W. HART.

. Watch Escapement.

No. 106,815. Patented Aug. 30, 1870.

Fig: 1.

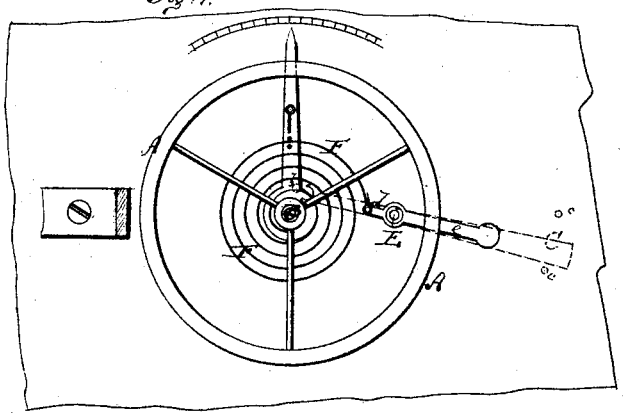


Fig: 2.

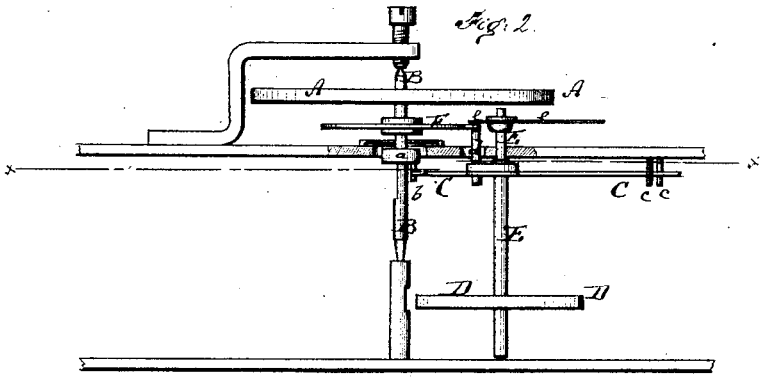
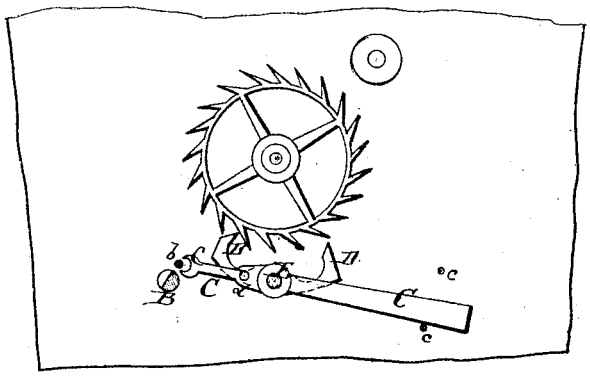


Fig: 3.



Witnesses:

Chas. Neida

Jno. T. Brooks

Inventor:

Wm. Hart

PER Munn & Co

Attorneys.

United States Patent Office.

WILLIAM HART, OF KIRKSVILLE, MISSOURI.

Letters Patent No. 106,815, *dated August* 30, 1870.

IMPROVEMENT IN ESCAPEMENTS FOR WATCHES, &c.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern:

Be it known that I, WILLIAM HART, of Kirksville, in the county of Adair and State of Missouri, have invented a new and improved Watch-Escapement; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1 represents a plan or top view on an enlarged scale of my improved escapement.

Figure 2 is a side view, partly in section, of the same.

Figure 3 is a detail plan view of the lever and escape-wheel.

Similar letters of reference indicate corresponding parts.

This invention has for its object to so construct the escapement of watches and clocks that the lever will be held in repose by the force of the hair-spring, while the balance swings toward and returns from the extreme of its motion.

The invention consists chiefly in connecting the outer end of the spring with a pin, which projects from the escapement lever, so that the generally useless power of the said outer end will be utilized to more completely regulate the movements of the wheels.

A in the drawing represents the balance-wheel, mounted upon the spindle B, on which the shoulder *a*, carrying the ruby-pin *b*, is also secured.

C is the escapement lever, and D the anchor, both being mounted upon the arbor E.

The front end of the lever is forked, to be engaged by the ruby-pin in giving impulse to the balance; its other end plays between the banking-pins *c c*.

From the lever C projects a pin, *d*, over which the outer end of the hair-spring F is fitted, in the manner indicated in fig. 1.

The hair-spring, through the movement of the balance, follows up the lever in giving impulse with increasing force, until arrested by a banking-pin.

The wheel swings then still further, but the lever is held in repose until the ruby-pin, through which the balance receives its impulse, returns to carry it from its state of rest in the opposite direction, when the impulse is again renewed.

In the interval between the arresting of the lever by the banking-pin and its return move, it is held in position by the outer end of the hair-spring.

This outer end, through the force of the balance, acts in conjunction with the lever, but after the lever has struck the banking-pin the further motion of the balance causes the outer end of the spring to draw the lever firmly against the banking-pin, and thereby to hold it firmly in place.

The same action is produced during the return stroke of the pin and wheel.

The advantages of this arrangement are the following:

The escapement is of simpler construction than it was where the roller and point upon, or pin in, the lever, to prevent derangement, were employed.

The friction produced by the said roller and pin is dispensed with, a closer and more convenient adjustment of the escapement is permitted, and the same is liable to be injured by sudden motion.

The entire force of the hair-spring is, in this case, utilized, while heretofore a great part of it was wasted upon a stationary stud.

The end of the hair-spring is held upon the pin *d* by means of a key, *e*, pivoted to the arbor E, and swung to cover the upper end of the pin *d*.

Having thus described my invention,

I claim as new and desire to secure by Letters Patent—

1. The hair-spring of a watch escapement, connected with the lever C, in such manner that it will draw the said lever against and retain it in contact with the banking-pins, as set forth.

2. The escapement lever C, provided with the projecting-pin *d*, to which the outer end of the hair-spring is secured, substantially as and for the purpose herein shown and described.

3. The key *e*, pivoted to the arbor E, to lock the hair-spring to the pin *d*, as specified.

WILLIAM HART.

Witnesses:
S. W. WILLIAMS,
LEWIS W. LINK.