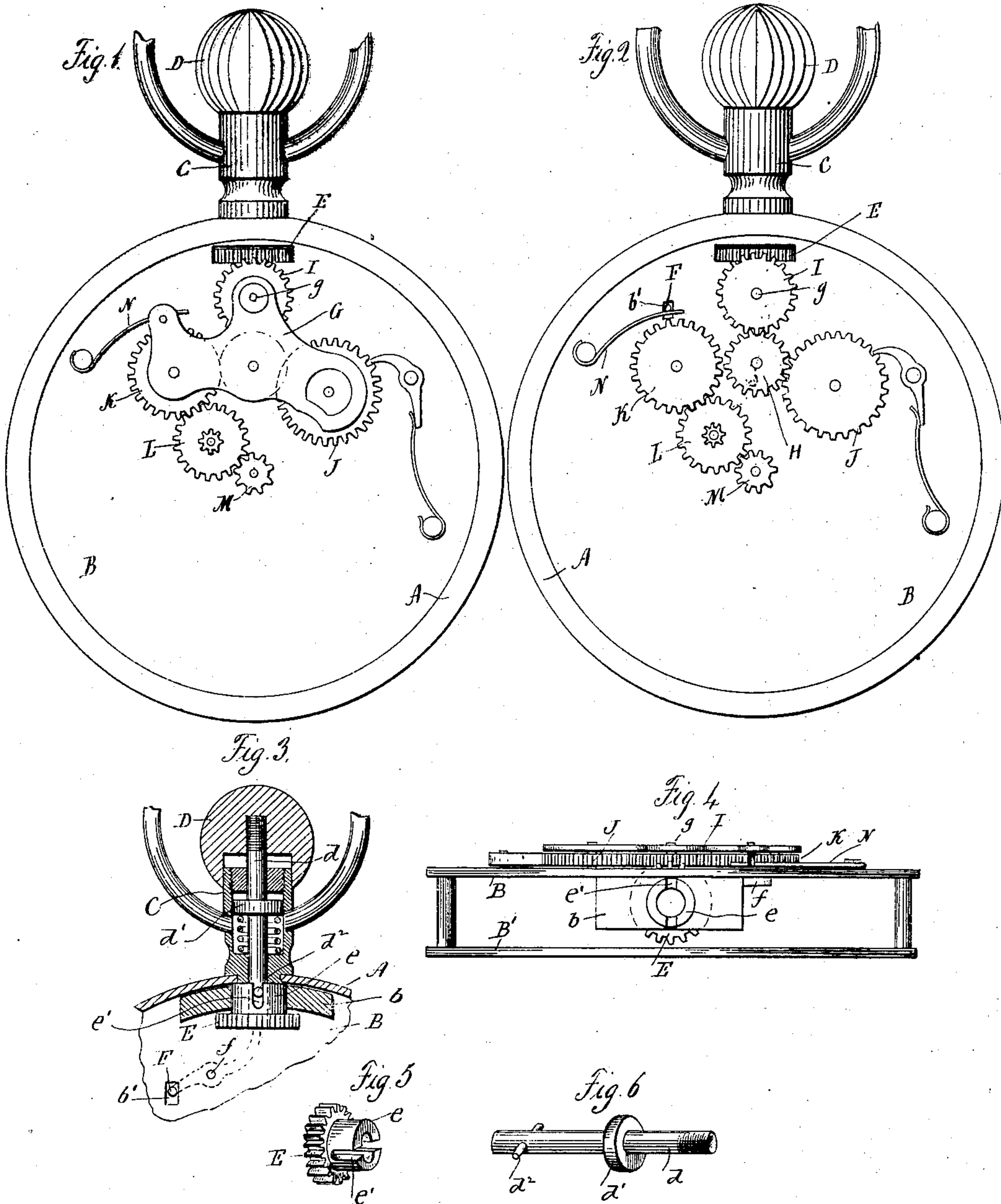


W. E. PORTER.
STEM WINDING WATCH.
APPLICATION FILED DEC. 10, 1900.

NO MODEL.



Witnesses.
Wesley R. Pittman
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UNITED STATES PATENT OFFICE.

WILSON E. PORTER, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO THE
NEW HAVEN CLOCK COMPANY, OF NEW HAVEN, CONNECTICUT, A COR-
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STEM-WINDING WATCH.

SPECIFICATION forming part of Letters Patent No. 737,474, dated August 25, 1903.

Application filed December 10, 1900. Serial No. 39,423. (No model.)

To all whom it may concern:

Be it known that I, WILSON E. PORTER, a resident of the city and county of New Haven, in the State of Connecticut, have invented a new and useful Improvement in Stem-Winding Mechanism for Watches, of which the following is a full, clear, and exact description when taken in connection with the accompanying drawings, which form a part thereof, and in which—

Figure 1 represents a top view of a watch with the face removed embodying my invention; Fig. 2, a similar view, partly broken away, of the connection between the stem-arbor and winding and setting trains, the bridge being shown by dotted lines; Fig. 3, a back view of the stem-arbor, lever, and associated parts on the under side of the supporting-plate, the stem being shown in section; Fig. 4, an end view of the watch-movement with the stem and arbor omitted; Figs. 5 and 6, side and end detail views of the operating-pinion.

In all figures similar letters of reference represent like parts.

This invention relates to watches, and more particularly to the stem-winding mechanism, and has for its object the production of a novel, simple, and efficient means operated by the stem for winding and setting the watch.

To this end the invention consists of the various improvements and combinations of parts set forth and claimed hereinafter.

The arbor of the stem is provided with a pin-and-slot connection with the operating-pinion, so that it may readily be removed, but while assembled positively rotates the pinion and upon its longitudinal movement without disengagement from the pinion shifts a yoke by which the connection from the pinion to the winding-train is disconnected and that with the setting-train established, or vice versa. This peculiar connection is especially suitable for such a construction, as the pin of the connection need not fit. These pins need not fit in the slots with any particular nicety and may be made of such length that they will engage the slots of journals of various widths and styles. The arbor, with pins, does not have to extend in the exact line of the

axis of the slot of the journal, as in the case of a squared arbor, as a slight rocking or inexactness may be allowed, it being merely necessary that the pin or pins on the arbor sufficiently engage in the slot or slots to communicate the rotary movement of the arbor by the pressure of the pin on the side of the slot. Moreover, the liability to wear is diminished as a more positive engagement is made, and as the journal merely receives the end of the arbor in its interior and not the full width of the arbor and pin or engaging portions the journal may be reduced in size, which is an important desideratum in small watches.

Referring to the drawings, the parts designated by the letter A represent the case of the watch; B and B', the supporting-plates for the movement; C, the hollow pendant, and D the outer rotary end of the stem or crown.

d designates the stem-arbor, with *d'* a collar or flange to limit the longitudinal movement of the arbor.

E represents a pinion with its journal *e* bearing in a depending flange *b* on the plate B. The outer end of this journal *e* is provided with longitudinal side slots *e'*, adapted to receive the outer ends of a laterally-projecting pin *d²* on the inner end of the arbor *d*. The arbor *d* when the pin *d²* is engaged in the slot or slots *e'* of the pinion-journal *e* communicates its rotary movement to the pinion E, while still permitting a limited independent longitudinal movement. The extreme inner end projects through the pinion E and bears against a lever F, pivoted at *f* on the under side of the plate B, Fig. 3.

G designates a lever or yoke pivoted at *g* and connected at one end through a slot *b'* in the plate B with the lever F, so that the movement of lever F is transmitted to lever or yoke G. A gear H is mounted on the under side of the yoke G to mesh with a gear I, concentric with the pivot of the yoke G and meshing with the pinion E. The gear H engages the wheel J of the time-train (not shown) when the yoke G is swung in one direction and the wheel K of the setting-train L and M when the yoke is swung in the reverse direction. A spring N holds the yoke G, so that normally the connection between pinion E and

time-train is established, until by the swinging of lever F upon the longitudinal movement of arbor *d* the connection is broken and that between the pinion E and the setting-
 5 train established. The rotary movement of the stem-arbor is communicated to the pinion E by means of the engagement of the pin in the slot or slots of the pinion-journal. No exact fit of the arbor in the journal is necessary, for so long as the pin engages in the
 10 slot or slots the movement may be operated by the stem-arbor.

Having now described my invention, what I claim, and desire to secure by Letters Patent, is—
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In a stem-winding mechanism for a watch, or similar article, the combination with the winding and setting trains; of a gear adapted to be engaged with one or the other of said

trains; a pinion constantly in engagement 20 with said gear to communicate its rotary movement thereto, said pinion being incapable of longitudinal movement; a stem-arbor projecting into and having a pin-and-slot connection with said pinion to rotate the same 25 and capable of longitudinal movement independently of said pinion while connected to rotate therewith; and mechanism for shifting the engagement of said gear from one train to the other by the longitudinal movement of said arbor, substantially as described. 30

In witness whereof I have hereunto set my hand this 14th day of November, 1900.

WILSON E. PORTER.

Witnesses:

EUGENE CARTIER,
 THOMAS RAFTER.