J. M. HITCHCOCK.

Escapements for Watches and Clocks.

No. 200,533. Patented Feb. 19, 1878.

Fig. 1.

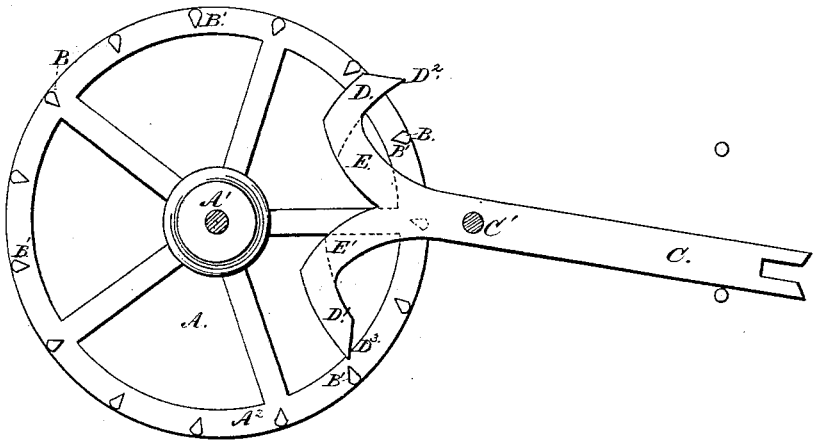
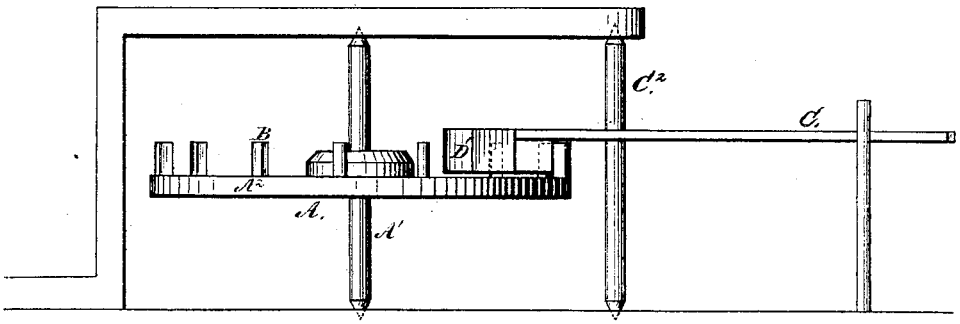


Fig. 2.



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UNITED STATES PATENT OFFICE.

JAMES M. HITCHCOCK, OF MICHIGAN CITY, INDIANA.

IMPROVEMENT IN ESCAPEMENTS FOR WATCHES AND CLOCKS.

Specification forming part of Letters Patent No. **200,533**, dated February 19, 1878; application filed May 12, 1877.

To all whom it may concern:

Be it known that I, JAMES M. HITCHCOCK, of Michigan City, in the county of La Porte and State of Indiana, have invented certain new and useful Improvements in Watch-Escapements; 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 which it pertains to make and use the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in escapements for watches and clocks; and has for its object to furnish a device whereby greater force is secured and applied to the balance.

It consists in a series of scape-teeth standing out at right angles to the rim of the scape-wheel, and which have a beveled face on the inner side and facing the center of the wheel; and in having both pallets placed over or within the rim or circumference of the scape-wheel, so that the movement of both, when escaping, is centripetal to the scape-wheel, all of which will be hereinafter explained.

In the drawings, Figure 1 is a plan, and Fig. 2 is a side elevation, of a scape-wheel, and pallets attached to the lever, constructed and arranged according to my invention.

A is the scape-wheel, and A^1 is its arbor, and it is provided with the series of teeth B, standing out at right angles to the rim A^2. The teeth B are formed with a straight or beveled side, B′, facing toward the center of the wheel A. This beveled side acts upon the beveled face of the pallets and as an impulse to the lever. C is the lever, and C′ its arbor, which is placed near the rim of the wheel A. D D^1 are the pallets, and E E′ the pallet-arms attached to the back end of the lever. They extend over the top of the teeth, B and within the line of the circumference of the wheel A. On the under side of the ends of the arms E E′ are attached the pallets D D^1, which are formed so as to extend downward from the plane of the arms E E′, and engage the teeth B on the face or sides B′. They are also formed with the beveled faces D^2 D^3, as shown.

When the lever, pallets, and wheel are constructed and arranged as shown and described, it will be seen that the escapement is wholly within the circumference or rim of the scape-wheel, and is centripetal—that is, toward the center or arbor A^1.

It will be further understood that, the escapement being from the rim toward the center, there will be a shortening of the leverage of the wheel, and consequently an increase of force is exerted upon the balance through the pallets and lever.

In the ordinary devices of this class the escapement is wholly or partly centrifugal, and in their operation there is a lengthening of the leverage of the scape-wheel, and, as a consequence, a diminishing of force as the escapement progresses.

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

The pallets D D^1, projecting outward and downward from the pallet-arms E E′, and arranged so as to be within the path of a circumference described by the teeth B, thereby giving a centripetal escape to both, substantially as described.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

JAMES M. HITCHCOCK.

Witnesses:

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