

A. M. LANE.
BALANCE ESCAPEMENT.
APPLICATION FILED SEPT. 16, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.

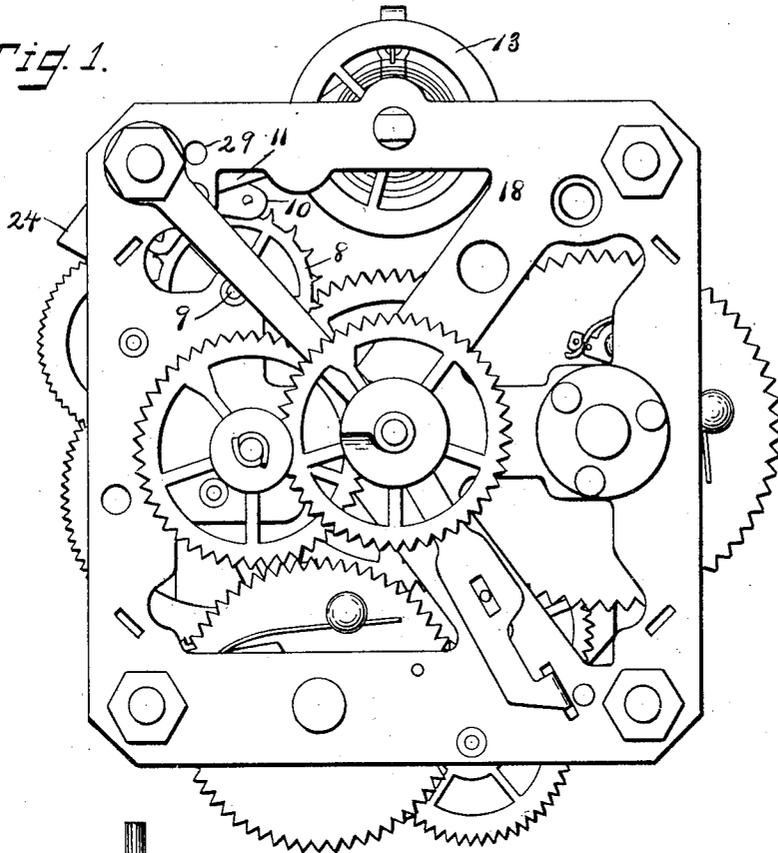
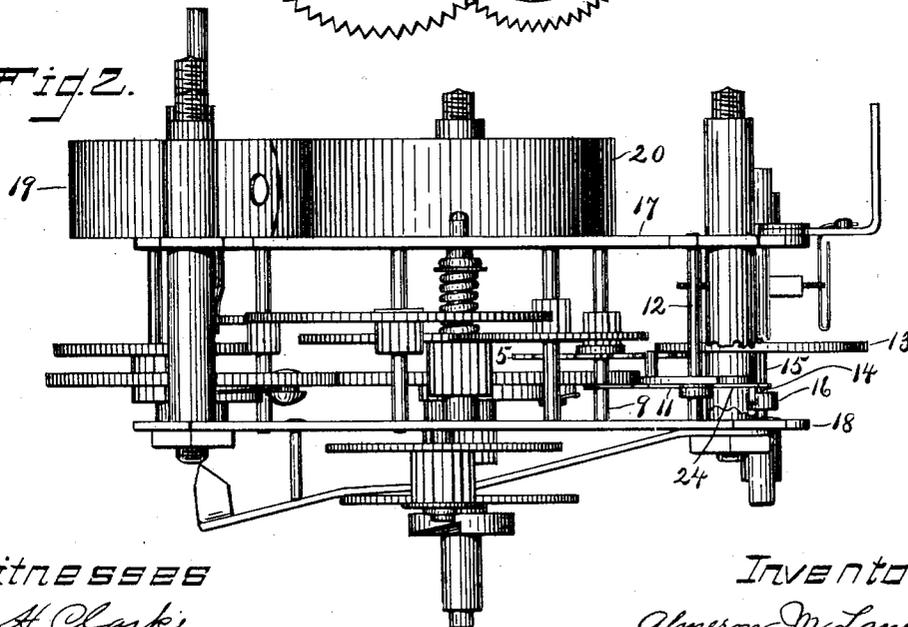


Fig. 2.



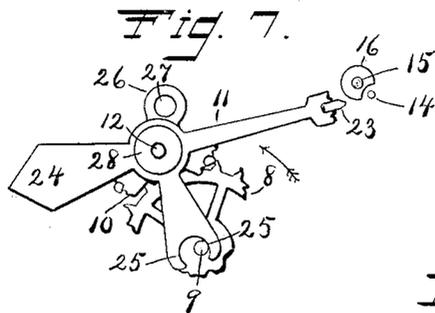
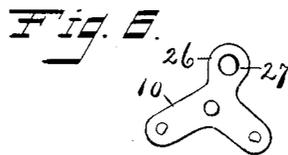
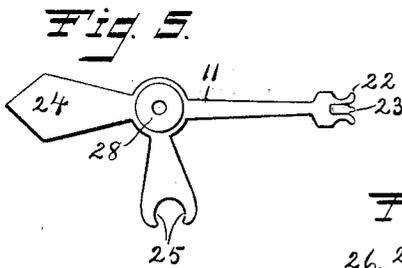
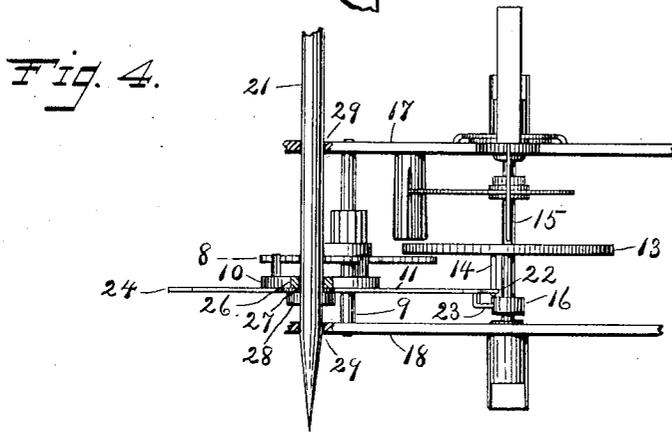
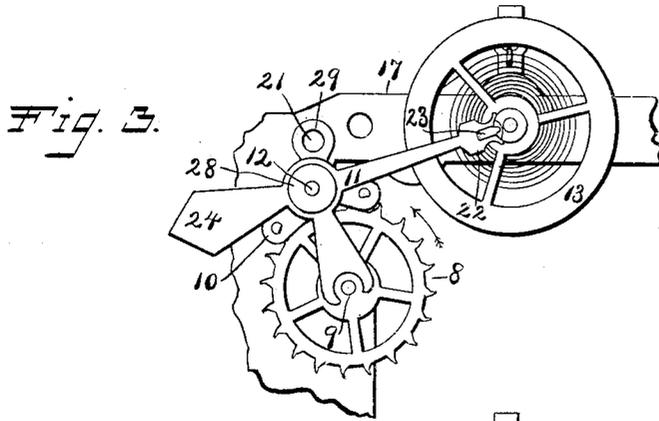
Witnesses
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

ALMERON M. LANE, OF MERIDEN, CONNECTICUT.

BALANCE-ESCAPEMENT.

SPECIFICATION forming part of Letters Patent No. 748,290, dated December 29, 1903.

Application filed September 16, 1903. Serial No. 173,461. (No model.)

To all whom it may concern:

Be it known that I, ALMERON M. LANE, a citizen of the United States, residing at Meriden, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Balance - Escapements, of which the following is a specification.

My invention relates to improvements in balance-escapements and means for adjusting the same; and the objects of my improvement are to conveniently, quickly, and correctly adjust the lever of the escapement.

In the accompanying drawings, Figure 1 is a front elevation of a clock-movement containing my balance-escapement. Fig. 2 is a side elevation of the same with parts broken away, the said view showing the right-hand side of Fig. 1 with the top in Fig. 1 turned to the right in the said Fig. 2. Fig. 3 is a detached view of the escapement and portion of one movement-plate and holder with the pallet member held in place preparatory to changing the position of the lever relatively to the said pallet member. Fig. 4 is a sectional plan of the said escapement with two movement-plates and the holder. Fig. 5 is a detached side view of the lever. Fig. 6 is a detached side view of the pallet-bearing member. Fig. 7 is a broken view of the lever and adjacent parts, together with the impulse-pin and roller of the balance-wheel and staff.

The escapement-wheel 8, its staff 9, the pallet-bearing member 10, lever 11, the staff 12 for the said pallet-bearing member and lever, the balance-wheel 13, its impulse-pin 14, staff 15, and roller 16 are or may be of any ordinary construction, the staffs for the same being mounted in the movement-plates 17 and 18, together with the other parts of any ordinary balance. As shown, the springs 19 and 20 are in the rear of the two plates 17 and 18, while the posts of the frame are designed to receive another plate, (not shown;) but the arrangement of the plates is not essential to my improvement further than that the pallet-bearing member oscillates between two plates or fixed parts that are adapted to receive the detachable holder 21.

The lever 11 has the ordinary fork 22 and guard-pin 23 intermediate the two members of the said fork, although offset therefrom, so

as to lie in a different plane. The end of the lever that is opposite the fork 22 is made broad and serves as a handle 24, as herein- after described. It is also provided with a banking arm having two banking faces 25, that extend on the opposite sides of the escapement-wheel staff 9, against which staff the said faces bank.

The pallet-bearing member 10 is provided with a holding-arm 26, having an opening 27. This pallet-bearing member is secured on the staff 12, and the lever 11, having a hub 28, is driven onto the said staff up against the flat side of the pallet-bearing member 10. The said lever and pallet-bearing member are thus secured upon the staff 12 so tightly that they will not slip by accident, the lever being held by friction, so that it can slip on its axis relatively to the pallet-bearing member by the application of sufficient force to the said lever. The movement-plates 17 and 18 are each provided with an opening 29 to receive the detachable and rod-like holder 21, as best shown in Fig. 4, the said openings in the plate being so located with reference to the opening 27 in the arm 26 and the pallets of the said member 10 that when the holder is passed through the said three openings the said pallet-bearing member will be rigidly held in position at about the middle of its proper strokes. The lever when properly set relatively to the strokes of the pallet member will also be in the center of its stroke and if so the staff 9 of the escapement-wheel will be central between the banking faces 25 of the banking arm. The center of the strokes of the said lever is a plane passing through the axis of the balance-wheel and the axis of the said lever, as shown in Fig. 3. The escapement to work well must swing through an equal space each side of the point of rest, this position being shown in Fig. 3; but unless the pallets and lever are mounted in their correct relation to each other there is an incorrect action of the escapement.

In the main the parts hereinbefore described are or may be of ordinary construction excepting the detachable holder and the provision for having it hold the pallet-bearing member rigidly in place.

Any ordinary balance-escapement and connected parts with the lever frictionally held

in its place may be substituted for the balance-escapement and connected parts herein shown and described and when so substituted will be considered an equivalent therefor.

5 In adjusting the balance according to my improvement a skilled operator may ascertain in the usual way whether or not the lever is in its proper position and which way
10 it ought to be moved. He then puts in the holder to hold the pallet member and taking the lever by the handle 24 slips the same in the proper direction. An unskilled operator can, however, properly set the lever by means
15 of my improvement, and to do so he first puts in the holder and then looks at the banking faces to see whether or not they are at equal distances from each side of the staff 9 and if not which way to move them to bring them
20 central. He then slips the lever as before described and looks again to see if the banking faces are central, and if so the lever is properly adjusted and will have an equal amount of travel on each side of the center
25 of its strokes.

By my improvement I provide means for holding the pallet-bearing member in the middle of its proper stroke, and by observing the position of the banking faces when so held an
30 inexperienced operator can tell whether the lever is properly adjusted or not, whereby the lever is quickly and conveniently adjusted and with greater precision than is generally attained when the operator attempts to
35 locate and hold the pallet-bearing member by hand.

It is apparent that some changes from the specific construction herein disclosed may be made, and therefore I do not wish to be
40 understood as limiting myself to the precise form of construction shown and described, but desire the liberty to make such changes in working my invention as may fairly come within the spirit and scope of the same.

45 I claim as my invention—

1. In a balance-escapement having a pallet-bearing member and escapement-lever adapted to be changed in position relatively to each other, means arranged to receive a suitable
50 tool for holding the said pallet-bearing mem-

ber in the intermediate position of its proper strokes when changing the position of the said lever, substantially as described.

2. In a balance-escapement, the combination of the pallet-bearing member having a
55 holder-receiving opening, plates on opposite sides of the said pallet-bearing member having similar openings for registering with the said opening in the said pallet-bearing member, the said openings being arranged to receive
60 a detachable holder to secure the said pallet-bearing member in its intermediate position, substantially as described.

3. In a balance-escapement, the combination of the pallet-bearing member having a
65 holding-arm provided with an opening arranged to receive a detachable holder, an escapement-lever mounted on the same axis as the said pallet-bearing member and frictionally held in place, and means for receiving,
70 locating and holding the said detachable holder in position to secure the said pallet-bearing member preparatory to adjusting the lever, substantially as described.

4. In a balance-escapement, the combination of the pallet-bearing member with an
75 escapement-lever mounted on the same axis as the said pallet-bearing member and frictionally held in place, banking faces for the said lever and means for receiving a tool for holding
80 the said pallet-bearing member in its intermediate position, substantially as described.

5. In a balance-escapement, the combination of the movement-plates having holder-
85 receiving openings, with the pallet-bearing member and its staff, the said pallet-bearing member having a holder-receiving opening, and the escapement-lever mounted on the same staff as the said pallet-bearing member
90 and frictionally held in position, the said openings being arranged to receive a detachable rod-like holder for holding the said pallet-bearing member in position, substantially as described.

ALMERON M. LANE.

Witnesses:

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