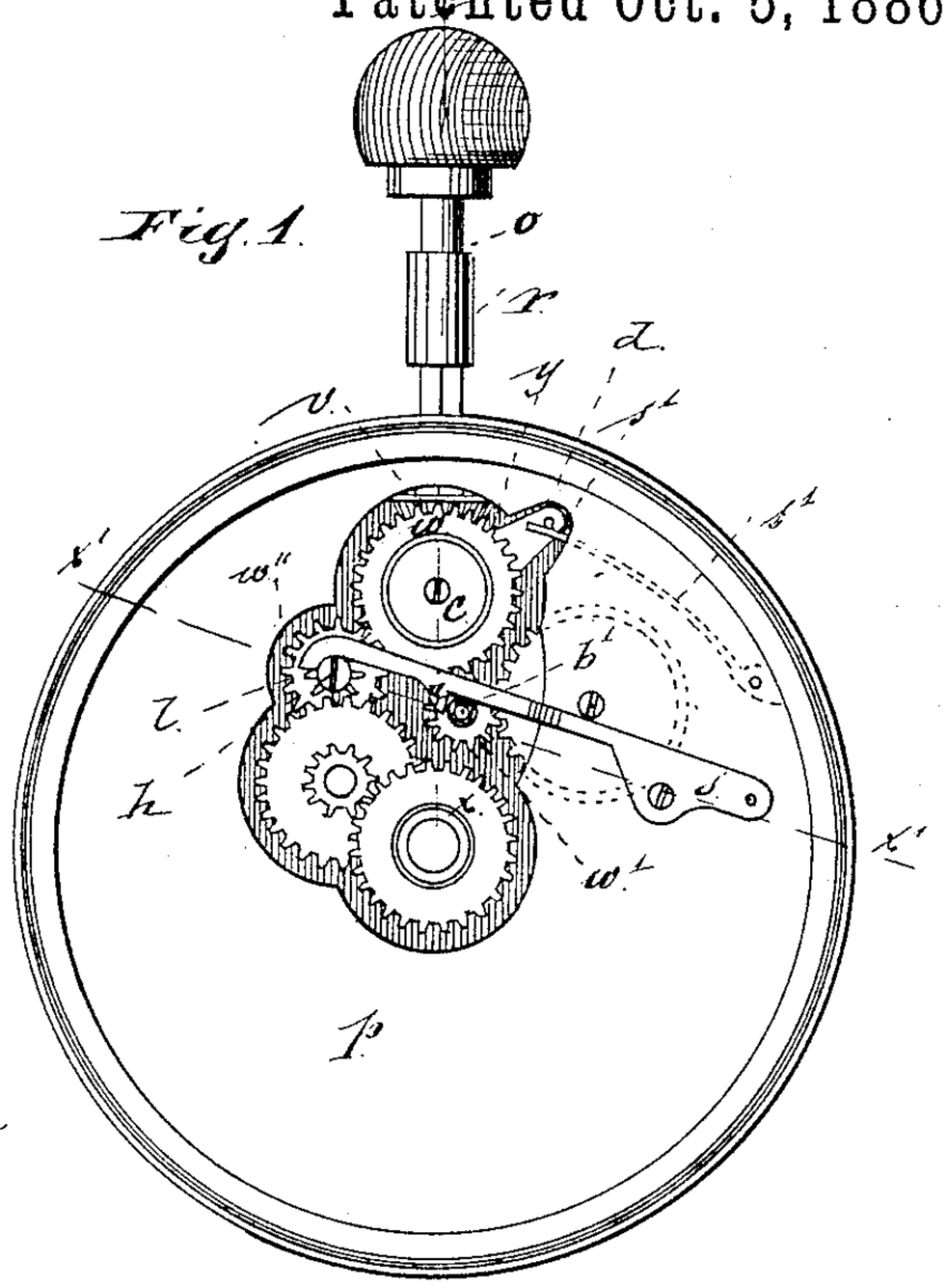


Fig. 5.

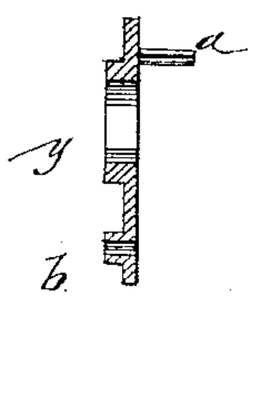


Fig. 4.

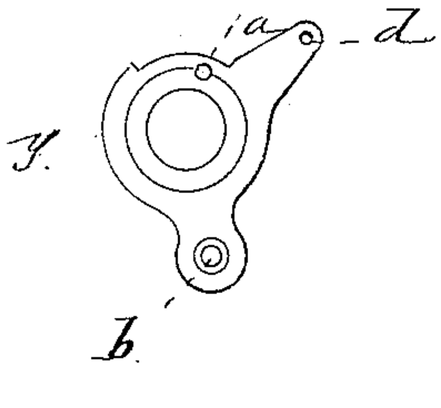


Fig. 3.

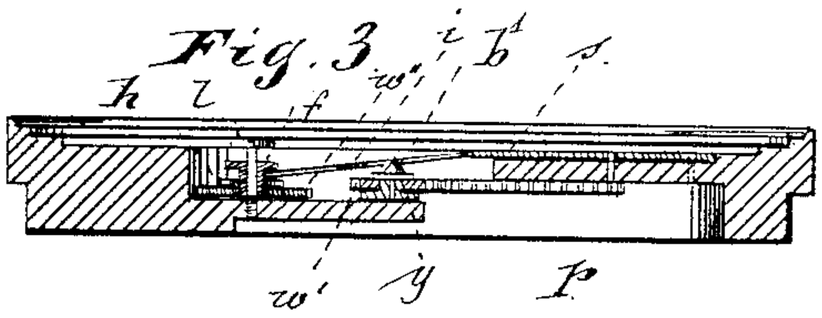
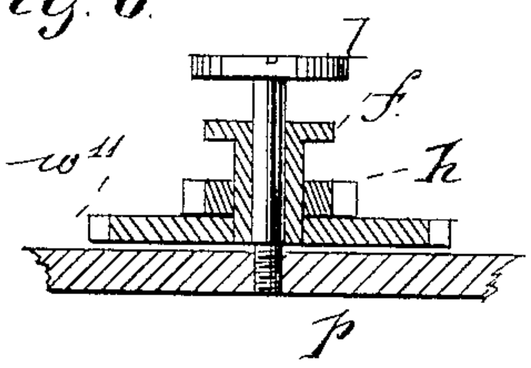


Fig. 6.



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STEM WINDING AND SETTING WATCH.

SPECIFICATION forming part of Letters Patent No. 350,425, dated October 5, 1886.

Application filed April 19, 1886. Serial No. 199,424. (No model.)

To all whom it may concern:

Be it known that I, BERNARD FRESE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Stem-Winding Apparatus for Watches, of which the following is a specification.

My invention relates to improvements in that kind of stem-winding watches in which the shipping or changing from winding to hand-setting is effected by means of the crown and winding bar, which, when pulled out, causes the intermediate winding-wheel to disconnect and the hand-setting wheels to connect with their respective gear-wheels, and vice versa when pushed in.

The object of my improvement is to provide a simple, durable, and reliable apparatus for effecting the shipping from winding to hand-setting, or vice versa, and also means for gearing and ungearing with the dial-wheels, by which the hands are not liable to be disturbed when unshipping after they have been set to time. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a front view of a watch-plate on which the dial-wheels and my apparatus for winding and setting are shown. Fig. 2 is a sectional view on line *x* of Fig. 1, showing the winding-bar, the winding-pinion, the crown and intermediate winding wheel, the movable yoke, and the projection *a* on the under side of the same, by means of which and a groove in the winding-bar I effect the shipping. Fig. 3 is a section on line *x' x'*, looking toward the stem, and showing the ratchet-wheel, a part of the yoke, and intermediate winding-wheel, vertically-movable intermediate hand-setting wheels, and a spring and a conical projection, *b'*, for lifting the hand-setting wheel. Fig. 4 is a front view of the yoke. Fig. 5 is a sectional view of Fig. 4, showing the pin or projection *a*, for moving the yoke, and the bearings on which the winding-wheels are pivoted. Fig. 6 is an enlarged view of the intermediate hand-setting wheels.

Similar letters refer to similar parts throughout the several views.

By placing the yoke *y* next to the plate *p*, and placing the crown-wheel *w* above the yoke, I am enabled to allow a projection or pin, *a*, on the yoke to extend by the side of and in a groove, *g*, on the winding-bar *r*. By these means I am enabled to move the yoke and the intermediate winding-wheel, *w'*, out of connection with the winding ratchet-wheel by pulling out the bar *r*, and these are essential parts and arrangements of my invention. The bar *r* is prevented from being pulled out by a screw in the pendant of the case, which projects in a groove, *o*, of this bar *r*. The square part of it extends through the pinion *v* to the groove *g*. This groove is deep and its sides are cones. The round end of the bar is left as large as possible, and longer than shown in the drawings in Fig. 2. The yoke *y* is pivoted on a solid part of the plate, and the crown-wheel *w* is pivoted on the yoke. A circular cap, *c*, of sufficient size to partially cover the crown-wheel is screwed fast to the plate, and covers both the yoke and the wheel, but leaves both free to rock or revolve. The intermediate winding-wheel, *w'*, is pivoted on the yoke at *b*, and is held in place by a screw having a conical head, *b'*. A spring, *s'*, bearing on a pin, *d*, actuates the yoke and keeps the wheel *w'* in gear with the ratchet in the usual way. The intermediate hand-setting wheel, *w''*, and the wheel *h*, which has smaller teeth, are fastened on a hub which has a shoulder, *f*. The whole is pivoted on a screw, *l*, in a recess of the plate. The screw *l* is longer than the hub, so that the wheels *w''* and *h* may be lifted in gearing with the crown-wheel *w* and the minute-wheel. The spring *s* has an offset, *i*, and its end passes between the shoulder *f* and wheel *h*, and when not lifted by the cone *b'* and offset *i* forces the wheels *w''* and *h* to the plate.

The operation, taking place when the bar *r* is pulled out to set the hands, is as follows: The pin *a*, and with it the yoke *y*, is forced to swing to one side. The wheel *w'* will thereby be disengaged from the ratchet-wheel, and the spring *s* will be lifted by the cone *b'* and offset *i*, and the collar *f* on the hub of the wheels *w''* and *h* will be held against the shoulder of the screw *l*, in which position the wheel *w''* gears with the crown-wheel *w*, and the wheel *h* with one of the dial-wheels. It is shown in the drawings to gear with the minute-wheel. While the parts are brought in this position, by pulling out the bar *r* the pin *a* rests on the enlarged end of the bar and keeps all the parts

in position for setting the hands. When the bar is pushed back, all the parts assume the position shown in the drawings by the action of the springs *s'* and *s*.

It is evident that the hand-setting may be effected without the wheel *w''* spring *s*, and the other parts herein shown for that purpose, and that the intermediate winding-wheel, *w'*, may be made to gear with the minute-wheel by slightly changing the position of the parts, and also that by extending the yoke beyond the wheel *w'* an additional wheel thereon may be made to gear with the cannon-pinion; but I prefer the arrangement shown, because after setting the hands to the right time they are not liable to be disturbed when unshipping.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The yoke *y*, turning on the fulcrum on which the crown-wheel *w* turns, and having pin *a* or its equivalent thereon extending in and by the side of a groove in the winding-bar, substantially as and for the purpose specified.

2. The yoke *y*, turning on the fulcrum on which the crown-wheel *w* rotates, and having cone *b'* or its equivalent on one end thereof, and also having pin *a* thereon, or its equivalent, extending in and by the side of a groove in the winding-bar, substantially as described, and for the purpose specified.

3. The yoke *y*, turning on the same fulcrum on which the crown-wheel *w* rotates, and having cone *b'* or its equivalent on one end thereof, and pin *a* or its equivalent thereon, extending in and by the side of a groove in the winding-bar, in combination with spring-lever *s*, secured on one end to plate *p*, and at the other end engaging with the hub of wheel *w''*, and the said lever *s* having point *i* or its equivalent thereon, all substantially as described, and for the purpose set forth.

BERNARD FRESE.

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