R. S. MERSHON.

Watch-Regulator.

No. 167,407. Patented Sept. 7, 1875.

Fig. 1.

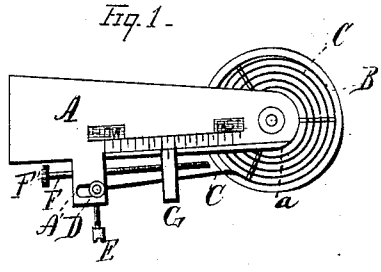
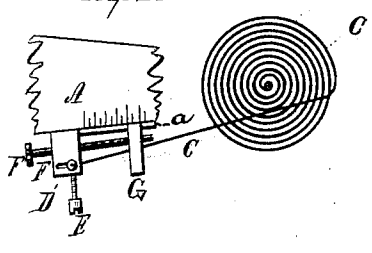


Fig. 2.



WITNESSES.

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RALPH S. MERSHON, OF ZANESVILLE, OHIO.

IMPROVEMENT IN WATCH-REGULATORS.

Specification forming part of Letters Patent No. **167,407**, dated September 7, 1875; application filed July 3, 1873.

To all whom it may concern:

Be it known that I, RALPH S. MERSHON, of Zanesville, in the county of Muskingum and State of Ohio, have invented certain new and useful Improvements in Regulating Device for Watches, &c.; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to certain new and useful improvements in regulators for time-pieces.

In the drawings, Figures 1 and 2 represent plan views of my invention complete; Fig. 3, a sectional view, showing a different form of balance-spring.

My invention consists in forming or constructing the several parts of a regulating mechanism for time-keepers a part of or directly upon the cock or bridge of the balance-wheel, substantially as and for the purposes hereinafter more fully set forth and claimed.

A represents the balance bridge or cock, which constitutes a part, and upon which all the different parts of the regulator are secured; B, the balance-wheel; C, the balance-spring; D, the stud, into which said spring C is fastened, said stud being held in its proper position in the open slot of the projection A′ of the balance-bridge A by means of the temper-screw E. F represents the screw of the regulating device, provided with a milled head, F′, the body of the screw F being fitted to a hole through the projection A′, and so adjusted that it shall turn freely in place without forward or backward motion. The threads of said screw F operate in a female screw in the nut G, which, when the screw F is turned in place, is made to follow the threads of said screw F horizontal to the surface and parallel to the edge of said bridge A, by reason of a tongue, *a*, formed on the edge of said bridge, working in a corresponding groove in the end of said nut G. The balance-spring C is attached at its inner coil to the balance-wheel in the usual manner. Its outside coil, however, is bent across the face of the spring, or straightened into a tangent or right line from its circumference, and the straight portion made to pass through an open slot in the under side of the nut G, which serves the purpose of curb-pins, preventing the vibratory action of the spring C behind the nut G in the direction of the stud D.

To operate the regulator, which I have herein described, turn the screw F on its axis by means of the milled head F′. The nut G will follow backward or forward along the tongued edge *a* of the balance-bridge A, as already shown, indicating the extent of the movement by the index or mark on said nut passing over the graduated scale upon the beveled or tongued portion *a* of the balance-bridge.

By thus forming the bridge or cock A, and permanently attaching the other parts to it, as herein described and shown, the device can be readily attached to any watch now in use without in any respect altering the parts, only removing the old bridge with the balance wheel and spring, and substituting this device in lieu thereof. The bridge, with the entire regulating device attached, occupies the same space, and the means for attaching it in the watch is the same as in the ordinary bridge.

These regulating devices may be thus manufactured and put together and sold, to be afterward placed within watches.

Among the advantages which my invention possesses over modes now in use for regulating time-pieces are, first, its simplicity; second, facility and cheapness of construction; third, its adaptability to be readily attached to any watch now in use, and without altering the parts; fourth, its extreme delicacy and great accuracy of movement, and the possibility of practically affecting the balance-spring to the minutest degree; fifth, the prevention of two or more coils of the balance-spring from getting entangled in the regulating device by reason of violence to or undue expansion of the coils of the balance-spring when in operation. In technical phrase it prevents "two coils of the hair-spring from jumping into the regulator."

I am aware that a regulating device for watches has before been made; but the different parts of the regulator were attached to

the watch-plate and not to the bridge, and the bridge formed no part of the regulator. This, therefore, I do not claim.

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

As an improvement in regulating mechanism for time-pieces, the bridge A, constructed with projection or stud A′ and scaled edge or tongue *a*, in connection with the regulating-screw F, nut G, and balance-spring C, all permanently united to or formed a part or fixture of the balance-bridge, whereby the bridge containing the entire regulating device may be readily removed or secured in place in a time-piece without alteration of the parts, substantially as and for the purposes described.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 28th day of June, 1873.

RALPH S. MERSHON. [L. S.]

Witnesses:

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