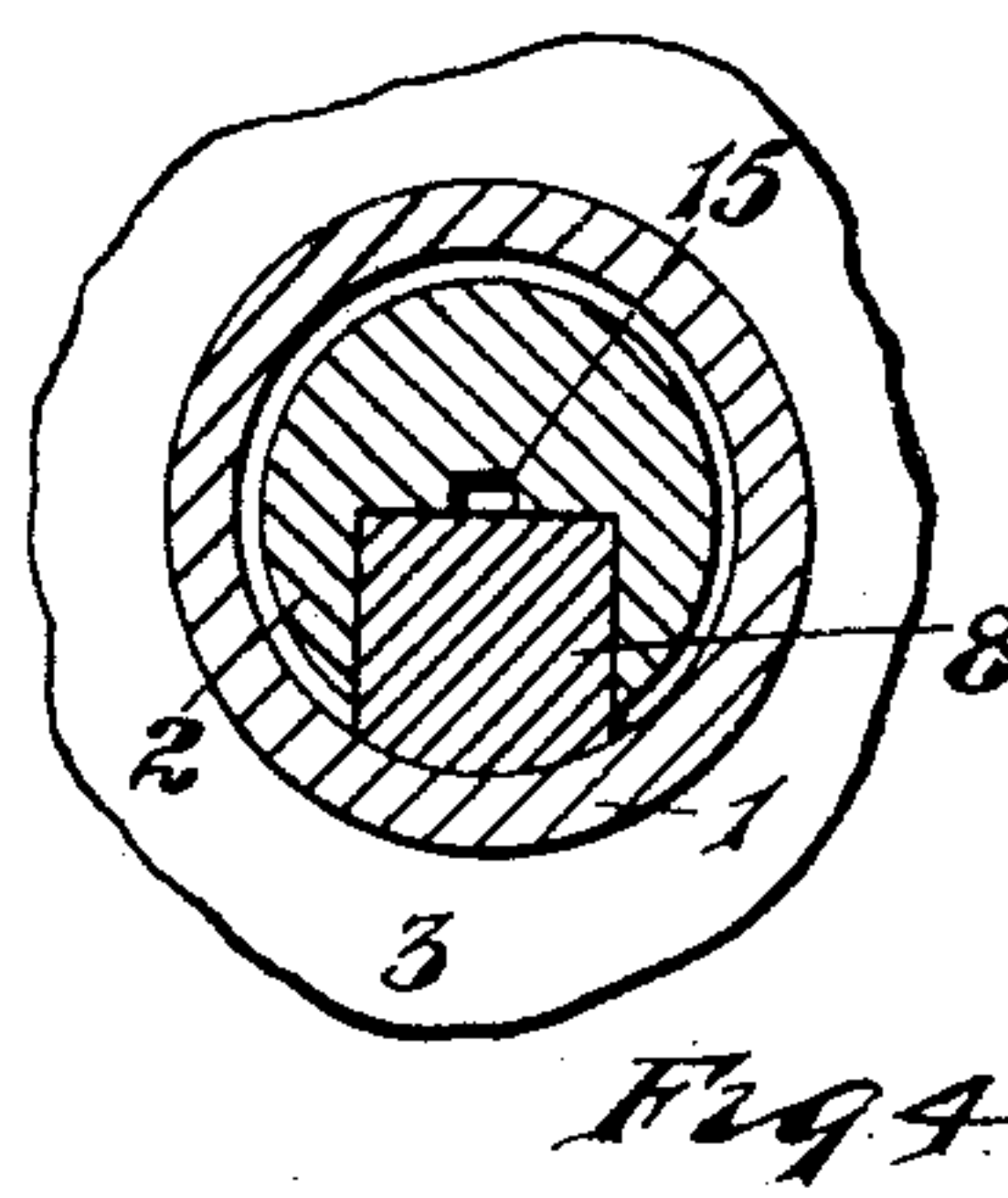
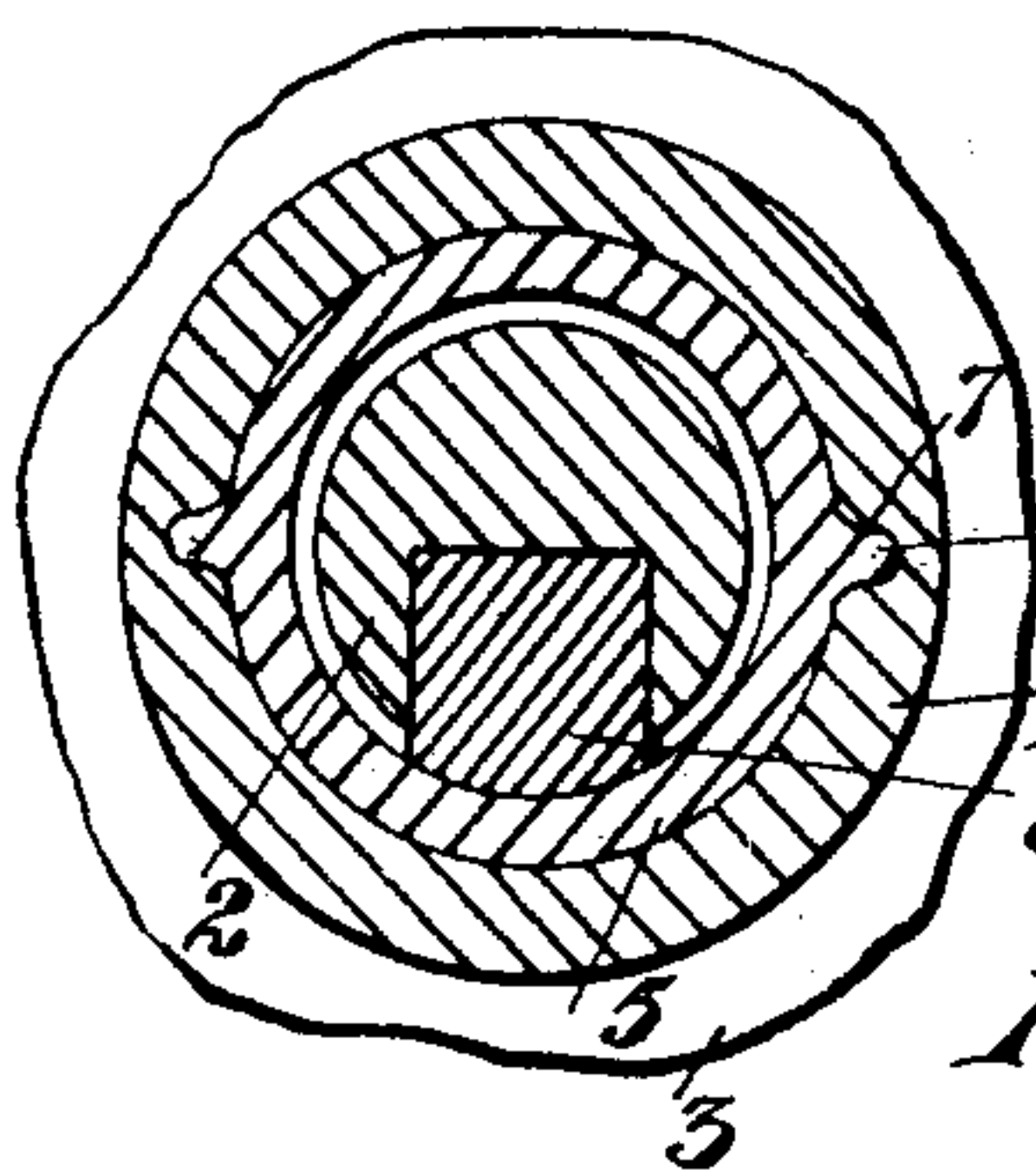
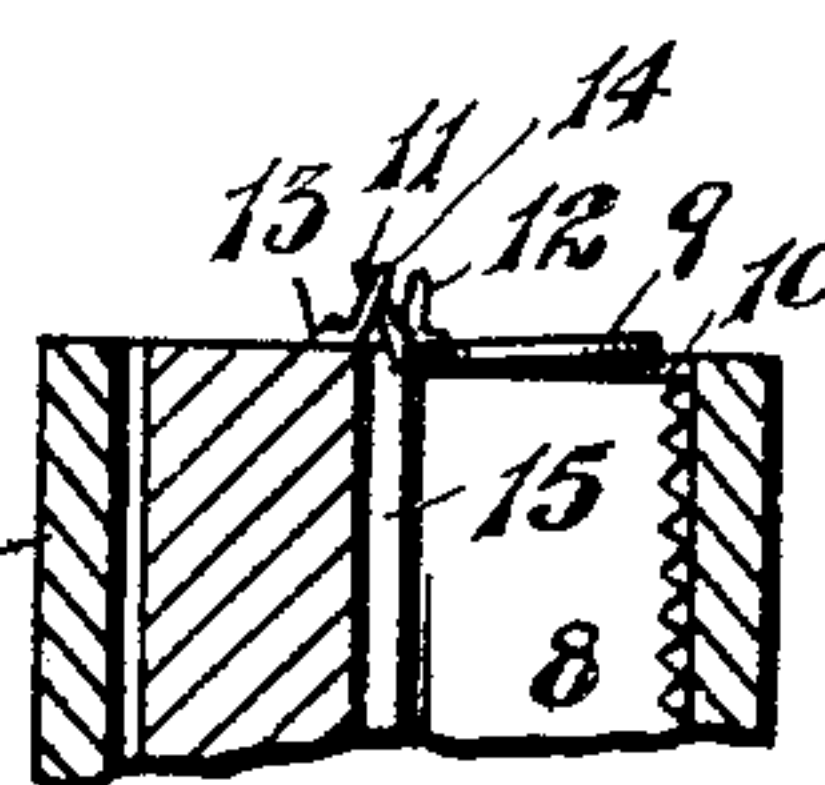
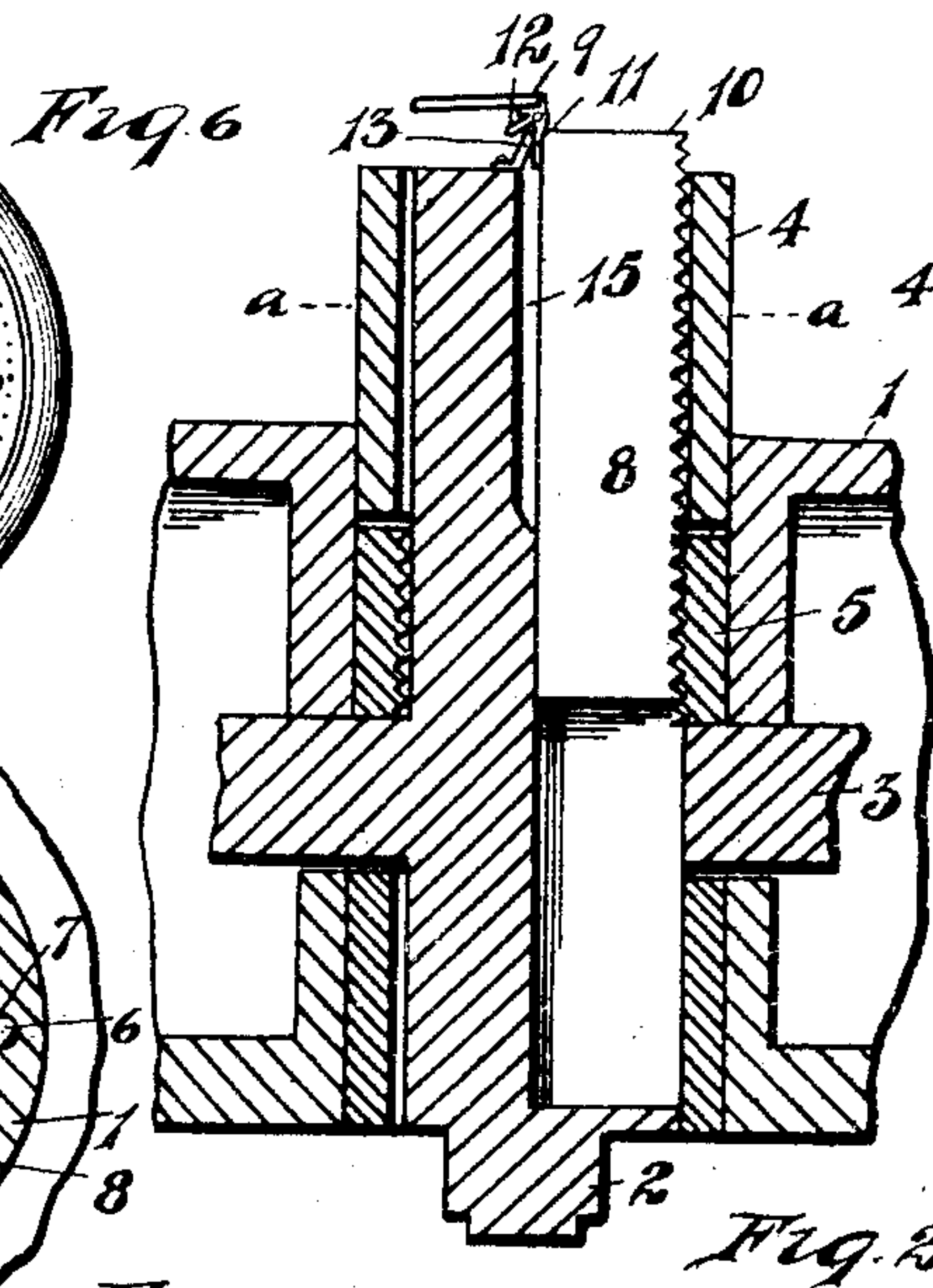
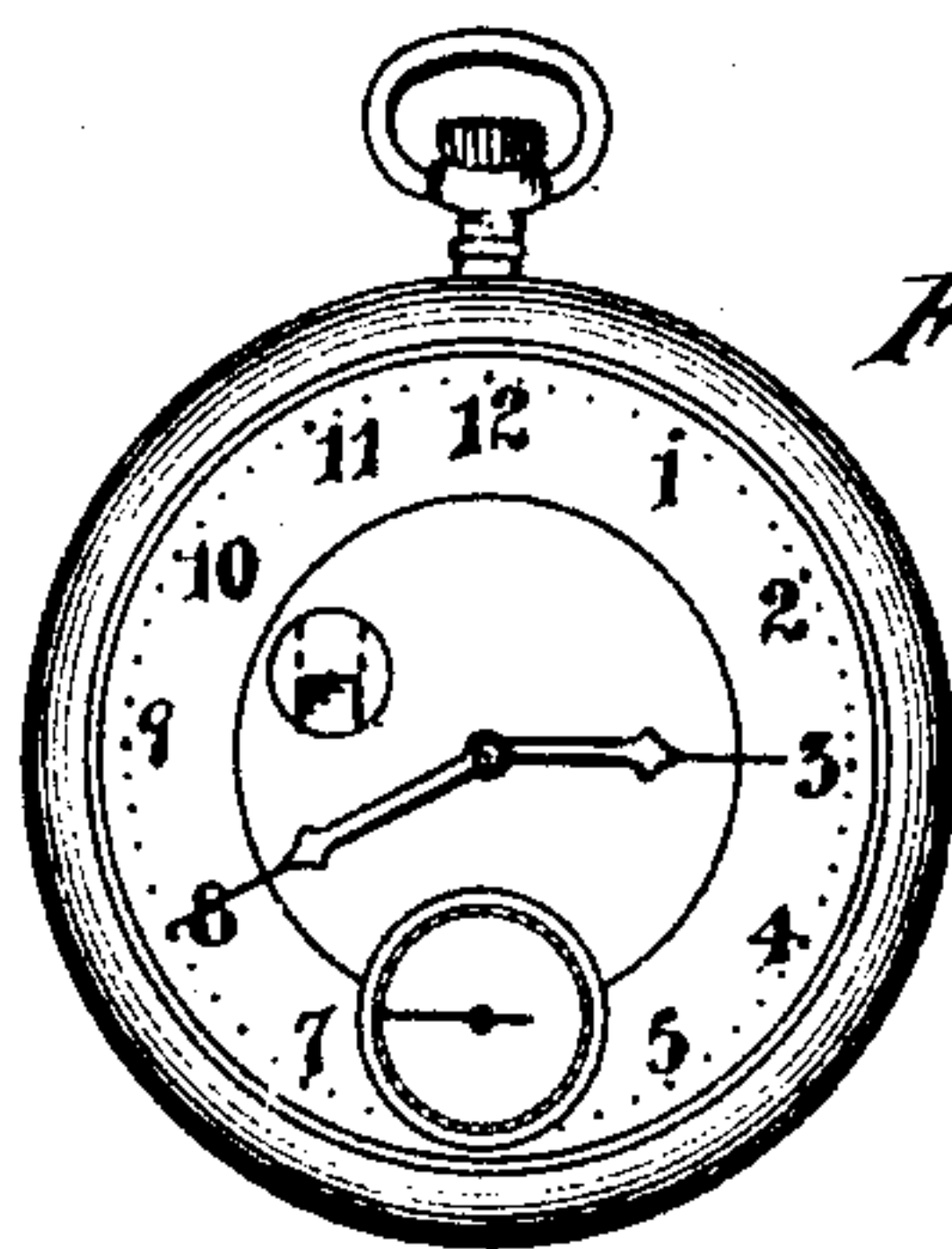
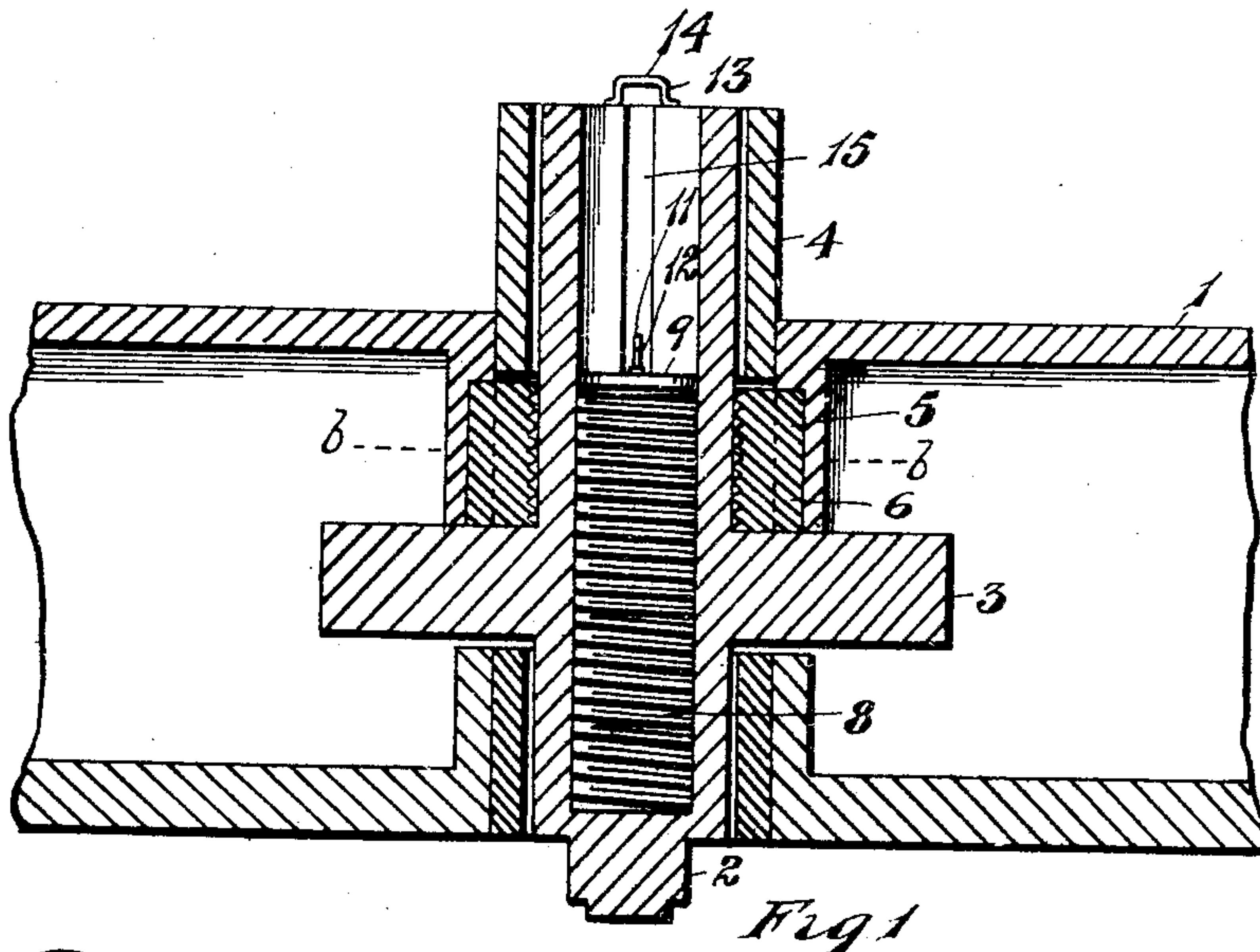


L. L. D. ELDERKIN.
WINDING INDICATOR FOR WATCHES.
APPLICATION FILED OCT. 16, 1909.

966,671.

Patented Aug. 9, 1910.

2 SHEETS—SHEET 1.



WITNESSES.

Clarence E. Day
Vera Pillman

INVENTOR.

Lester L. D. Elderkin

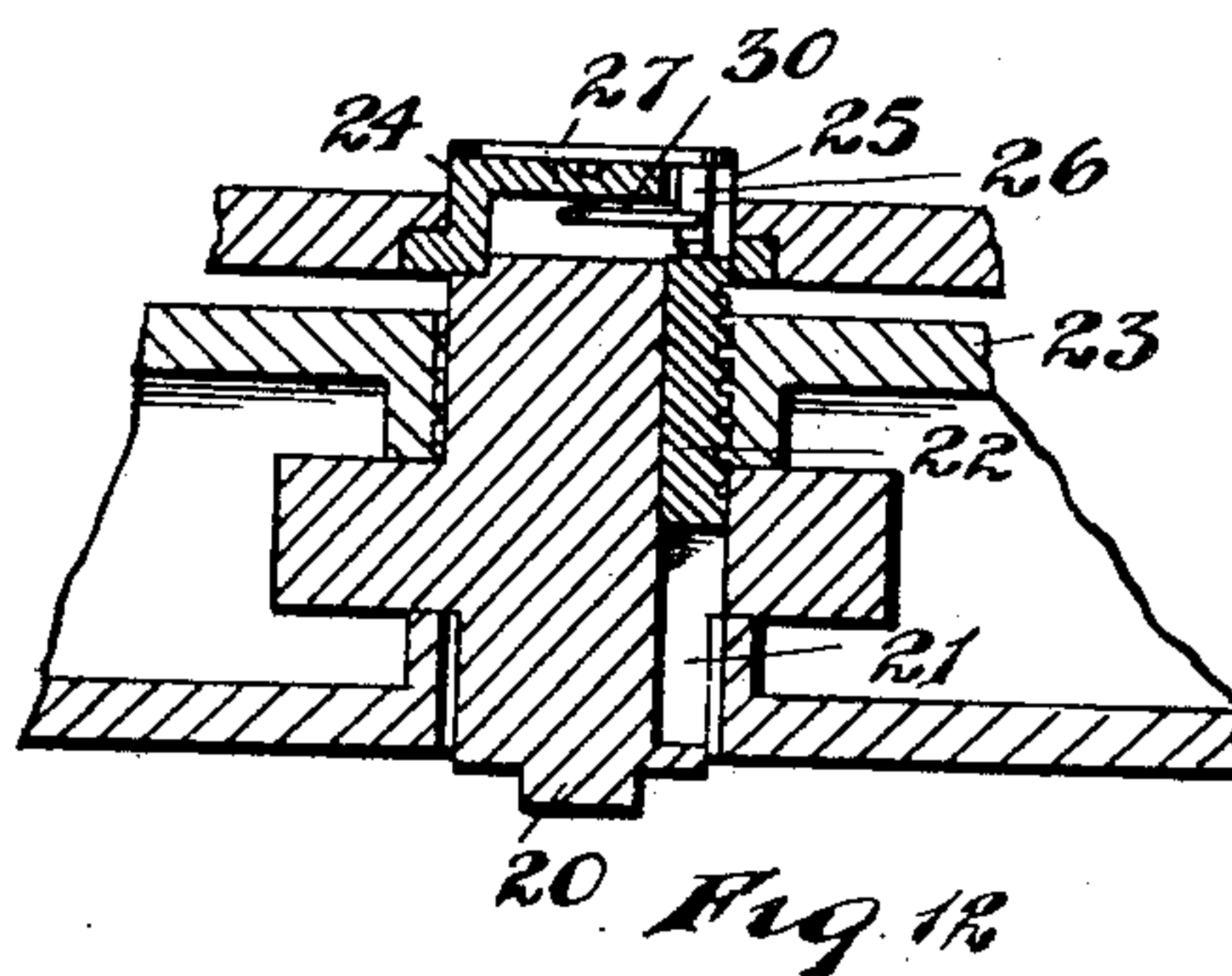
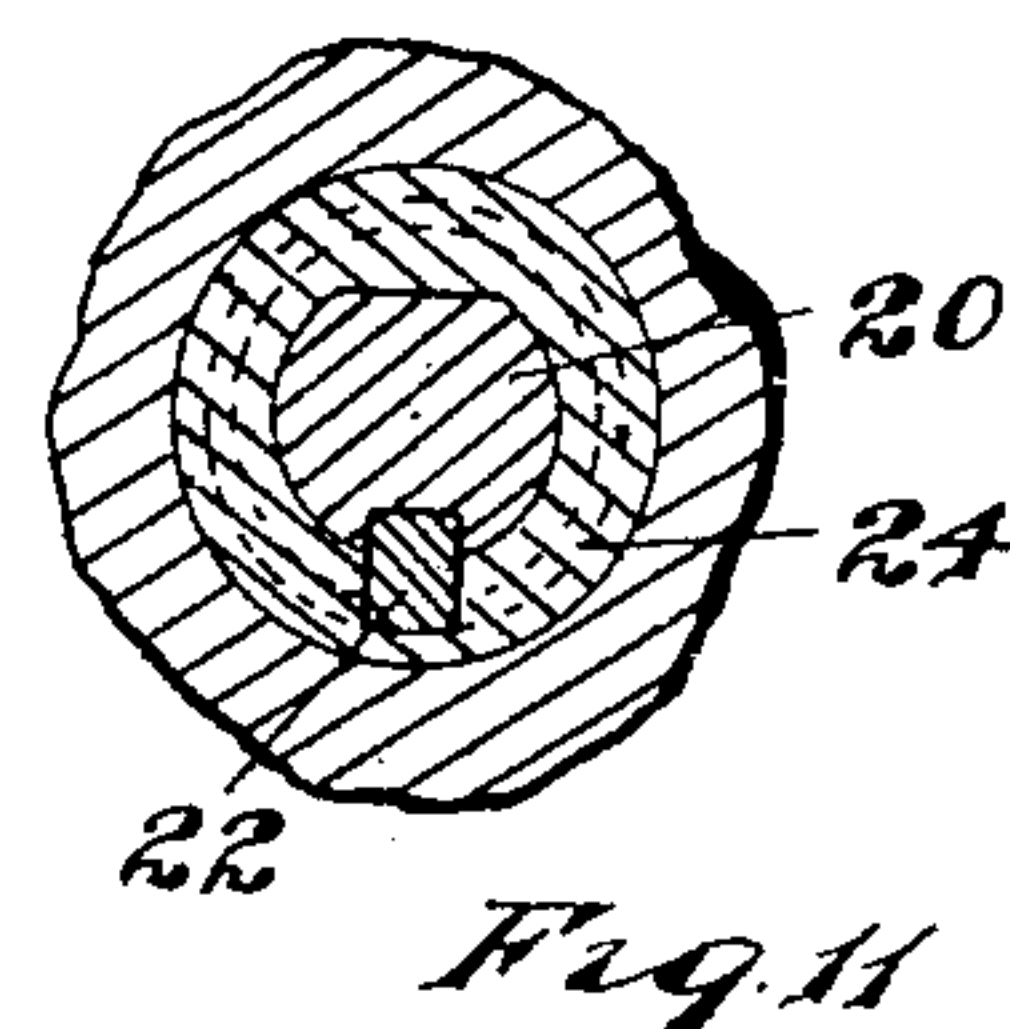
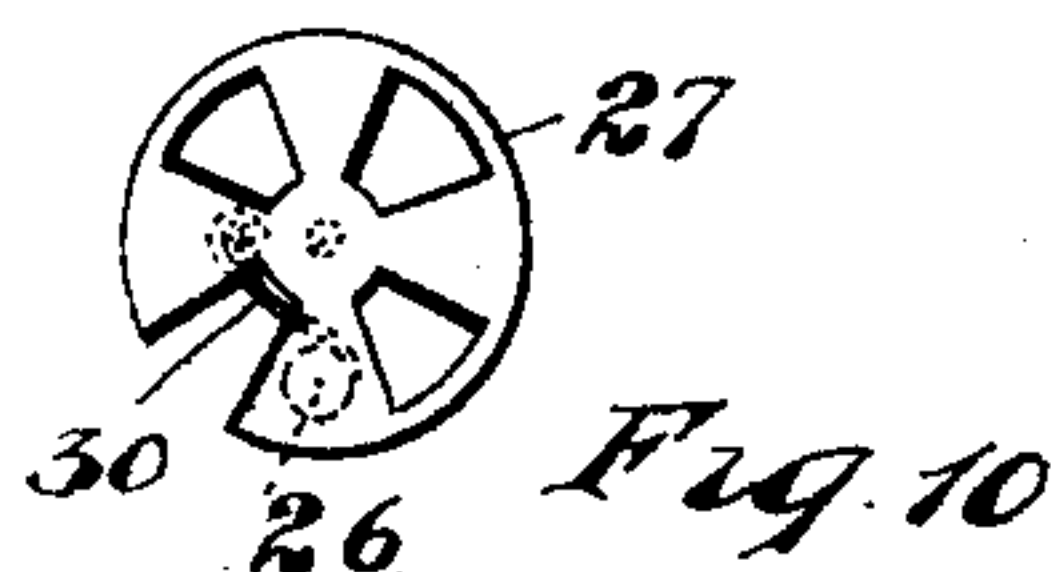
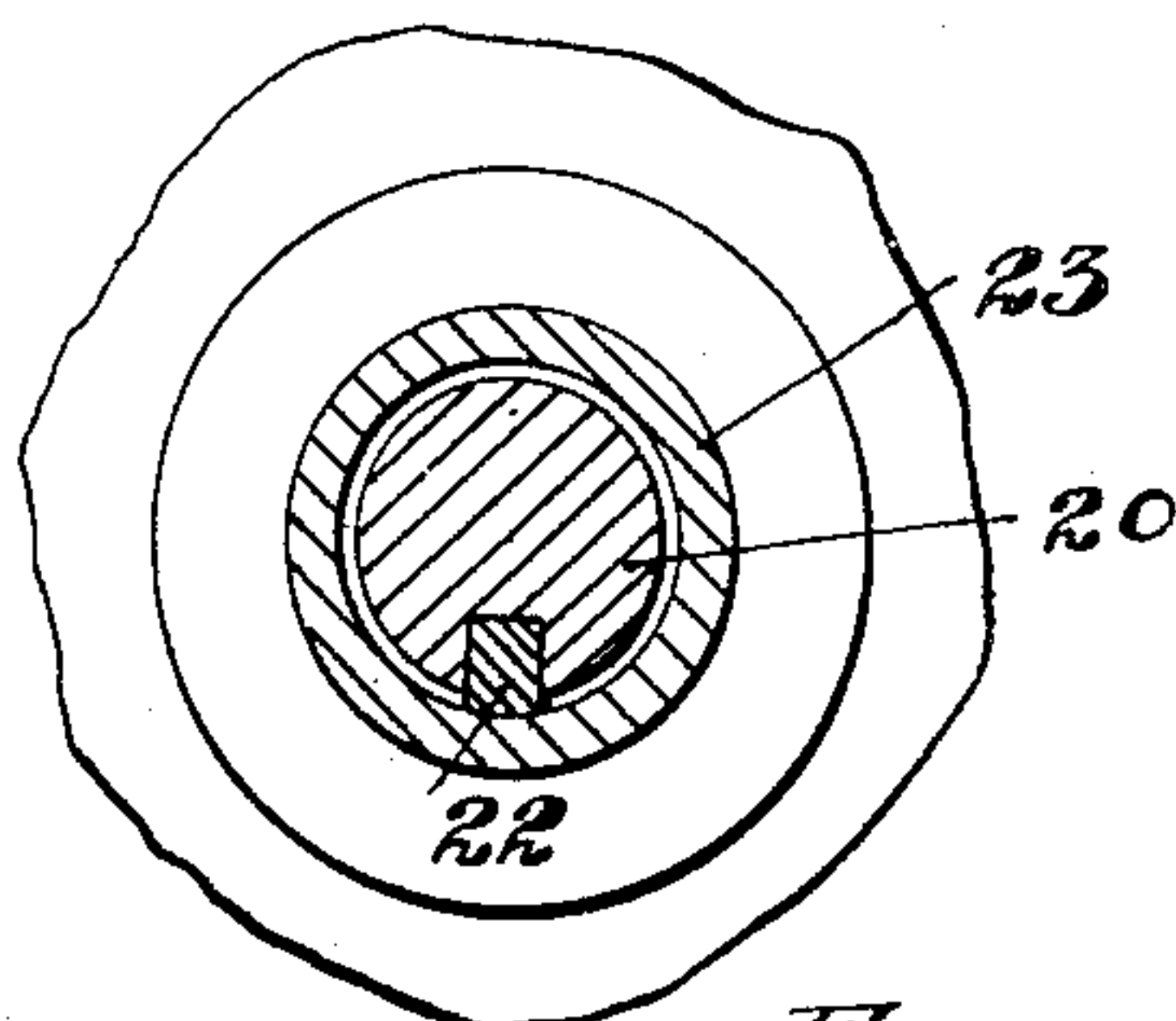
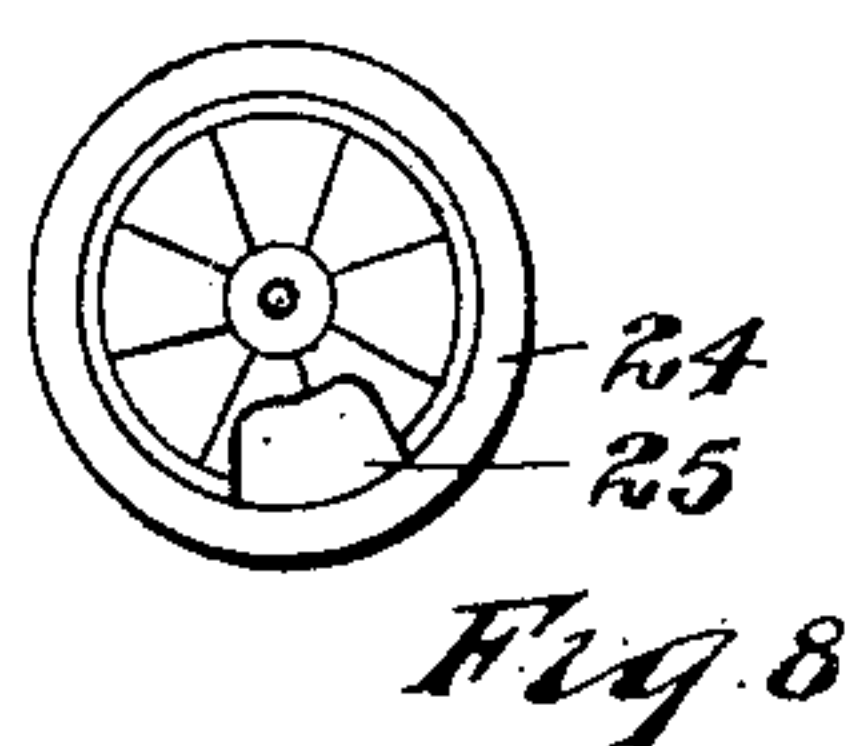
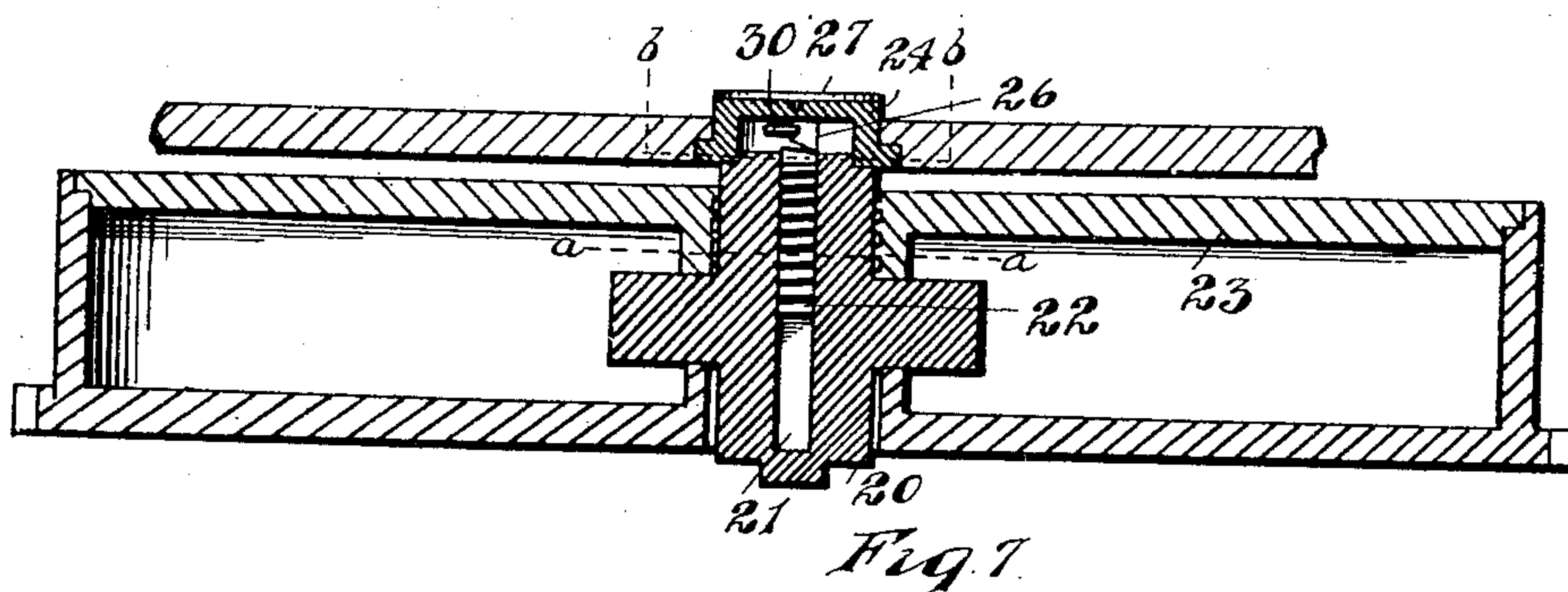
by Parker & Burton Attorneys.

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2 SHEETS—SHEET 2.



WITNESSES.

Clarence E. Day
Vera Fillman

INVENTOR.

Lester L. D. Elderkin

by Parker & Burton
Attorneys.

UNITED STATES PATENT OFFICE.

LESTER L. D. ELDERKIN, OF ROXBURY, MASSACHUSETTS.

WINDING-INDICATOR FOR WATCHES.

966,671.

Specification of Letters Patent.

Patented Aug. 9, 1910.

Application filed October 16, 1909. Serial No. 523,067.

To all whom it may concern:

Be it known that I, LESTER L. D. ELDERKIN, a subject of the King of Great Britain, residing at Roxbury, county of Suffolk, State of Massachusetts, have invented a certain new and useful Improvement in Winding-Indicators for Watches, and declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to indicators for watches.

It has for its object an improved indicating device to be applied to watches for the purpose of indicating the condition of the main spring, and is so arranged to indicate to the carrier of the watch, who looks at the face thereof, whether or not the main spring be unwound to about its last turn, the indicator continuing to show the condition of tension of the spring such that the watch will continue to run for a few hours, but that it needs re-winding, or will need re-winding within a short period. This attachment is made to the post that carries the drum on which the spring is wound, and consists essentially of a member that slides along the axis of the post and carries the indicator at its end, which indicator is shown in the present application as being one that opens out like the leaf of a book, and which may carry a cover on that side of the folding part which is turned toward the end of the post, but which at the last part of the travel of the indicating member is turned outward, and shows its covered face through the inspection hole in the face of the watch.

In the drawings:—Figure 1, is a vertical section through the drum, barrel and post of the watch; the sliding member is seen in elevation. Fig. 2, is a section at right angles to the section shown in Fig. 1. Fig. 3, shows a sliding member raised with the folding leaf in position to turn. Fig. 4, is a cross section at the line *a—*a** Fig. 2; the immediately surrounding portion of the drum member is indicated by the surrounding irregular line. Fig. 5, is a cross section at the line *b—*b**, Fig. 1. Fig. 6, indicates the location of the indicator on the face of the watch. Fig. 7, shows another form of indicator, wherein the indicator lies and travels in a plane substantially parallel with that

of the drum and the watch casing, about an axis parallel with that of the barrel and its arbor. Fig. 8, is a plan view of the cover plate, of this modified type. Fig. 9, is a cross section at line *a—*a** Fig. 7. Fig. 10, is a plan view of the indicator disk. Fig. 11, is a section at line *b—*b** of Fig. 7. Fig. 12, is a vertical section of assembled parts of the second form.

The barrel 1 is mounted on the arbor 2, integral with which is the drum 3. The arbor 2 is provided with a groove that runs parallel with its axis and along one side thereof. The upper part of the arbor is reduced to a smaller diameter than its normal diameter, and is provided with a collar 4 that is secured to the arbor, and increases the size of the reduced arbor to its normal diameter. Between the collar 4 and the drum 3 is inserted a nut member or bur member 5, screw threaded and provided with wings 6, that engage in slots 7 made in the walls of the barrel. In the groove 7 made in the arbor 2 is inserted a mutilated screw 8 provided with a thread adapted to engage the threads of the nut 5. This mutilated screw 8 carries at its upper end pivotally connected with it a leaf 9 which is normally turned to face and lie in contact with the upper surface 10 of the mutilated screw 8. The leaf 9 is provided on its hinge line, and on that side of it which lies away from the screw 8 with two projecting lugs 11 and 12, that form in effect the two teeth of a rack. On the top of the post 2 and back of the groove or channel 7 is a bracket 13 that carries a bar 14 properly located to engage with the arms or lugs 11 and 12, or a small secondary groove 15 at the back of the groove 7, especially for the arm 11 in its travel with the sliding member 8 and a clearance way for the arm 11 in the turning movement toward the close of the outward travel of the sliding member 8.

The operation of the device is as follows:—When the spring is wound the barrel is turned with respect to the arbor, or the arbor with respect to the barrel and the barrel carries the nut 5 with it in rotation, or holds the nut 5 if the rotary movement be given to the arbor. The action of the nut 5 on the sliding screw 8 actuates the sliding screw along the groove 7 until it is in position shown in Fig. 1, which position is taken when the main spring is fully wound. As the main spring unwinds the turning of one

part with respect to the other gradually transfers the sliding member 8 to the position shown in Fig. 2. During the movement of the sliding screw from the position shown in Fig. 3 to the position shown in Fig. 2, the lugs on the back of the leaf 9 engage the cross bar of the bracket 13, and open out the leaf to the position shown in Fig. 2; preferably the top of the sliding member 8 and the inner face of the leaf 9 are colored with some color distinct from that of the dial so that the sliding member and leaf as seen through the inspection hole in the dial of the watch show distinctly by reason not only of the proximity of the leaf to the face, but by reason of the distinct color.

In the second form shown in Figs. 7 to 12 the arbor 20 is grooved and in the groove 21 is a mutilated screw 22, the top of which is preferably very slightly inclined to the axis of the screw; the throat through the barrel cover 23 is threaded to engage the screw; a cap 24 rests on top of the arbor 20, and is so secured to the arbor that it turns with it, but is easily disengaged when the watch is to be taken apart. Such a means of securing the cap to the arbor, comprising an eccentric periphery to the arbor for a short distance from its extreme end, which engages in a corresponding eccentric flange to the cap, is shown in the figures; the cap, 24, is provided with an opening 25, through which projects a spur 26, that projects from the surface of a disk 27 pivoted to the cap. The upper surface of the cap 24 shown in Fig. 8 is divided into segments, and the segments are colored alternately with two colors. These segments which in the normal position of the disk, that is, in the position which the disk assumes when the watch is wound, have the same color as the color of the disk 27. These segments which lie under the retained parts of the disk 27 differ in color from the basic color of the disk.

The disk 27 is pivotally mounted above the cap 24 with the pin 26 hanging into the opening 25 in the cap 24. Segmental openings are cut through the disk 27 corresponding in number to the colored segments on the cap 24. The disk 27 is normally held by a spring 30 with the retained parts of the disk covering those segments of the cap which are colored with a distinctive color, and the disk therefore normally conceals the distinctive colored segments. The mutilated screw, toward the close of its travel along the groove toward the indicator, engages the inclined face of the spur 26, and turns the disk 27 on its axis, and discloses the colored portions of the cap, which may be now seen through the openings in the disk. In this form of device the screw is projected by the turning barrel and retracted by the turning arbor, and the indicating change occurs either when the screw is nearing the end of

its travel outward or is leaving its contact with the spur during the first period of its travel inward, the disk making an oscillation in one direction under the first condition and the return oscillation under the second condition.

What I claim is:—

1. In combination with the barrel and a grooved post member of a watch, a mutilated screw adapted to slide in said groove, a hollow screw adapted to drive said mutilated screw in longitudinal movement, and an indicating terminal to said screw, substantially as described.

2. In a watch, in combination with a barrel, a grooved post therefor, a screw adapted to slide longitudinally of said post, a leaf member mounted on the end of said screw, and means for turning the said leaf member outward, substantially as described.

3. In a watch, in combination with a barrel, a longitudinal slotted post, a mutilated screw member adapted to travel in said post, a nut member carried by the barrel and adapted to actuate said mutilated screw member, a folded leaf pivotally connected to the end of said screw member, a bracket adapted to engage a projection on said leaf and fold it outward toward the closing travel of said screw member and to fold it inward at the beginning of the return travel, substantially as described.

4. In combination a grooved post, a member adapted to slide in said groove, and an indicator means on the end of said sliding member for actuating said indicator, said means being hinged on the top and being adapted to be displaced from such position and to be moved about its hinged edge as a center by engagement against a projection from said post.

5. The combination, in a watch, of a movable supporting member, a pivoted indicator member capable of movement with respect thereto, means for causing the supporting member to move perpendicularly with respect to the plane of the watch, and a trip member against which said indicator member is adapted to engage when said supporting member is actuated, substantially as described.

6. A winding indicator for watches, having in combination an arbor member having a path of travel perpendicular to the plane of the watch, a movable indicator member normally out of contact therewith, and means for actuating the arbor member with respect to the indicator member whereby the latter is moved into a position of observability, substantially as described.

7. A winding indicator for watches, having in combination with a dial, an indicating disk capable of movement with respect thereto, and an arbor member normally out of engagement with said disk, adapted to

be actuated by the mechanism of the watch against the disk to cause the projection of the same into observable position with respect to the dial, substantially as described.

5 8. A winding indicator for watches, having in combination a dial, a plate differing in color from said dial, means for shifting the plate, and means for returning the plate to its normal position.

10 9. A winding indicator for watches, having in combination an arbor provided with a longitudinal track, a threaded member

adapted to travel along said track, means whereby the winding of said watch actuates the traveler in one direction and the relaxing 15 spring actuates said traveler in the reverse direction, substantially as described.

In testimony whereof, I sign this specification in the presence of two witnesses.

LESTER L. D. ELDERKIN.

Witnesses:

CHARLES F. BURTON,
ELLIOTT J. STODDARD.