

(No Model.)

C. R. KINEHAN.
WATCH REGULATOR.

No. 465,935.

Patented Dec. 29, 1891.

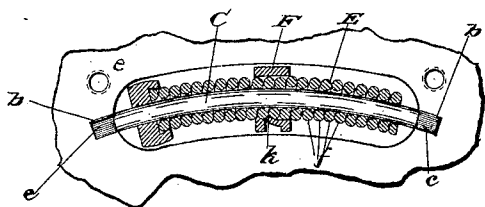


Fig. 2.

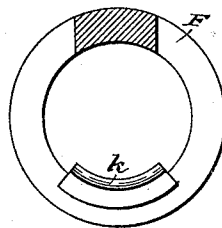


Fig. 3.

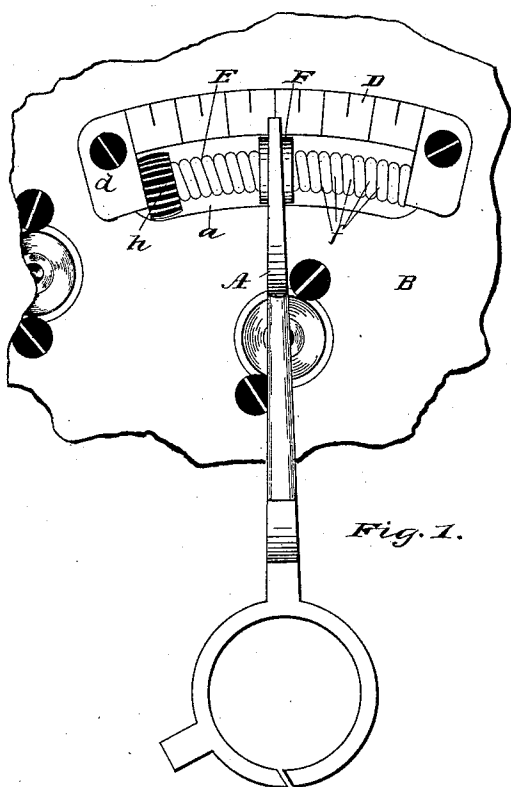


Fig. 1.

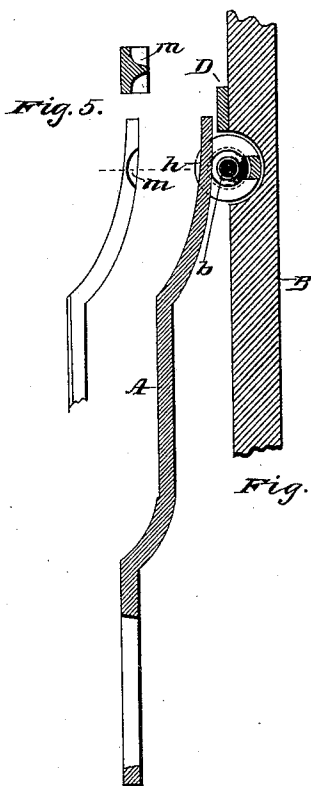


Fig. 5.

Fig. 4.

WITNESSES.

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CHARLES R. KINEHAN, OF CANTON, OHIO, ASSIGNOR TO JOHN C. DUEBER,
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WATCH-REGULATOR.

SPECIFICATION forming part of Letters Patent No. 465,935, dated December 29, 1891.

Application filed August 21, 1891. Serial No. 403,359. (No model.)

To all whom it may concern:

Be it known that I, CHARLES R. KINEHAN, a subject of the Queen of Great Britain, residing at Canton, county of Stark, State of Ohio, have invented a new and useful Improvement in Watch-Regulators, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification.

My invention relates to improvements in watch-regulators, the object of which is to move the regulator-arm about its pivotal connection with the gear-plate and over the scale and to hold the arm when adjusted from vibration.

With these ends in view my invention consists of certain features of construction and combination of parts, as will be hereinafter described, and pointed out in the claims.

Figure 1 of the accompanying drawings is a plan view of a watch-regulator illustrating my invention; Fig. 2, a horizontal section longitudinally through the spring thread or screw; Fig. 3, a view comprising longitudinal and transverse sections of the sleeve or nut; Fig. 4, a side elevation showing regulator in direct engagement with the thread of the spring-screw; and Fig. 5, a side elevation and transverse section of the regulator-lever, showing the tongue that engages the thread of the spring-screw.

Similar letters of reference indicate corresponding parts in all of the figures of the drawings.

A represents the regulator-lever; B, the gear-plate, in which there is provided a depression *a*, at the ends of which there are depressions *b*, adapted to receive the ends of the bar C, which is bent to a circle corresponding with a line swept by that portion of the lever A engaging the sleeve or thread by which the lever is moved about its pivotal center. The end portion *c* of the bar C is cut away to a line with the face of the plate B, and to secure said bar in the position shown in Fig. 2 the register D is placed in position shown in Fig. 1, the end portions resting upon the ends *b* of the bar. The register is secured in position by the screws *d*, turned into the perforations *e* in the gear-plate B.

About the bar C is placed a coil of spring-wire, by which a screw-thread *f* is formed of previously-determined size and pitch to embrace and conform to the circle of the bar C, and adapted to be rotated thereon, as hereinafter explained. One end of the screw so formed is secured in the head *h*, by which it may be rotated about the bar C, the other end resting against the register D, the energy of the spring which forms the screw, &c., exerted outwardly or endwise, holding the head *f* against the register at one end and the end of the coil against the other, by which arrangement end movement is entirely prevented. A sleeve, as F, is provided, having a tongue portion *k*, adapted to engage the thread of the screw E, formed by the coiled wire on and between the coils. The energy of the coil exerted on both sides of the tongue will hold it from vibration or backlashing.

To operate the regulator, the head *h* is turned about the bar C, which carries with it the coil or screw E. The sleeve F will be carried to either end of the screw. The free end of the lever A, resting in the top of the sleeve, will be carried with the sleeve in the desired direction.

Figs. 4 and 5 illustrate a slight modification of my invention, in which the regulator-lever A is shown in direct engagement with the threads *f*, formed, as before stated, by the coiled wire. The sides of the lever are cut away, as shown in cross-section, Fig. 5, by which a tongue *m* is formed to engage the threads of the screw E. The energy of the spring exerted on both sides of the tongue will hold it in desired adjustment.

The operation and object of the modification are the same. The difference relates simply in the omission of the sleeve F and placing the tongue *m* on and between the coils of the spring E. It will be noticed that the energy of the coil-spring, forming the thread of the screw, being exerted against the end portions of the register and against each side of the tongue *m*, there can be no backlashing or vibration of the regulator-lever. It will also be noticed that the screw E, by reason of its construction of coiled spring-wire, will yield to the form of the bar C, thus forming a screw that is bent to conform to an arc described

by the movement of the regulator-lever, that will rotate about the axis of said bar to move the said lever, as before stated.

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

1. The combination, with a watch-regulator lever, of a bar conformed to a circle described
10 by the movement of said lever and a screw-thread formed of wire to rotate about said bar to move said lever to regulate the watch.

2. The combination, with a watch-regulator lever, of a flexible screw supported on the gear-plate of a watch and bent to conform to
15 an arc described by the movement of said lever, that may be rotated about its axis to move the lever to regulate the movement of the watch.

3. The combination, in a watch-regulator, of the bar C, flexible screw-thread to rotate there-
20 on, a sleeve F to embrace said screw, having a tongue $\frac{1}{2}$ to engage said screw-thread, and the lever A, substantially as described, and for the purpose set forth.

4. The combination, in a watch-regulator, of
25 the arched bar C, a flexible screw-thread to rotate about the axis of said bar, and a regulator-lever having a tongue portion to engage said screw-thread, substantially as described, and for the purpose set forth.

In testimony whereof I have hereunto set
30 my hand this 21st day of May, A. D. 1891.

CHARLES R. KINEHAN.

Witnesses:

W. K. MILLER,

CHAS. R. MILLER.