

(No Model.)

N. R. VARNEY.

STEM WINDING AND SETTING WATCH.

No. 323,985.

Patented Aug. 11, 1885.

Fig. 2.

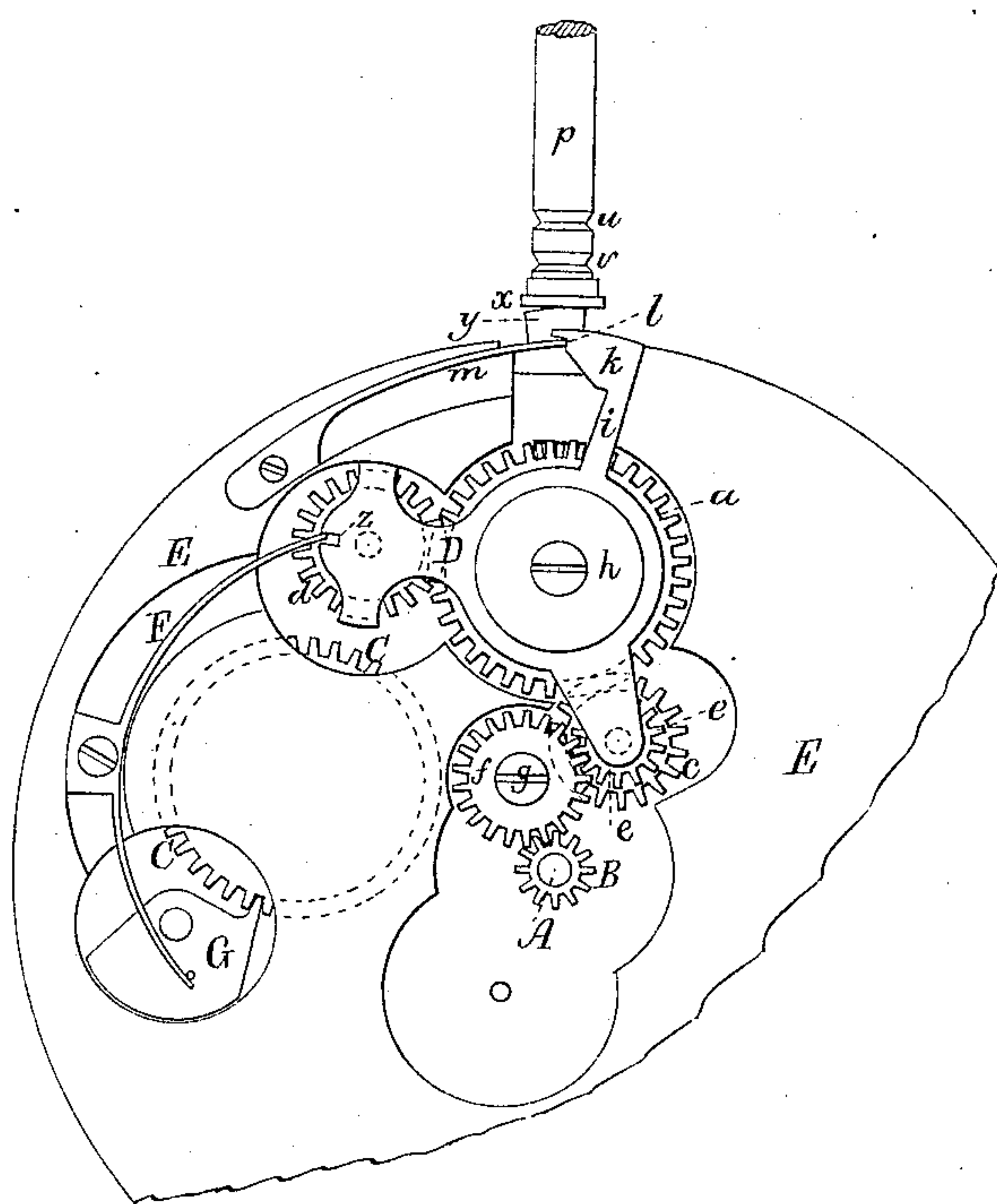
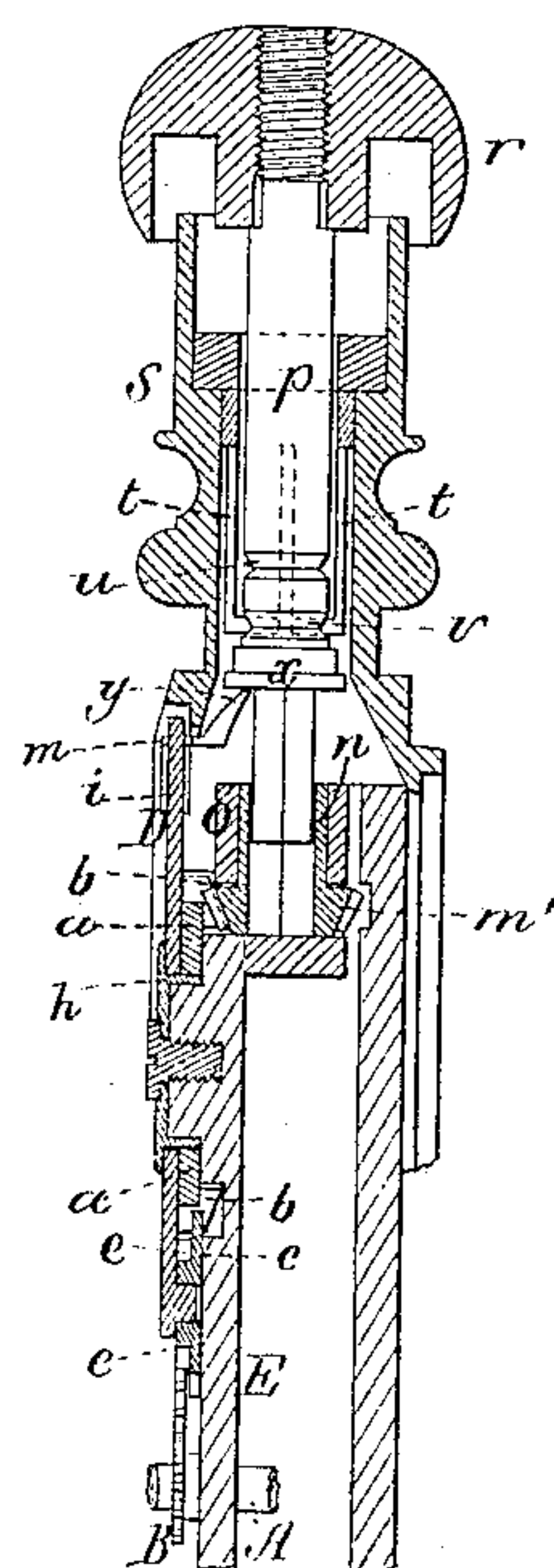


Fig. 1.



Witnesses.

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STEM WINDING AND SETTING WATCH.

SPECIFICATION forming part of Letters Patent No. 323,985, dated August 11, 1885.

Application filed January 12, 1885. (No model.)

To all whom it may concern:

Be it known that I, NICHOLAS RICKER VARNEY, of Waltham, in the county of Middlesex, of the Commonwealth of Massachusetts, have
5 invented a new and useful Improvement in Stem Winding and Setting Watches; and I do hereby declare the same to be described in the following specification and represented in the accompanying drawings, of which—

10 Figure 1 is a longitudinal section, and Fig. 2 a front view, of parts of a watch provided with my improvement, the nature of which being defined in the claim hereinafter presented.

15 My invention relates to means for operating the yoke in order to engage its gearing either with the gear of the winding arbor or with that or those of the minute-hand of the watch.

20 In the drawings, A denotes the minute-hand arbor, and B its gear, while C denotes the gear of the winding-arbor of the main spring. The yoke, which is a flat lever, is shown at D as provided with a spur-gear, *a*, and in rear thereof and concentric therewith a bevel gear,
25 *b*. It also has to engage with the said spur-gear *a* two spur pinions, *c* and *d*, the latter of which is directly over and adapted to engage with the gear C of the winding-arbor. The pinion *c* of the yoke has fixed to it a small gear,
30 *e*, to engage with a gear, *f*, that turns on a stationary pivot, *g*, and engages with the gear B of the minute-hand arbor.

The yoke turns on a stationary fulcrum, *h*, and such yoke has projecting upward from it
35 an arm, *i*, terminating in a triangular head or cam, *k*, formed as shown, and having in it a notch, *l*, to receive the end of a spring, *m*, arranged as represented, and fixed to the pillar-plate E of the watch. There is also fixed at
40 its middle to the pillar plate a bow-spring, F, which at its upper end extends into a notch, *z*, in the next adjacent arm of the yoke, the lower part of such spring serving to press toward the gear of the winding-arbor the retaining-pawl G of such gear. The spring *m*
45 should have a stronger elastic force than the upper arm of the spring F in order for the yoke to be moved by the spring *m* when the latter may be moving upward. The bevel-gear *b* of the yoke engages with a bevel-pin-
50 ion, *m'*, fitted upon a tubular arbor, *n*, adapted to revolve in a suitable bearing or box, *o*, fixed

in the frame of the watch. The bore of the tubular arbor *n* is prismatic to receive the lower part of the key *p*, which is correspond- 55
ingly prismatic. The key, at its upper part, is screwed or fixed into the milled crown *r*, and is adapted to slide lengthwise or to turn transversely within the stem S of the watch-case. The lengthwise movements of the key are de- 60
termined by one or more spring-latches, *t*, arranged in the stem, and also by two grooves, *u v*, arranged in and extending around the shank of the key. Each groove is triangular in vertical section, and each spring-catch has 65
a triangular head or projection to enter either groove. On taking hold of the crown and pulling it upward the key will be drawn upward by it, the catch or catches at the time slipping out of the upper and into the lower groove. Be- 70
low the grooves and fixed on the shank of the key is a shoulder or annulus, *x*, that projects over and upon an ear, *y*, extending upward from the spring *m* and in rear of the arm *i* of the yoke. On pressing downward the crown 75
the key will be moved endwise and the spring latch or latches will be caused to slip out of the lower groove into the upper one of the shank of the key, and the spring *m* will be thrown out of the notch of the head of the arm 80
of the yoke, whereby the bow-spring F will cause the yoke to turn so as to put its pinion *d* into engagement with the gear C of the winding-arbor. This having been accomplished, the crown may be revolved, in which case the 85
main spring will be wound up. On pulling upward the crown the key will be drawn upward, and, carrying with it its annulus or shoulder, will allow the spring *m*, by its greater elastic power relatively to the spring F, to act 90
against the hypotenuse or lower inclined edge of the head or cam *k* of the arm of the yoke in a manner to cause the yoke to turn and carry its gear *e* into engagement with the train of the minute-hand. By next revolving the 95
crown the minute-hand may be set or revolved.

From the above it will be seen that for operating the yoke I have combined with it and its spring F and operative bevel-gears *b* and 100
m' the arm *i* with its notched cam *k*, and the spring *m* with its ear *y*, and I have provided the key with the shoulder annulus or collar *x* and the two grooves *u* and *v*, and I have added

to the watch-case stem the latch or latches *t*,
to engage with one or the other of the grooves
u and *v*; therefore

I claim—

5 The combination of the yoke *D*, its opera-
tive spring *F* and bevel-gears *b* and *m'*, and
the key *p*, having the shoulder or fixed collar
x, the grooves *u* and *v*, and their latch or
latches *t*, with the arm *i* and its notched cam
10 *k*, and the spring *m*, provided with the ear *y*,

such ear being to extend under and bear
against the said shoulder, and such spring *m*
being fixed to the pillar-plate, and such arm *i*
being extended from the yoke, and all being
to operate substantially as set forth.

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Witnesses:

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