

No. 752,786.

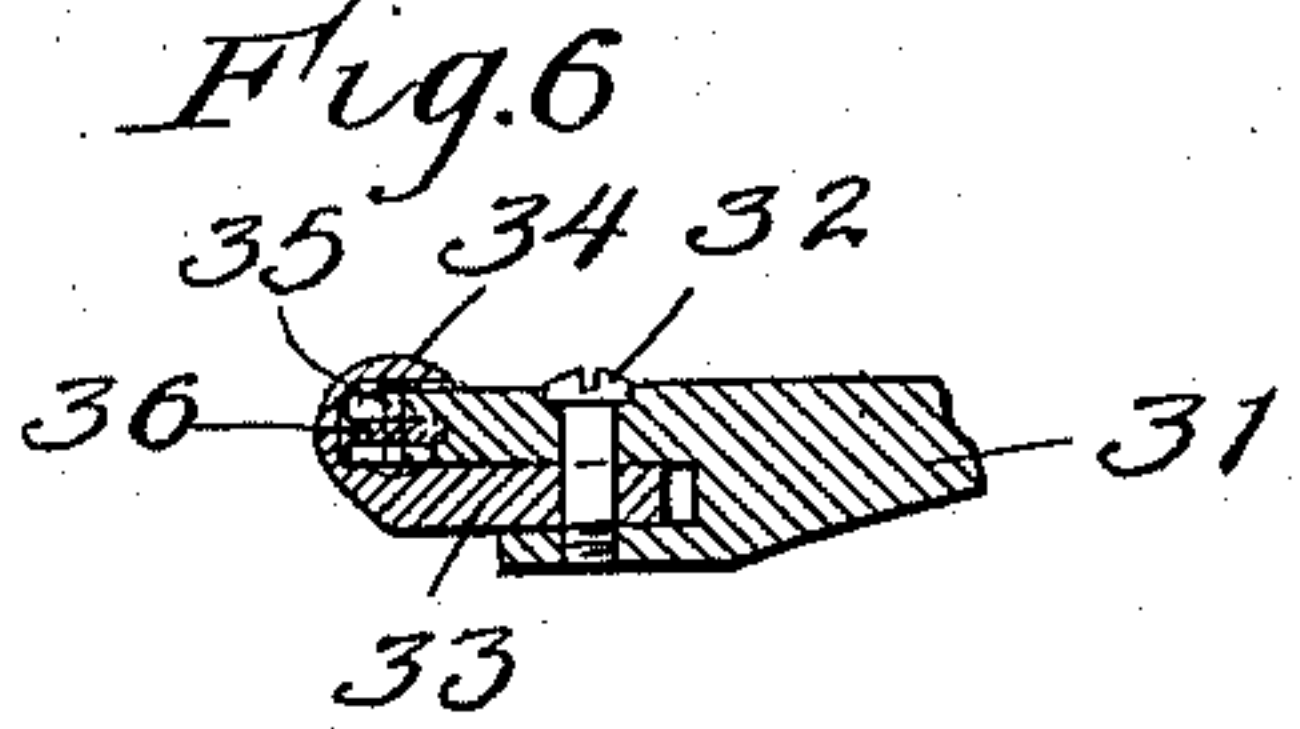
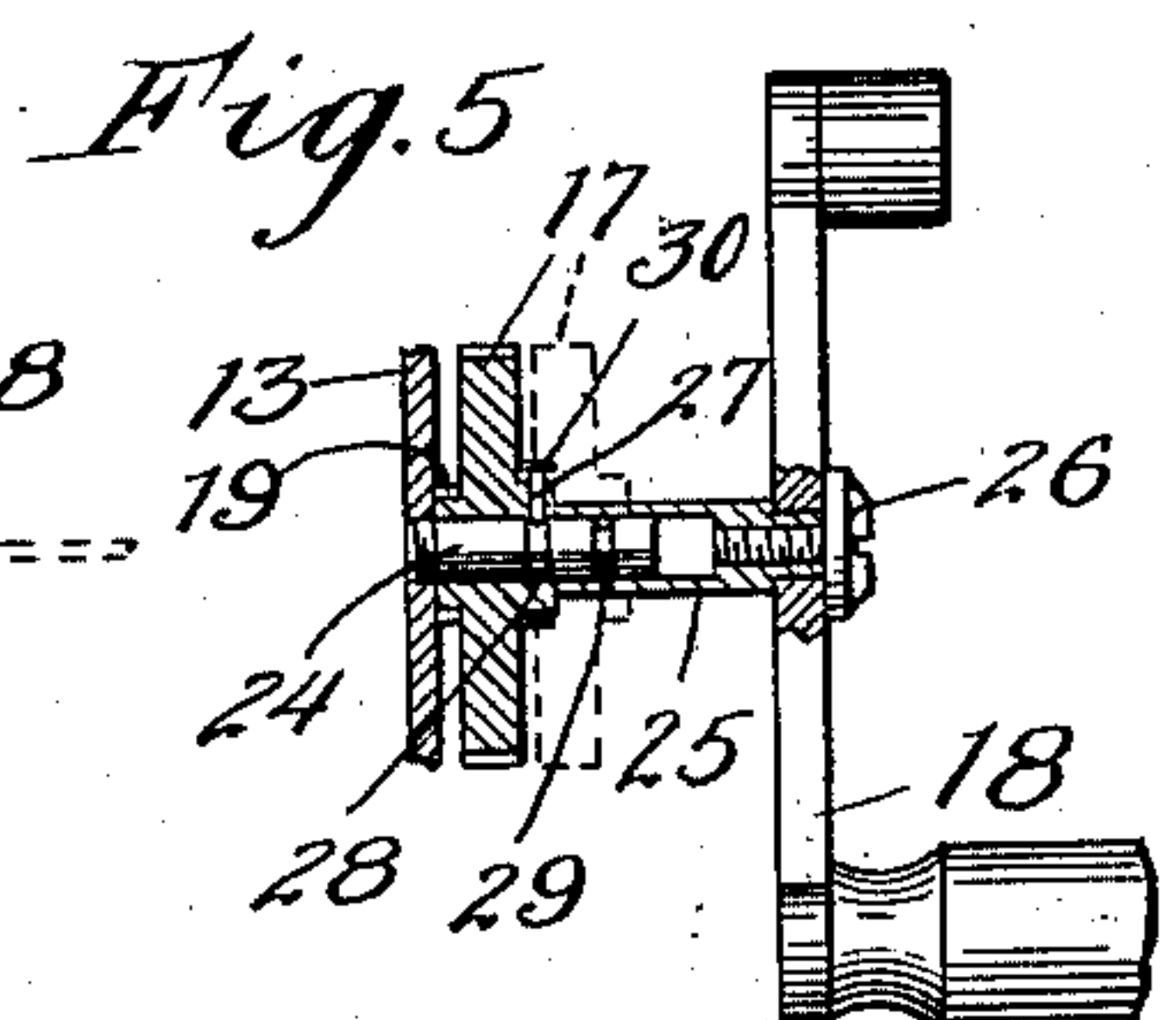
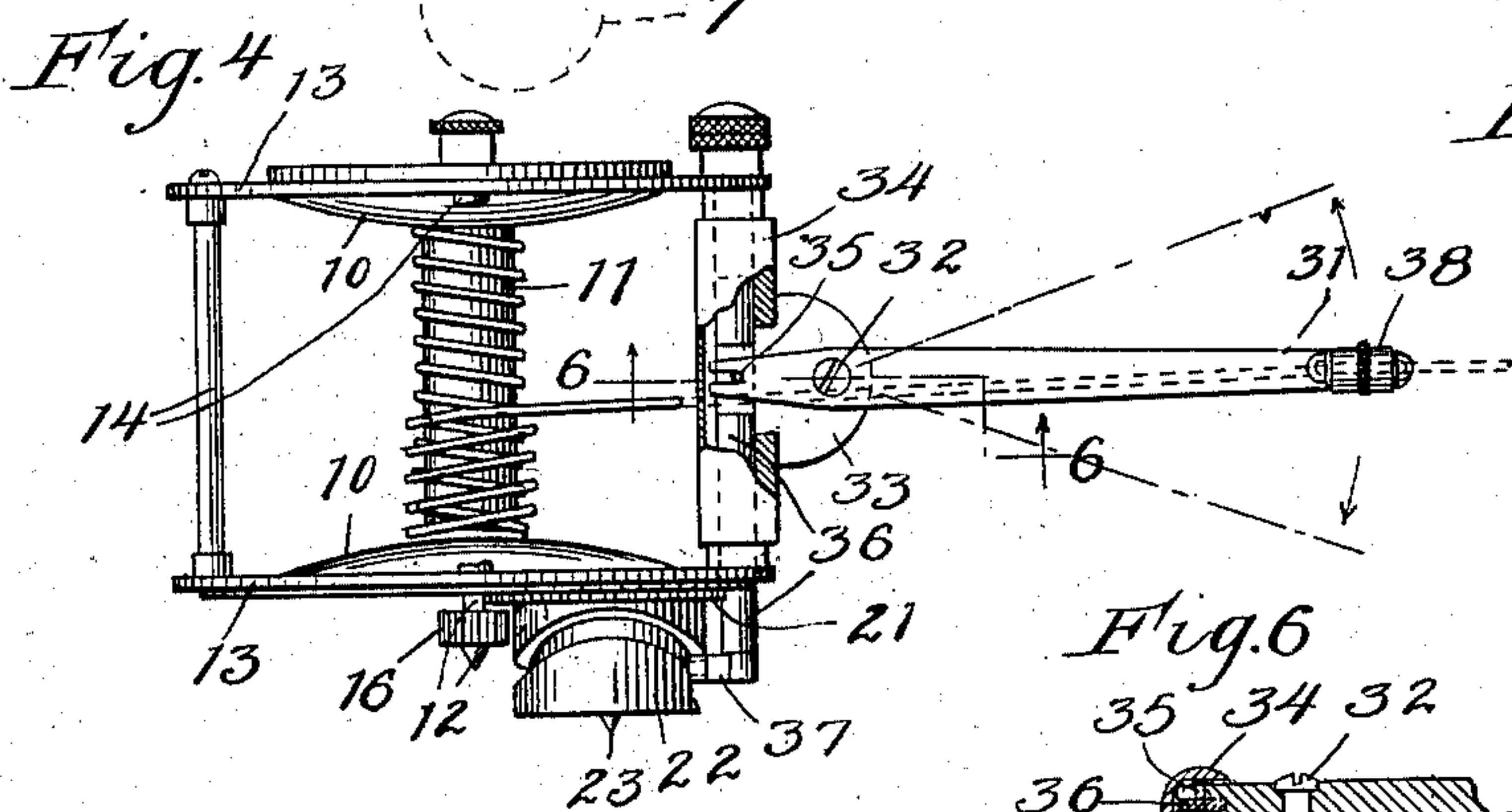
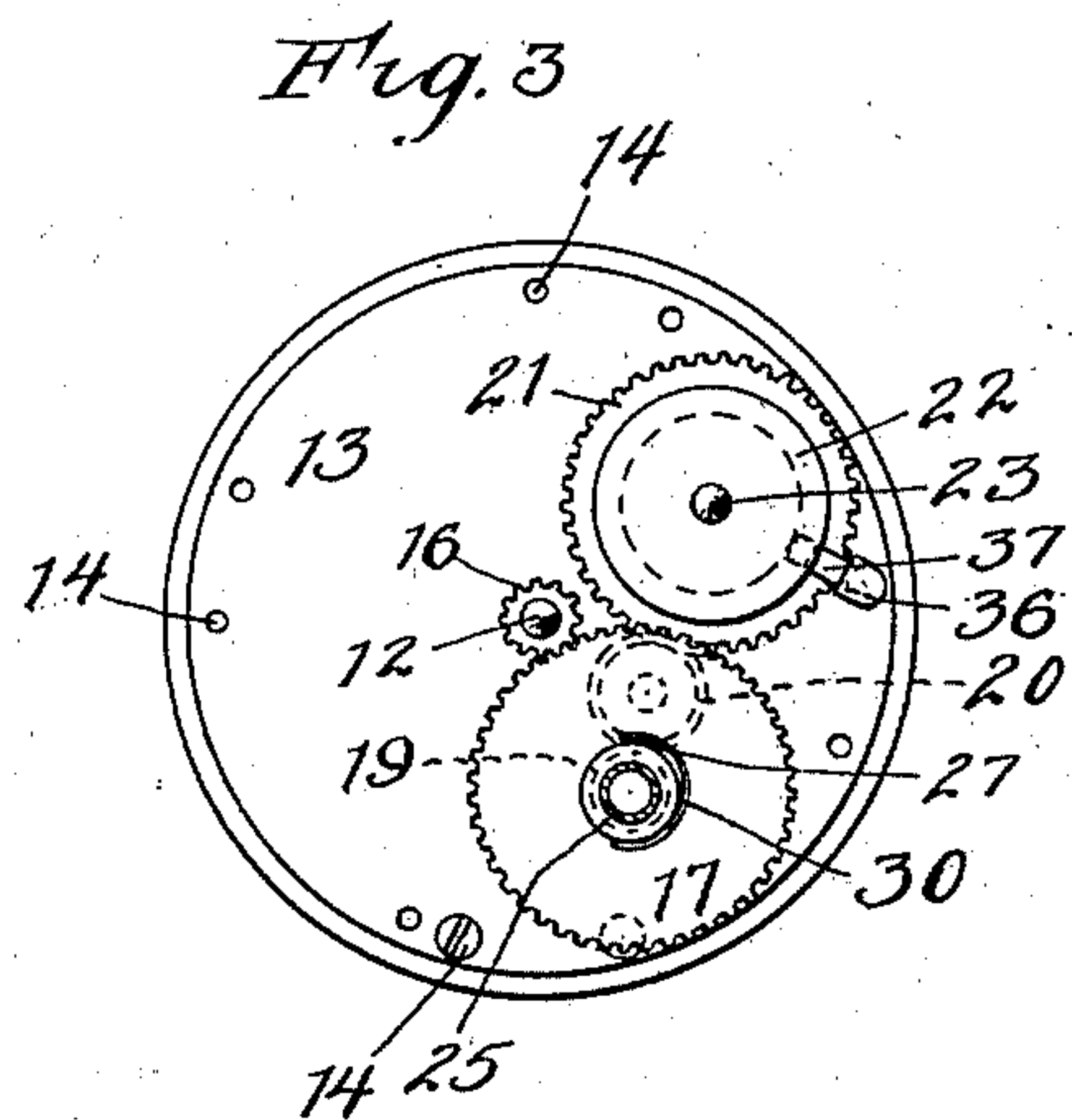
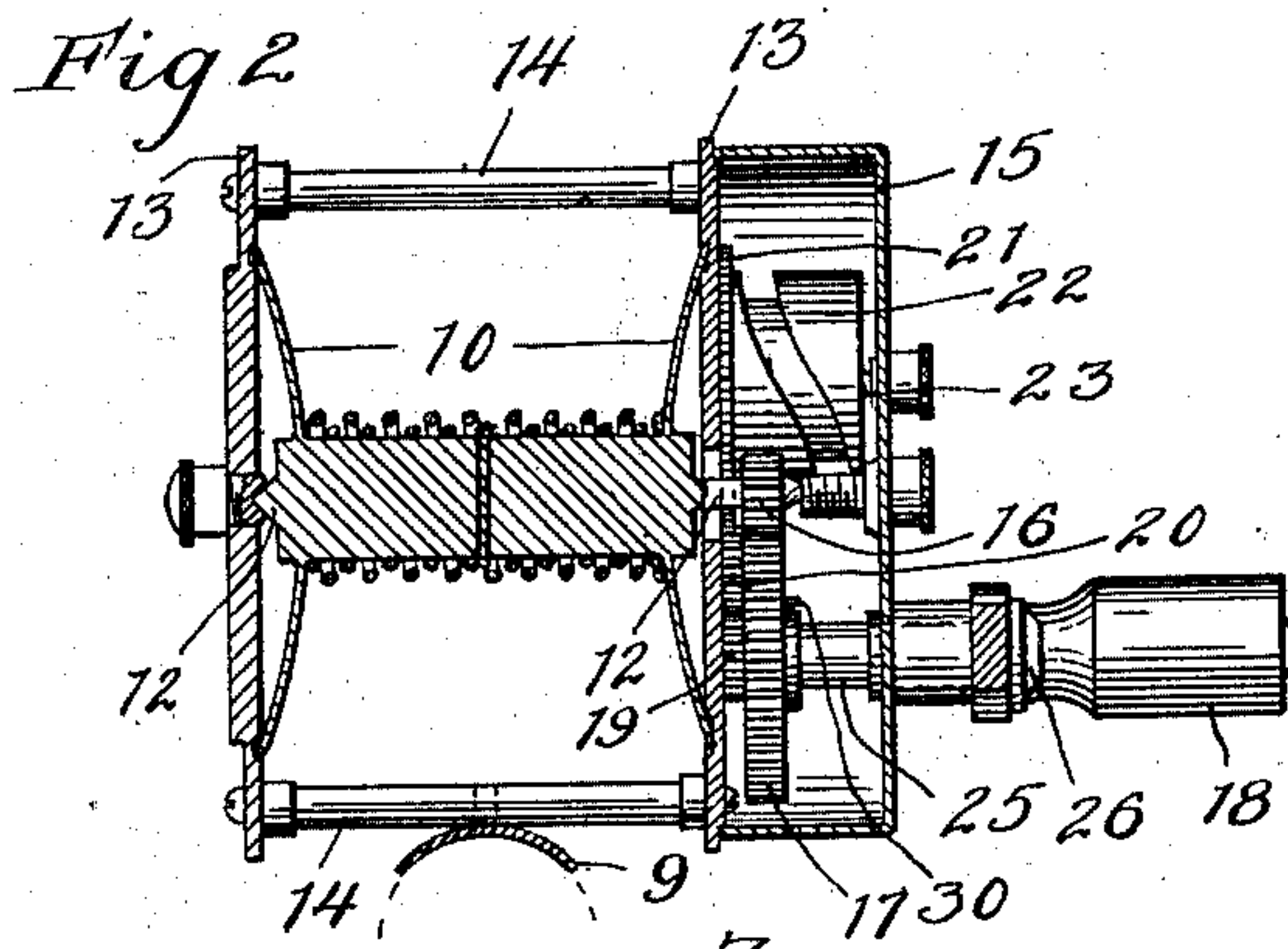
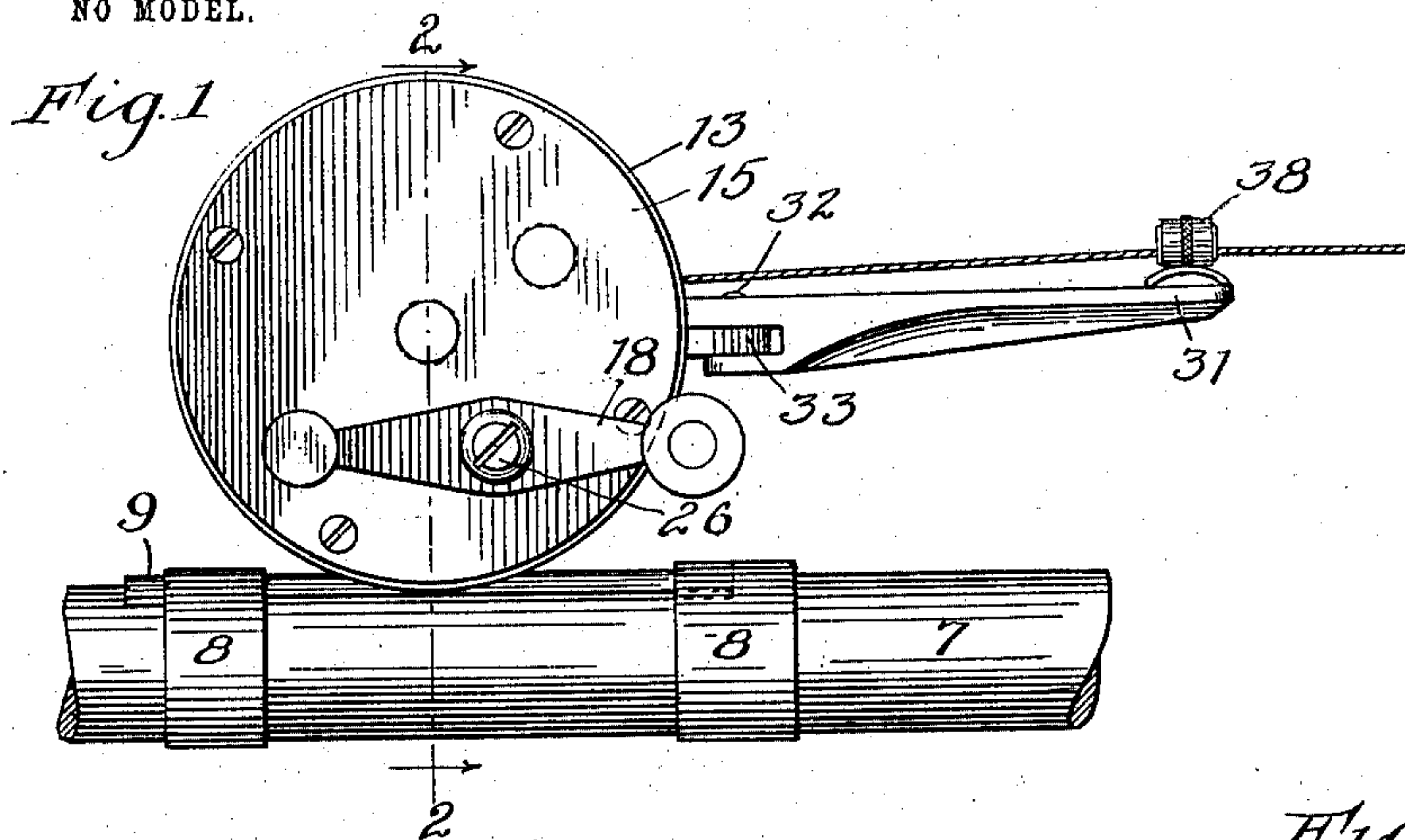
PATENTED FEB. 23, 1904.

A. E. & W. H. LEAVER.

FISH LINE REEL.

APPLICATION FILED MAR. 18, 1903.

NO MODEL.



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UNITED STATES PATENT OFFICE.

ALBERT E. LEAVER AND WILLIAM H. LEAVER, OF CHICAGO, ILLINOIS.

FISH-LINE REEL.

SPECIFICATION forming part of Letters Patent No. 752,786, dated February 23, 1904.

Application filed March 18, 1903. Serial No. 148,315. (No model.)

To all whom it may concern:

Be it known that we, ALBERT E. LEAVER and WILLIAM H. LEAVER, citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Fish-Line Reels, of which the following is a specification.

This invention is an improvement in fish-line reels; and our object therein has been to devise a construction by which the tangling, bucking, back-winding, or knotting of the line, which is oftentimes so serious a trouble in the use of reels, may be mainly overcome or prevented. This object we accomplish by providing the reel with a winding-guide adapted to cause the winding to take place in such manner that no portion of the line becomes sunken or wedged into the spaces between already wound courses, thus leaving it free to pay out without hindrance, and thereby avoiding the cause of the tangling and knotting and other evils above mentioned. In other words, the guide acts while the winding is going on to deflect the cord first in one direction, with the different courses forming a layer extending from end to end of the reel inclined to the axis of the reel and then upon being reversed to lay the courses of the next layer from end to end of the reel in an inclined direction crossing the direction of the first-layer courses, continuing in this manner until all the line has been wound, and laying the different courses in the different layers alternately in different directions. Thus all portions of the cord are prevented from wedging themselves between previously-wound courses, and consequently may be paid out freely and without hindrance from wedging.

Another feature of the invention relates to the construction whereby the operating-handle is disconnected from the reel and also from the guide at will.

Our invention consists in the novel features of the reel hereinafter set forth.

In the accompanying drawings, forming a part hereof, Figure 1 is a side elevation of the reel. Fig. 2 is a section on the line 2-2 of Fig. 1. Fig. 3 is a section at right angles to that of Fig. 2. Fig. 4 is a plan of the invention, partly broken away. Fig. 5 is a detail section of the

operating handle and shaft, and Fig. 6 is a detail of the guide.

In said drawings, 7 represents the fishing-pole, having rings 8 8, whereby the curved plate 9 of the reel is secured to the pole, at least one of the rings being slidable.

10 10 are the sides of the reel proper, 11 is the winding spindle or drum thereof, and 12 is the supporting-shaft, having bearings in the stationary side plates 13 13. These plates are united by cross-rods 14, and the plate 9 is secured to one of the rods. The reel-operating gearing is located in a housing 15, attached to one of the plates 13.

The reel-shaft 12 carries a small pinion 16, which meshes with a gear-wheel 17, receiving its actuations from the crank 18, whereby the user operates the reel in winding up the line. The wheel is integral with a pinion 19 at its side, meshing with an intermediate pinion 20, which in turn meshes with and drives a gear 21, attached to a grooved cam 22 on the shaft 23. The shaft 23 is provided with bearings in the housing 15 and the adjacent plate 13, and the wheel 17 is supported upon a stub-shaft 24, stationarily secured in the plate 13, as seen at Fig. 5, and the wheel is also provided with an extended hub 25, the outer end of which is squared and receives the crank, which is secured by a screw 26 entering the hub axially. The gear is movable on the shaft 24 and is held in its two positions by means of a pin 27 in its hub, which enters the grooves 28 and 29 in the shaft, a spring 30 encircling the hub and pressing the spring into the grooves. In its normal position (shown at said figure) the pin is in engagement with groove 28; but the operator may draw the crank and wheel 17 outward to release the reel from the gearing, so as to permit a rapid paying out of the line, and in that case the pin enters groove 29. The spring and pin yield to permit these changes in position of the gear-wheel. The movement is outward when the mesh is broken and inward when it is restored.

The cam 22 is the device whereby the winding-guide 31 is actuated. The guide is in the form of a swinging arm extending horizontally forward from the reel and is pivoted on

a vertical pivot 32, inserted in the horizontal plate or projection 33, attached to the sleeve 34, supported by the plate 13. The inner or rear end of the guide is forked, as shown at 5 Fig. 4, and this forked end is engaged by a pin 35, secured in the flattened central portion of a sliding bar 36, moving in said sleeve and carrying at one end an arm 37, entering the groove of the cam.

10 It will be seen from the description thus far given that as the operator turns the reel in winding up the line he also rotates the cam, and the cam actuates the slide and through the latter causes the outer end of the guide, 15 on which an eye 38 is mounted and through which the line is passed, to move slowly from side to side, thereby deflecting the line so that it winds in inclined directions which cross each other, movement of the guide in 20 one direction inclining all the courses wound during that movement in one direction and movement in the other or reverse direction laying the courses in an oppositely-inclined direction, as will be understood from Fig. 4. 25 The eye is located at a remove of several inches from the reel, and this distance enables the guide to deflect the line at a greater angle than could be obtained with the eye located close to the reel.

30 It will be noted that the mechanism by which the swinging guide is actuated, including both the rotating parts and the slide 36, is inclosed or covered so that the sand or dirt from the line cannot get into the working parts or 35 bearings. Also that the arm 31 is pivoted to the outside frame of the reel nearly in the plane of the reel-axis, so that the line moves from the eye 38 in a substantially horizontal direction to the reel. By this latter feature, 40 in conjunction with the location of the eye at a remote point from the reel, we avoid the interference with the winding which would occur if the eye were located below the level of the reel or at a short distance from it.

45 By disconnecting the gears whereby the reel and guide are operated the reel is left perfectly free to revolve in paying out the line and turns with very little friction and is not held back by the crank or guide. At the 50 same time the guide ceases its swinging movement, which is desirable when casting with a light bait.

We claim—

55 1. The combination in a fish-line reel, of a winding-drum, a swinging guide-arm pivoted to the forward side of the outside frame of the reel in the plane of the drum-axis, and mechanism whereby the arm is operated from the winding-handle.

60 2. The combination in a fish-line reel, of a winding-drum having a winding-handle, a

long swinging arm pivoted to the outside frame in the plane of the drum-axis, said arm having an eye at its outer end, and means whereby the arm is swung by power from the 65 winding-handle.

3. The combination of a reel proper and a swinging arm having an eye at its outer end, with an operating-handle and connecting mechanism including a slide 36 whereby the 70 handle actuates the reel and the arm, said handle being movable lengthwise of its shaft, so as to disconnect it from said connecting mechanism.

4. The fish-line reel having a swinging arm 75 carrying an eye for guiding the line during winding, and a grooved cam and slide receiving power from the operating-handle and actuating said arm, said operating-handle being separable at will from the mechanism by which 80 it operates said cam, and the cam being adapted to hold the arm stationary after the handle has been disconnected.

5. The combination in a fish-line reel, of a pivoted swinging guide-arm, a slide engaging 85 the inner end of said arm, a grooved cam for actuating said slide, an operating-handle and separable mechanism connecting the cam with the handle, whereby when the handle is disconnected from the cam, the latter holds the 90 arm stationary.

6. The combination of a reel proper, a frame in which the reel is supported, a swinging arm supported from the forward side of the frame, a slide engaging the inner end of the arm, and 95 moving in a sleeve supported between the sides of the frame, an operating-handle, and a rotating cam receiving power from said handle and actuating the slide.

7. The combination of a reel proper, a frame 100 in which the reel is supported, a swinging arm supported from the forward side of the frame, a slide engaging the inner end of the arm, and moving in a sleeve supported between the sides of the frame, an operating-handle, a cam 105 rotating on a horizontal axis and having a groove engaging the slide, and means for carrying power from the handle to said cam.

8. The combination in a fish-line reel, of a swinging arm having an eye at its outer end, 110 a support on the forward side of the reel-frame upon which the arm is pivoted, a transversely-moving slide engaging the inner end of the arm, and moving in a sleeve 34, and means for actuating said slide applying power 115 to its end.

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