

(No Model.)

C. T. HIGGINBOTHAM.
HAIR SPRING STUD FOR WATCHES.

No. 440,877.

Patented Nov. 18, 1890.

Fig. 1.

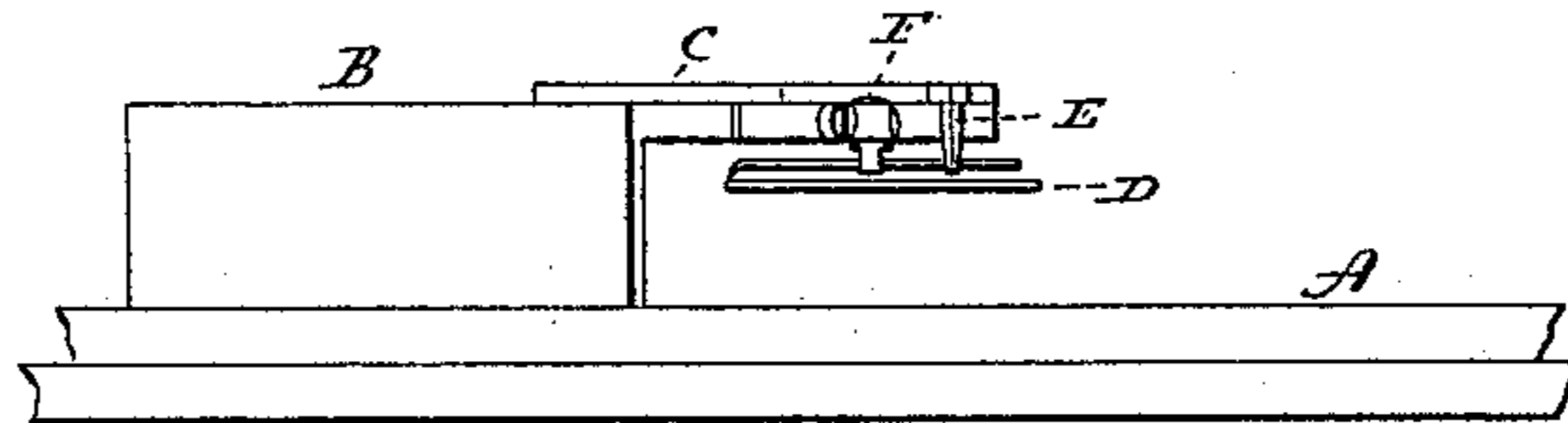


Fig. 2.

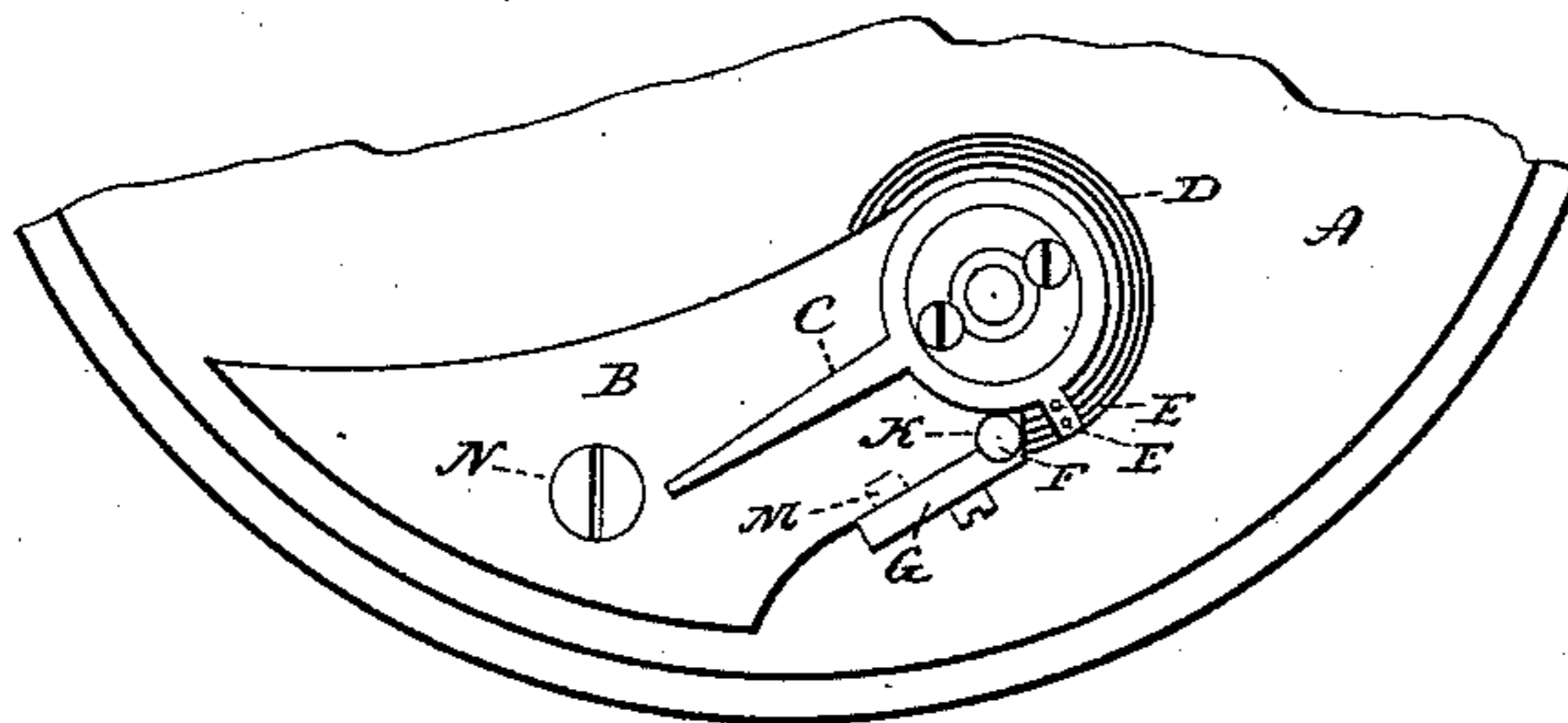


Fig. 3.

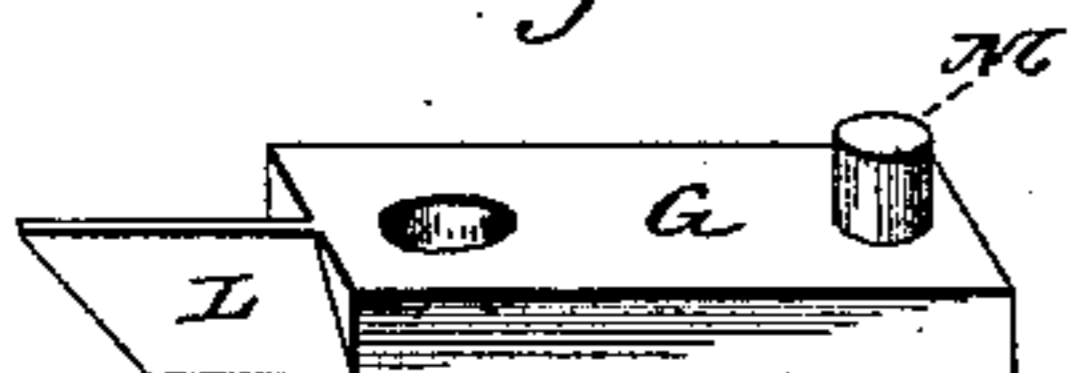


Fig. 5.



Fig. 4.

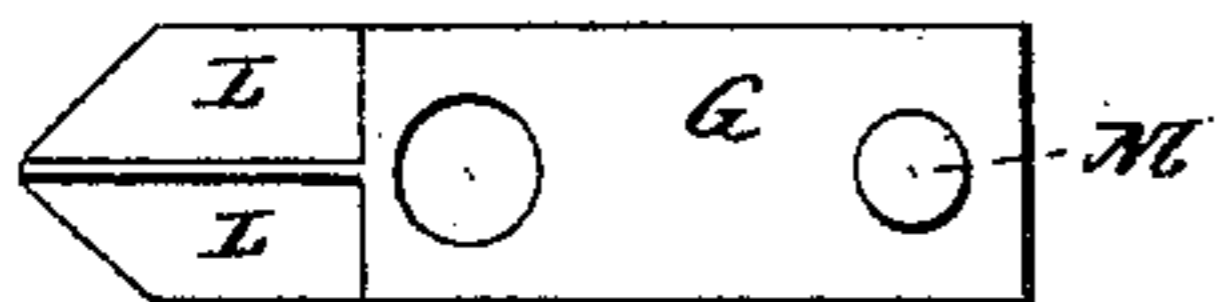
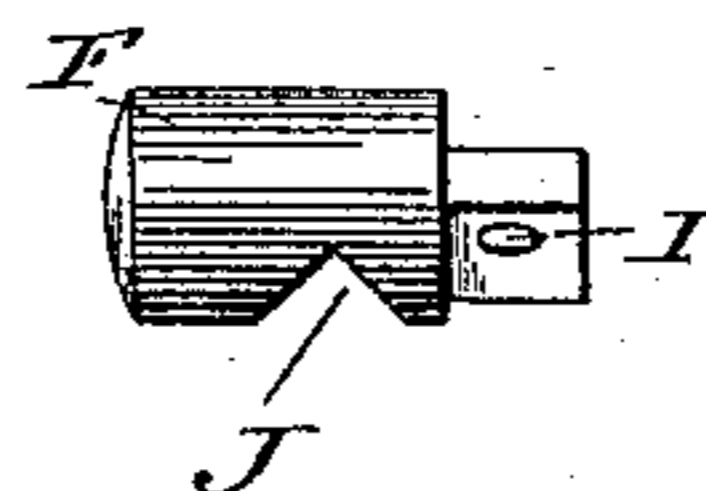


Fig. 6.



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CHARLES T. HIGGINBOTHAM, OF THOMASTON, CONNECTICUT, ASSIGNOR TO
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HAIR-SPRING STUD FOR WATCHES.

SPECIFICATION forming part of Letters Patent No. 440,877, dated November 18, 1890.

Application filed February 7, 1890. Serial No. 339,569. (No model.)

To all whom it may concern:

Be it known that I, CHARLES T. HIGGINBOTHAM, of Thomaston, in the county of Litchfield and State of Connecticut, have invented
5 a new Improvement in Watches; and I do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same,
10 and which said drawings constitute part of this specification, and represent, in—

Figure 1, a view in side elevation showing simply the lower plate of a watch-movement, the balance-cock, the regulator, the hair-spring, and my improved hair-spring stud and retaining-plate; Fig. 2, a broken plan view of the same parts; Fig. 3, a detached enlarged rear perspective view of the stud-holder; Fig.
15 4, a view thereof in rear elevation; Fig. 5, a detached perspective view of the hair-spring stud; Fig. 6, a view thereof in side elevation.

My invention relates to an improvement in watches, and more particularly to means for securing the hair-spring stud to the balance-cock, the object being to provide for invariably bringing the hair-spring stud into right longitudinal and lateral position by one single operation requiring neither skill nor delicacy of manipulation.

30 With these ends in view my invention consists in the combination, with a hair-spring stud provided with a transverse adjusting-notch, of a stud-holder adapted to be secured to one edge of the balance-cock and constructed with a bearing extending in the direction of the length of the notch and having bearing-surfaces corresponding to surfaces therein, whereby the stud is automatically drawn into right longitudinal and lateral adjustment with reference to the hair-spring.
40

My invention further consists in certain details of construction, as will be hereinafter described, and pointed out in the claims.

As herein shown, the lower plate A of the
45 watch-movement, the balance-cock B, the regulator C, the hair-spring D, and the curb-pins E E are of the construction ordinarily employed, and do not, therefore, need particular description.

50 The hair-spring stud F and the stud-holder

G contain my present invention. The former consists of a short cylindrical pin having its lower end cut away and provided with a hair-spring hole I, in which the outer end of the hair-spring is wedged in the ordinary manner. 55 Above the said squared portion of the stud the same is provided with a transverse V-shaped adjusting-notch J, the location whereof is predetermined with reference to the position of the hole I with respect to the plane in which the end of the spring is located. A transverse semicircular hair-spring-stud recess K, formed in the edge of the balance-cock at a point very near the inner end thereof, is adapted in shape to receive the cylindrical 65 upper end of the hair-spring stud, which is placed in the recess, so that its transverse notch will face outwardly to receive the beveled inner end L of the stud-holder G, which is secured to the edge of the balance-cock by 70 means of a dowel-pin M and a screw N, the said end L of the stud-holder being constructed with a bearing extending in the direction of the length of the said notch and having bearing-surfaces corresponding to surfaces 75 therein. As herein shown, the said bearing L has the form of a double bevel, the faces whereof reproduce the faces of the notch; but such form is not essential, as a cylindrical bearing, for instance, would contain bearing- 80 surfaces corresponding to some surfaces in the notch and effect the same result. Nor is the notch necessarily V-shaped, but might be made, for instance, to correspond to the shape of a cylindrical bearing. 85

It will be understood that the stud-holder will always come to identically the same position when it is rigidly secured to the balance-cock. The hair-spring stud being first placed in its recess is therefore drawn into its 90 right longitudinal and lateral position without any care on the part of the person assembling the parts by the co-operation of the inclined surfaces of the beveled end of the stud-holder with the corresponding inclined surfaces of the notch in the stud, whereby the stud is vertically adjusted and also rotated on its longitudinal axis and held in both of the positions to which it is finally so brought. Under this construction, therefore, not only 100

is time saved and absolute accuracy of adjustment secured in the first assemblance of the watch, but the right reassemblance of the parts is made certain after they have been
5 taken apart by any repairer, however unskillful, into whose hands the watch may come after it has been put in use. I thus accomplish by very simple and inexpensive means the right adjustment of the hair-spring stud with
10 reference to the spring.

Although I have herein shown my invention as applied to a watch having a Breguet spring, it is equally well adapted for watches employing the ordinary flat spring.

15 I am aware that it is not new to provide for the longitudinal or lateral adjustment of the hair-spring stud; but I believe it to be new to do both at one operation.

What I claim as new, and desire to secure
20 by Letters Patent, is—

1. In a watch, the combination, with the balance-cock thereof, of a hair-spring stud

provided with a transverse notch, and a stud-holder adapted to be secured to the balance-cock and constructed with a bearing extending in the direction of the length of the slot and having bearing-surfaces corresponding to surfaces therein, substantially as set forth. 25

2. In a watch, the combination, with the balance-cock thereof, of a hair-spring stud provided with a V-shaped transverse adjusting-notch and a stud-holder adapted to be secured to the edge of the balance-cock and constructed with a bearing extending in the direction of the length of the slot and made in the form of a double bevel reproducing the faces of the notch, whereby the hair-spring stud is brought into right longitudinal and lateral position, substantially as described. 35

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Witnesses:

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