H. T. HEWITT.

Clock Escapement.

No. 51,044. Patented Nov. 21, 1865.

Fig. 1.

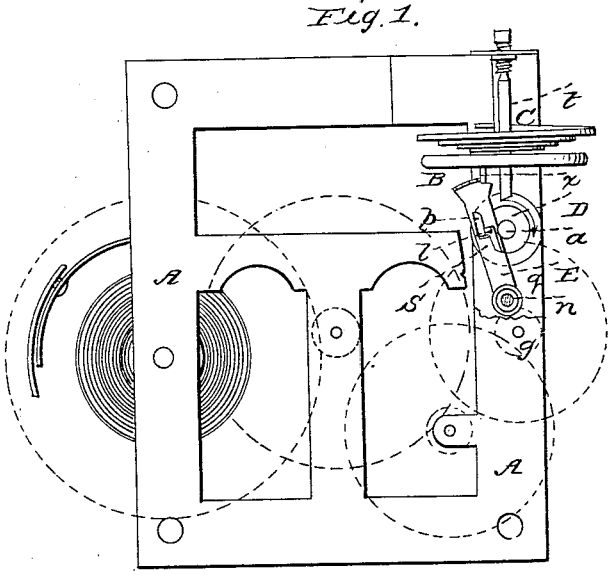


Fig. 2.

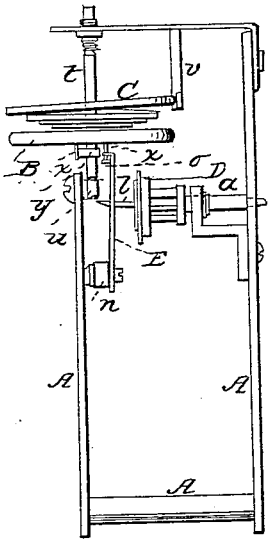
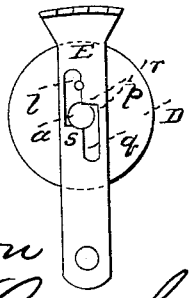
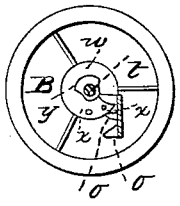


Fig. 4.





Witnesses:

Henry F. Brown

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Inventor:

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UNITED STATES PATENT OFFICE.

HORATIO T. HEWITT, OF SCOTCH PLAINS, NEW JERSEY.

IMPROVEMENT IN CLOCK-ESCAPEMENTS.

Specification forming part of Letters Patent No. **51,044**, dated November 21, 1865.

To all whom it may concern:

Be it known that I, HORATIO T. HEWITT, of Scotch Plains, in the county of Union and State of New Jersey, have invented a new and useful Improvement in Escapements for Clocks and Other Time-Pieces; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a back view of a clock-movement, represented partly in section, to show the application of my invention. Fig. 2 is an end view of the same, with my invention applied. Fig. 3 represents the under side of the balance-wheel and a part of the lever. Fig. 4 is a face view of the lever and escape-wheel on a larger scale than Figs. 1, 2, and 3.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to that class of escapement sometimes termed "the single-pin escapement," on account of the escape-wheel, instead of having teeth all around its outer edge, having but a single pin.

My improvement consists in a novel construction and arrangement of the parts of such an escapement, to adapt it more especially to what are termed "marine clocks"—that is to say, clocks governed by a balance.

To enable others skilled in the art to construct my invention and apply the same to use, I will proceed to describe it with reference to the drawings.

D is the escape-wheel, consisting simply of a circular disk carrying a single pin, *l*, which is arranged eccentrically to and parallel with the axis of the spindle *a* of said wheel.

B is the balance-wheel, the staff *t* of which is arranged with its axis perpendicular to but in the same plane with the axis of the escape-wheel.

C is the balance-spring, applied in the usual manner.

E is the lever through which the impulse is transmitted from the escape-wheel to the balance, arranged to oscillate in a plane parallel with the axis of the balance and with the plane of revolution of the escape-wheel, the axis of oscillation *n* of the said lever being in the same plane with the axis of the balance-staff and escape-wheel spindle. The lever E is bent near its vibrating end at a right angle to its plane of oscillation, and the part so bent is made with a three-pronged fork, *o o o*, the openings of which receive two pins, *x x*, secured in the hub of the balance-wheel or in an equivalent cylinder fast upon the balance-staff *t*, the said pins being set parallel with the axis of the balance. The said lever has cut in it a slot, *p q r s*, of a form something like the letter **Z**, but the two angular bends are rectangular, as shown in Fig. 1, but better in Fig. 4. The single pin *l* of the escape-wheel works in this slot. The sides *p* and *q* of the said slot are the impulse faces or pallets, and the edges *r* and *s* are the stops or resting-places of the pallets.

The pin *l* of the escape-wheel acts in its revolution upon the impulse-face *p* and *q* alternately to produce a vibrating movement of the lever, the bent prongs *o o o* of which act upon the pins *x x* of the balance to produce its vibration. One complete vibration of the lever back and forth is made for every revolution of the escape-wheel. After acting upon one of the impulse-faces, *p* or *q*, and giving the impulse to the lever and balance, the pin *l* strikes on one of the edges, *s* or *r*, and it and the lever stop while the balance completes its vibration, and until, in its return, one of the pins enters the fork of the lever and moves the latter far enough for the pin *l* to slip off the stop *s* or *r* and onto the impulse-face *q* or *p*, upon which it acts to repeat the impulse. This operation, it will be seen, is what is termed a "dead-beat," the pin *l* coming to a dead stop on the edges *r* and *s*.

In order to prevent the lever from accidentally falling back after the pins *x x* on the balance have passed out of the fork of the lever and before the returning movement of the balance has brought the said pins back into the said fork, a guard-roller, *y*, is provided on the staff of the balance, the said roller being recessed opposite the pins *x x* to admit the lever to pass it as the pins strike into the fork.

The escapement may be made to work with a single pin, *x*, on the balance-hub, and a two-pronged fork on the lever.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination and arrangement of the single-pin escape-wheel, the slotted lever, and the balance, substantially as and for the purpose herein specified.

HORATIO T. HEWITT.

Witnesses:

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