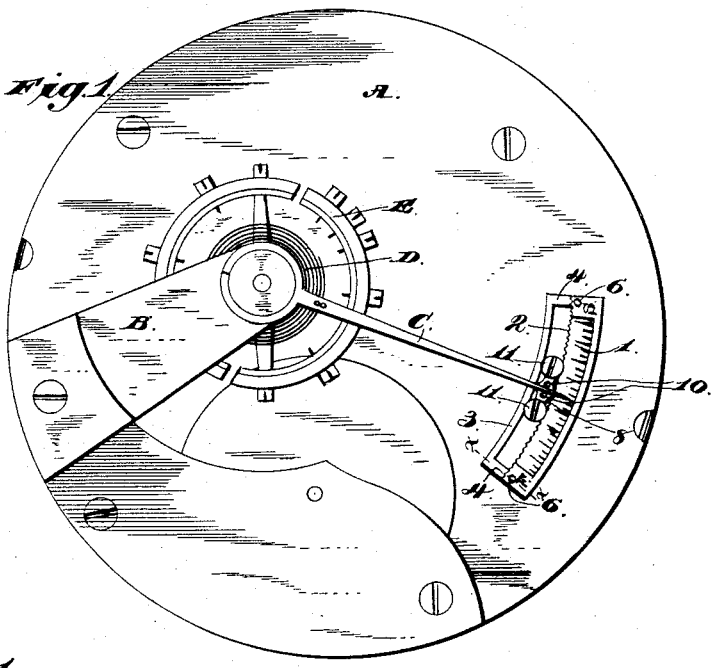
(No Model.)

# N. J. EDDY.

## WATCH REGULATOR.

No. 342,864. Patented June 1, 1886.

Fig. 1.



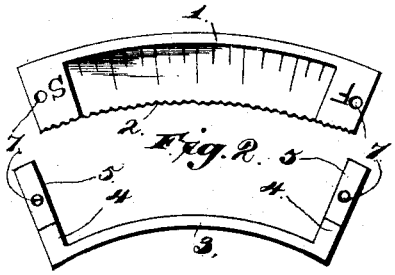




Fig. 2.

Fig. 5.

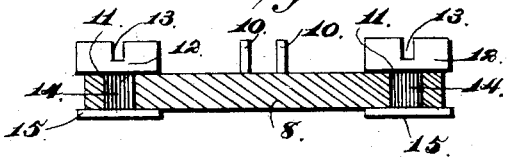



Fig. 6.

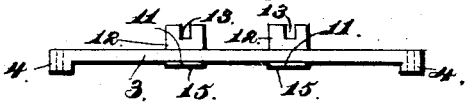



Fig. 3.


Fig. 4.


Fig. 7.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# UNITED STATES PATENT OFFICE.

NEWTON J. EDDY, OF PORTLAND, MICHIGAN.

## WATCH-REGULATOR.

SPECIFICATION forming part of Letters Patent No. 342,864, dated June 1, 1886.

Application filed January 28, 1886. Serial No. 190,093. (No model.)

*To all whom it may concern:*

Be it known that I, NEWTON J. EDDY, a citizen of the United States, residing at Portland, in the county of Ionia, State of Michigan, have invented certain new and useful Improvements in Watch-Regulators, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to regulators for time-pieces; and it consists in the construction and arrangement of the parts of the same, which will be more fully hereinafter described, and pointed out in the claims.

The object of my invention is to provide a regulator for time-pieces, adapted to be finely and positively adjusted, and when adjusted accidental turning or displacement of the indicator prevented by means which are simple, durable, and ornamental in their construction. I attain these objects by the device illustrated in the accompanying drawings, wherein like letters of reference indicate similar parts in the several views, and in which—

Figure 1 is a plan view of a plate of an ordinary watch with my improved regulator applied thereto. Fig. 2 is a plan view of the index-plate and spring. Fig. 3 is a plan view of the slide, showing the pins for holding the regulator-arm in position. Fig. 4 is a side elevation of one of the rollers. Fig. 5 is a longitudinal vertical section of the slide with the rollers in working position, also illustrating the pins for holding the regulator-arm in position. Fig. 6 is an elevation of the concave side of the spring, showing the rollers in position. Fig. 7 is a transverse section on line *x x* of Fig. 1, showing the manner of joining the index-plate and the spring.

The drawings represent the regulator as applied to an ordinary watch-plate; but it is obvious that the device can be applied to any well-known form of time-piece. The parts are also represented on an enlarged scale, so as to more clearly illustrate their construction.

A indicates a watch-plate having the bridge B secured thereto, with the regulator-arm C mounted upon said bridge B, and the spring D and balance-wheel E under the same, which is the ordinary construction in watches, and well-known to those skilled in the art.

On one side of the plate A, and conveniently situated, as may be desired, is an index-plate, 1, which has its inside edge, 2, formed with fine corrugations. A spring, 3, having concavo-convex sides and arms 4 extending from its ends, is used in conjunction with the index-plate 1. The arms 4 of the spring 3 have recesses 5 formed therein, Figs. 2 and 7, which are constructed of the same depth as the thickness of the index-plate 1, and of the same width as the width of the said plate. These two parts, 1 and 3, are secured together and to the plate A by small screws, 6, passing through apertures 7 in the ends of the said parts 1 and 3, and when these parts are secured together a space is left between them, as shown in Fig. 1. A slide-plate, 8, substantially of the form shown in Fig. 3, and having curved recesses 9 9 on one of its sides and guard-pins 10 10 on the top thereof, is provided, which slides in the space between the spring 3 and the index-plate 1. The rollers 11 11 are constructed with a head portion, 12, of considerable vertical thickness, having a cut, 13, therein, which may be engaged by a screw-driver or other suitable instrument in operating the rollers. Below the head 12 a shank, 14, is formed, which is provided with small corrugations extending around the entire circumference of the said shank. On the bottom of the shank 14 a circular flange, 15, is formed, which is constructed of the same diameter as the head 12. The corrugated shanks 14 of these rollers 11 fit in and are carried by the curved recesses 9 9 in the slide-plate 8, the heads 12 of the rollers extending slightly over the edges of the said plate and bear on the spring 3 and the index-plate 1, as shown in Fig. 1, while the flanges 15 of these rollers, in like manner, extend over and have bearing on the lower sides of the spring 3 and index-plate 1, as illustrated in Figs. 5 and 6. When the rollers 11 have been placed in the recesses 9 9 of the slide-plate 8, the said plate carrying the rollers is then placed in contact with the index-plate 1, the corrugations on the shank 14 engaging with the corrugations on the side 2 of the index-plate. The spring 3 is then slipped into place, as heretofore described, and the regulator-hand C placed between the two guard-pins 10 10 and the spring 3 and the index-plate 1 secured together and to the plate A when the regulator will be in condition for operation.

If it is desired to regulate the time-piece to which my improved regulator is applied, a screw-driver or other suitable key is inserted in the cuts 13 of one or both of the rollers 11, and the said rollers are then turned. The corrugations on the shanks 14 of the rollers 11, meshing with the corrugations on the edge 2 of the index-plate 1, will turn in and move along said corrugated edge 2, moving the slide-plate 8 at the same time, and the regulator-hand C will be moved from one position to another in consequence of the guard-pins 10 10 on each side of the hand moving with the slide-plate 8, and the time-piece regulated fast or slow, as may be desired. The spring 3 bears against slide 8 and rollers 11, and keeps the corrugated shanks 14 of said rollers in connection with the corrugated side 2 of the index-plate 1, and at the same time takes up all lost motion.

The parts may be ornamented in any suitable manner and by any suitable means.

The adaptability of this regulator to any watch or time-piece now used without changing the construction of the same to suit the regulator is an advantage of importance to manufacturers and the public generally.

It is obvious that many minor details in the construction of the parts could be made and substituted for those shown and described without in the least departing from the nature and principle of my invention.

Having thus described my invention, what I desire to secure by Letters Patent is—

1. In a regulator, the combination of an index-plate having small corrugations formed on its inn r edge, a spring having recessed arms supported and connected to the index-plate, and a sliding plate carrying corrugated shanked rollers operating in the space between the spring and the inside edge of the index-plate, substantially as described, and for the purposes specified.

2. In a regulator, the combination of an index-plate having corrugations formed on its inner edge, a spring having recessed arms supporting and connected to the index-plate, a sliding plate having recesses formed in one edge thereof, and guard-pins mounted on the top thereof, and corrugated shanked rollers fitting in the recesses of and carried by the sliding plate, said plate fitting and moving in the space between the spring and index plate with the indicator-hand between the guard-pins, substantially as described.

3. In a regulator for time-pieces, the combination, with an index-plate having an inside corrugated edge, a spring having recessed arms, said recessed arms supporting and holding the index-plate, and the two secured together and to a suitable place of securement, and a sliding plate moving between the spring and index-plate, of rollers supported in said sliding plate having heads with cuts formed therein, a corrugated shank engaging the corrugated edge of the index-plate, and a plate on the lower portion of each roller, said heads and lower plates extending over and under the spring and index-plate, substantially as described, and for the purposes specified.

4. In a regulator, the combination of the index-plate 1, having an inside corrugated edge, 2, a spring, 3, having arms 4, with recesses 5 formed therein, supporting and holding the index-plate, a sliding plate, 8, carrying guard-pins 10 10, and having recesses 9 9, and corrugated shanked rollers 12, carried by the plate 8 in the recesses 9 9, substantially as described, and for the purposes specified.

In testimony whereof I affix my signature in presence of two witnesses.

NEWTON J. EDDY.

Witnesses:
E. M. ALLEN,
J. B. RAE.