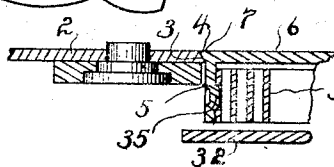
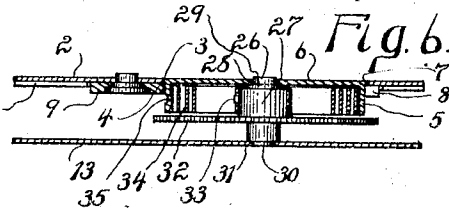
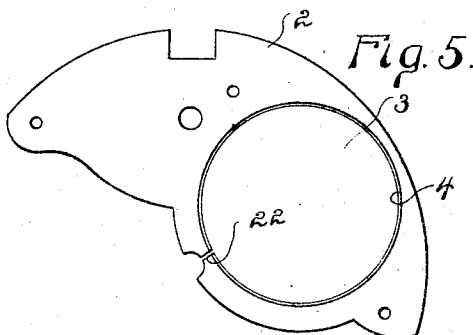
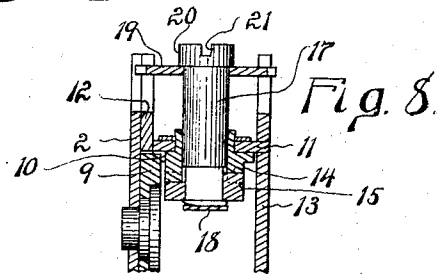
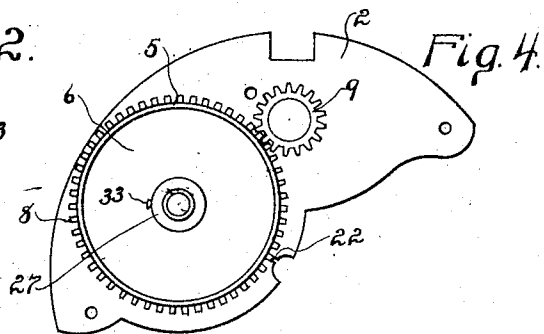
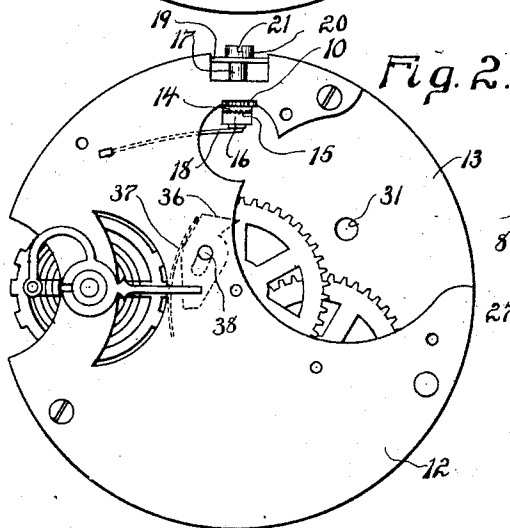
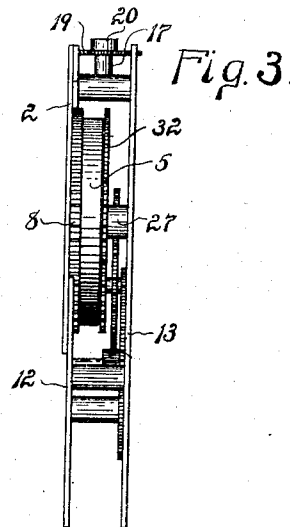


1,046,041.



197. Inventor:
 Frederick Wehinger
 by Seymour Tewel att.

UNITED STATES PATENT OFFICE.

FREDERICK WEHINGER, OF WATERBURY, CONNECTICUT, ASSIGNOR TO WATERBURY CLOCK CO., OF WATERBURY, CONNECTICUT, A CORPORATION.

WINDING MECHANISM FOR WATCHES.

1,046,041.

Specification of Letters Patent.

Patented Dec. 3, 1912.

Application filed July 27, 1912. Serial No. 711,873.

To all whom it may concern:

Be it known that I, FREDERICK WEHINGER, a citizen of the United States, residing at Waterbury, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in Winding Mechanism for Watches; and I do hereby declare the following, when taken in connection with the accompanying drawings and the characters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this application, and represent, in—

Figure 1 a plan view of a watch-movement constructed in accordance with my invention. Fig. 2 a corresponding view with the barrel-bridge removed. Fig. 3 an edge view of the movement. Fig. 4 a detached inside view of the barrel-bridge with the barrel, and winding pinion in place thereupon. Fig. 5 a detached plan view of the barrel-bridge. Fig. 6 a view in horizontal section on the line *a—b* of Fig. 1. Fig. 7 a broken view in horizontal section on the same line, on an enlarged scale, to better show the bearing of the barrel in the barrel-bridge. Fig. 8 a broken view in vertical section on the line *c—d* of Fig. 1.

My invention relates to an improved winding mechanism for watches, the object being to provide at all times a support of superior rigidity for the main-spring barrel, and to reduce the thickness of the watch.

With these ends in view, my invention consists in a winding mechanism having certain details of construction and combinations of parts as will be hereinafter described and pointed out in the claims.

In carrying out my invention, as herein shown, I employ a barrel-bridge 2 formed with a circular barrel-opening 3 the surrounding wall of which is beveled to form an inclined annular barrel-bearing 4. The said opening receives the main-spring barrel 5 which is formed upon its back 6 with a beveled over-hanging annular bearing-flange 7 adapted to bear upon the barrel-bearing 4 of the bridge, as clearly shown in Fig. 7. The said barrel 5 is provided, as usual, with circumferential teeth 8 located directly below the overhanging bearing-flange 7 and meshing into an intermediate winding-pinion 9 mounted upon the said bridge 2, and in turn meshing into a winding-pinion 10 mounted in a bridge 11 supported between the upper

edges of the front and rear movement-plates 12 and 13. The lower face of the said winding-pinion 10 is formed with a face-ratchet 14 forming one member of a clutch, the other member of which consists of a corresponding face-ratchet 15 formed upon the upper face of a collar 16 having a square opening and mounted upon the squared lower end of a short shaft 17 the extreme lower end of which is engaged by a spring 18 exerting a constant effort to push the shaft outward. The said shaft 17 passes through the winding-pinion 10 and has longitudinal and rotary movement, its outer end being furnished with a setting pinion 19 the hub 20 thereof is formed with a notch 21 for the reception in the ordinary manner of a coupling-flange located upon the inner end of an ordinary pendant-stem which is not shown.

In order to seat the bearing-flange 7 of the barrel 5 upon the beveled bearing 4 of the bridge 2, it is essential to split the bridge by means of a slot 22 entering its circular barrel-opening 3, whereby the same may be momentarily expanded sufficiently to permit the flange 7 upon the back 6 of the barrel 5 to be inserted into the circular barrel-opening 3 from the inside of the bridge 2. After this has been done, the bridge 2 springs together so as to hold the barrel 5 as shown in Fig. 7. The bridge 2 is prevented from springing open so as to release the barrel 5 by means of screws 23 and 24 located on opposite sides of the opening 3. The bridge is further secured to the rear movement-plate by the screw 25.

Ordinarily the journal 26 at the rear end of the main-arbor 27 has bearing in the bridge itself, but under my construction the said journal has bearing directly in the back 6 of the barrel which is formed with a bearing-opening 28 for this purpose, as shown in Fig. 6. As shown, the rear end of the arbor 27 is formed with a shoulder 29 to reduce the friction between the main-arbor and the barrel over what the friction would be if the full diameter of the main-arbor bore upon the inner face of the back 6 of the barrel. The front end of the main-arbor 27 is formed with a trunnion 30 having bearing in an opening 31 in the front movement-plate 13. Upon the main-arbor 27 I mount the main wheel 32 which meshes into the center pinion, not shown, of the watch. The main arbor 27 is provided, as

usual, with a hook 33 for the inner end of the main-spring 34 the outer end of which is engaged with a hook 35 upon the inner face of the barrel as shown in Fig. 7. As shown the teeth 8 of the barrel 5 are engaged by the nose of a recoiling, winding pawl 36 operated by a spring 37, and held in place by a stud 38 upon the inner face of the back movement plate 12.

10 By utilizing the bridge 2 as a bearing for the main-spring barrel 5, the thickness of the movement may be reduced by the full thickness of the bridge itself. At the same time a stable support is secured for the main-spring barrel 2 on account of the great diameter of the bearing and the dovetail character of the mounting of the barrel in the bridge in which the barrel turns when the spring is being wound, but, of course,

15 at no other time.

I claim:—

1. In a watch, the combination with a bridge having a split barrel-opening formed with a beveled annular barrel-bearing, of a main spring-barrel formed at its back with an overhanging bearing-flange beveled to correspond to the said beveled bearing of the bridge, the split of which permits it to be temporarily expanded for the introduction of the barrel into the said barrel-opening of the bridge.

2. In a watch movement, the combination with a barrel bridge having a circular barrel-opening, of a normally-stationary barrel located in the said barrel opening of the bridge and bearing at its edge directly upon the winding of the spring, and a normally-rotating main-spring arbor the rear end of which is journaled directly in the center of the back of the said barrel.

3. In a watch movement, the combination with the front and rear movement plates thereof, of a bridge adapted to be applied to the said rear movement-plate and formed with a split barrel-opening, a barrel adapted to be set into the said barrel-opening and bearing directly upon the bridge in which the barrel is rotated for the purpose of winding the spring, and a main-arbor journaled at its rear end directly in the center of the back of the barrel and having its front end journaled in the front movement-plate of the watch.

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

FREDERICK WEHINGER.

Witnesses:

C. W. SHADER,
J. R. PUTNAM.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."