RAMSDELL & WHITCOMB.

Clock Pendulum.

No. 108,390. Patented Oct. 18, 1870.

Fig. 1.

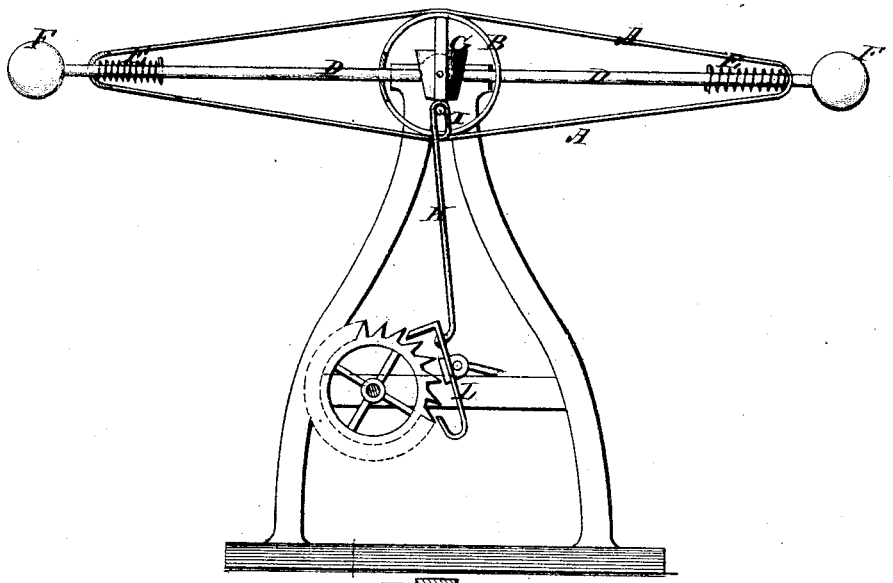
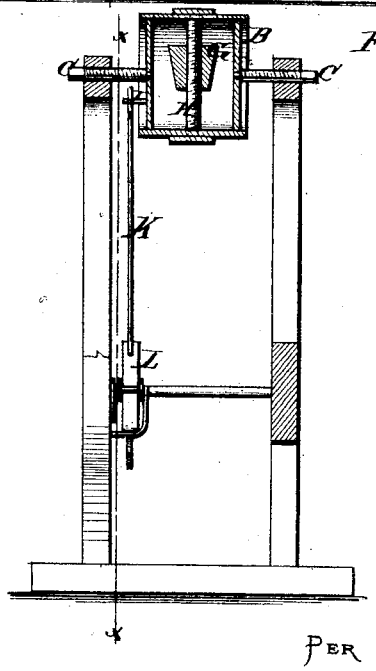


Fig. 2.



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RICHARD ROBLEY RAMSDELL AND GEORGE ALBERT WHITCOMB, OF MARLBOROUGH DEPOT, NEW HAMPSHIRE.

Letters Patent No. 108,390, dated October 18, 1870.

IMPROVEMENT IN BALANCE-PENDULUMS FOR CLOCKS.

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

To all whom it may concern:

Be it known that we, RICHARD ROBLEY RAMSDELL and GEORGE ALBERT WHITCOMB, of Marlborough Depot, in the county of Cheshire and State of New Hampshire, have invented a new and useful Improvement in Clock-Balance; and we 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.

This invention relates to improvements in balances for clocks and other instruments, for use in substitution of the pendulum, and consists in a horizontal balance, mounted at the center, and provided with weights at the ends, also with adjusting apparatus for the weights, to extend or return them, and connected to the pallet by a wire, by which it is vibrated.

Figure 1 is an elevation of our improved clock-balance on the line *x x* of fig. 2, and

Figure 2 is a sectional elevation, taken in a plane perpendicular to that of fig. 1.

Similar letters of reference indicate corresponding parts.

A is the balance-frame, of wood, or of wood and metal, having a skeleton hub, B, mounted on the pivot-centers C.

D represents arms, connected to the hub and the other ends of the frame, so as to slide in and out.

They have springs E connected to them and to the frame A, so as to have a constant tendency to force the arms inward.

The said arms have weights F at their outer ends, and at the inner ends bear against the conical adjusting-block G, mounted on the screw H, traversing the axis of the hub, and on which the block is moved back and forth, for moving the weights out, and allowing them to be drawn back by the springs, to vary the length of the pendulum, as is required, from time to time.

A crank-pin, I, on the hub below the axis takes into the slotted upper end of the wire K, which is attached to the pallet L, for communicating the motion to the balance.

Any suitable stops may be arranged with this improved balance, to limit its movement to a slight extent beyond that required for regular action, to prevent damage to any of the parts when the clock is moved, so as to make the pendulum move irregularly.

The principal advantage due to this improved balance is, that its movements are very slow, and the clock movements may be made with proportionately less gearing. For instance, a balance of this kind six inches in length vibrates in the time of an ordinary pendulum of thirty-six inches, and a balance fifteen inches vibrates in ten seconds, whereby only one wheel is required for the hour-hand of a thirty-hour clock.

This balance will work with good results without the adjusting apparatus for the weights, and we propose to use it either way.

Having thus described our invention,

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

In a clock-balance, the combination, with the adjusting-rods A and weights, of the springs E, and conical adjusting-plug G, substantially as specified.

RICHARD ROBLEY RAMSDELL.
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