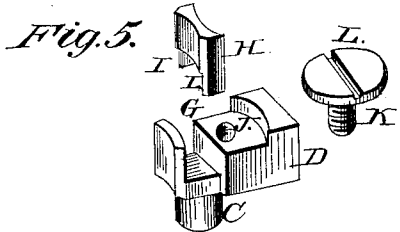
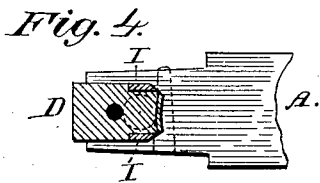
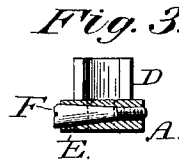
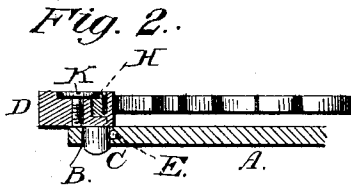
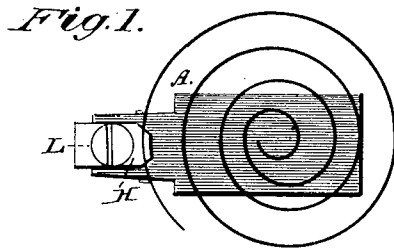


N. MONDAY & J. P. DOHERTY
Hair-Spring Studs.

No. 221,180.

Patented Nov. 4, 1879.



Witnesses:
Ed. G. Dieterich
J. R. Littell,

Inventors:
Newton Monday,
J. P. Doherty,
by *A. Snow & Co. attys*

UNITED STATES PATENT OFFICE.

NEWTON MONDAY AND JOHN P. DOHERTY, OF BENTONVILLE, ARKANSAS.

IMPROVEMENT IN HAIR-SPRING STUDS.

Specification forming part of Letters Patent No. **221,180**, dated November 4, 1879; application filed August 19, 1879.

To all whom it may concern:

Be it known that we, NEWTON MONDAY and JOHN P. DOHERTY, of Bentonville, in the county of Benton and State of Arkansas, have invented certain new and useful Improvements in Hair-Spring Studs; and we do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

Figure 1 is a plan view, Fig. 2 is a longitudinal vertical section, Fig. 3 is a cross-section, Fig. 4 is a horizontal sectional view, and Fig. 5 is a detail view, in perspective, of the stud and spring-clamp.

Corresponding parts in the several figures are denoted by like letters of reference.

This invention relates to studs for holding the hair-springs in watches; and it consists in certain improvements in the construction of the same, which will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings, A represents the balance-cap, which is provided with a perforation, B, to receive the stud C of the spring-clamp D. The plate A has a transverse perforation, E, communicating with the opening B.

F is a conical or tapering screw, fitted in perforation E in such a manner that when screwed down it will press against the stud C of clamp D, and thereby keep the latter in position.

Upon its face the clamp D is provided with a recess, G, in which is fitted a slide, H, provided with legs I I, straddling the clamp. The front end or edge of the slide H is curved to correspond with the shape of the front end of the clamp, between which and the slide the end of the hair-spring is inserted.

In a threaded opening, J, extending downwardly from the recess G, is adjusted a screw, K, having an eccentric head, L.

It will be observed that when, in turning the screw, the broad side of its head presses against the slide H the latter is forced in a forward direction, thus clamping and holding the hair-spring securely between itself and the front end of the clamp.

In order to release the pressure upon the spring, for the purpose of removing it, it is only necessary to give the screw K a one-half turn in the opposite direction.

The advantages of our invention will be readily understood. The spring is easily adjusted to exactly the proper position, and when once in place it cannot accidentally come loose. The invention is simple, cheap, and durable.

Having thus described our invention, we claim and desire to secure by Letters Patent of the United States—

1. The combination, with the balance-cap A, having vertical perforation B and transverse perforation E, communicating with the said opening B, of the spring-clamp D, having stud C and conical or tapering screw F, all arranged and operating as set forth, for the purpose described.

2. The spring-clamp D, having recess G, in combination with the slide H, and eccentric-headed screw K, as set forth.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in presence of two witnesses.

NEWTON MONDAY.
JOHN P. DOHERTY.

Witnesses;

J. C. KNOTT,
S. D. McREYNOLDS.