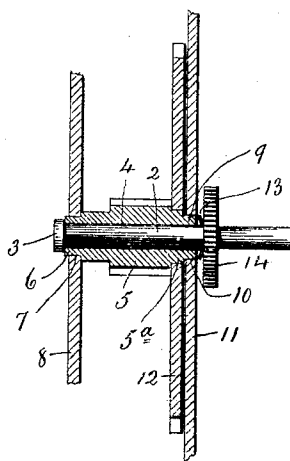


No. 857,668.

PATENTED JUNE 25, 1907.

W. E. PORTER.
WATCH.

APPLICATION FILED JUNE 8, 1906.



Witnesses.
J. H. Hummery
Clara L. Need

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UNITED STATES PATENT OFFICE.

WILSON E. PORTER, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO NEW HAVEN CLOCK CO., OF NEW HAVEN, CONNECTICUT, A CORPORATION.

WATCH.

No. 857,668.

Specification of Letters Patent.

Patented June 25, 1907.

Application filed June 8, 1906. Serial No. 320,708.

To all whom it may concern:

Be it known that I, WILSON E. PORTER, a citizen of the United States, residing at New Haven, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in Watches; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawing constitutes part of this specification and represent an enlarged broken sectional view of a watch-movement constructed in accordance with my invention.

My invention relates to an improvement in watches, the object being to provide them with "center-frictions" constructed with particular reference to economy of space, efficiency and accuracy of performance, and to convenience.

In carrying out my invention, as herein shown, I employ a center-shaft 2 formed at its rear end with a head 3 and adapted to be inserted from rear to front through a longitudinal bore 4 in a center-pinion 5 having at its rear end, a rear bearing 6 running in a bearing-hole 7 in the rear movement-plate 8, and at its forward end, a front bearing 9 running in a bearing-hole 10 in the front movement-plate 11. A shoulder 5^a formed upon the said pinion contiguous to its said front bearing 9, has the center-wheel 12 staked upon it, the same lying directly back of the front movement-plate 11. After the center-shaft 2 has been inserted through the bore 4, as described, one or more cup-shaped friction washers 13 are slipped over the projecting front end of the shaft so as to engage with the front end of the front pinion-bearing 9. The cannon-pinion 14 is then fixed upon the projecting front end of the shaft 2 in such a way as to place the washer or washers 13 under enough tension to couple the shaft 2 and center pinion 5 together through the cannon-pinion 14, the friction being produced between the end of the front bearing 9 of the center-pinion 5 and the inner face of the cannon-pinion, and the tension upon the washer or washers 13 being held by the head 3 at the rear end of the center shaft and by the cannon-pinion which is positioned upon the

shaft in position to develop the required tension.

It is to be particularly noted that the center-pinion bears directly in the movement plates and carries the center-shaft instead of vice versa which is the usual way. In other words, there is no bearing of the center-shaft in the movement plates but the center-pinion carries the center-shaft as well as the center-wheel. Inasmuch as the center-shaft does not bear in the movement-plates, the friction between the center-shaft and the center-pinion may be made very much lighter than common because the friction does not have to be superior to the friction between the center-shaft and the movement-plates as when the center-shaft runs therein. When the center-shaft has bearing in the movement-plates the friction between the center-shaft and the center-pinion must be enough greater than the friction between the center-shaft and the movement plates to insure the carrying of the hands and the dial-work. If it is desired for any reason to take the movement apart without disturbing the center-shaft, center-pinion, center-wheel, and cannon-pinion, this may readily be done by removing the rear movement-plate 8 the bearing hole 7 of which is larger than the head 3 at the rear end of the center-shaft 2, whereby the said rear movement-plate 8 may be drawn away from the rear bearing 6 of the center-pinion 5 without disturbing the parts specified. If it should be desired for any reason to remove the center-shaft 2, it may be withdrawn from the rear without disturbing the center-pinion after the cannon-pinion has been removed from its projecting front end.

I claim:—

In a watch, the combination with the front and rear movement plates thereof, of a hollow center pinion bearing directly at its ends in the said plates and formed with a central longitudinal passage, a center-wheel mounted upon the said center-pinion, a center-shaft passing from rear to front through the longitudinal passage of the center-pinion and formed at its rear end with a head not exceeding in diameter the diameter of the rear end of the center pinion, a cannon-pinion driven upon the projecting forward end of the center shaft, and a friction washer for fric-

tionally coupling the center-shaft with the center-pinion, the said washer being compressed by driving the said pinion upon the said shaft, and held under tension by the action of the pinion, when in place, and the head of the shaft, against each other.

In testimony whereof, I have signed this

specification in the presence of two subscribing witnesses.

WILSON E. PORTER.

Witnesses:

CLARA L. WEED,

GEORGE D. SEYMOUR.