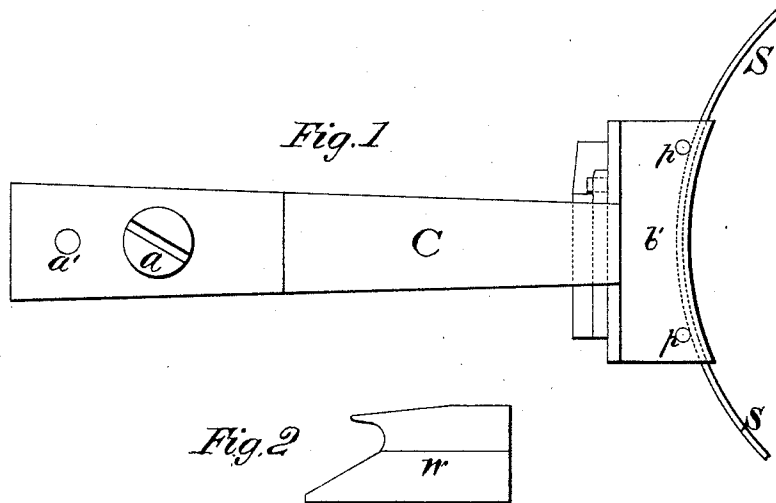


J. SHAW.

Balance-Spring Holders for Watches.

No. 149,795.

Patented April 14, 1874.



WITNESSES
Villette Anderson.
Robert Everett.

By

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UNITED STATES PATENT OFFICE.

JACOB SHAW, OF SHELBY, OHIO.

IMPROVEMENT IN BALANCE-SPRING HOLDERS FOR WATCHES.

Specification forming part of Letters Patent No. **149,795**, dated April 14 1874 : application filed June 23, 1873.

To all whom it may concern :

Be it known that I, JACOB SHAW, of Shelby, Richland county, Ohio, have invented an Improvement in Attaching Hair or Balance Springs to Watches, of which the following is a specification :

This invention relates to a new and improved mode of securing the outer ends of the balance or hair springs of time-pieces, whereby these springs are firmly held in a plane parallel to the plane of their balance-wheels, as will be hereinafter explained.

Prior to my invention and improvement hair-springs in watches have been held by devices which clamp their sides, thus rendering the position of these springs with respect to the balance-wheels very uncertain.

My object is to obtain a device by means of which the springs can be readily and properly adjusted and confined in place.

In the annexed drawings, A designates the plate of a watch or chronometer, to which a bed-plate or bracket, B, is firmly secured by means of a screw, *a*, and steady-pin *a'*. The overhanging portion of this bracket is rectangular, and in that portion which is designated by the letter *b* I form a curved groove, *c*, for receiving the lower edge of a hair-spring, S, as shown in Fig. 3. The curve of the groove *c* may be concentric to the axis of the balance-wheel, and it may be an arc which is one-fourth, more or less, the diameter of the spring. C designates a spring-clamp, which corresponds in its shape to the shape of the bracket B, and which is secured to this bracket by means of the screw *a* and steady-pin *a'*. The portion lettered *b'* of this clamp is parallel, or nearly so, to the portion of the bracket B let-

tered *b*. It is between these two portions *b b'* that the spring S is confined by its edges, they serving as clamping-jaws. When the spring S is clamped as described, it is steadied by means of the groove *c* and two pins, *p p*, which latter rise perpendicularly from the portion *b*, and pass through the upper clamping portion *b'*. For the purpose of readily applying the spring S between the portions *b b'*, and removing it therefrom, I employ a wedge, *w*, which is applied as shown in Figs. 1 and 3. By forcing this wedge in between the parts B and C the jaw *b'* will be raised so as to free the spring S, or allow it to be adjusted in its groove *c*. I am thus able to remove or apply the spring without detaching the spring C.

It is obvious from the above description that if the bottom of the groove *c* is in a plane parallel to the plane of the balance-wheel of the time-piece the spring S will be confined in a proper position, and thus positively held.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The spring-clamp C, combined with the portion *b* of the base or bracket B, grooved to receive the spring S, substantially as described.
2. The wedge *w*, applied between the spring-clamp C and the grooved bracket B, as and for the purposes described.
3. The steady-pins *p p*, combined with the spring-clamp C and the groove *c* in the bracket B, as and for the purposes set forth.

JACOB SHAW.

Witnesses:

HIRAM W. HILDEBRANT,
C. P. LEITER.