

(No Model.)

2 Sheets—Sheet 1.

G. E. HART.

STEM WINDING WATCH.

No. 364,106.

Patented May 31, 1887.

Fig. 1.

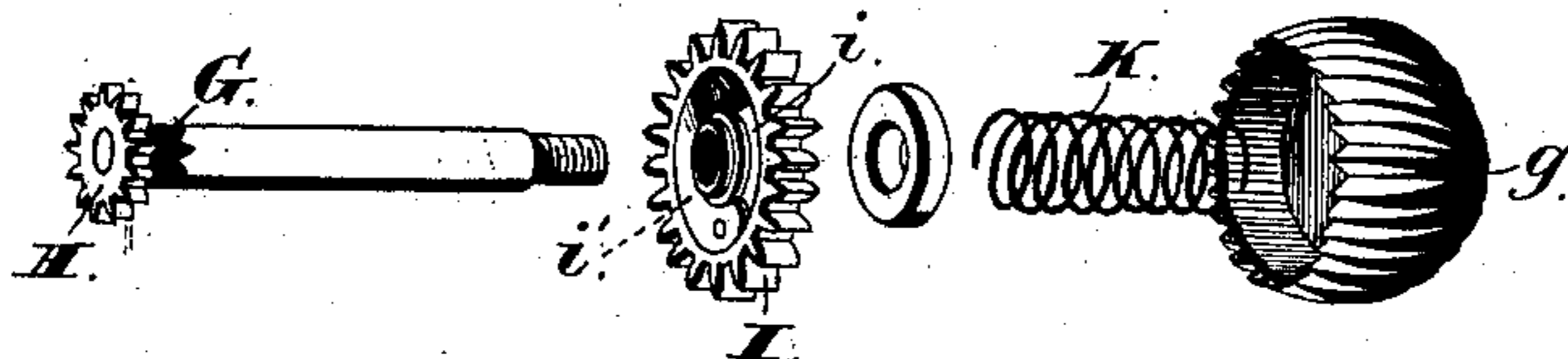


Fig. 2.

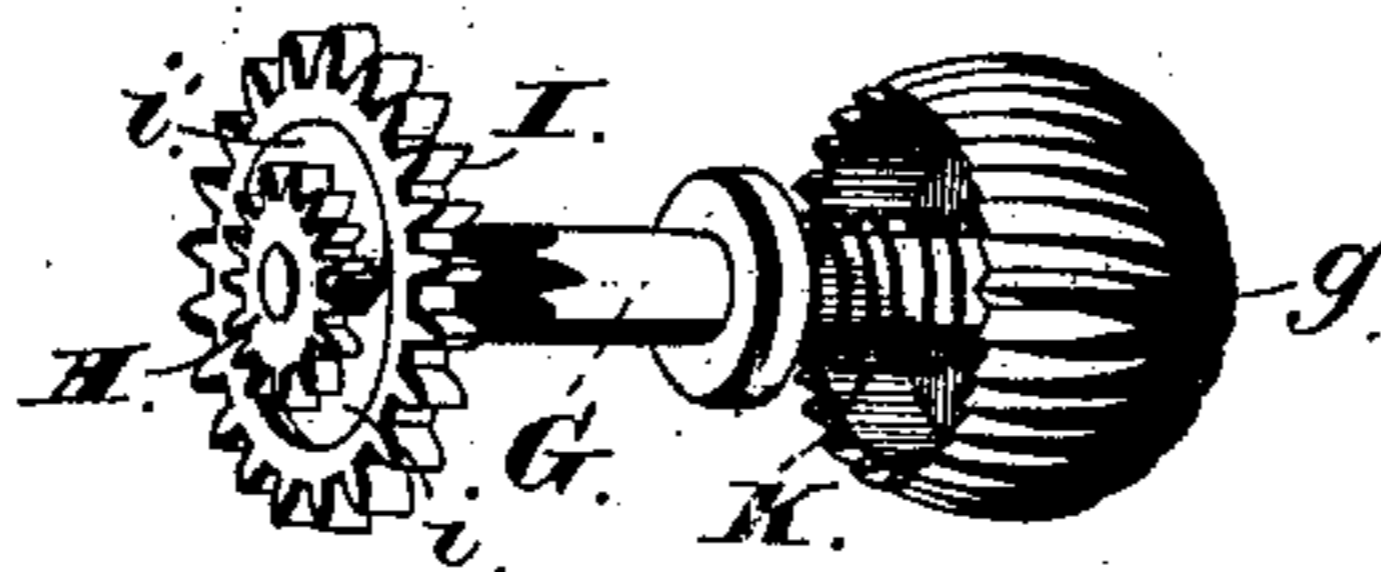
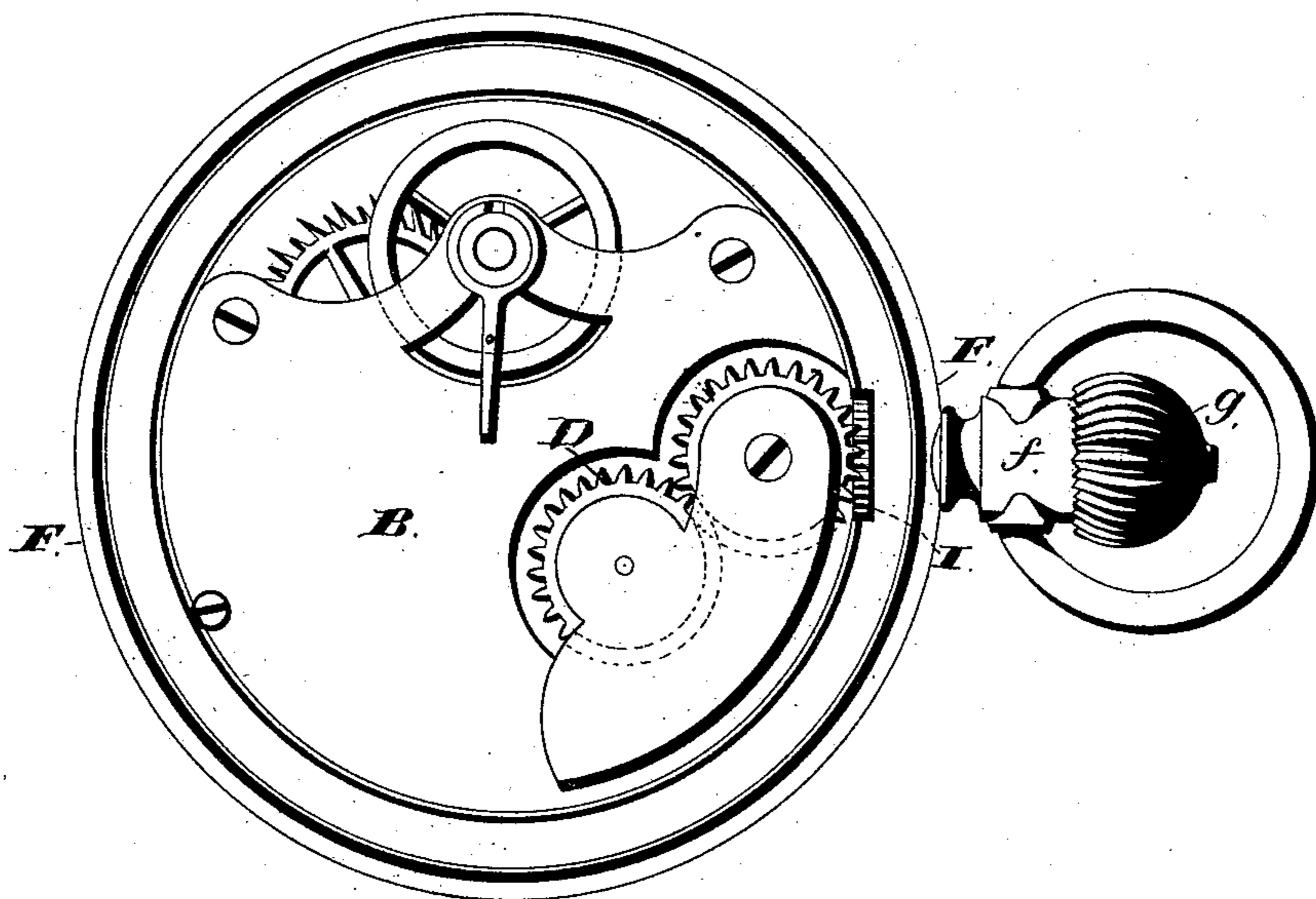


Fig. 3.



Witnesses:

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Fig. 4.

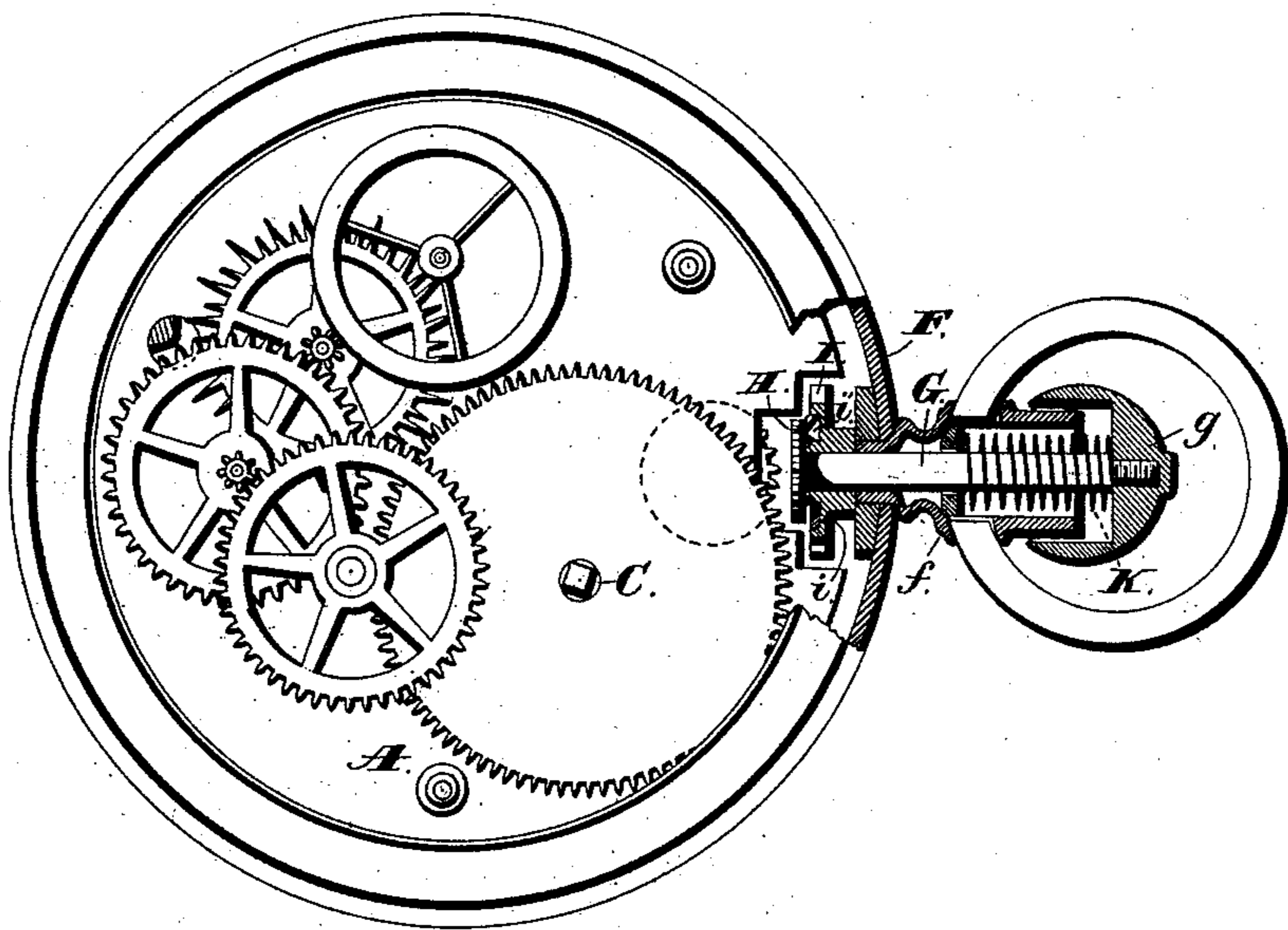
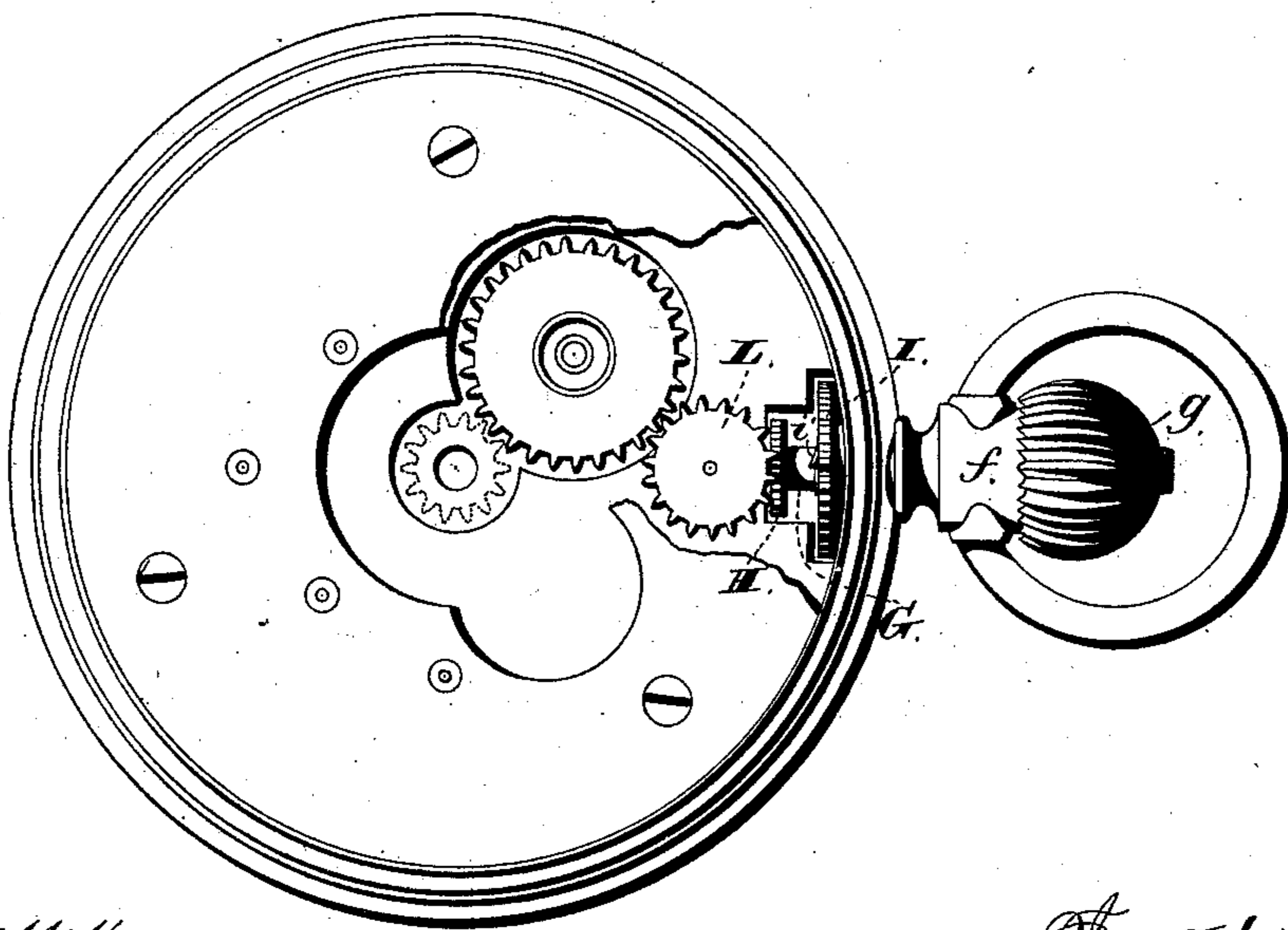


Fig. 5.



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UNITED STATES PATENT OFFICE.

GEORGE E. HART, OF WATERBURY, CONNECTICUT, ASSIGNOR TO THE
WATERBURY WATCH COMPANY, OF SAME PLACE.

STEM-WINDING WATCH.

SPECIFICATION forming part of Letters Patent No. 364,106, dated May 31, 1887.

Application filed December 23, 1885. Serial No. 186,560. (No model.)

To all whom it may concern:

Be it known that I, GEORGE E. HART, of Waterbury, in the county of New Haven, and in the State of Connecticut, have invented certain new and useful Improvements in Stem-Winding Watches; 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—

10 Figure 1 is an enlarged perspective view of the stem-arbor, setting-pin, winding-pin, arbor-spring, and crown separated from each other and from the case-stem. Fig. 2 is a like view of said parts united. Fig. 3 is a
15 plan view from the rear of a watch-movement and case containing said winding and setting mechanism, the back plate being removed and the stem arbor and its connecting parts occupying their normal positions. Fig. 4 is a plan
20 view of said watch from the front, the dial being removed and the stem and its connecting parts shown in longitudinal section; and Fig. 5 is a like view of the same with the stem-arbor and its connecting parts in engagement
25 with the dial-wheels.

Letters of like name and kind refer to like parts in each of the figures.

My invention relates to the winding and setting of watches; and it consists in the means
30 employed for winding the mainspring through the stem-arbor, substantially as and for the purpose hereinafter specified.

It consists, further, in the means employed for connecting the stem-arbor with the winding-pin, substantially as and for the purpose
35 hereinafter shown.

In the annexed drawings, A represents the pillow-plate, and B the back plate, of a watch, between which is placed any usual form of
40 time-train that has an ordinary mainspring-arbor, C, which arbor carries upon one end a winding-wheel, D, that meshes with a second or intermediate wheel, E.

Journalled within the case-stem *f* is a stem-arbor, G, which has secured to its outer end
45 the usual crown, *g*, and upon its inner end, which extends just through the case-center F, has secured a small pinion, H. Upon said arbor, immediately in rear of said pinion, is
50 journalled a second larger pinion, I, which has within the central portion of its inner face a

slight recess, *i*, and within the same has a C-shaped spring, *i'*, that is secured at one end to said pinion and at its opposite free end is turned slightly outward into position to en- 55
gage with the teeth of said pinion H.

A spiral spring, K, placed around the stem-arbor G between the crown *g* and the inner end of the recessed portion of the stem *f*, operates to hold said arbor at the outer limit of its mo- 60
tion with the contiguous faces of the pinions H and I in contact and the outer face of the latter in contact with the inner face of the case-center F, such being the normal positions of said parts, but allows said arbor to be moved 65
longitudinally inward a certain predetermined distance, for reasons hereinafter set forth.

The pinion I is in engagement with the intermediate wheel, E, and is caused to rotate the same, the wheel D, and the mainspring- 70
arbor C whenever the stem-arbor G is rotated in such direction as to cause the spring-pawl *i'* to be engaged by the teeth of the pinion H, while when said stem arbor is rotated in the opposite direction said pawl will not be en- 75
gaged and said pinion I and its connecting parts will remain at rest.

The pinion H is adapted to engage with one of the dial-wheels, L, whenever the spring-arbor G is moved inward a sufficient distance, as 80
shown by Fig. 5, at which time said stem by the separation of said pinion from engagement with the spring-pawl *i'* is disconnected from said winding-pin and free to rotate in either direction within the latter. 85

By this construction the spiral spring K performs no other office than to hold the stem-arbor G at the outer limit of its motion, and may have any amount of stiffness necessary for such purpose without interference with the 90
ratchet mechanism, while the spring-pawl *i'* may be made as light as desired within the limits of the required longitudinal rigidity, and adds but slightly to the resistance offered to the rotation of said arbor. 95

Having thus described my invention, what I claim is—

1. As a means for winding the mainspring of a watch, a pinion secured to the inner end of the stem-arbor, a second pinion journalled 100
upon said arbor in rear of the fixed pinion, and provided with a pawl or tooth which is adapted

to be engaged by the teeth of said fixed pinion and thereby cause the motion of said stem-arbor to be transmitted to the mainspring-arbor, substantially as and for the purpose shown.

2. As a means for winding the mainspring of a watch, a pinion secured to the inner end of a stem-arbor, a second pinion journaled upon said arbor in rear of the fixed pinion, and provided with a spring-pawl which is adapted to be engaged by said fixed pinion and is adapted to transmit the motion of the same to the mainspring-arbor, substantially as and for the purpose specified.

3. As a means for connecting the fixed pinion of the stem-arbor with the pinion journaled upon said arbor, a pawl or tooth which projects from the face of one of said pinions, and

is adapted to engage with or to be engaged by the teeth of the other pinion, substantially as and for the purpose set forth.

4. As a means for connecting the fixed pinion of the stem-arbor with the pinion journaled upon said arbor, a spring-pawl which is secured to the face of one of said pinions, and is adapted to engage with or to be engaged by the teeth of the other pinion, substantially as and for the purpose shown.

In testimony that I claim the foregoing I have hereunto set my hand this 6th day of November, A. D. 1885.

GEORGE E. HART.

Witnesses:

GEO. S. PRINDLE,
HENRY C. HAZARD.