

(No Model.)

F. C. GOOLD.
WATCH REGULATOR.

No. 266,256.

Patented Oct. 17, 1882.

Fig. 1.

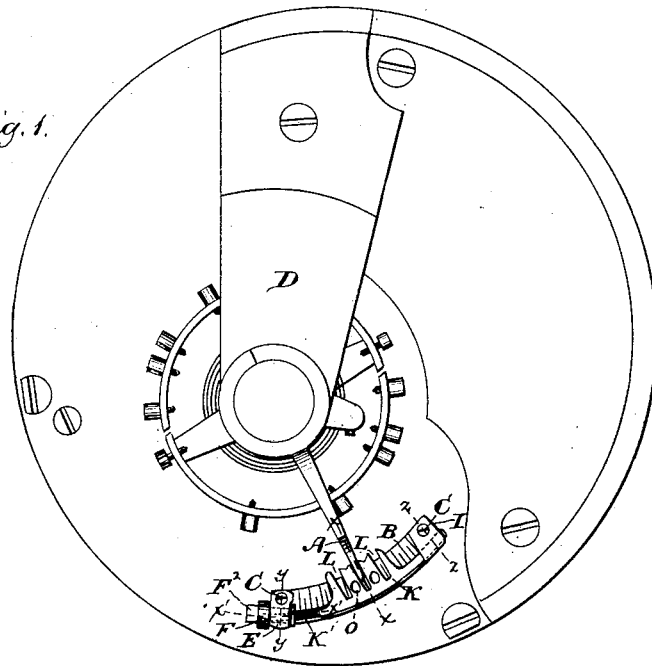


Fig. 6.

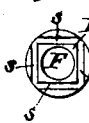


Fig. 5.

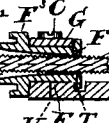


Fig. 3.

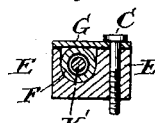


Fig. 4.

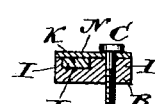


Fig. 7.

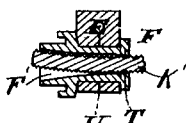


Fig. 8.

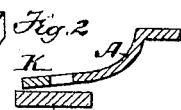
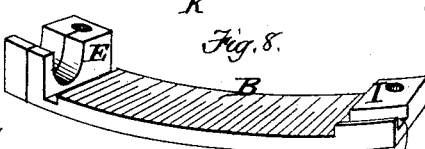
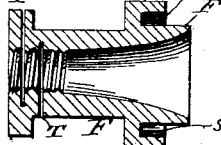


Fig. 9.



Witnesses:

Joseph Lauter
A. L. White

Inventor
F. C. Goold
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Atty.

UNITED STATES PATENT OFFICE.

FRANK C. GOOLD, OF BOSTON, MASSACHUSETTS, ASSIGNOR OF ONE-THIRD
TO JOHN P. LOWELL, OF SAME PLACE.

WATCH-REGULATOR.

SPECIFICATION forming part of Letters Patent No. 266,256, dated October 17, 1882.

Application filed June 17, 1882. (No model.)

To all whom it may concern:

Be it known that I, FRANK C. GOOLD, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Watch-Regulators, of which the following is a specification.

This invention has for its object to provide a regulator-operating device capable of ready application to any ordinary watch adapted to produce a fine and accurate adjustment of the regulator, and presenting a neat and symmetrical appearance.

The invention consists in the improved devices, which I will now proceed to describe and claim.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a view of the back plate of a watch-movement provided with my improvement. Fig. 2 represents a section on line *xx*, Fig. 1. Fig. 3 represents a section on line *yy*, Fig. 1. Fig. 4 represents a section on line *zz*, Fig. 1. Fig. 5 represents a section on line *x'x'*, Fig. 1. Fig. 6 represents an end view of the nut shown in Fig. 5. Fig. 7 represents a section on line *y'y'*, Fig. 5. Fig. 8 represents a perspective view of the scale-plate. Fig. 9 represents an enlarged section of the nut.

The same letters of reference indicate the same parts in all the figures.

In the drawings, A represents the regulator-arm, and B represents the segmental scale-plate, which is secured by screws C C to the back plate of the watch-movement, as shown, or may be similarly secured to the balance-cock D in case the regulator-arm projects over the latter. The scale-plate B is provided at one end with a block or shoulder, E, in which is formed a socket receiving a cylindrical piece or nut, F, which is adapted to rotate in said socket, and is prevented from moving endwise by enlargements or flanges at each end. The nut F is held in the socketed block E by a plate, G, secured to the block by one of the attaching-screws C, and bearing upon the outer surface of the nut without interfering with the rotation thereof. At the opposite end of the scale-plate B is another block or shoulder, I, which has an angular groove or guide, J, receiving the end of a segmental slide or bar,

K, said slide being adapted to move lengthwise in the guide J, and prevented from rotating by its form and that of the guide. The bar K is provided with a series of slots, L, either of which is adapted to receive the end of the regulator-arm A, as shown in Figs. 1 and 2. On one end of the bar K is formed a segmental screw, K', which passes through a partially-threaded orifice or bore, F', in the nut F. Said orifice is necessarily tapered or increased in size from its inner to its outer end on account of the segmental form of the screw, and is therefore threaded for only a short distance at its inner or smaller end, as shown in Fig. 5.

It will be seen that the bar K and its screw K' are concentric with the scale plate B, and with the center on which the regulator-arm A turns. The nut F and guide J are arranged to guide the bar K in a segmental path, which is a continuation of the curvature of the bar, so that there is no variation under any circumstances in the distance between the bar and the center on which the regulator-arm turns, nor in the inclination or position of the slots L with relation to said center. The degree of movement given to the regulator-arm by a rotation of the nut F is therefore the same under all circumstances, and there is no movement of the regulator-arm into and out of the slots L. It follows therefore that the operator is enabled to rely upon a given movement of the regulator as the result of a given movement of the nut, and that when the regulator is once fitted snugly in a slot L without lost motion the accuracy of the fit cannot be impaired by movement of the bar K in either direction. Heretofore a straight bar having a series of notches to receive the regulator-arm and moved in a rectilinear direction by a screw has been employed; but said bar cannot operate so satisfactorily as my improved bar, because the distance between the bar at the point where it is engaged with the regulator-arm and the center on which said arm turns changes when the regulator is operated, and the arm necessarily moves into and out of the slots in the bar.

I prefer to make the slots L slightly inclined or oblique to the arm A, as shown in Fig. 1,

to insure a closer fit of the arm in the slots. The outer end of the nut F is provided with a head, F², which can be grasped for the purpose of rotating the nut. I prefer to make the head square, as shown in Figs. 1 and 6. I also prefer to leave a cylindrical collar or enlargement, F³, upon the nut, in which I form slots parallel with the sides of the head F², as shown in Fig. 6. These slots, meeting at the corners of the head, form openings through the cylindrical portion F³, in which a pin may be inserted for the purpose of rotating the nut. The part of the bar K that slides in the guide J is held down by a plate, N, which is secured by one of the attaching-screws C.

It will be seen that my improved device is neat and mechanical in appearance, accurate in operation, and can be secured to a watch-plate in the position shown in Fig. 1 without any alteration or adaptation of the plate, the screws C C entering the same holes that are prepared for the screws that attach the ordinary scale-plate.

I prefer to provide the bar K with orifices O between the slots L L, thin walls to said slots being thus formed which may be crowded outwardly to contract the slots and enable them to fit the arm A more closely, if desired.

I prefer to give the threaded portion of the nut a resilient quality to adapt its threads more readily to the curved screw K'. To this end I form one or more (preferably two) transverse cuts, T T, in the nut, each extending from one side through the bore, and leaving a narrow uncut portion connecting the parts of the nut at either side of the cut. By thus treating the nut its threaded portion is enabled to conform to the curved screw, the effect being the same as if the threaded portion of the nut were curved. The nut thus treated is adapted for use on any curved screw. The square head F² enables the nut F to be turned by an or-

dinary watch-key. The block E, in which the nut F is journaled, may be split transversely part way across, as shown at U, to give the ends of said block a yielding pressure against the flanges of the nut, and thereby insure a close fit and prevent lost motion of the latter.

I claim—

1. The combination, with a watch-regulator, of a segmental bar slotted to engage the arm of the regulator, and moved and guided, by means substantially as described, in a path that is concentric with the center on which the regulator-arm turns, as and for the purpose specified.

2. The combination, with a watch-regulator, of the segmental plate B, having a guide, J, a journaled nut, F, with a tapered partly-threaded orifice, and the segmental bar K, adapted to slide at one end in the guide J and threaded at its other end to engage with the nut F, as set forth.

3. The combination, with the regulator-arm, of the segmental bar K, guided and operated as described, and provided with the slots L, which are oblique to said arm, as set forth.

4. The segmental bar K, having the slots L and the intermediate orifices, O, as set forth.

5. The combination, with a curved screw, of a nut partially severed at one or more points in its threaded portion, and thereby adapted to conform to the curvature of the screw.

6. The combination, with the flanged nut F, of the bearing E, split transversely, as described, whereby end motion of said nut is prevented, as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 13th day of June, 1882.

FRANK C. GOOLD.

Witnesses:

C. F. BROWN,

A. L. WHITE.