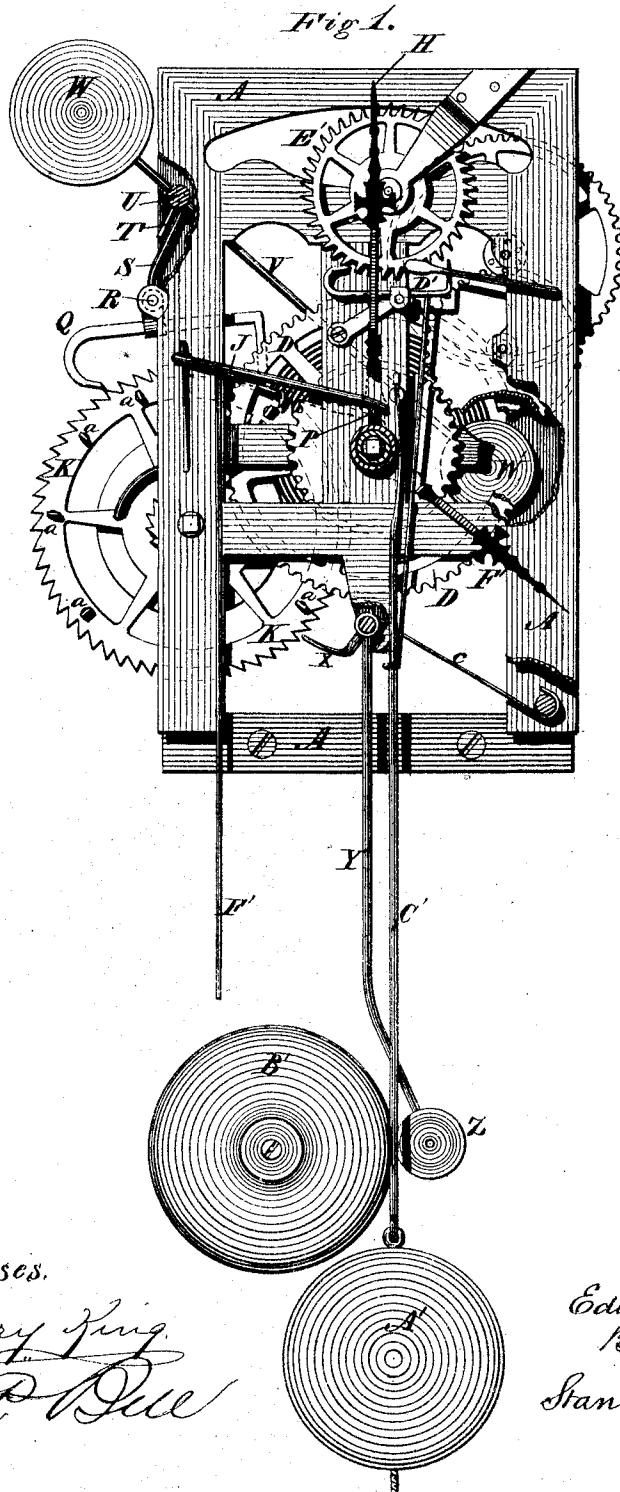


E. CLARK.

Striking Mechanisms of Clocks.

No. 158,165.

Patented Dec. 29, 1874.



Witnesses.

Harry King  
H. C. Dill

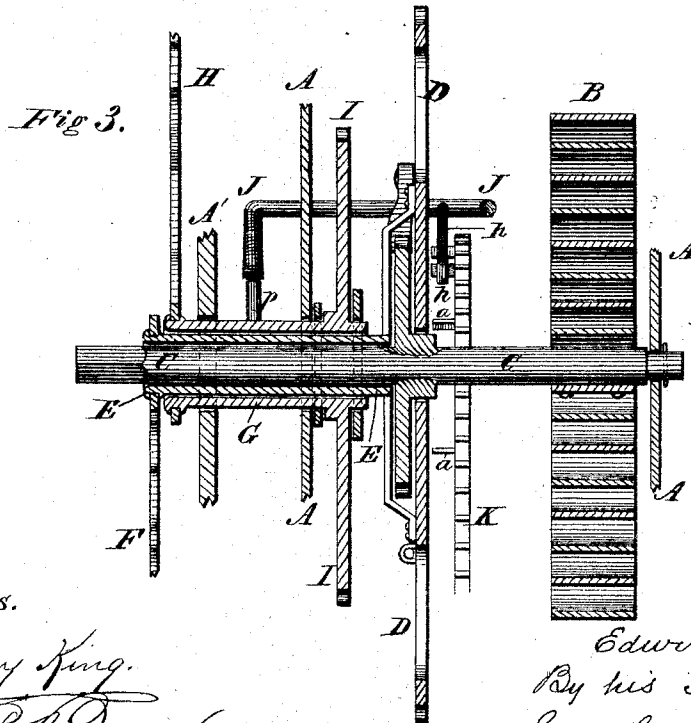
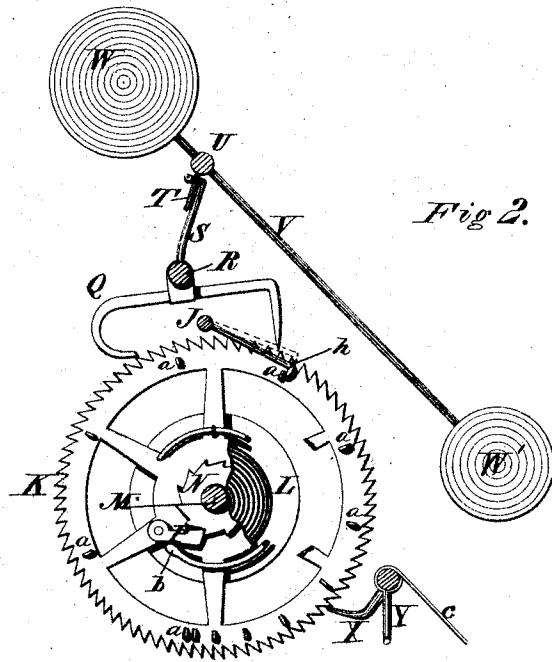
Inventor,  
Edwin Clark  
By his Attorneys  
Stansbury & Mann.

E. CLARK.

## Striking Mechanisms of Clocks.

No. 158,165.

Patented Dec. 29, 1874.



*Witnesses.*

Harry King.  
W. P. & D. C.

*Inventor.*

Edwin Clark  
By his Attorneys  
Stansbury & Lunn.

# UNITED STATES PATENT OFFICE.

EDWIN CLARK, OF LA CROSSE, WISCONSIN.

## IMPROVEMENT IN STRIKING MECHANISMS OF CLOCKS.

Specification forming part of Letters Patent No. **158,165**, dated December 29, 1874; application filed January 21, 1874.

*To all whom it may concern:*

Be it known that I, EDWIN CLARK, of La Crosse, in the county of La Crosse, Wisconsin, have invented certain new and useful Improvements in Clocks; and I do hereby declare the following to be a full and correct description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a front view of my improved clock-movement, the frame-work being partly cut away to show the parts beneath. Fig. 2 is a detail view of the striking mechanism, and Fig. 3 is a vertical section from front to rear, showing the relative position of the several parts.

The same part is marked by the same letter of reference wherever it occurs.

My invention consists in improvements in the construction and mode of operation of the striking mechanism of a clock.

In the accompanying drawings, A marks the frame-work, which supports the various parts. B is the mainspring, which is wound around the main spindle C, the front edge of which is squared for the reception of the key. The spindle C is the center on which the hands turn. D is the main driving-wheel, fixed on shaft C so as to turn with it in one direction only, and giving motion to an ordinary train of gearing connected with the minute-hand, and with the common clock-escapement wheel E', verge and pallets D', and pendulum A', all of which are constructed and operate in the usual manner, and do not require further description. To the front face of wheel D is attached a collar or sleeve, E, which extends forward through the face A<sup>2</sup> of the clock, and has the hour-hand F attached to it. Thus, one revolution of the wheel D carries the hour-hand once around the face of the clock. G is an outer collar, concentric with collar E, and carrying the minute-hand H. This collar is attached to the front face of wheel I, the movements of which are produced and controlled by the train of gearing from D, before referred to, and by the pendulum and escapement in the usual way, so that the minute-hand shall make twelve revolutions while the hour-hand makes one. The striking movement is controlled by a pin, p, on the collar G, which coincides in position with that of the

minute-hand, and always points in the same direction as that hand. When the pin is at the highest point, which is when the minute-hand points to XII, it lifts a bent lever, J, to the inner end of which is attached a hook, h, which engages with pins a, on the face of the striking-wheel K, and arrests or releases that wheel. When the lever J is raised by the pin p, the hook h is disengaged from one of the pins a, and the striking-wheel is permitted to turn until the next pin on its face comes into contact with hook h.

The striking movement is fully illustrated in Fig. 2. The wheel K is formed like an escapement-wheel, and is driven by its own spring L, independently of the mainspring of the clock. M is the shaft of wheel K, on which is the ratchet-wheel N with its pawl P, actuated by the spring b, to control the recoil of the spring L in the ordinary way. A verge and pallets, Q, engage with the teeth of wheel K. From the shaft R of verge Q a bent pin, S, projects upward and engages with a pin, T, connected with the shaft U of a balanced pendulum, V, having the weights W and W' attached at its ends, as shown. The vibrations of this balanced pendulum regulate the movement of wheel K. Pins a a a, &c., are placed in the face of wheel K, which engage with a hook, h, attached to bent lever J, as before described. This hook is disengaged each hour at the proper moment, to produce the required striking motions. The striking is produced by the operation of the teeth of wheel K upon a hook or dog, X, attached to the shaft of the rod Y, at the end of which is the hammer Z, which strikes the bell B'. A spiral spring, c, winds around this shaft, and keeps the hook X engaged with the teeth of K, except when thrown out by the movement of that wheel. The wheel K makes a revolution once in twelve hours. It moves only while the hook h is disengaged from the pins a, and causes the hammer to strike once, as each of its teeth is released by the pallets of the verge at each vibration of the balanced pendulum, and passes and throws off the hook X.

The peculiar features of my improved clock which distinguish it from others, are found in the position of the mainspring in the center of the mechanism; its being wound around the

main spindle; in the winding of the clock in the center of the dial by a stem concentric with the axis of the main wheel D; in the peculiar method of operating the hands, and in the striking being effected by a single wheel.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

The striking-wheel K, driven by the independent spring, and regulated by the independent pendulum V, and having the pins *a* ar-

ranged on its face, as described, in combination with the hook *h*, bent lever J, pin *p*, and sleeve G of the minute-hand H, all constructed, arranged, and operating as specified.

The above specification of my said invention signed and witnessed at La Crosse, this 13th day of January, A. D. 1874.

EDWIN CLARK.

Witnesses:

JAMES I. LYNDEN,

WM. S. BURROUGHS.