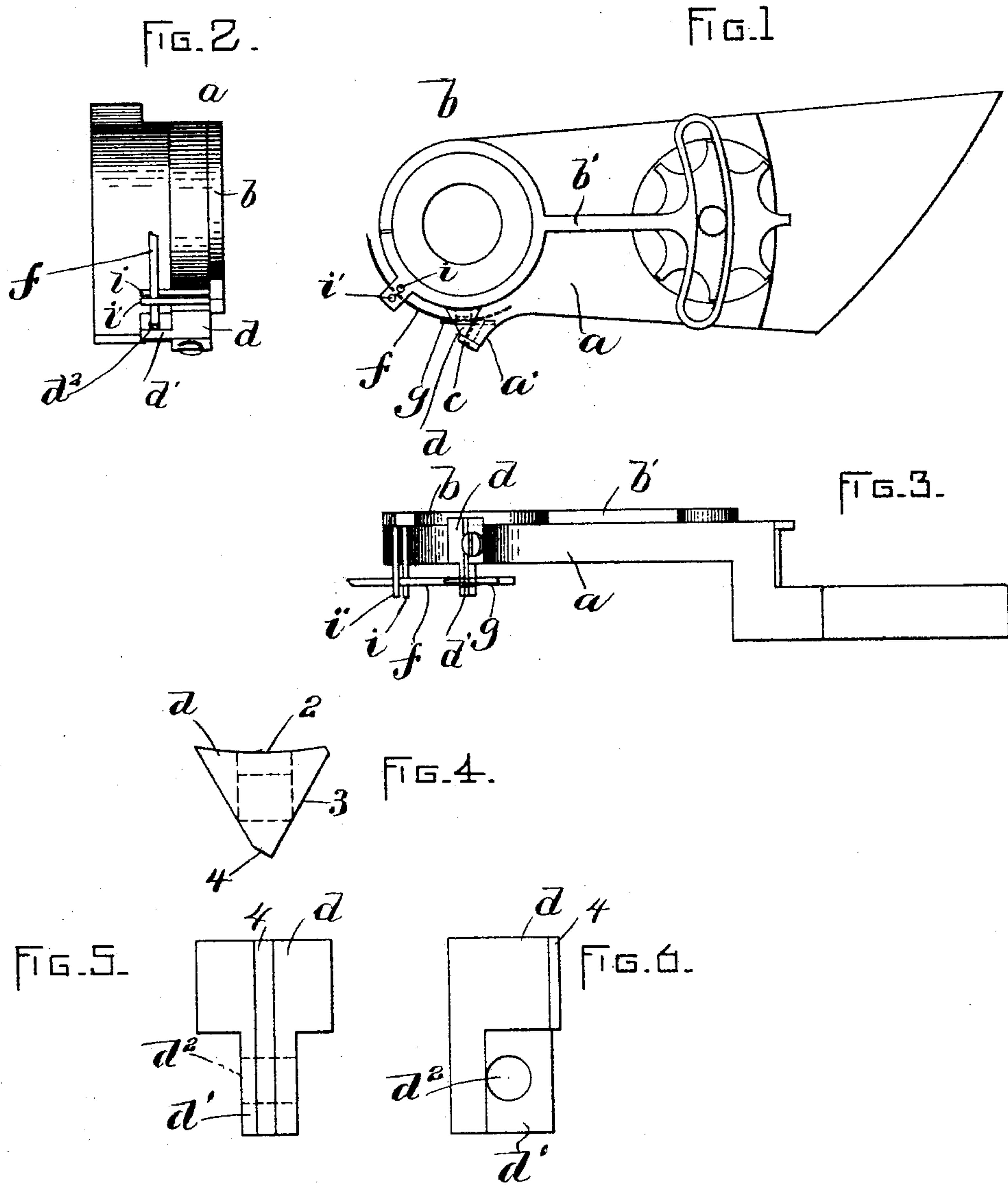


(No Model.)

H. E. DUNCAN.  
HAIR SPRING STUD FOR WATCHES.

No. 498,209.

Patented May 23, 1893.



WITNESSES:

W. W. Jackson  
A. C. Brown

INVENTOR:

H. E. Duncan  
by Knight Brown Crossley  
Atty.

# UNITED STATES PATENT OFFICE.

HARRIE E. DUNCAN, OF NEWTON, ASSIGNOR TO THE AMERICAN WALTHAM WATCH COMPANY, OF WALTHAM, MASSACHUSETTS.

## HAIR-SPRING STUD FOR WATCHES.

SPECIFICATION forming part of Letters Patent No. 498,209, dated May 23, 1893.

Application filed October 14, 1892. Serial No. 448,864. (No model.)

*To all whom it may concern:*

Be it known that I, HARRIE E. DUNCAN, of Newton, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Devices for Securing Hair-Springs, of which the following is a specification.

This invention relates to means for securing the hair spring of a watch balance to the balance-cock, and it consists in the improvements which I will now proceed to describe and claim.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a top plan view of a balance-cock, showing my improved device for securing the hair spring thereto. Fig. 2 represents an elevation of the balance-cock, looking from the left upon the end thereof. Fig. 3 represents a side elevation. Fig. 4 represents a plan view of one of the parts shown in the preceding figures. Figs. 5 and 6 represent side elevations of the part shown in Fig. 4.

The same letters and figures of reference indicate the same parts in all the figures.

In the drawings: *a* represents the balance bridge or cock of a watch movement, the same being of the ordinary general construction, excepting that it has an arm or projection *a'* at one side, located near the split ring *b* which constitutes one end of the regulator of which *b'* is the arm. The side arm *a'* is provided with a screw-threaded orifice, receiving the screw *c*. The arm *a'* is diagonally arranged, and forms one side of a substantially V-shaped open recess, the other side of which is a portion of the curved end of the balance-cock. The screw *c* is provided with a comparatively broad or fillister head, which projects from the arm over said recess, as shown in Fig. 1.

*d* represents a block or piece which corresponds to the part usually known as the hair spring stud. Said block or stud is formed to enter and closely fit said recess, the stud having a concave side 2 formed to fit the curved end of the balance bridge, and a straight side 3 formed to fit one side of the arm *a'*. One side of the stud is formed to bear upon the under side of the head of the screw, so that the screw may be caused to clamp and hold the stud.

I prefer to give the outer side of the stud a supplemental angle forming a seat 4 for the screw head but I do not limit myself to this form. When the screw *c* is turned inwardly, its head bears against the seat 4 and presses the stud *d* firmly against the sides of the recess which receives it, thus firmly clamping or holding the stud in place and permitting it to be vertically adjusted to any desired extent, the stud being loosened by loosening the screw, so that it can be raised or lowered as the operator may desire, and subsequently secured rigidly at any position to which it may have been adjusted.

The stud is provided with a reduced portion *d'*, containing an orifice *d''* (Figs. 2 and 6) to receive the outer end of the hair spring *f*, said orifice being of sufficient size to receive the end of the hair spring, and a wedge or key *g* inserted beside the spring to secure it to the stud. The reduced portion *d'* projects below the bridge *a*, as shown in Fig. 3, so that the hair spring attached to the stud stands below the under side of the bridge, in position to pass between the usual pins *i i'* attached to the short arm of the regulator.

It will be seen that the provision of the V-shaped recess on the side of the bridge or cock *a*, one side of said recess being formed by a projecting arm, and the provision of the adjustable clamping screw on said arm, the head of the screw projecting over the mouth of the recess, enables the spring holding stud *d* to be readily adjusted for the purpose of leveling the spring *f* and giving the latter the exact position desired. The construction is simple, and is such that the spring can be released and secured by a slight turn of the clamping screw.

I do not limit myself to the described form of the parts here shown, and may modify the same in various ways without departing from the spirit of my invention.

I claim—

1. A balance mechanism for watches, comprising in its construction a bridge having an open recess in one side edge, a spring-holding stud occupying the recess, and a screw fastened in the edge of the bridge at one side of the recess and having a head which projects over the same and confines the stud therein.



2. A balance mechanism for watches, comprising in its construction a bridge having a rounded end-portion and a lateral projection forming a recess between it and the rounded  
5 portion, a spring-holding stud engaging the sides of said recess, and a screw fastened in the end of the lateral projection and having a head which projects over the recess and confines the stud therein.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 8th day of October, A. D. 1892.

HARRIE E. DUNCAN.

Witnesses:

C. F. BROWN,  
M. W. JACKSON.