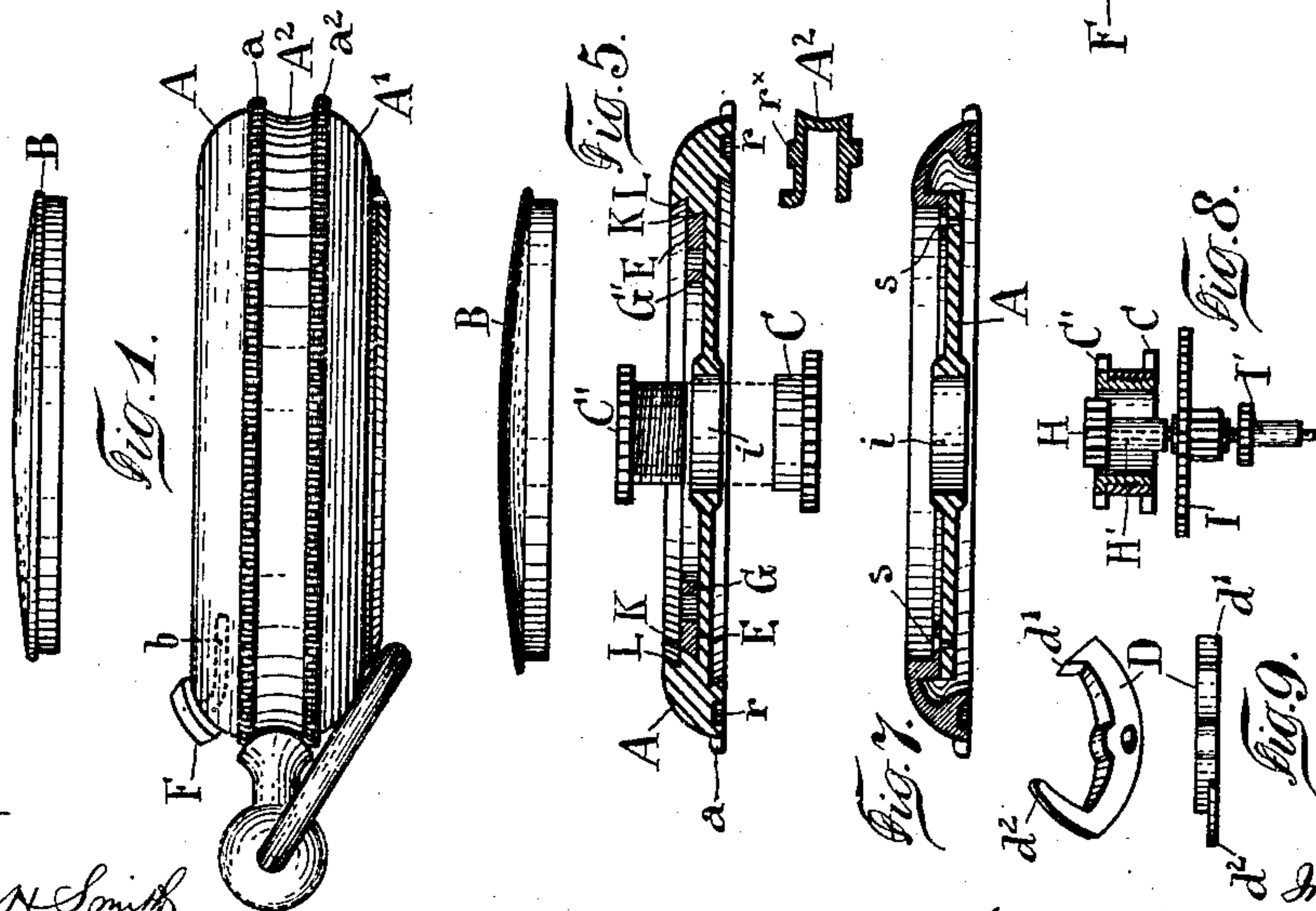
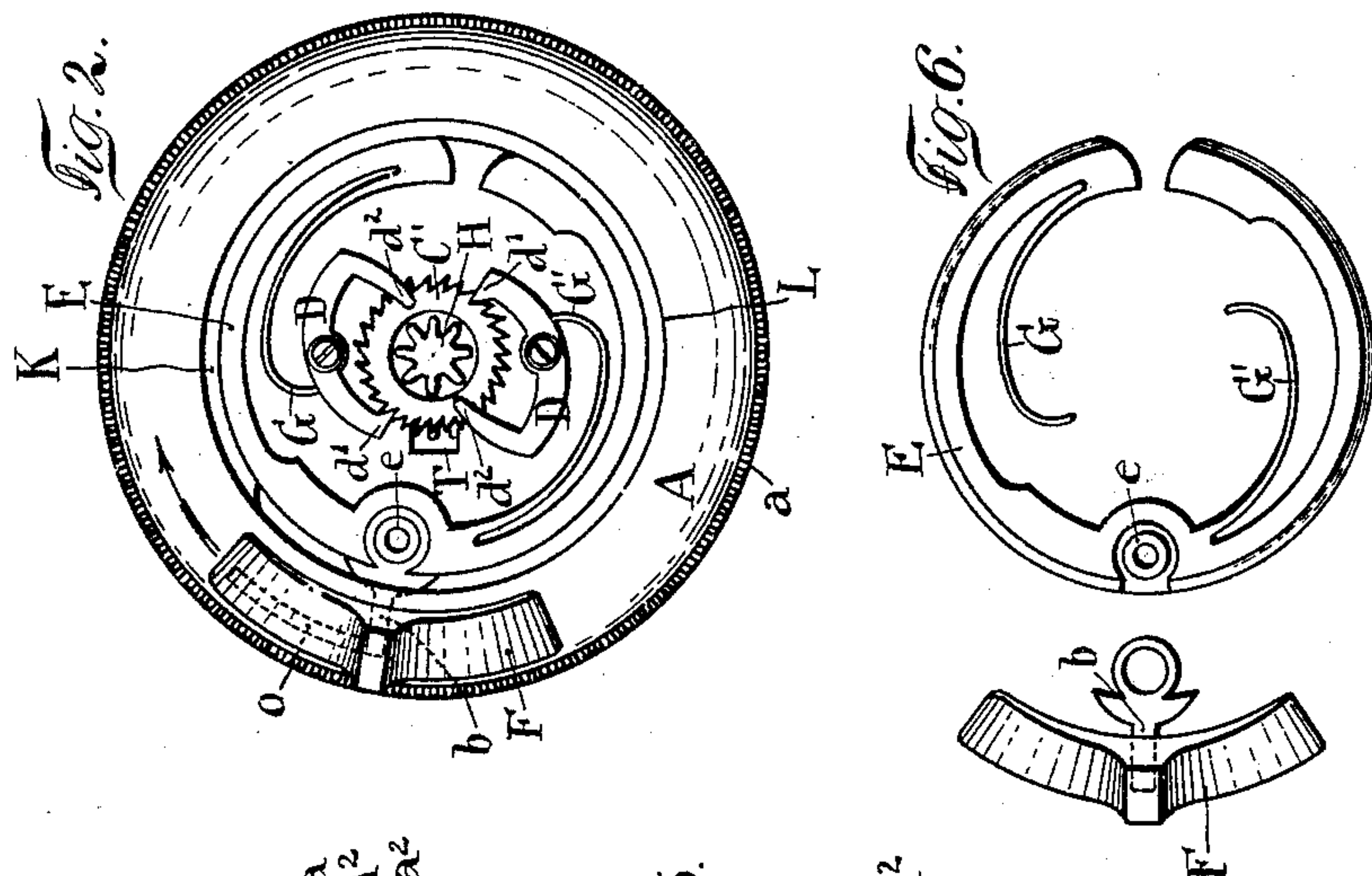
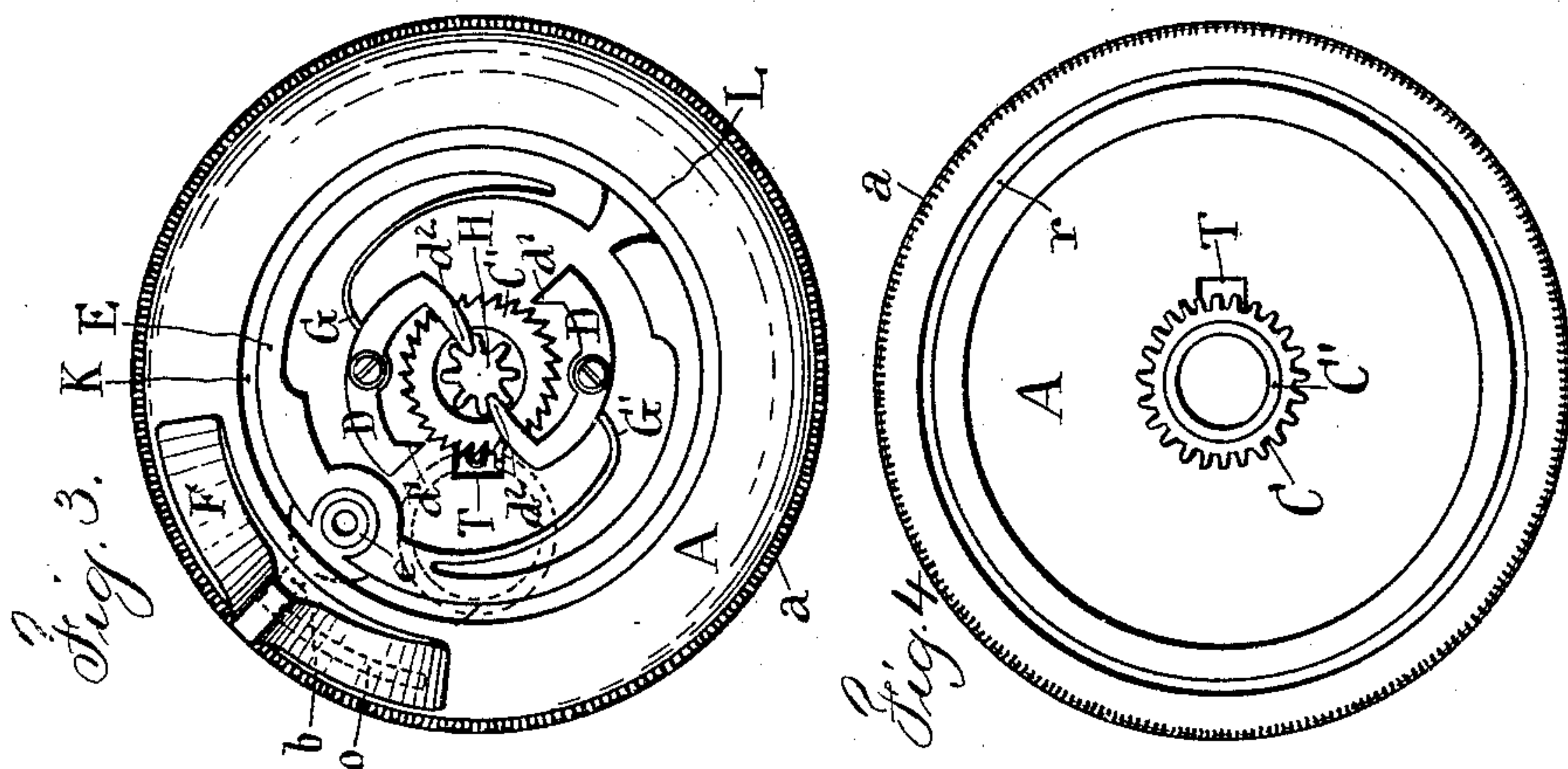


(No Model.)

J. F. REBELLO.  
WATCH WINDING MECHANISM.

No. 548,008.

Patented Oct. 15, 1895.



Witnesses  
Chas. N. Smith  
J. Staib

Inventor  
J. F. Rebello  
Lemuel W. Serrell  
Atty.



# UNITED STATES PATENT OFFICE.

JADO FERREIRA REBELLO, OF AMPARO, BRAZIL.

## WATCH WINDING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 548,008, dated October 15, 1895.

Application filed June 5, 1895. Serial No. 551,725. (No model.) Patented in Switzerland November 10, 1894, No. 9,252.

*To all whom it may concern:*

Be it known that I, JADO FERREIRA REBELLO, of Amparo, State of St. Paul, in the Brazilian Republic, have invented certain new and useful Improvements in Watches, (for which I have obtained Letters Patent in the Republic of Switzerland, No. 9,252, dated November 10, 1894,) of which the following is a specification.

The invention consists of certain new and useful improvements in the winding and hand-setting devices for watches.

In the accompanying drawings only those parts of the watch are shown which are necessary for the understanding of the invention. The motor, train of wheels, and escapement may be of any description whatever.

Figure 1 is a side view of a watch provided with my device, the cap B being represented as removed and shown separately. Fig. 2 is a top view of the cover A and of the devices contained in the same with the cap B removed. In this figure the hand-setting device is shown as out of action. Fig. 3 is a similar top view in which the hand-setting device is ready for working, the winding device being out of action. Fig. 4 is a view at the inner side of the cover A. Fig. 5 is a cross-section through the same. Fig. 6 is a view of the two parts of the rocking device intended to put the hand-setting device in or out of action. Fig. 7 is a cross-section through a cover of a modified construction. Fig. 8 shows separately the gear-wheels that act upon the winding and hand-setting mechanism. Fig. 9 shows edgewise and in perspective view one of the clicks D.

In all the figures the same letters of reference refer to the same parts.

The watchcase is composed, as usual, of a ring-shaped part or center  $A^2$ , a glass-bezel  $A'$ , and a cover A; but the latter is of peculiar construction, being intended to contain the winding and the hand-setting devices and to be partially rotated to and fro in view of causing either the mainspring of the watch to be wound up or the hands of the same to be set. To allow the partial to-and-fro rotation to the cover A the same is provided with a knurled rim or border  $\alpha$ , which may easily be acted upon by the hand, and the bezel  $A'$  is also provided with a knurled rim or border

$\alpha^2$ , which may easily be seized in the hand, so as to allow the case to be firmly held while the cover A is partially rotated to and fro by the other hand. To connect the parts A and  $A^2$  to one another water and dust tight the part  $A^2$  of the watchcase is provided with a circular projection  $r^+$ , which engages a circular groove  $r$  of the cover A, Figs. 4 and 5. The cover A has a central recess to contain the winding-up and the hand-setting devices, as will be specified below, and the said recess is provided with a cap B, forced into the beveled edges L of the central recess of the cover A.

The bottom of the cover A may be made of one piece with the circumferential portion of the latter, as shown in Fig. 5, or it may be made separately and connected to the said circumferential portion by means of screws s, as shown in Fig. 7. This latter construction will preferably be used when the watchcase is to be made of precious metals and when it is desirable to have those parts of the same which are not visible made of a cheaper metal than the outer ones. In the center of the cover A there is provided an opening  $i$ , into which the sleeve of the gear-wheel C is adapted to turn smoothly, and the said sleeve is provided with a female screw-thread, into which is screwed the hub of a ratchet-wheel  $C'$ . Thus the gear-wheel C and the ratchet-wheel  $C'$  are firmly connected to one another, and if the latter is rotated by means of the click or pawl, which will be described below, the wheel C is also rotated, and as said wheel C is in gear with the winding-wheel of the mainspring of the watch the rotation of the ratchet-wheel  $C'$  causes the said mainspring to be wound up. Within the tubular hub of the wheel  $C'$  is the pin  $H'$ , passing also through the tubular axis of the central wheel I and the tubular axis of the usual minute-wheel  $I'$  and acting on them by friction. Now, the said pin  $H'$  is provided with a toothed head-piece or pinion H. Thus it is evident that the setting of the hands may be effected by rotating the pinion H.

In the bottom of the central recess of the cover A there are pivoted two or more clicks D, preferably formed like the anchors of an escapement, but having one of their teeth  $d^2$  longer than the other one  $d'$  and reduced in



thickness, as shown in Fig. 9. The tooth  $d'$  of each click D is intended to act upon the wheel C', and the tooth  $d^2$  of each click D is intended to pass over the upper surface of said wheel C' and to engage the pinion H. 5 The cover A further contains a concentric split ring E, having its circumferential edges beveled to fit into a beveled groove K in the cover A and to be circularly moved or partially revolved in the said beveled groove. 10 The split ring E is provided with two or more springs G and G', (the number of said springs being the same as the number of the clicks D,) disposed so as to each bear against one of the clicks D. According as the split ring E is moved into the position shown in Fig. 2 or into that shown in Fig. 3, the springs G and G' bear against that part of the said clicks D, situated between the pivot of the latter 20 and their tooth  $d'$ , as shown in Fig. 2, or they bear against that part of the said clicks D situated between the pivots of the said clicks and their tooth  $d^2$ , as shown in Fig. 3. In the first case the springs G and G' act 25 like click-springs for the winding up of the watch, causing the teeth  $d'$  of the clicks D to engage the ratchet-wheel C' for winding up the mainspring. In the second case they cause the teeth  $d'$  of the clicks D to be retracted out of reach of the ratchet-wheel C' 30 and the teeth  $d^2$  of said clicks to engage the hand-setting pinion H. The partial rotation of the split ring E from one of the said positions to the other may be obtained by any suitable means, but I preferably provide for that purpose the device shown in Figs. 1, 2, 3, and 6, composed of a piece  $b$ , having one of its ends traversing a suitable slot  $o$  of the circumferential part of the cover A and the 40 other one fitting on a projection  $e$  of the piece E, and there is a suitably-curved piece F fitting upon the outer surface of the said cover A and adapted to be moved to and fro by the fingers. The length of the slot  $o$  will limit 45 the stroke of such to-and-fro motion. To allow the gear of wheel C with the gear-wheel of the mainspring-barrel axis to be

observed after the cover A is in its place, there is provided an opening T in the cover A, so as to have part of the teeth of said wheel C and of the spring-barrel gear visible, as shown in Fig. 3. 50

I claim as my invention—

1. The combination in a watch, of a cover adapted to being partially rotated and having a recess, a double ended click within the recess and a ratchet wheel acted upon by one end of the click and a gear wheel therewith connected for winding the watch, a wheel adapted to be acted upon by the other end of the click and a connection therefrom to the hand setting mechanism and means for bringing one end or the other of the click into action, substantially as set forth. 60

2. The combination in a watch, of a cover adapted to being partially rotated and having a recess, a double ended click within the recess, and a ratchet wheel acted upon by one end of the click and a gear wheel therewith connected for winding the watch, a wheel adapted to be acted upon by the other end of the click, a spring and means for moving the same to bring one end or the other of the click into action, substantially as set forth. 70

3. The combination in a watch, of a cover adapted to being partially rotated and having a recess, two clicks pivoted within the recess, a central ratchet wheel and tubular hub and gear wheel therewith connected for winding the watch, a pinion within the tube of the ratchet connected with the hands, a split ring within the recess of the cover and springs therewith connected bearing upon the clicks and means for moving the split ring and changing the action of the clicks 85 substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JADO FERREIRA REBELLO. [L. s.]

Witnesses:

THOMAS FRY,  
J. A. DEWSBURY.