

A. L. DENNISON.
Watch Regulator.

No. 30,873.

Patented Dec. 11, 1860.

Fig. 1.

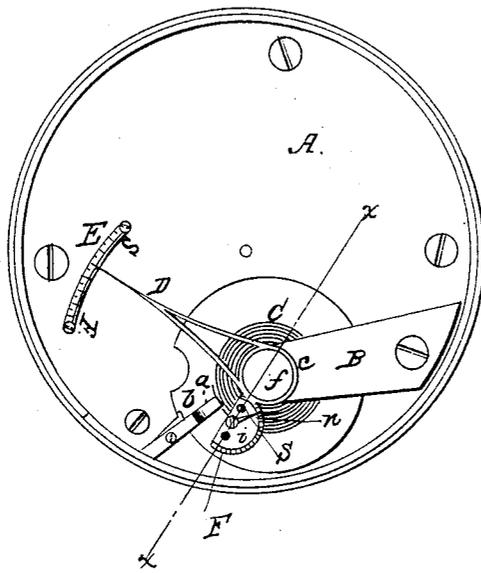
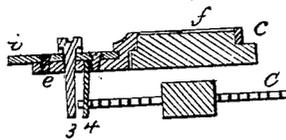


Fig. 2.



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A. L. DENNISON, OF WALTHAM, MASSACHUSETTS.

IMPROVED METHOD OF REGULATING WATCHES.

Specification forming part of Letters Patent No. 30,873, dated December 11, 1860.

To all whom it may concern:

Be it known that I, A. L. DENNISON, of Waltham, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in the Regulators of Watches, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a plan of part of the works of a watch, showing the hair-spring and regulator with my improvements attached; Fig. 2, a vertical section on the line xx of Fig. 1.

The ordinary method of regulating watches is by means of a small hand or index pivoting on the top of the cock or plate which forms one of the bearings for the arbor of the balance-wheel, a portion of the hair-spring passing between two pins or studs which project down from the hand, so that as the hand is moved toward one side or the other over a graduated scale these pins will be moved nearer to or farther from the point at which the hair-spring is rigidly attached to a part of the frame of the watch, this change of the position of the pins permitting a longer or shorter vibration of the spring, and thus regulating the rate of going of the watch. The said pins do not actually bind or clasp the spring, but are placed close enough together to interrupt its vibrations at the part of the spring opposite to which they happen to be, and yet leaving space enough between them to allow them to move along the spring when the hand is moved. As this did not give a sufficiently nice adjustment or means of regulating the vibrations of the hair-spring, a further adjustment has been effected by changing the position of the pins so as to cause them to press more closely on the hair-spring, and thus more entirely check its vibrations beyond the point at which the pins come in contact with the spring. The means heretofore employed for giving this "final adjustment," as it may be termed, were not such as enabled the person regulating the watch to define exactly the positions of the pins, and it was therefore guess-work with him as to how much he really changed their position, and consequently how much he accelerated or retarded the vibrations of the spring.

The object of my present invention is to

remedy this defect; and it consists in forming one of the pins eccentric and attaching to its head a small hand or index which will show the position of the pin and the degree to which the spring is confined between the two pins.

That others skilled in the art may understand and use my invention, I will proceed to describe the manner in which I have carried out the same.

In the said drawings, A is the plate or frame of the watch.

B is a cock which forms one of the bearings of the arbor of the balance-wheel.

C is the hair-spring, one end of which is secured at a to a stud b , the other end being connected with the balance-wheel. (The wheel is not shown in the drawings.)

A hand or index D is attached by a friction ring or band c to a hub f , rising from the top of the cock B. This hand points to a scale E, and by moving the hand toward one end or the other of the scale the vibrations of the spring C are lengthened or shortened in the following manner: An arm e , Fig. 2, projects from one side of the ring c and has two pins 3 and 4 projecting down from its under side. These pins are in such a position that the last coil of the spring C passes between them near where its end is secured at a . They are placed just far enough apart to allow them to slide along the spring as the hand D is moved, but near enough for the spring to touch as it vibrates, and thus the vibrations of the spring are interrupted between the point of contact with the pins and the point of attachment at a . They are not, however, caused entirely to cease. After the watch has been thus regulated by the movement of the hand D a still further and nicer adjustment may be effected by closing more or less the space between the pins 3 and 4, so that the amount of vibration allowed to that part of the spring between the point of contact with the pins and the point of attachment at a may be regulated with great exactness. This is effected in the following manner: A semicircular dial i , with a graduated scale or arc around its edge, is attached to the top of the arm e . The pin 3 (the lower end of which is of an eccentric form) passes up through the arm e and dial i and has a small hand n se-

cured to its head, this hand pointing to the graduated arc on the dial *i*, the hand thus indicating the position of this pin. As the pin 3 is turned, its side which projects beyond the axis of the pin is brought more or less near to the pin 4, and the spring C is held more or less rigidly by the pins, and, as before stated, a remarkably nice adjustment of the vibrations of the spring may be had, the hand *n* and scale on the dial *i* guiding the operator.

For the convenience of turning the pin 3, its head is cut or notched like that of a screw,

so that it may be turned by a small screw-driver.

What I claim as my invention, and desire to secure by Letters Patent, is—

The eccentric-pin 3, with its index-hand *n* and graduated arc or dial *i*, in combination with the regulating-hand D and hair-spring C, arranged and operating in the manner set forth, for the purpose specified.

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—Witnesses:

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