

No. 665,719.

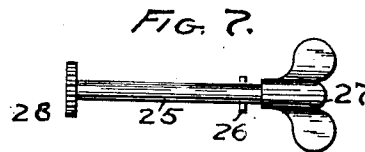
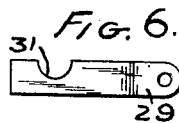
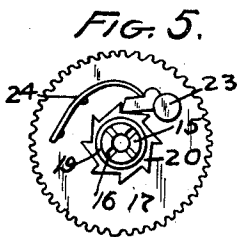
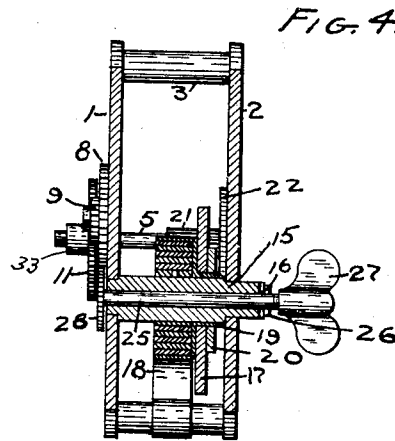
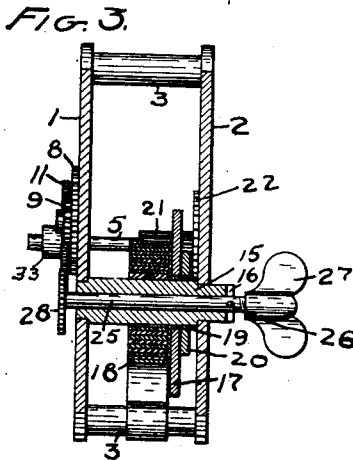
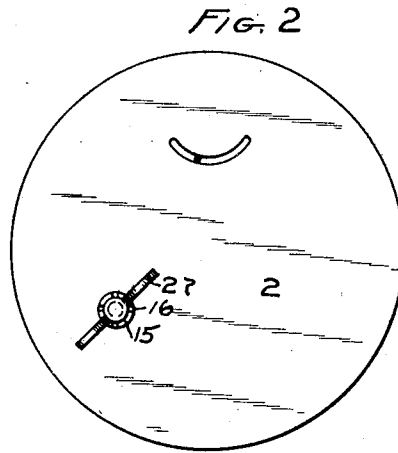
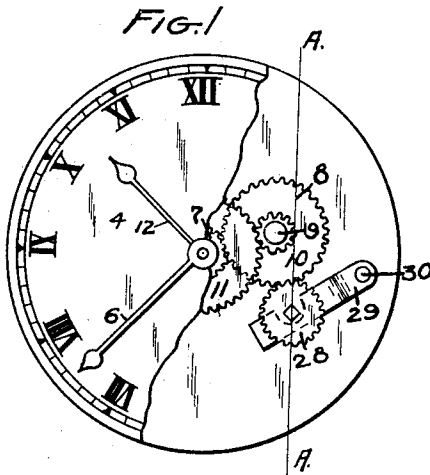
Patented Jan. 8, 1901.

J. BACHNER.

CLOCK WINDING AND SETTING MECHANISM.

(Application filed Mar. 16, 1900.)

(No Model.)



WITNESSES:

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CLOCK WINDING AND SETTING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 665,719, dated January 8, 1901.

Application filed March 16, 1900. Serial No. 9,120. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH BACHNER, of Princeton, county of Gibson, and State of Indiana, have invented certain new and useful Improvements in Timepieces; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which like figures refer to like parts.

This invention relates to a new means for winding and setting timepieces, including clocks, watches, and the like. Its object is to provide a single means for both setting and winding a timepiece that is novel and simplifies the construction of parts of the timepiece and also renders its manufacture and repair cheaper than where two separate means are employed for winding and setting the timepiece.

The chief feature of my invention consists in providing an arbor parallel with the main shaft employed in winding the timepiece, so that the arbor will have a slight longitudinal movement independent of the shaft and when in one position will engage the shaft, while in the other position will disengage the shaft, but will bring a gear-wheel on the arbor into engagement with means for setting the hands of the timepiece. A spring is employed to hold the arbor normally in engagement with the shaft, whereby the timepiece is wound by merely rotating the arbor, and the timepiece can be set by longitudinally moving the arbor out of engagement with the shaft and then rotating it. I preferably provide a hollow shaft through which the arbor centrally extends.

The full nature of my invention will be understood from the accompanying drawings and the description following of one form of device embodying my said invention, and the scope of said invention will be understood from the claims following said description.

In the drawings, Figure 1 is a front elevation of a small clock with the dial partly broken away. Fig. 2 is a rear elevation of the same. Fig. 3 is a vertical section on the line A A of Fig. 1 omitting the spring, the arbor being in engagement with the shaft for winding the timepiece. Fig. 4 is the same with the arbor disengaged from the shaft for setting the timepiece. Fig. 5 is an elevation

of the shaft and parts mounted thereon. Fig. 6 is a detail of the spring, and Fig. 7 is a detail of the arbor.

Referring now to the details of the construction of the clock herein shown for the purpose of illustrating the nature of my invention, 1 is the front plate, and 2 the rear plate, which, with the spacers 3, form the framework for mounting the mechanism of the clock.

4 is the dial.

5 is the shaft that carries the minute-hand 6 and has mounted on it the small gear 7, (shown in dotted lines in Fig. 1,) that meshes with the large gear 8, secured on the pintle 9. On the same pintle a small gear 10 is secured that rotates with the large gear 9 and which meshes with the large gear 11, that is loosely mounted on the minute-shaft 5 and has an extended hub or sleeve 33, which carries the hour-hand 12.

The main winding-shaft 15 is made hollow, with its rear end provided with notches or recesses 16. On said shaft the spring 18 is coiled, the inner end being secured to the shaft and the outer end to one of the posts or spacers 3 of the stationary frame. On the shaft there is also a sleeve 19, that fits tightly and rotates therewith and carries the ratchet-wheel 20 with it. The spur-wheel 17 is loosely mounted on said sleeve 19 and meshes with the pinion 21 on the minute-shaft 5, that also carries the spur-gear 22. On the face of the gear 17 I pivot a pawl 23, that is held into engagement with the ratchet 20 by the spring 24. In this way power from the spring or main shaft is transmitted to the gear-wheel 17 and from it to the rest of the machinery for driving the latter.

I provide an arbor 25, that extends through the main driving-shaft 15 and is somewhat longer than said shaft in order that it may have some longitudinal movement independent of the shaft. It is provided with the pins 26, that engage the recesses or notches 16 in the end of the shaft. A finger-piece 27 is screwed on the rear end of said arbor for actuating it. On the front end of the arbor I mount a small gear 28, that meshes with the large gear 8 when the arbor is drawn rearward, as shown in Fig. 4, but disengages said gear 8 when the arbor is drawn forward, as

shown in Fig. 3. Behind the small gear-wheel 8 I provide a flat spring 29, that is secured at 30 to the plate 1 and has a notch 31 in it, that surrounds the arbor. Said spring is bent normally so as to tend to draw the arbor forward into the position shown in Fig. 3 and to hold it in that position. In other words, the spring tends to hold the gear 28 out of engagement with the gear 8 or the setting mechanism. Any other form of spring that will hold the arbor normally out of engagement with the setting mechanism may be employed. To wind the clock, all that is necessary is to rotate the arbor 25 by means of the finger-piece 27. Since the pins 26 normally rest in the notches 16, such rotation of the arbor will actuate the winding-shaft 15, and thus wind the clock.

To set the clock, the arbor is pulled rearward by means of the finger-piece 27 against the action of the spring 29 until the gear 28 engages the gear 8, as seen in Fig. 4, and then the arbor is rotated while it is held in the rearward position. As soon as it is released the spring 29 will draw the arbor forward into the position shown in Fig. 3.

While I show the arbor normally in engagement with the means for winding, I do not wish to be limited to such arrangement, as the spring could be arranged to hold the arbor normally in engagement with the setting mechanism, although the former arrangement is preferable. Likewise I show the arbor extending centrally through the shaft 15; but I do not limit myself to such arrangement, as any arrangement whereby the arbor could be brought into engagement or moved out of engagement with the shaft 15 would suffice, although the form herein shown is by far preferable. I do not limit myself to the form of spring 29, as any spring acting on the arbor to hold it in its desired normal position would answer the purpose. Nor do I limit myself to the recesses 16 and pins 26, as any well-known means of locking the arbor and shaft together could be employed.

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

1. In a timepiece having suitable means for setting the same, a mainspring, a hollow winding-shaft on which said spring is mounted and whereby it is wound, a slidable rotary arbor extending through said hollow shaft, means for actuatingly connecting the winding-shaft and arbor when the latter is in one

position, and means on the arbor that engages and actuates the setting mechanism when the arbor is in the reverse position.

2. In a timepiece having suitable means for setting the same, a mainspring, a hollow winding-shaft on which said spring is mounted and whereby it is wound, a slidable rotary arbor extending through said hollow shaft, means for actuatingly connecting the winding-shaft and arbor when the latter is in one position, means on the arbor that engages and actuates the setting mechanism when the arbor is in the reverse position, and a spring for holding the arbor in one position normally.

3. In a timepiece having means for setting the same, a mainspring, a hollow winding-shaft carrying said mainspring provided at one end with a notch, a slidable rotary arbor extending through said hollow shaft provided with a pin to engage the notch when the arbor is in one position, and means on the arbor that engages and actuates the setting mechanism when the arbor is in the reverse position.

4. In a timepiece having a suitable minute-shaft and winding-shaft, a gear on said minute-shaft carrying a mainspring, a slidable rotary arbor mounted parallel with said winding-shaft, means for actuatingly connecting the arbor and the winding-shaft when the arbor is in one position, and suitable gearing for actuatingly connecting the arbor and the gear on the minute-shaft when the arbor is in the reverse position.

5. In a timepiece having a suitable minute-shaft and winding-shaft, a gear on the minute-shaft, a sleeve on the minute-shaft carrying the hour-hand and a large gear, a large intermediate gear meshing with the gear on the minute-shaft and carrying a small gear that meshes with the gear on the hour-hand sleeve, a slidable rotary arbor mounted parallel with the driving-shaft, means for actuatingly connecting the arbor and shaft when the arbor is in one position, and a gear on said arbor that meshes with said large intermediate gear when the arbor is in the reverse position.

In witness whereof I have hereunto affixed my signature in the presence of the witnesses herein named.

JOSEPH BACHNER.

Witnesses:

E. R. MAXAM,
JAMES W. WESTFALL.