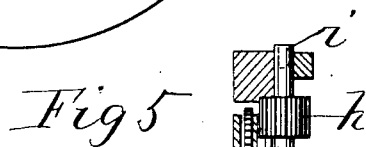
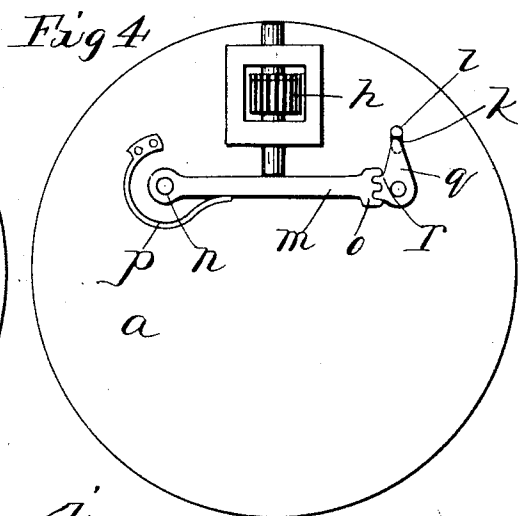
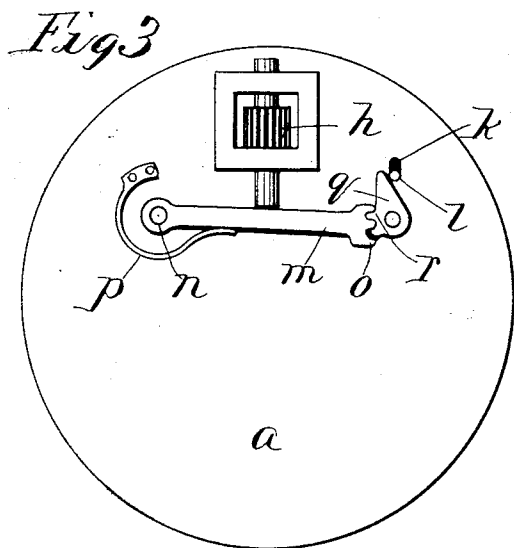
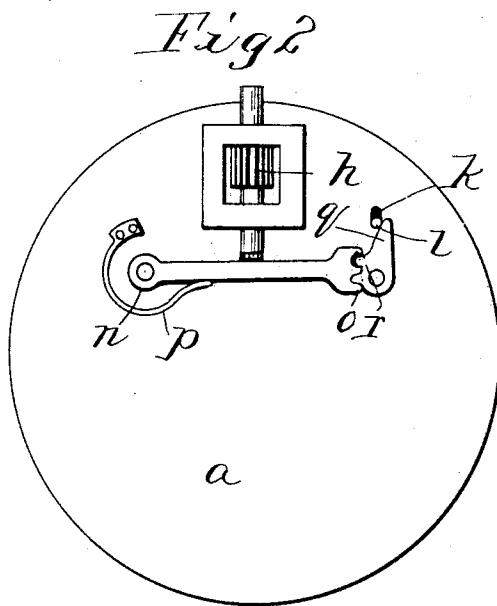
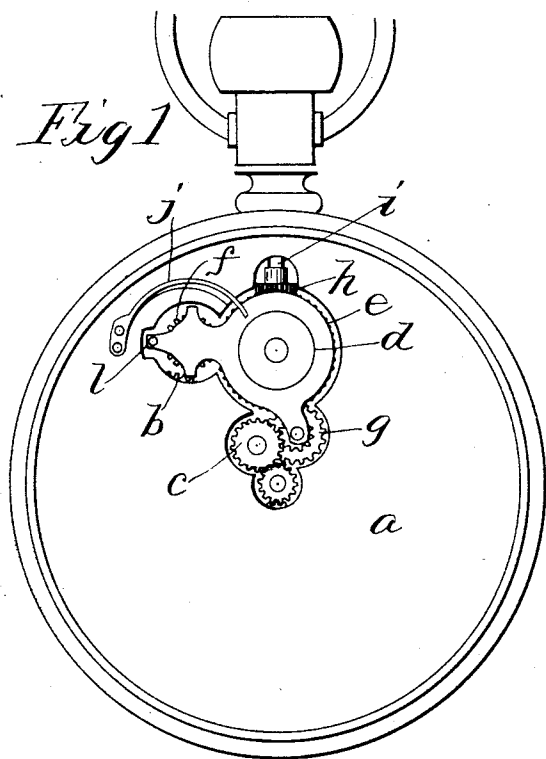


(No Model.)

W. F. WAGGONER.
STEM WINDING AND SETTING WATCH.

No. 510,740.

Patented Dec. 12, 1893.



Witnesses

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UNITED STATES PATENT OFFICE.

WILLIAM F. WAGGONER, OF RAYMOND, ILLINOIS.

STEM WINDING AND SETTING WATCH.

SPECIFICATION forming part of Letters Patent No. 510,740, dated December 12, 1893.

Application filed July 19, 1893. Serial No. 480,941. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. WAGGONER, of Raymond, in the county of Montgomery and State of Illinois, have invented certain new and useful Improvements in Stem-Setting Devices; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to certain improvements in stem setting devices for watches.

The object of the invention is to provide an improved stem setting device for watches, cheap, simple and durable in construction, and composed of a minimum number of parts whereby the parts can be easily and quickly shifted from the winding to the setting position and vice versa, and wherein the movement of parts will always assume the winding position when the movement is removed from the case.

The invention consists in certain novel features of construction and in combinations of parts more fully described hereinafter and particularly pointed out in the claims.

Referring to the accompanying drawings:— Figure 1 is an enlarged front view of the pillar plate showing a swinging yoke and parts when adjusted in the position for setting the hands. Figs. 2, 3, and 4 are enlarged elevations of the rear side of the pillar plate showing the parts in position when the movement is out of the case, when the movement is in the case and set to operate the winding mechanism, and when the movement is in the case and set to turn the hands respectively. Fig. 5 is a sectional view.

In the drawings the reference letter *a*, indicates the pillar plate of the watch or movement.

b, indicates the winding drum of the watch and *c*, indicates the wheel gearing with the cannon pinion for setting the hands of the watch.

d, indicates the swinging or pivoted yoke such as commonly employed in stem setting movements mounted on the same pivot with the gear wheel *e*, which meshes with the gear

f, mounted in one arm of said yoke to mesh with the winding drum of the movement, said central gear wheel also meshing with the pinion *g*, journaled in the opposite arm of the yoke and arranged to mesh with said pinion *c*, for setting the hands of the watch. This gear *e* is also provided with gearing or teeth on one face meshing with the long winding pinion *h*, connected with the stem *i*, of the movement.

j, indicates a spring constantly bearing on the pivoted yoke in such a manner as to throw the winding wheel of the yoke into engagement with the winding drum of the movement. The normal position of the yoke, it will thus be observed is with the parts in position to operate the winding drum of the movement. The winding pinion is formed elongated as shown with bearings to permit longitudinal movement thereof, and one end of the winding pinion is formed with an angular socket to receive the angular tenon on the end of the stem. The winding pinion is freely movable longitudinally in its bearings, but the winding stem is provided with a suitable catch as is usual to hold it in its various positions.

k, indicates an elongated slot in the pillar plate, under the end of the yoke carrying the wheel to engage with the winding drum of the watch. *l* is a lateral projection from said yoke projecting through and beyond said slot in the pillar plate. This slot is of such length that when the pin is forced to the outer end thereof the yoke will be rocked so as to throw the stem into gear with the hand setting wheel and when the pin is at the inner end of the slot the yoke will be in its normal position in gear with the winding mechanism of the watch.

m, indicates a lever extending transversely across the inner end of the winding pinion and fulcrumed at one end at *n*, on the under side of the pillar plate, and at its opposite free end beyond the winding pinion provided with one or more cogs *o*, as shown. This lever is held or forced against the inner end of the winding pinion by means of the spring *p*, so that the constant tendency is to throw the winding pinion outwardly toward its limit of outward movement in its bearings.

q, indicates a locking lever or clamp ful-

erumed or pivoted on the under side of the pillar plate near the slot *k*, and having the teeth or cogs *r*, adapted to intermesh with the cogs or teeth *o* of the lever *m*. This locking lever is so pivoted that its tapered extended end will swing back and forth over the slot *k*. When the movement is removed from the case the spring *p* through the medium of the lever *m* forces the winding pinion to its limit of outward movement (see Fig. 2) thereby swinging the locking lever *q* outwardly through the mediums of the cogs *o*, *r*, until the tapered extended end of the locking lever is beyond the slot *k*, permitting the pin *l*, to move to the inner end of the slot thereby throwing the yoke into winding position. The parts thus automatically assume the winding position when the movement is removed from the case. The tapered end of the locking lever is so formed as to permit this movement. This is a feature of great advantage for it is objectionable to have the winding wheels, &c., in engagement with the hand setting gears of the movement when the movement is out of the case. Furthermore, when the parts are in this position out of the case the key can be easily inserted in the winding pinion to wind up the movement when desired, and if it is desired to set the hands with a key the winding pinion can be easily moved in.

When the movement is in the case and it is desired to throw the parts into the position to wind the watch the stem is pressed in to its limit of inward movement, thereby forcing the winding pinion in, and pressing down the lever *m*, against the tension of the spring *p*, thereby swinging the cam or locking lever *q* inwardly through the medium of cogs *o*, and *r*, until its extended end swings inwardly from over the slot *k* permitting the pin *l* to move into the inner end of the slot. The yoke is thus permitted to swing to the winding position.

When it is desired to set the hands the stem is pulled up thereby permitting the spring *p*, through the medium of lever *m* to throw the winding pinion out, thus rocking lever *q* until its extended tapered end is located over the slot *k*. The sides of the lever are formed tapered or curved as shown so that as the cam is swung its curved side throws the pin *l* toward the outer end of the slot *k*, thereby swinging the yoke to throw the gears into mesh with the hand setting mechanism. When the stem is at its limit of outward movement said pin *l* is held at the outer end of the slot *k*, by means of the locking lever or cam *q*, as shown in Fig. 4.

The extreme simplicity and durability of this device are obvious, and it is evident that various changes might be made in the forms and constructions of the parts described with-

out departing from the spirit and scope of my invention. Hence I do not wish to limit myself to the exact construction herein set forth, but consider myself entitled to all such changes as fall within the spirit and scope of my invention.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. A stem setting device comprising the yoke yieldingly held in winding position, a longitudinally movable winding pinion operated by the stem of the watch, and spring operating mechanism disconnected from said yoke for throwing the yoke into setting position, and disconnected from said winding pinion and constantly tending to throw the same outwardly to permit free swing of said yoke.

2. In a stem setting device the combination of the yoke having the spring to yieldingly hold it to its limit of movement in one direction, a locking lever arranged to swing said yoke in the opposite direction and to permit free swing when said lever is swung to its limit of movement in one direction, the longitudinally movable winding pinion, and a spring actuated lever extending below and yieldingly held engaging the inner end of said pinion and constantly tending to move the winding pinion outwardly and adapted to operate said locking lever as and for the purposes set forth.

3. The combination of the pillar plate having a slot, the swinging yoke having the pin projecting through said slot, the longitudinally movable winding pinion, the rocking lever having the curved edges and arranged to swing across said slot, and having the teeth or cogs and the spring actuated lever disconnected from and constantly bearing against the inner end of said winding pinion having cogs meshing with the cogs of said locking lever and arranged to swing the locking lever, substantially as set forth.

4. In a stem setting mechanism, the combination of the spring actuated swinging yoke, a longitudinally movable winding pinion, a lever extending across and disconnected from the lower end of the winding pinion and fulcrumed in one end, a spring constantly pressing said lever outwardly against the end of the winding pinion, and mechanism disconnected from said lever and from said yoke and operated by the winding mechanism to permit rocking of the yoke, substantially as set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

WM. F. WAGGONER.

Witnesses:

M. F. MAY,
CARL HOFACKER.