S. S. MORRILL.

Mainspring Attachments for Watches.

No. 137,468. Patented April 1, 1873.

Fig. 1.

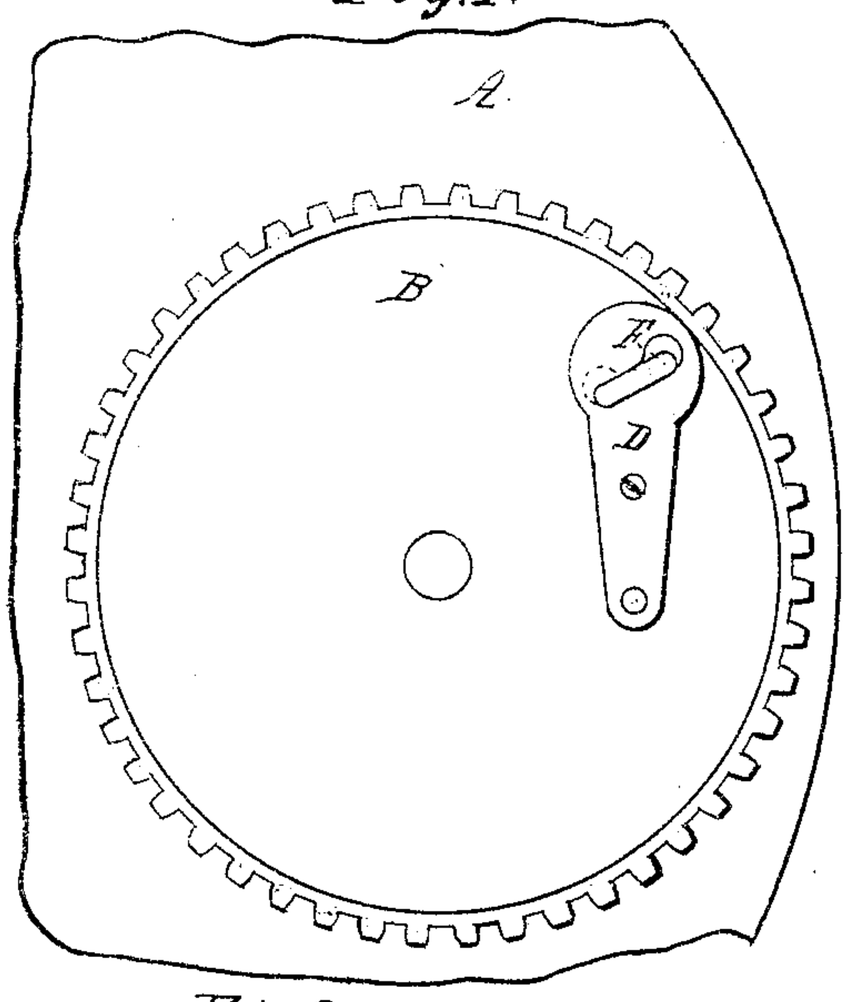


Fig. 2.

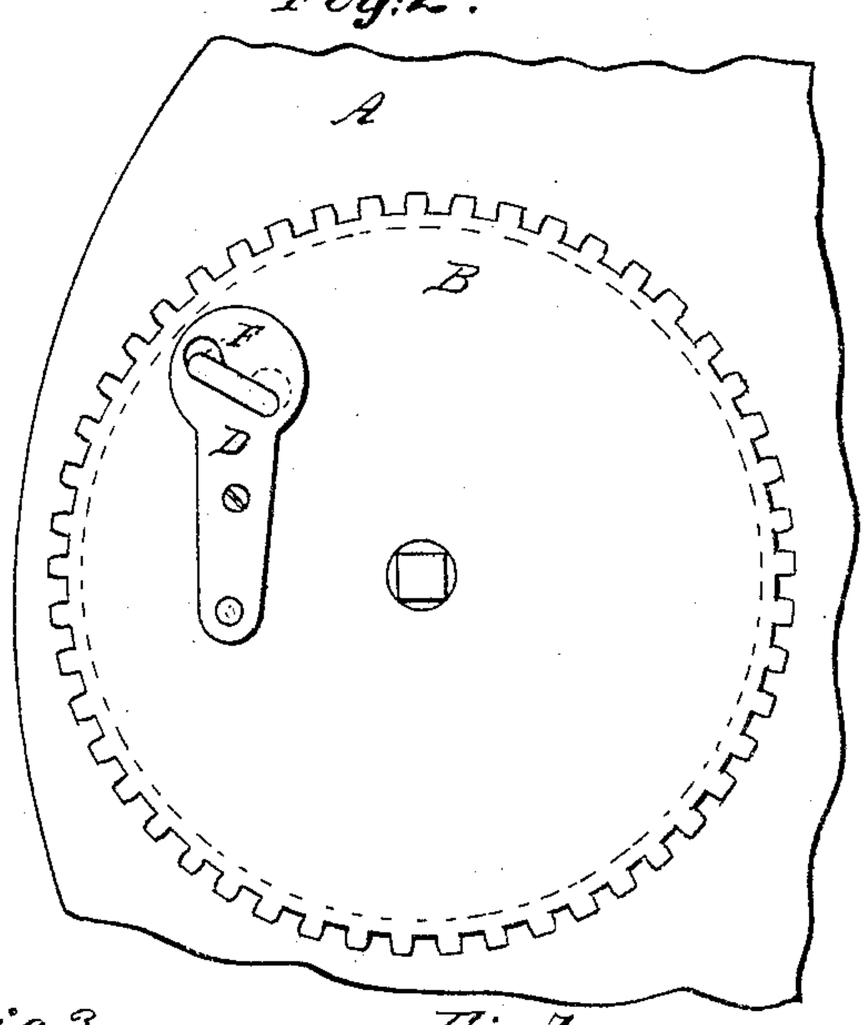


Fig. 6.

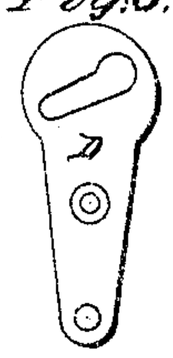


Fig. 3.

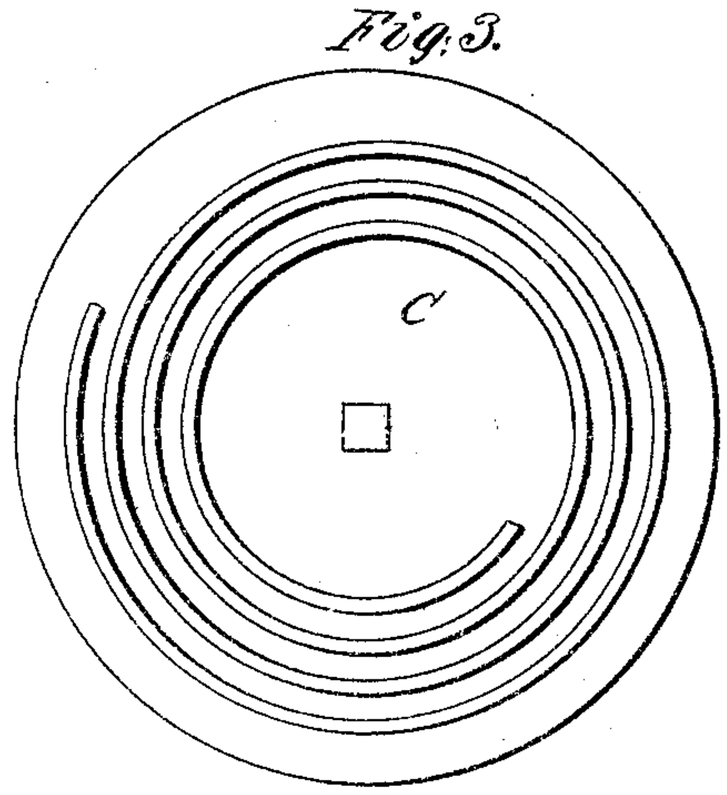


Fig. 4.

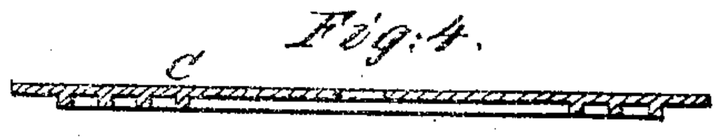


Fig. 7.

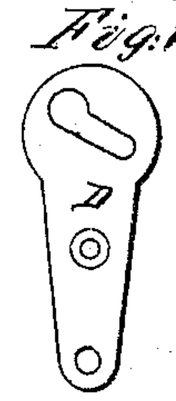


Fig. 8.

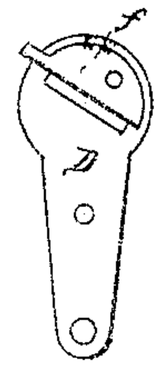
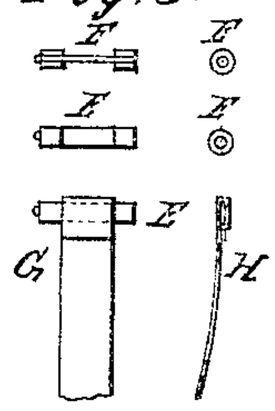


Fig. 5.



Witnesses

J. A. Morrill
M. B. Schenck

Inventor

Sidney S. Morrill

A.M. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS.)

UNITED STATES PATENT OFFICE.

SIDNEY S. MORRILL, OF FULTON, NEW YORK.

IMPROVEMENT IN MAINSPRING ATTACHMENTS FOR WATCHES.

Specification forming part of Letters Patent No. **137,468**, dated April 1, 1873; application filed December 16, 1872.

To all whom it may concern:

Be it known that I, SIDNEY S. MORRILL, of Fulton, Oswego county, New York, have invented a new and useful Improvement in Method of Applying the Power of Mainsprings to Watches and Clocks, of which the following is a description, reference being had to the accompanying drawing forming a part of this application, in which—

Figures 1 and 2 represent the mainspring-barrel with slot piece or arm attached. Figs. 3 and 4 represent the "scroll" in plan and section. Fig. 5 shows detail views of the outer portion of the mainspring and pin attached. Figs. 6 and 7 show the slot piece or arm detached. Fig. 8 shows the "brace" or support attached to the under side of the arm D.

Like letters refer to the same parts.

The object of my invention is to equalize the power of mainsprings in watches and clocks in a better manner than has hitherto been done; and to this end I have devised means for changing the leverage of the mainspring upon the barrel as it unwinds in a certain and regular manner. The fusee and chain employed for a similar purpose in the old style of watches is now largely dispensed with on account of the lack of space in the form of watch most preferred, and no provision is made in ordinary watches to compensate the varying power of the spring in its different stages of tension, except the imperfect one of using a portion only of its recoil, which necessarily gives a varying rate. In a few watches a varying radius of effort is given within the mainspring-barrel itself by means similar to one portion of those which I em ploy, but with uncertain results.

I have endeavored to combine the simplicity and compactness of the latter method with the certainty of the fusee. To this end I dis pense with the usual method of connecting the mainspring with the barrel, and instead thereof I attach to the outer end of the spring, at right angles, a pin, E, Fig. 5, the ends of which project through slotted plates D D, Figs. 6 and 7, attached to the barrel-heads, as shown in Figs. 1 and 2, so that the slots shall be slightly oblique to a radial line. These slots form guides, in which the pin traverses during the winding and unwinding of the spring; but in order to insure accuracy and precision of movement, I further attach to the winding-arbor a scroll, C, Figs. 3 and 4. This is a plate having on its inner side a spiral groove accurately cut, in which the end of the pin F traverses as the spring winds and unwinds, thus insuring at all times a position of the pin, and consequent leverage, exactly corresponding with the amount of tension in the spring, the pin being at the inner portion of the scroll when the spring is wound up, and gradually traversing the groove until it arrives at the circumference, and also at the extremity of the slot, at the time of the greatest relaxation. On the under side of the arm D I place what I call a brace or support, *f*, Fig. 8, riveted to the same, semicircular in form, with a projection which rests upon the edge of the barrel, and its edge coinciding, or nearly so, with the edge of the slot.

My invention is not limited to new watches, but can be applied, in many cases, to those already constructed.

I claim and desire to secure by Letters Patent—

1. In combination with the barrel and mainspring of a watch or clock, the pin E, slotted arm or arms D, and scroll C, for equalizing the power of the spring, substantially as specified.

2. The brace or support *f* attached to the under side of the arm D, substantially as specified.

SIDNEY S. MORRILL.

Witnesses:

J. A. MORRILL,

M. B. SCHENCK.