

D. A. A. BUCK.
Stem-Winding Attachment for Watches.
No. 222,657. Patented Dec. 16, 1879.

Fig. 1.

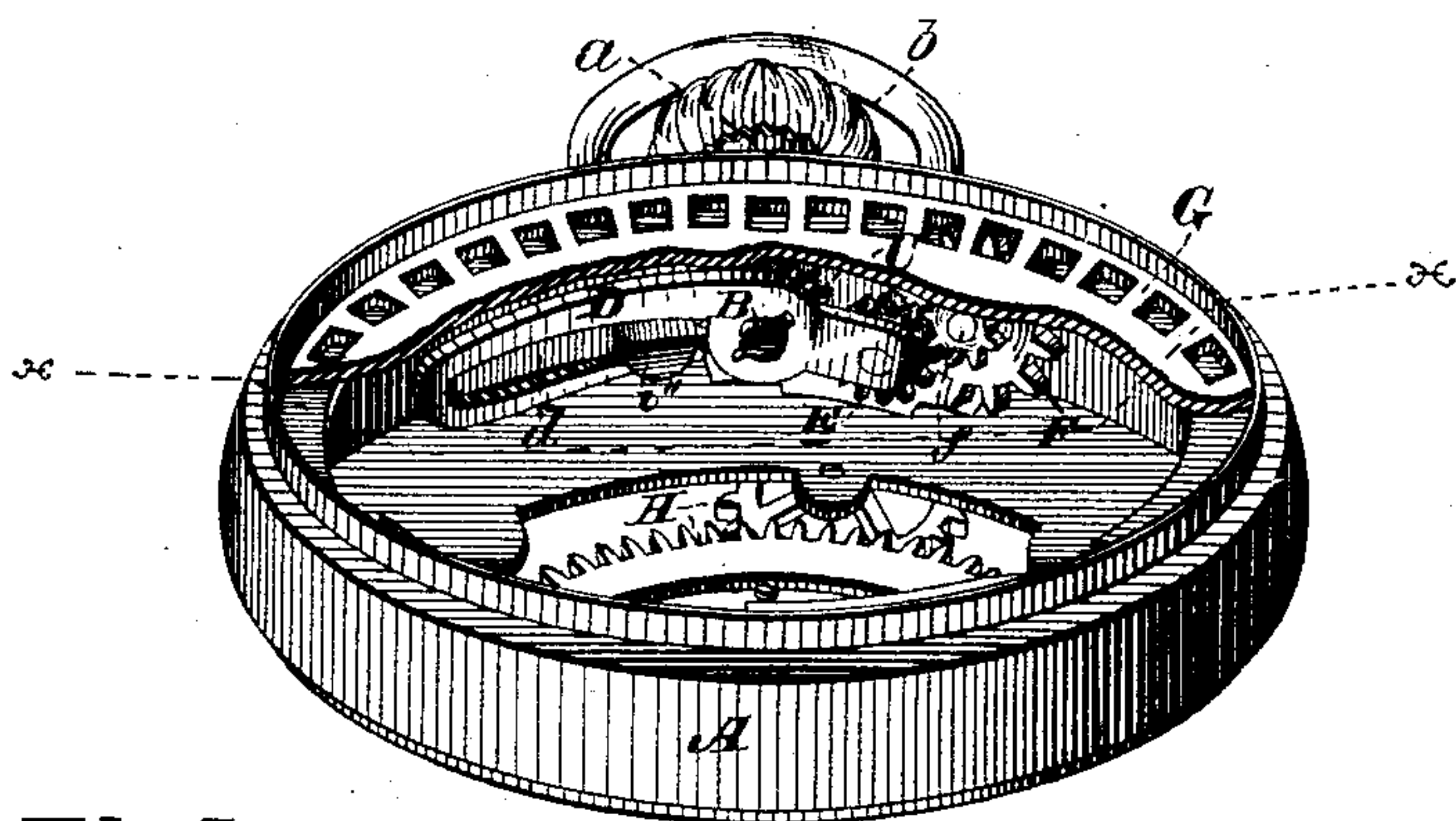


Fig. 2.

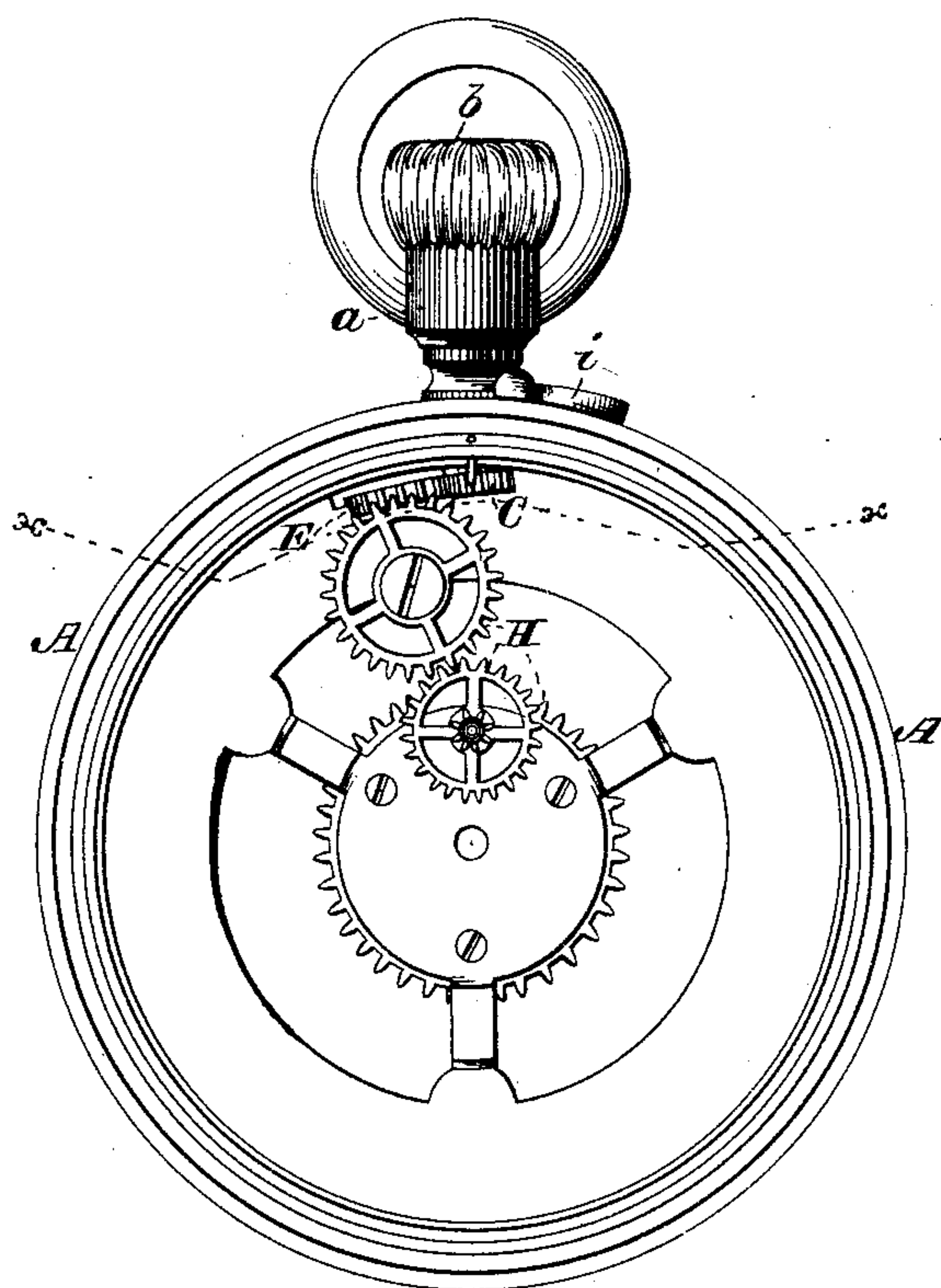


Fig. 3.

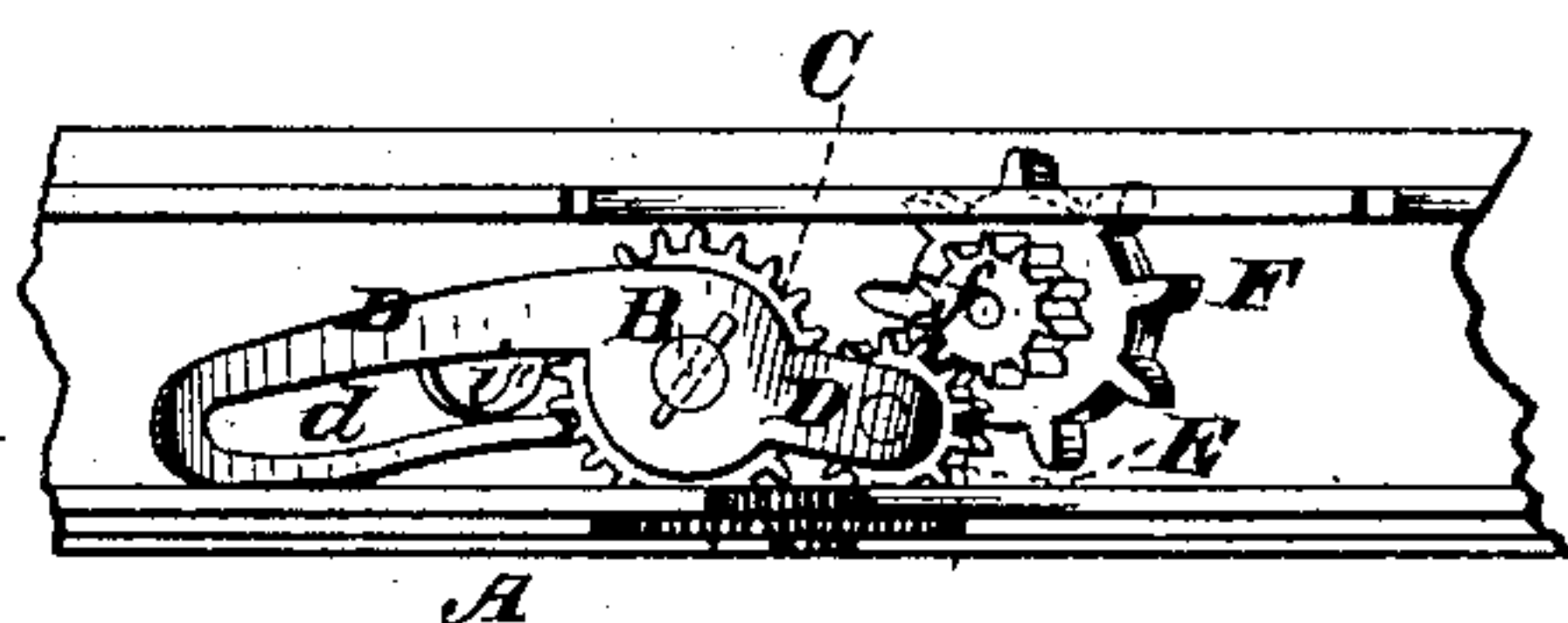
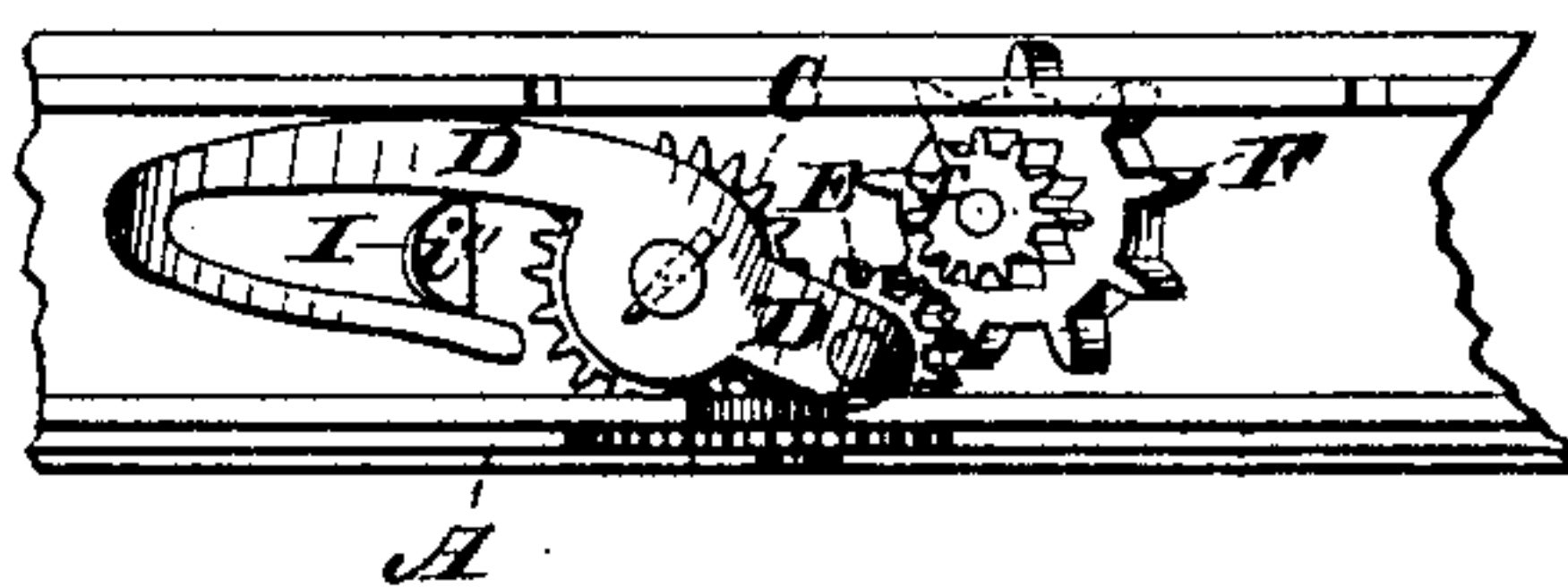


Fig. 4.



WITNESSES=

*Jas. C. Hutchinson.
 Henry C. Hazard.*

INVENTOR=

*D. A. A. Buck, by
 Geo. S. Prindle, his Att'y.*

UNITED STATES PATENT OFFICE

D. AZRO A. BUCK, OF WATERBURY, CONNECTICUT, ASSIGNOR TO HIMSELF
AND EDWARD A. LOCKE, OF SAME PLACE.

IMPROVEMENT IN STEM-WINDING ATTACHMENTS FOR WATCHES.

Specification forming part of Letters Patent No. **222,657**, dated December 16, 1879; application filed
September 26, 1879.

To all whom it may concern:

Be it known that I, D. AZRO A. BUCK, of Waterbury, in the county of New Haven, and in the State of Connecticut, have invented certain new and useful Improvements in Stem-Winding Attachments for Watches; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view of the rear side of a watch containing my improved mechanism, the back plate and train being removed from the case. Fig. 2 is a plan view of the front side of said watch; and Figs. 3 and 4 are, respectively, sections upon line *x x* of Figs. 1 and 2, and show the relative positions of the operative mechanism when connected with the winding-barrel and with the dial-wheels.

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

The design of my invention is to increase the efficiency and render more certain the operation of mechanism for winding and setting watches through the stem; and to this end it consists, principally, in a stem-winding and hand-setting attachment for watches in which the engagement of the gearing is changed by means of the rotation of a radial shaft, substantially as and for the purpose hereinafter specified.

It consists, further, in a stem-winding and hand-setting attachment for watches composed of a train of gearing arranged upon the inner face of the case-center, actuated by means of a shaft contained within the case-stem, and capable of being thrown into or out of engagement with the winding-barrel and dial-wheels, substantially as and for the purpose hereinafter shown.

It consists, further, in a stem-winding and hand-setting attachment for watches provided with an intermediate gear adapted to engage with the winding-barrel and dial-wheels, and arranged to be thrown into engagement with either of the same by means of a cam actuated by a radial shaft, substantially as and for the purpose hereinafter set forth.

It consists, finally, in the construction and

arrangement of parts, substantially as and for the purpose hereinafter shown and described.

In the annexed drawings, A represents a case-center provided with a stem, *a*, within which is journaled a shaft, B, that at its outer end has a head or button, *b*, and upon its inner end has secured a toothed wheel, C.

Journaled at one side of its longitudinal center upon the inner end of the shaft B, outside of the gear-wheel C, is a bar, D, which has the form, in side elevation, shown in Figs. 3 and 4, its longest end being made narrow and tapering, and turned backward, so as to form within said part a narrow slot, *d*, while upon the outer face of the short end of said bar is pivoted a pinion, E, that meshes with and receives motion from said gear-wheel C.

Pivoted upon the inner face of the case-center A is a gear-wheel, F, which has secured upon its inner side a pinion, *f*, that is engaged by the pinion E whenever the bar D is oscillated upon its axial bearing B so as to move said pinion E against said pinion *f*, at which time the rotation of said shaft B will cause said gear-wheel F to revolve.

The gear-wheel F is caused to mesh with the toothed periphery of a winding-barrel, G, and by the rotation of the shaft B said barrel is revolved and the mainspring wound.

Within the face side of the case is a train of toothed wheels, H, which engage with the dial-wheels of the watch, and extend between the same and the case-center, so that by oscillating the bar D until the pinion E is moved out of engagement with the pinion *f* said pinion E will mesh with the outer wheel of said train, and enable the same to be revolved by the rotation of the shaft B for the purpose of setting the hands of said watch.

In order that the bar D may be moved so as to cause the pinion E to engage with the winding or the hand-setting trains, a shaft, I, is journaled radially within the case-center A, and is provided upon its outer end with a handle or lever, *i*, and upon its inner end, which is contained within the inner end of the slot *d*, has a cam, *i'*, that closely fills said slot transversely when said shaft is in its normal position, with said pinion E in engagement with the pinion *f*, as seen in Fig. 3.

The tail d' of the backward-turned end of the bar D constitutes a spring, and holds the pinion E in engagement with the pinion f with a yielding pressure, and from the relative positions of said pinions such engagement will be maintained while the mechanism is being operated so as to wind the mainspring; but if said mechanism is turned in an opposite direction said pinion E will be pressed away from said pinion f , and the teeth of the former will slip over the teeth of the latter, the arrangement being such as to dispense with the use of a ratchet-wheel.

When the shaft I is turned in either direction one-half of a revolution, the bar D is moved upon its axial bearing until the pinion E is withdrawn from engagement with the spring-winding train and is thrown into engagement with the hand-setting train, as seen in Fig. 4.

The spring of the tail-piece d' holds the bar D in close contact with the cam i' , and prevents said cam and the shaft I from being accidentally turned, while, as the lever i is arranged to be in line circumferentially with the periphery of the case-center A in each of the positions it is designed to occupy, no danger exists of the accidental moving of said lever and its shaft by the ordinary use of a watch.

By use of the mechanism described the winding of a watch and the setting of its hands are easily effected without danger of mistaking one for the other, while said mechanism is simple, compact, and in all respects durable and efficient, and occupies no space within the case that can be utilized by the time-train.

Having thus fully set forth the nature and

merits of my invention, what I claim as new is—

1. A stem-winding and hand-setting attachment for watches in which the engagement of the gearing is changed by means of the rotation of a radial shaft, substantially as and for the purpose specified.

2. A stem-winding and hand-setting attachment for watches composed of a train of gearing arranged upon the inner face of the case-center, actuated by means of a shaft contained within the case-stem, and capable of being thrown into or out of engagement with the winding-barrel and dial-wheels, substantially as and for the purpose shown.

3. A stem-winding and hand-setting attachment for watches provided with an intermediate gear adapted to engage with the winding-barrel and dial-wheels, and arranged to be thrown into engagement with either of the same by means of a cam actuated by a radial shaft, substantially as and for the purpose set forth.

4. The shaft B, gear-wheel C, pivoted bar D, having the slot d and spring tail-piece d' , the pinions E and f , the gear-wheel F, and the shaft I, provided with the cam i' , in combination with each other, the case-center A, and the winding and hand-setting trains, substantially as and for the purpose shown and described.

In testimony that I claim the foregoing I have hereunto set my hand this 6th day of September, 1879.

Witnesses: D. AZRO A. BUCK.
GEO. S. PRINDLE,
JAS. E. HUTCHINSON.