

(No Model.)

R. B. RICHMOND.

WATCH REGULATOR.

No. 395,351.

Patented Jan. 1, 1889.

Fig. 1.

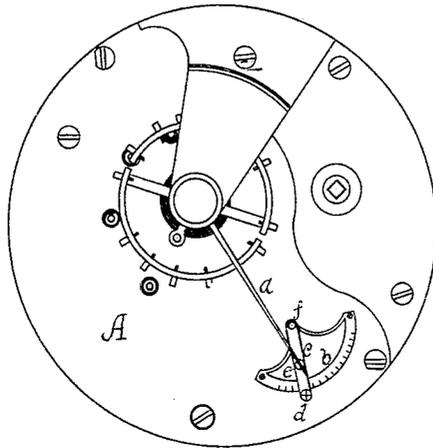


Fig. 2.

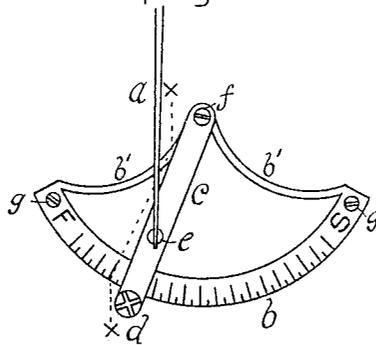
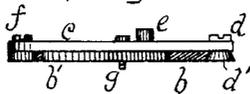


Fig. 3.



ATTEST

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# UNITED STATES PATENT OFFICE.

ROME B. RICHMOND, OF DECATUR, ILLINOIS.

## WATCH-REGULATOR.

SPECIFICATION forming part of Letters Patent No. 395,351, dated January 1, 1889.

Application filed May 7, 1888. Serial No. 273,003. (No model.)

*To all whom it may concern:*

Be it known that I, ROME B. RICHMOND, of the city of Decatur, county of Macon, and State of Illinois, have invented a certain new and useful Micrometer Watch-Regulator, of which the following is a specification sufficiently full, clear, and exact to enable persons skilled in the art to make and use the same.

My invention comprises a graduated arc fixed to the watch-plate, an arm with its pivot yieldingly connected with the arc and approximately concentric with the circle the arc would form if continued, a friction-roller in the arm bearing with a yielding pressure against the outer periphery of the arc, and a swivel-head on the arm between the pivot thereof and the friction-roller, adapted to carry the swinging end of an ordinary regulator-pointer, all as hereinafter set forth in detail and specifically claimed.

In the drawings accompanying and forming a part of this specification, Figure 1 represents a watch-plate with my device affixed thereto. Fig. 2 represents the device enlarged and detached from the watch-plate. Fig. 3 represents the device in section on dotted line  $x$  in Fig. 2, the pointer being omitted.

Like reference-letters indicate like parts in the different figures.

The watch-plate is designated by reference-letter  $A$ , the regulator-pointer by  $a$ , the graduated arc by  $b$ , the arm by  $c$ , the head of the friction-roller by  $d$ , the roller by  $d'$ , the swivel-head by  $e$ , the yielding pivot of the arm by  $f$ , the securing-screws for the graduated arc by  $g g$ , and the springs that connect the arc with the arm-pivot by  $b' b'$ . The swivel-head is slotted to receive the pointer, which acts on the balance-spring in the customary manner. The head of the friction-pulley has a transverse groove that forms a seat for the driver with which the roller is adjusted with relation to the arc. The springs  $b' b'$  cause the roller to exert a yielding pressure against the arc, thereby insuring constant contact and avoiding stoppages that might result from eccentricity or irregularities in the surface of the arc. The arm  $c$  acts as an index on the graduations of the arc, and, as the swivel car-

rying the pointer is nearer the pivot than is the arc, the motion of the arm on the arc is greater than the motion of the end of the pointer. This peculiarity enables the pointer to be adjusted with great minuteness, and makes the device a micrometer in fact. By placing the swivel nearer the pivot the delicacy of the adjustment is increased. By placing the swivel nearer the arc the regulating capacity of the device is increased, and these facts may be considered in adapting the regulator to different requirements.

From the foregoing description it will be understood that the arm with the swivel between the pivot and the arc may be used independently of the yielding pivot when the arc is true and the pivot perfectly concentric, and it is obvious that other well-known forms of springs may be substituted for those shown without the exercise of invention and without affecting the principle of my device.

I claim as new and desire to secure by Letters Patent—

1. A micrometer watch-regulator comprising a graduated arc, an arm pivoted at or near the center of the circle that the arc would form if continued, a swivel on the arm between the pivot and the arc, adapted to carry the regulating-pointer, and means for adjusting the arm with relation to the arc, as and for the purpose set forth.

2. A micrometer watch-regulator comprising a graduated arc, an arm yieldingly pivoted near the center of the circle that the arc would form if continued, a roller in the arm bearing with a yielding pressure against the arc, and means for connecting the arm with a regulator-pointer, as and for the purpose set forth.

3. In micrometer watch-regulators, in combination, arc  $b$ , springs  $b' b'$ , carrying pivot  $f$ , arm  $c$ , pivoted at  $f$ , roller  $d'$  in arm  $c$ , bearing against the periphery of the arc, and swivel  $e$ , adapted to carry pointer  $a$ , as and for the purpose set forth.

In testimony whereof I sign my name in the presence of two subscribing witnesses.

ROME B. RICHMOND.

Attest:

R. B. HOSTETLER,  
J. C. HOSTETLER.