

(Model.)

2 Sheets—Sheet 1.

W. H. FITZ GERALD.

STEM WINDING AND SETTING WATCH.

No. 338,947.

Patented Mar. 30, 1886.

Fig. 1.

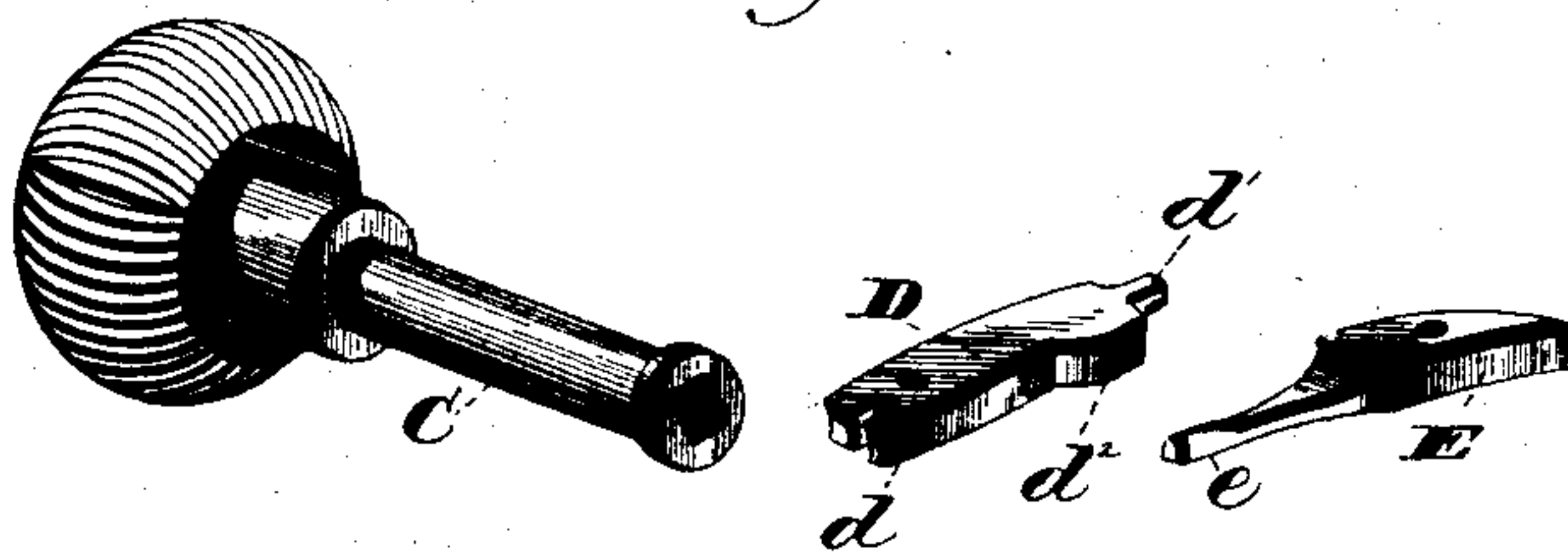


Fig. 2.

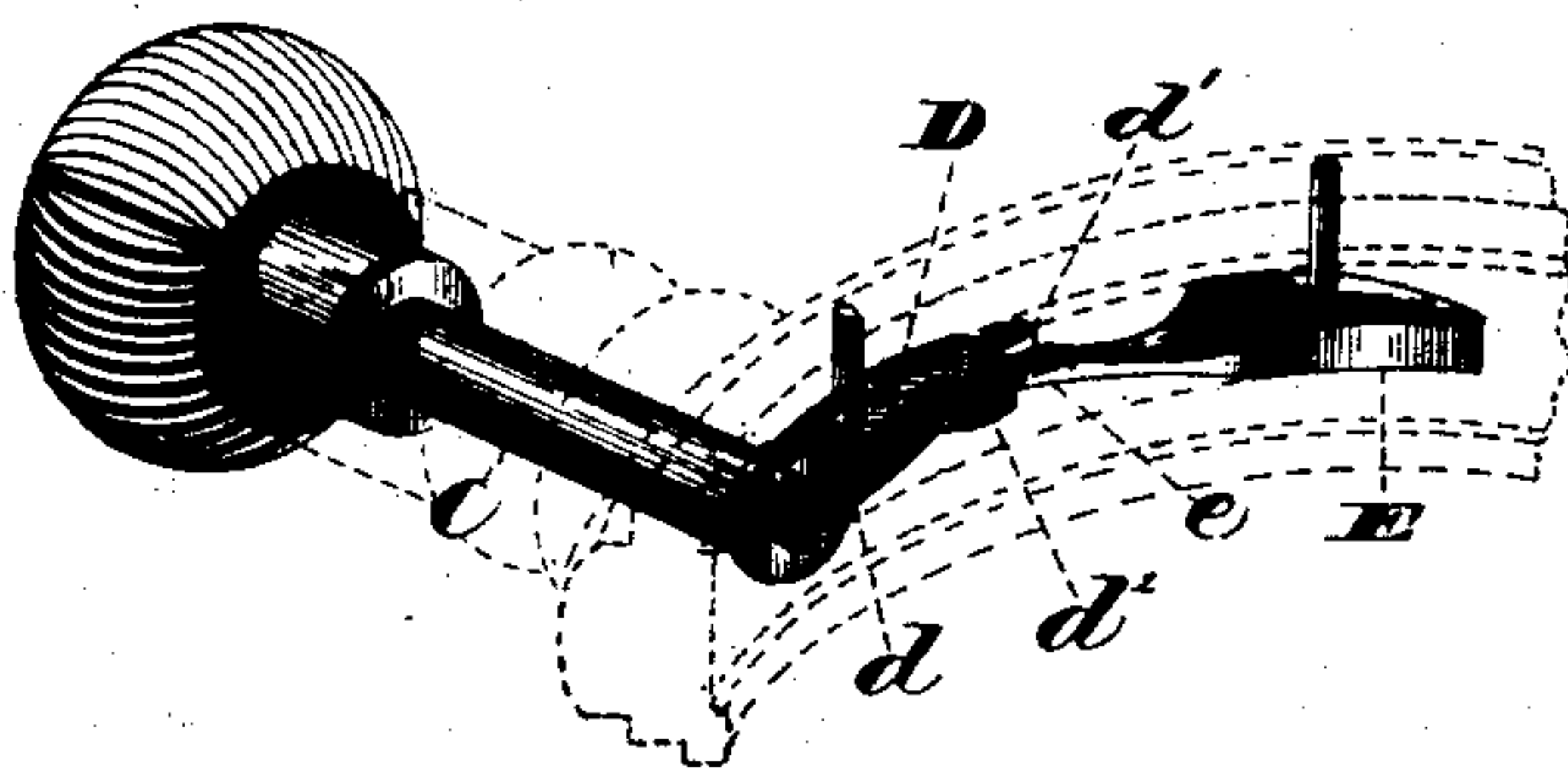
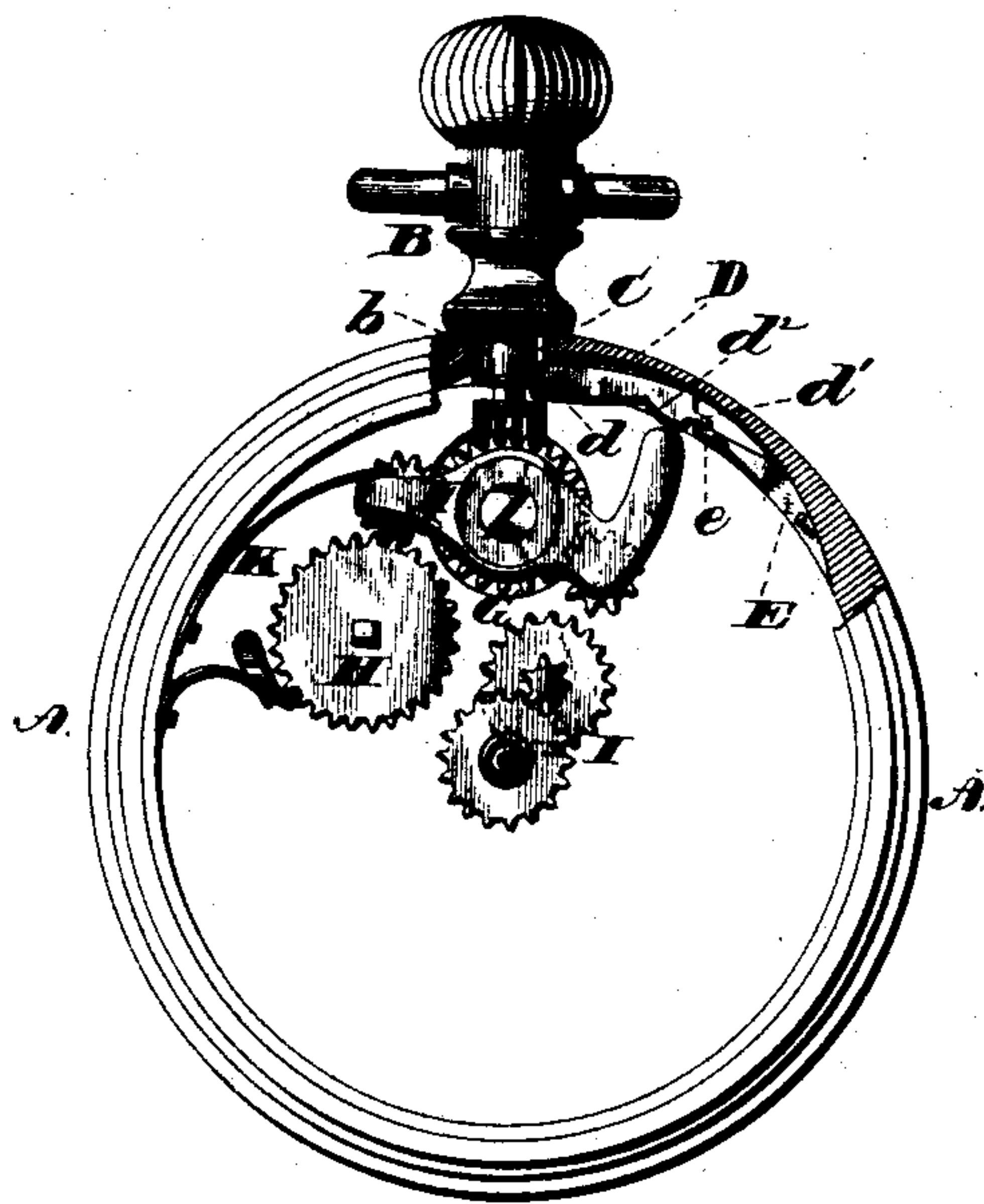


Fig. 3.



Witnesses:
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Henry C. Hazard

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Fig. 4.

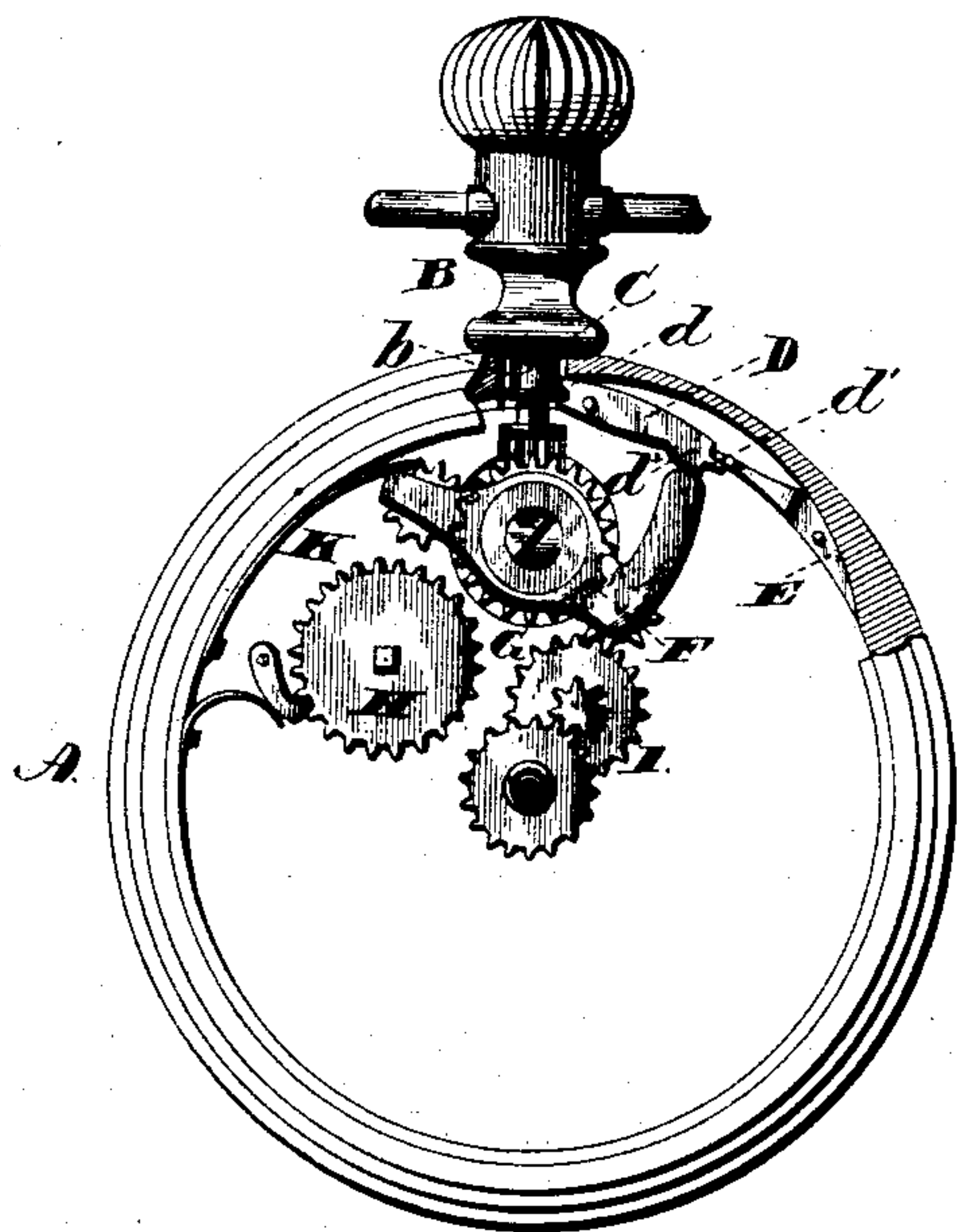


Fig. 5.

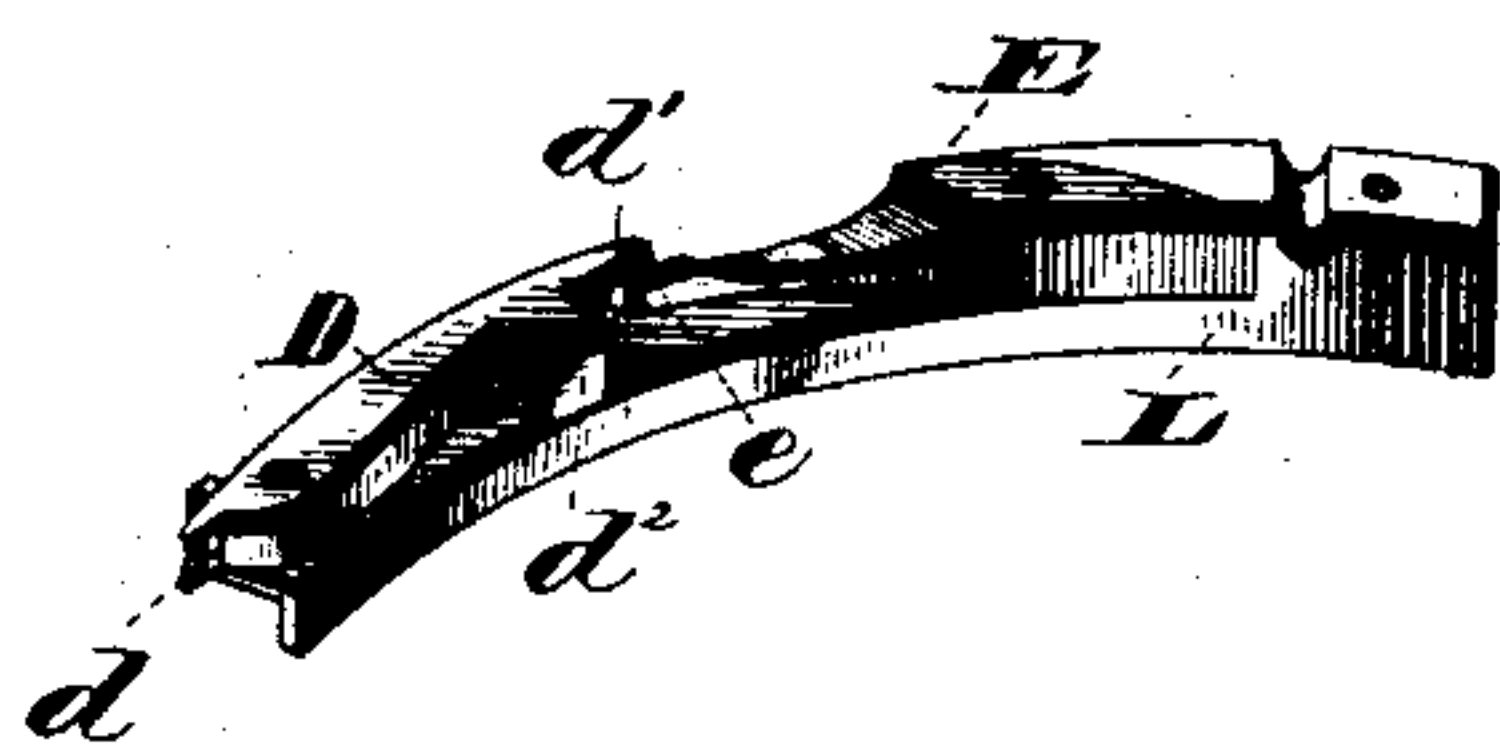
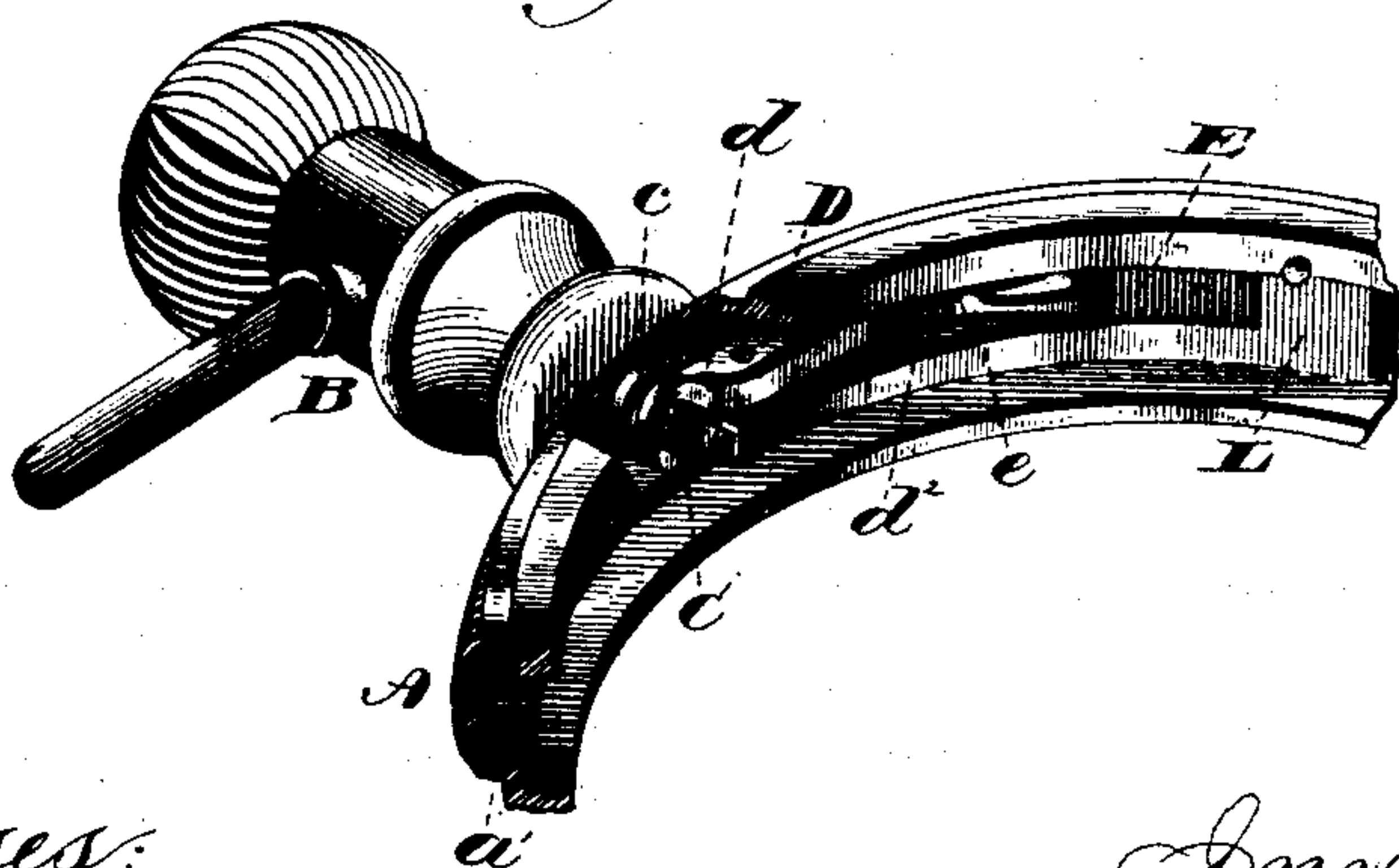


Fig. 6.



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UNITED STATES PATENT OFFICE.

WALTER H. FITZ GERALD, OF BROOKLYN, NEW YORK.

STEM WINDING AND SETTING WATCH.

SPECIFICATION forming part of Letters Patent No. 338,947, dated March 30, 1886.

Application filed October 3, 1885. Serial No. 178,935. (Model.)

To all whom it may concern:

Be it known that I, WALTER H. FITZ GERALD, of Brooklyn, in the county of Kings, and in the State of New York, have invented
5 certain Improvements in Stem Winding and Setting 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 operative parts of my mechanism separated from each other and from the case-center. Fig. 2 is a like view of the same when combined for use. Figs. 3 and 4 are plan views
15 of a watch-movement inclosed by a case-center, and show, respectively, the stem-driven train in engagement with the mainspring-wheel and the dial-wheels. Fig. 5 is a perspective view of my intermediate and locking
20 devices as arranged for attachment to the center of a hunting-case, and Fig. 6 is a like view of the same in position within such case-center.

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

The object of my invention is to render stem winding and setting watch-movements freely interchangeable; and to this end said invention consists, principally, as an improvement in
30 stem winding and setting watches, in the combination of a winding and setting train which is in part journaled upon a pivoted yoke, and is normally in engagement with the winding-wheel, a rotatable longitudinally-movable stem-
35 arbor that has no positive connection with the watch-movement, and an intermediate device which is contained within the case-center and is adapted to communicate the longitudinally-outward movement of said stem-arbor di-
40 rectly to said pivoted yoke and cause said train to engage with the dial-wheels, substantially as and for the purpose hereinafter specified.

It consists, further, as an improvement in
45 stem winding and setting watches, in the combination of a winding and setting train which is in part journaled upon a pivoted yoke and is normally in engagement with the winding-wheel, a rotatable longitudinally-movable
50 stem-arbor that has no positive connection with the watch-movement, and an intermedi-

ate device which is contained within the case-center and impinges directly upon said pivoted yoke, and by the longitudinally-inward movement of said stem-arbor is adapted to
55 permit said train to be disengaged from the dial-wheels and engaged with said winding-wheel, substantially as and for the purpose hereinafter shown.

It consists, further, as an improvement in
60 stem winding and setting watches, in a watch-case provided within its pendant with a rotatable longitudinally-movable stem-arbor which is adapted to engage with a suitably constructed watch-movement without having
65 positive connection therewith, and an intermediate device which is contained within the case-center and is adapted to impinge directly upon the pivoted yoke of the winding and setting train and to communicate thereto the
70 longitudinal movements of said stem-arbor, substantially as and for the purpose hereinafter set forth.

It consists, further, as an improvement in
75 stem winding and setting watches, in a watch-case provided within its pendant with a rotatable longitudinally-movable stem-arbor which is adapted to engage with a suitably constructed watch-movement without having
80 a positive connection therewith, an intermediate device which is adapted to communicate the longitudinal movements of said stem-arbor directly to the winding and setting train, and a stop for holding said intermediate de-
85 vice in different positions, said intermediate device and stop being independent of the watch-movement and substantially outside of the movement-holding space in the case, substantially as and for the purpose hereinafter specified.

It consists, finally, as an improvement in
90 stem winding and setting watches, in a watch-case provided within its pendant with a rotatable longitudinally-movable stem-arbor which is adapted to engage with a suitably-
95 constructed watch-movement without having a positive connection therewith, a lever that is pivoted within the case-center and is adapted to communicate the longitudinal movements of said stem-arbor to the winding
100 and setting train, and a spring-stop secured to or within said case-center and adapted to en-

gage with and hold said lever in different positions, substantially as and for the purpose hereinafter shown.

In the carrying of my invention into practice, the usual case-center, A, provided with a stem, B, and stem-arbor C is employed. Pivoted near one end, within the inner face of said center A, at one side of the axial opening *b* of the stem B, is a lever, D, which has its said end *d* adapted to engage with a circumferential groove, *c*, that is formed within the periphery at or near the inner end of said stem-arbor C, so that a longitudinal movement of the latter will cause the opposite outer end of said lever to be moved in an opposite direction.

At the outer end of the lever D is a small lug, *d'*, which extends outward in substantially the same line as said lever, and has, in cross-section, an oval shape, its greatest diameter being in a line having a right angle to the plane of oscillation of said lever.

Secured to the case-center A is a spring, E, which has a small, round, free end, *e*, that is located in the path of said lug *d'*, and is engaged by the latter as said lever is swung upon its pivotal bearing. The transverse dimensions of the lug *d'* and spring end *e* are just equal to the desired movement of the outer end of the lever D, and when the latter, through the stem-arbor C, is thus moved said lug will press said spring end away, and, passing to the opposite side of the same, said spring will resume its normal position and said lever will be locked in place against any longitudinal pressure which would ordinarily be brought to bear upon said stem-arbor.

Upon the inner face, at the outer or free end of the lever D, is a lug, *d''*, which projects toward the interior of the case and impinges upon one end of a pivoted yoke, F, that carries a portion of a stem-operated train, G, and, by movement upon its axis, is adapted to cause said train to engage with the main-spring-arbor wheel H for winding purposes, or with the dial-wheels I for the purpose of setting the hands. A spring, K, bearing upon the end of said yoke, adjacent to said winding-wheel H, operates to hold the former with a yielding pressure at the limit of its motion in the direction necessary to cause engagement between said stem-driven train and said winding-wheel, to permit of the winding of the mainspring by the rotation of the stem-arbor C, as seen in Fig. 3, such being the normal positions of said parts.

In the position of parts necessary for the winding of the mainspring, (shown in Fig. 3,) the stem-arbor C is moved to the inner limit of its motion, and the free end of the lever D, with its lug *d''*, is at the limit of its motion in an outward direction. If, now, said stem-arbor is drawn outward, the free end of said lever will be moved inward, and its said lug *d''*, pressing against the contiguous end of the yoke F, will turn said yoke upon its axis so as

to disengage the train G from the winding-wheel H and cause it to engage with the dial-wheels I, as seen in Fig. 4, in which position of parts the hands may be set by the rotation of said stem-arbor. This construction renders the stem-arbor a portion of the watch-case and enables the latter to receive any movement designed for it, the insertion or removal of such movement being as easily effected as in case of key-winding watches.

The construction described is designed for open-faced watches in which the case-center A has a flush interior, and opportunity is afforded for cutting within the inner face of said center a recess which is adapted to receive and contain the stem-actuated lever D and its locking-spring E.

When the invention is to be employed in connection with a hunting-case watch in which the center A has the usual circumferential interior recess, *a'*, for the reception of the case-springs, the lever D and spring E are connected with a block or bar, L, and the latter fitted to said recess, where it is preferably secured in position by means of screws.

While the connection between the stem-arbor and lever, as described, is preferably employed, I do not limit myself to such construction, as it will be obvious that a peripheral flange or collar upon the stem-arbor and an engaging fork or slot in the end of the lever would operate in all respects as well, and would be the same in principle.

The stem-operated lever need not impinge directly upon the yoke, but its movements may, if desired, be transmitted to said yoke through any convenient form of intermediate device.

Having thus fully set forth the nature and merits of my invention, what I claim is—

1. As an improvement in stem winding and setting watches, the combination of a winding and setting train which is in part journaled upon a pivoted yoke and is normally in engagement with the winding-wheel, a rotatable longitudinally-movable stem-arbor that has no positive connection with the watch-movement, and an intermediate device which is contained within the case-center and is adapted to communicate the longitudinally-outward movement of said stem-arbor directly to said pivoted yoke and cause said train to engage with the dial-wheel, substantially as and for the purpose specified.

2. As an improvement in stem winding and setting watches, the combination of a winding and setting train which is in part journaled upon a pivoted yoke and is normally in engagement with the winding-wheel, a rotatable longitudinally-movable stem-arbor that has no positive connection with the watch-movement, and an intermediate device which is contained within the case-center and impinges directly upon said pivoted yoke, and by the longitudinal-inward movement of said stem-arbor is adapted to permit said train to be dis-

engaged from the dial-wheels and engaged with said winding-wheel, substantially as and for the purpose shown.

3. As an improvement in stem winding and setting watches, a watch-case provided within its pendant with a rotatable longitudinally-movable stem-arbor which is adapted to engage with a suitably-constructed watch-movement without having positive connection therewith, and an intermediate device which is contained within the case-center and is adapted to impinge directly upon the pivoted yoke of the winding and setting train and to communicate thereto the longitudinal movements of said stem-arbor, substantially as and for the purpose set forth.

4. As an improvement in stem winding and setting watches, a watch-case provided within its pendant with a rotatable longitudinally-movable stem-arbor which is adapted to engage with a suitably-constructed watch-movement without having a positive connection therewith, an intermediate device which is adapted to communicate the longitudinal movements of said stem-arbor to the winding and setting train, and a stop for holding said intermediate device in different positions, said

intermediate device and stop being independent of the watch-movement and substantially outside of the movement-holding space in the case, substantially as and for the purpose specified.

5. As an improvement in stem winding and setting watches, a watch-case provided within its pendant with a rotatable longitudinally-movable stem-arbor which is adapted to engage with a suitably-constructed watch-movement without having a positive connection therewith, a lever that is pivoted within the case-center and is adapted to communicate the longitudinal movements of said stem-arbor to the winding and setting train, and a spring-stop secured to or within said case-center and adapted to engage with and hold said lever in different positions, substantially as and for the purpose shown.

In testimony that I claim the foregoing I have hereunto set my hand this 18th day of September, 1885.

WALTER H. FITZ GERALD.

Witnesses:

STEDMAN H. HALE,
A. H. CROMMELIN.