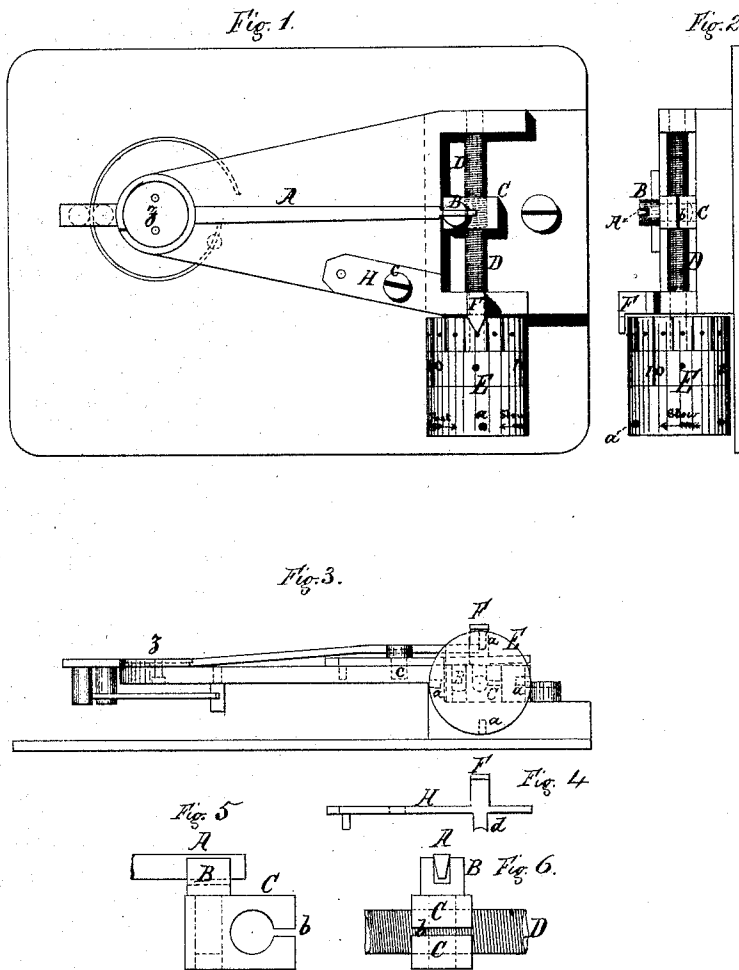


C. TESKE.
Watch-Regulators.

No. 156,046.

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UNITED STATES PATENT OFFICE.

CHARLES TESKE, OF SARATOGA SPRINGS, NEW YORK.

IMPROVEMENT IN WATCH-REGULATORS.

Specification forming part of Letters Patent No. **156,046**, dated October 20, 1874; application filed August 16, 1873.

To all whom it may concern:

Be it known that I, CHARLES TESKE, of Saratoga Springs, Saratoga county, in the State of New York, have invented certain new and useful Improvements in Watch-Regulators, of which the following is a specification:

The object of my invention is to provide a regulator for watches so constructed that it will be certain in its effect upon the hair-spring, and at the same time may be easily operated even by the owner of the watch or an inexperienced person; and also to provide a means by which the effect of a given movement of the regulator on the running of the watch may be definitely read or calculated within a comparatively short space of time.

In the drawings, Figure 1 is a top view of my improved regulator. Fig. 2 is an end elevation of the same. Fig. 3 is a side elevation; and Figs. 4, 5, and 6 are enlarged views of different parts.

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

A is the regulator-arm, one end of which rests in a groove made in the head of the pivot B, where it is held by its own elasticity as the arm is fastened at the other end, near the hair-spring, by the pin *z*, so that it has to be slightly sprung in order to be placed in position in the groove of the pivot B. This regulator-arm A, where it fits into the groove, is made V-shaped, so that its sides are always in contact with the walls of the groove, and there being sufficient space left between the arm and the bottom of the groove, as shown in Figs. 2, 5, and 6, any wear is always taken up or compensated for and the arm prevented from becoming loose in the groove. The pivot B fits into a socket in the nut C, which is carried by the screw D, and this screw D is provided at its extreme outer end with a head or drum, E, in which are made pin-holes *a*, as shown in Figs. 1 and 2, and bears upon its circumference a graduated scale of any number of parts, but I prefer thirty, and accompanied by the words "Fast" and "Slow," with arrows designating the direction in which the head should be turned for that purpose, thus rendering the direction and amount of movement perfectly visible.

In order to demonstrate the superiority and

greater accuracy of my improved regulator over all others, I will proceed to describe more particularly its operation.

The end of the regulator-arm A being V-shaped, and resting in the square groove in the head of the pivot B, gives a firm, even pressure on the pivot from each side of the center, and on the other hand allows the regulator-arm to conform to the two motions, one from its center along the arc, and the movement of the nut C on the screw D in a straight line, in a tangent from the arc described by the end of the regulator-arm, the pivot B always allowing its groove to conform to the changes of the line of direction of the regulator-arm caused by the movement of the nut C on the screw D. The nut C is formed and adapted specially for its purpose: first, it is of an oblong shape, in order that the lower part may lightly rest upon and easily slide over the bridge or plate. The upper part corresponds with the lower in shape, and is provided with a socket to receive the pivot B. The hole in the nut C, through which the screw D passes, is made in the usual manner, but I make a saw cut on one side of the nut, as shown at *b*, and compress it together with a stroke of the hammer, thus bringing into play the elasticity of the sides of the nut, which causes it to grasp the screw tighter, so that it is affected by the slightest movement of the screw D, producing the effect of a dead motion, not liable to any deflection or derangement.

The graduated and perforated head E of the screw D, and its mode of operation, form an important part of my invention. Being divided into thirty parts, one division represents one-thirtieth part of the width of the thread of the screw, which is as fine as a hair; but that is only one-fourth as fine as I can move the point of the regulator-arm operating on the hair-spring, for as the distance from the center of the regulator hand or arm at *z* to the center of the pivot B is four times as great as from the center *z* to the pin on the short arm, hence the distance moved at the short arm is one-fourth as much as that moved at the pivot on the nut, which, by former calculation, is ascertained to be one hundred and twentieth part of the width of the thread of the screw D. This extremely fine division is

ascertained to affect the time of the watch from one-twelfth to one-sixteenth of a second in twenty-four hours, according to the sensitiveness of the hair-spring. The rate is, however, accurately known, and such knowledge sent out with the watch, thereby enabling the owner to regulate his own watch in one movement, and with absolute certainty.

By having the head E provided with holes *a a*, placed at equal distances from each other around its circumference, the regulator may be easily operated by means of any small pointed instrument, such as a pin, and any movement of the head E is plainly and positively indicated by the pointer F. The pointer F is carried by the strip H, which has formed on its under side a projection serving as one of the upper bearings for the screw D; and the strip H, being made of steel, and fastened to the bridge by the screw *c* placed some little distance from the bearing, gives it an elasticity, but at the same time renders that bearing perfectly firm, and not liable to derangement.

It is a very important point in the arrangement or combination of the parts in my improved regulator that the indispensable firmness necessary to obtain the requisite accuracy

of movement is obtained by the novel use of the elasticity of the parts acting in and on the required situations to produce the desired effect, and is not, as in other regulators, obtained by rigidity of the different parts, which in time would relax from wear, and the whole be rendered useless.

I claim—

1. In a watch-regulator, the nut C, made open on one side, so as to be more or less elastic, and intermediate pivot B located thereon, in combination with the screw D, provided with a graduated drum-shaped head, E, perforated radially with the holes *a a*, substantially as and for the purposes shown and described.

2. The combination of the regulator-arm A and nut C by means of the intermediate connecting-pivot B, having a grooved head to receive the V-shaped regulator-arm, and its shank-socket in the nut C, so as to allow for the changes in the relative location of the nut C at different adjustments of the regulator-arm.

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