

F. F. J. PRIHODA.
WATCH.

APPLICATION FILED DEC. 11, 1915.

Patented Oct. 23, 1917.
2 SHEETS—SHEET 1.

1,244,127.

Fig. 1.

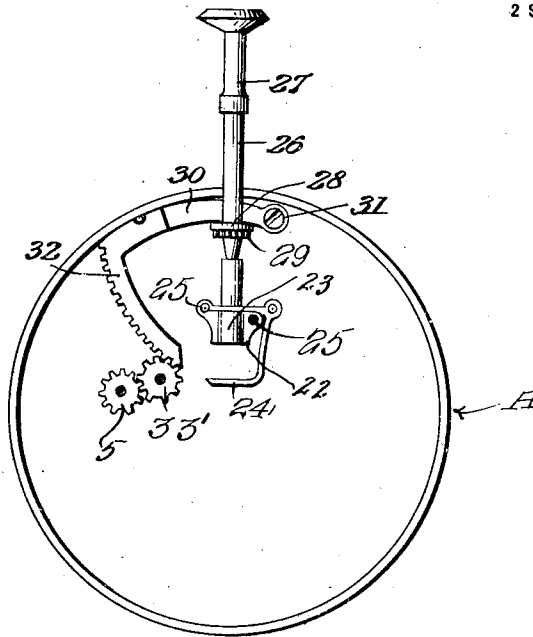


Fig. 2.

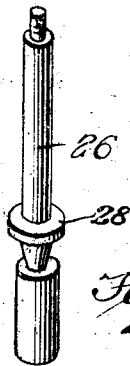
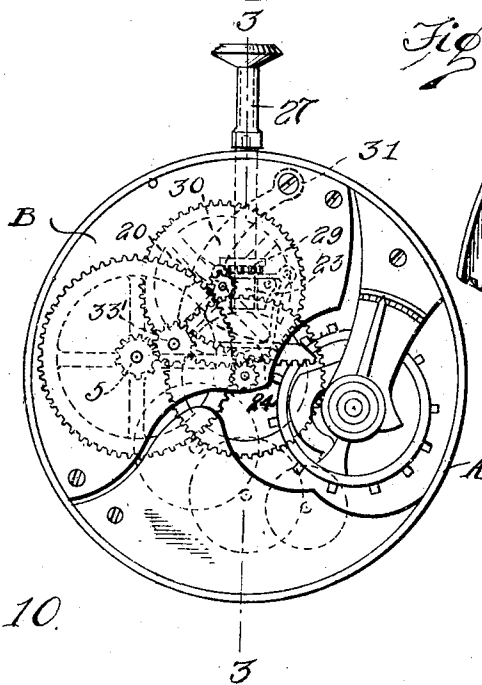
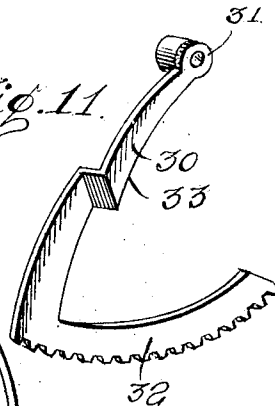


Fig. 10.

Fig. 11.



WITNESSES

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2 SHEETS—SHEET 2.

Fig. 4

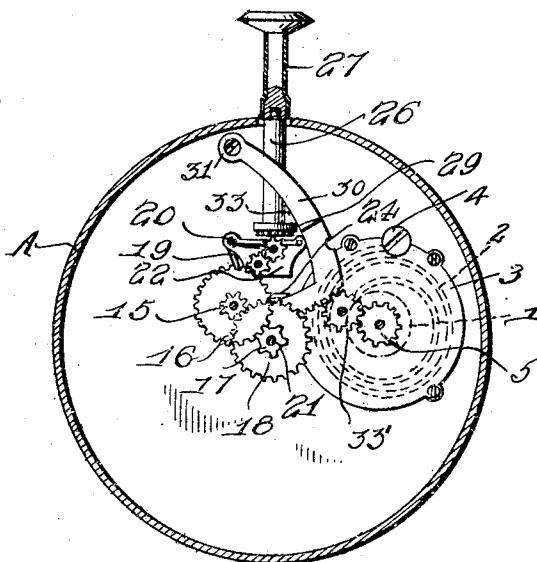


Fig. 6

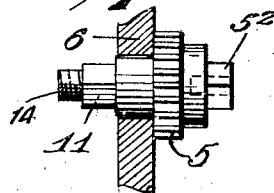


Fig. 3

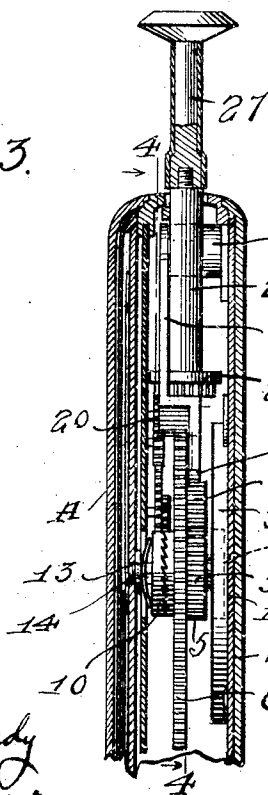


Fig. 9

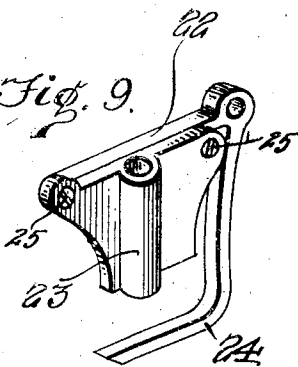


Fig. 7

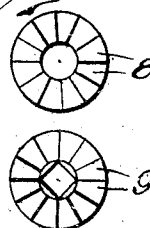


Fig. 5

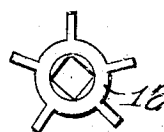
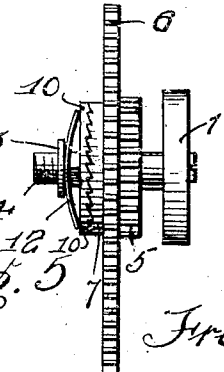


Fig. 8

WITNESSES

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UNITED STATES PATENT OFFICE.

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WATCH.

1,244,127.

Specification of Letters Patent.

Patented Oct. 23, 1917.

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To all whom it may concern:

Be it known that I, FRED F. J. PRIHODA, a citizen of the United States, residing at New Rochelle, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Watches, of which the following is a specification.

This invention relates to a watch, particularly of that type which is of extremely thin construction and is adapted to be carried in the vest pocket.

The primary object of the invention is to provide a novel winding mechanism for watches, wherein rotary movement of the stem of the watch to tension the power spring is obviated and which provides improved means for empowering the spring upon moving the stem longitudinally.

A further object is to provide improved means in connection with a mechanism of the above described character for setting the watch.

A still further object of the invention is to provide a watch winding and setting mechanism of the above mentioned type, which is simple and inexpensive in construction, which comprises but few readily assembled parts, which is positive in both its winding and setting movements, and which combines simplicity with efficiency and practicability.

Figure 1 is a rear elevation showing the outline of a watch case and the arrangement of the setting and winding mechanism with the back plate of the movement removed.

Fig. 2 is a detail rear elevation of the watch movement with the back plate in place, and showing the gear trains comprising the watch movement dotted in position.

Fig. 3 is an enlarged sectional view on the line 3—3 of Fig. 2,

Fig. 4 is a sectional view on the line 4—4 of Fig. 3,

Fig. 5 is a detail edge elevation showing the winding arbor clutch,

Fig. 6 is a detail view showing the winding element,

Fig. 7 are face views of the cooperating clutch members,

Fig. 8 is a plan view of the clutch spring,

Fig. 9 is a perspective view of the stem bearing,

Fig. 10 is a perspective view of the stem minus the crown and,

Fig. 11 is a perspective view of the sectoral rack.

The watch in the present instance consists of the casing A accommodating the movement B, the latter being of the usual well known construction except that the main spring arbor has affixed thereto a hub 1, to the periphery of which one end of the main spring 2 is connected. This main spring is accommodated within the housing 3, and the outer end of the main spring is secured to the housing or to the casing by a screw 4. The arbor has formed or secured thereon the winding arbor pinion 5 by means of which the arbor is rotated to tension the spring 2.

Loosely carried by said arbor is the time wheel 6, having affixed thereto, the clutch member 7, provided with teeth 8 adapted to coact with teeth 9 on a similar clutch member 10. The clutch member 10 is mounted on the squared portion 11 of the winding arbor, so as to rotate with the arbor, and is capable of moving longitudinally of the said arbor. The clutch member 10 is held yieldably engaged with the clutch member 7 by a spring 12 retained by the nut 13 screwed on the threaded extension 14 of the winding arbor pinion. It will be seen from this construction that when the pinion 5 is rotated in one direction, the power spring upon the hub 1 will be wound, and such movement will not in any way affect the time wheel 6 as the clutch member 10 carried by the arbor will slip or play over the member 7. However, when the unwinding action of the spring takes place, the arbor is moved in the opposite direction, and by reason of the clutches 10—7, carries with it the time gear 6, through which the force of said spring is transmitted to the gear train and the escapement mechanism of the watch movement.

The setting of the hands of the watch is effected through the medium of the gear train including the pinion 15, gear 16, pinion 17, and gear 18. Meshing with the gear 16 is a pinion 19 which also meshes with a pinion 20. The arbor 21 carries one of the time hands and the other hand is connected to the gear 18.

Mounted on the movement is a bearing stand 22, which carries a bearing 23, and a stop 24, the said parts being held in place by suitable screws 25. This bearing accommodates the reciprocable stem 26 which at its upper end carries a crown face 27, and adjacent its lower end carries the collar 28

and the crown gear 29. The latter gear meshes with the pinion 20 when the same is depressed and the said stem is limited in its downward movement by engagement at its lower end with the stop 24. When in the latter position, rotation of the stem will operate through the gear 29, pinions 20—19, gear 16, pinion 15, and pinion and gear 17 and 18 to move the hands of the watch.

The winding mechanism for the watch includes an arm 30 pivoted at one end as at 31 to the casing, and is provided at its opposite or free end with a sectoral rack 32. This arm is offset as shown, and its under edge provides an abutment face 33 to be engaged by the shoulder 28 on the stem 26. The rack 32 is enmeshed with a pinion 33', the latter being in mesh with the winding arbor pinion 5. The main or power spring of the watch in the present instance is of such quality that a relatively small amount of rotary movement delivered to the winding arbor will empower the spring to drive the time gearing the requisite period, but it will be understood that the ratio of the gears 33' and 5 may be changed so that a single outward pull upon the stem 26 will rotate the winding arbor pinion one or more times as desired.

When the spring is deenergized, the arm 30, by reason of its association with the spring arbor by the gear 33', will assume the position shown in Figs. 2 and 4. To wind the spring, it is but necessary to move the stem 26 outwardly. This movement of the stem lifts the arm 30, and the sectoral rack 32, rotates the gear 33', and the latter by reason of its engagement with pinion 5, moves the hub 1 in a direction to tension the spring 2. As has been before stated, during winding movement of the winding arbor, clutch member 10 will slip over the clutch member 7, carried by the wheel 5, but retrograde movement of the said arbor will operate through the said clutch members to drive the time gears. When the spring is wound, the arm 30 assumes the position shown in Fig. 1, and is moved downwardly by unwinding action of the spring 2. The stem 26 may at any time be moved inwardly to engage its gear 29 with the setting pinion 20. If desired, springs may be used to yieldably maintain the stem 26 in a position with its gear 29 out of engagement with the pinion 20, and with the stem moved inwardly to approximately the position shown in Fig. 4 of the drawings.

While the present disclosure is that of what I believe to be the preferred embodiment of the invention, it is to be understood that the invention is not limited thereto, but that various changes may be made in the construction, arrangement, and propor-

tion of parts, without departing from the spirit of the invention, as defined in the appended claims.

I claim:

1. In a watch winding mechanism, a spring arbor, a gear on said arbor, a longitudinally movable stem, an arm pivoted at one end adjacent said stem, a sectoral rack on the free end of said arm enmeshed with said gear, a shoulder on said stem to engage said arm, and a clutch mechanism connecting said arbor and winding mechanism.

2. In a watch winding mechanism, a spring arbor, a gear secured to said arbor, a driving wheel loosely mounted on said arbor and in operative connection with said mechanism, a clutch member secured to said wheel, a clutch member carried by said arbor and yieldably engaged with said first mentioned clutch member, a pivoted arm adapted when moved to rotate said gear, and a longitudinally movable stem operatively connected with said arm for moving the same.

3. In a watch winding mechanism, a spring arbor, a driving wheel mounted for rotation on said arbor and in operative connection with said mechanism, a clutch mechanism between said arbor and time wheel, an arm pivoted at one end near said mechanism, a sectoral rack at the free end of said arm, a gear on said arbor engaged with said rack, a longitudinally movable stem, and a shoulder on said stem adapted to engage said arm to move the latter.

4. In a watch winding mechanism, a spring arbor, a gear rotatably mounted on said arbor, a clutch on said gear for establishing a connection between said spring arbor and said gear when the latter is rotated in one direction, a longitudinally movable stem, a shoulder on said stem, an arm pivoted at one end adjacent said mechanism and extending angularly across said stem and in the path traversed by said shoulder, and a sectoral rack at the free end of said arm and in mesh with said gear.

5. In a watch winding mechanism, a spring arbor, a stem, a shoulder on said stem, an arm pivoted at one end and extending across and in close proximity to said stem, an offset portion on said arm adapted to be engaged by said shoulder when said stem is moved in one direction, and a sectoral rack at the free end of said arm operatively connected with said winding mechanism.

In testimony whereof I affix my signature in presence of two witnesses.

FRED F. J. PRIHODA.

Witnesses:

ABNER WOODEN,
GEORGE O'NEIL.