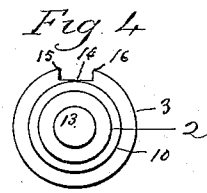
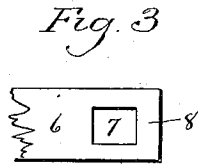
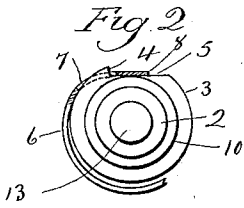
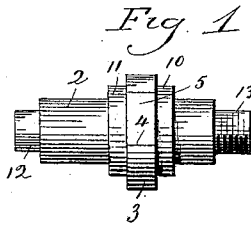


No. 820,252.

PATENTED MAY 8, 1906.

W. E. PORTER.
WATCH BARREL ARBOR.
APPLICATION FILED JUNE 19, 1905.



Witnesses:
J. H. Shumway
Clara L. Reed

Wilson E. Porter
Inventor.
B. A. Seymour & Co.

UNITED STATES PATENT OFFICE.

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

WATCH-BARREL ARBOR.

No. 820,252.

Specification of Letters Patent.

Patented May 8, 1906.

Application filed June 19, 1905. Serial No. 265,855.

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 Spring-Barrel Arbors for Timepieces; and I do hereby declare the following, when taken in connection with the accompanying drawings and the numerals of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a detached enlarged plan view of a spring-barrel arbor constructed in accordance with my invention; Fig. 2, an end view thereof, showing the inner end of the spring in section; Fig. 3, an enlarged broken view of the inner end of the mainspring; Fig. 4, a view of one of the modified forms which the arbor may assume.

Heretofore the inner ends of the mainsprings of watches and small "marine" clocks have generally been connected with the spring-barrel arbors thereof by means of pins driven transversely into the arbors, one end being left projecting to form, as it were, a hook for the spring. This construction is not only expensive on account of the labor involved, but the projecting end of the pin takes up room and produces a bend in each coil of the spring in such a way that many springs are broken on this account alone. In some very expensive watches the arbor is milled to form a transversely-arranged integral pin, but that construction is too expensive for use in cheaper watches and clocks of cheaper grades.

The object of my invention is to avoid the objections above stated and to produce at a low cost for manufacture a spring-barrel arbor which shall be economical of space, effective, durable, and in no wise tend to bend or break the spring wound upon it.

With these ends in view my invention consists in a spring-barrel arbor having certain details of construction, as will be hereinafter described, and pointed out in the claim.

My improved spring-barrel arbor as herein shown has an annular flange 3 transversely broken away to form a mainspring-hook 4, located at one end of a clearance-space 5, which receives so much of the end of the mainspring 6 as extends beyond the opening

7 formed therein for the engagement of the spring with the hook 4. As shown, the space 5 is extended from the hook 4 in a straight line to the periphery of the flange 3; but this is not essential, it being only necessary to have the break in the flange wide enough to receive the extreme cross-bar like end portion 8 of the spring. This construction provides at small cost for the connection of the spring with the arbor and incidentally for the accommodation of the inner end of the spring. Furthermore, as the engagement of the spring with the arbor is below the surface of the flange 3 no hump or projection is produced for the abrupt bending of the inner coil of the spring. The flange 3 is located between the two annular shoulders 10 and 11 corresponding to each other in diameter and forming an integral part of the arbor. The inner end of the spring rests upon these shoulders which prevent it from tilting and disengaging itself from the hook 4. Beyond the shoulder 11 the arbor is extended to form the barrel-bearing 2, which is formed with a trunnion 12 for the arbor.

Beyond the shoulder 10 the arbor is extended to form the journal 12^a, which has a threaded extension 13 for the attachment of the winding-wheel, which is not shown. The shoulders 10 and 11 form end-shake shoulders for the barrel proper, while the journals 2 and 2^a take the end shake of the arbor itself; but the particular construction of the arbor will vary according to the character of the movement of which it forms a part, the essential feature being the formation of the arbor with a flange transversely cut for the production of a mainspring-hook.

If desired, the arbors may be individually turned and cut; but my purpose is to have the wire from which the arbors are produced drawn in long rod lengths with a longitudinal groove having the cross-sectional form and depth of the cut. Then when this wire is turned as required and cut up into arbor lengths the groove in the rod will reappear, as it were, in the form of a transverse cut in the flange developed by the turning. I would therefore have it understood that I do not limit myself to the exact construction shown and described, but hold myself at liberty to make such departures therefrom as fairly fall within the spirit and scope of my invention. Thus the flange 3 might be

formed, as shown by Fig. 4, with a cut 14, having two straight side walls 15 16 separated by just the distance required to receive the end portion of the spring.

5 Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

10 A one-piece spring-barrel arbor for time-pieces, having an annular flange transversely broken for the production of a hook to be engaged by the inner end of a coiled spring formed at its inner end with a hole for the reception of the hook which is narrower than the width of the spring and also having two
15 annular shoulders corresponding to each

other in diameter but smaller in diameter than the said flange which is located between them, and the said arbor also having two journals on which it runs and being adapted to have a spring-barrel applied to it and the said shoulders preventing the extreme inner end of the spring from tilting and being disengaged from the hook.

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

WILSON E. PORTER.

Witnesses:

FREDERIC C. EARLE,
CLARA L. WEED.