

(No Model.)

A. M. LANE.
CLOCK.

No. 253,397.

Patented Feb. 7, 1882.

fig. 1

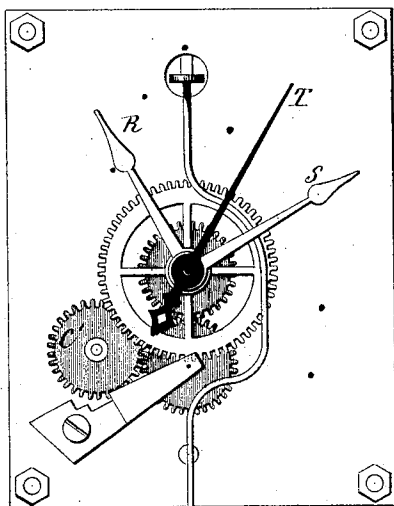


fig. 3

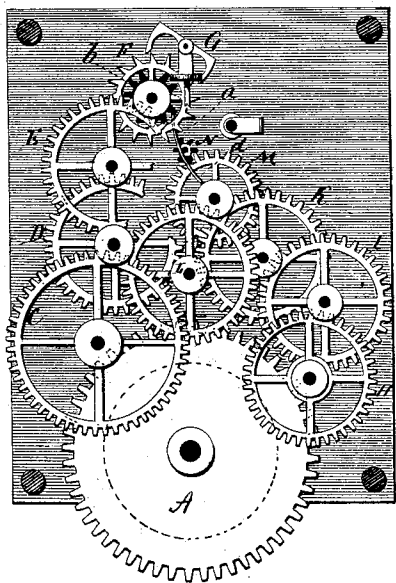
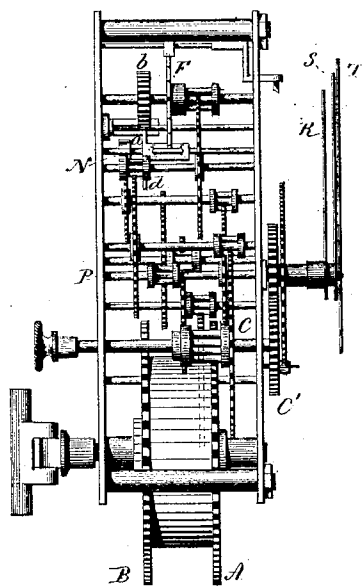


fig. 2



Witnesses:
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L. D. Rogers

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UNITED STATES PATENT OFFICE.

ALMERON M. LANE, OF WEST WINSTED, CONNECTICUT.

CLOCK.

SPECIFICATION forming part of Letters Patent No. 253,397, dated February 7, 1882.

Application filed October 11, 1881. (No model.)

To all whom it may concern:

Be it known that I, ALMERON M. LANE, of West Winsted, in the county of Litchfield and State of Connecticut, have invented a new
5 Improvement in Clocks; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full,
10 clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a front view of the movement; Fig. 2, a side view; Fig. 3, a vertical section cutting just in rear of the front plate and
15 showing the train of wheels.

This invention relates to an improvement in clocks, with special reference to time-movements, the object being to combine with an ordinary time-movement an independent second,
20 without materially increasing the space occupied by the clock-movement; and it consists in two main wheels arranged upon a common shaft, concentric with each other, a mainspring between them, one end attached to one
25 main wheel and the other to the other main wheel, so that the power of the spring is applied to drive one wheel in one direction and the other in the opposite direction, a train of wheels from one of said main wheels directly
30 to the crown or escapement wheel, and a second train of wheels from the other main wheel to the said escapement-shaft, the connection between the said second wheel on the train and the crown-wheel shaft being by means of
35 an arm extending from a shaft working into the said wheel on the escapement-shaft, so that while the power of the spring is applied through said second train the said wheel on the escapement-shaft permits the said arm to
40 escape from it at intervals, and therefore permits the mainsprings to impart to the said train an intermittent rotation, which is communicated through the central shaft to an independent second-pointer, and gives to that
45 pointer a movement each second, as more fully hereinafter described.

A represents one main wheel, which for convenience I will call the "time-wheel;" B, the other main-wheel, which for convenience I will
50 call the "second-wheel." From the time-wheel A a train of gearing, C, D, and E, leads to the

crown or escapement wheel F, so as to impart rotation to that wheel in the usual manner, and into which the verge G, or may be a lever, works in the usual manner, too well known to
55 require further description in this specification. The shaft of the wheel C extends through the front plate, and to it is fixed the pinion C', which communicates the power to the wheels of the time-pointers R S in the usual manner,
60 and as seen in Figs. 1 and 2.

From the second-wheel B a train of gearing, H, I, K, L, and M, communicates the power of the wheel to a shaft, N, near the escapement-wheel shaft. The wheel L is on the center shaft, P, which extends through the front
65 of the plate and forms the center around which the pointers revolve, and to the extreme end of the shaft the second-pointer T is attached.

From the shaft N an arm, a, extends radially
70 outward, and so as to engage the teeth of the wheel b on the escapement-shaft, as seen in Fig. 3. Preferably from the opposite side of the shaft N a second arm, d, extends radially in the opposite direction. When the arm a is
75 engaged with the wheel b the movement of the second train is substantially stopped, while the other train proceeds as usual at each beat of the pendulum or lever, turning the escapement-wheel in the usual manner. So soon as
80 the tooth of the wheel b, which holds back the arm a, has advanced so far that the arm a may escape therefrom, the arm being free, the second train of gearing is set in motion, and imparts to the arm a quick or instant revolution
85 until the arm a re-engages, or the opposite arm, d, if it be used, engages the next tooth of the wheel b, when the further movement of that train will be arrested until that arm may in
90 like manner escape from its tooth, and so continuing, one arm will first engage a tooth of the wheel and escape therefrom and permit the other to engage the next tooth, and so on, such escapement permitting a corresponding
95 movement of the second train, consequently a corresponding movement of the second-pointer T, the relation of the wheels in said second train being such that the shaft of the wheel L will make one-sixtieth of revolution per minute, and carry with it the second-pointer T,
100 thus indicating on the dial successive seconds.

The arm from the shaft N bears against the

tooth of the wheel on the escapement-shaft with the force of the mainspring applied to it in the direction in which the escapement is revolving. Hence it imparts to that shaft the power of the spring to the extent to which it may be communicated through said connection, and thus the full power of the spring is communicated to the escapement-wheel through the two independent trains.

10 In case the two arms *a* and *d* are used it will be understood that the train of gearing is to be proportioned accordingly—that is to say, so that the movement of the pointer by the escapement of the one arm or two arms, as the case may be, shall give the required intermittent movement to the second-pointer.

I am aware that a single mainspring has been applied to two driving-wheels on the same shaft, concentric with each other, so that one mainspring will turn one wheel in one direction and the other end of the mainspring turn the other wheel in the opposite direction, the said two wheels employed to drive different parts of clock mechanism, and such construction of driving-wheel I do not broadly claim; but

What I do claim is—

The combination of two main or driving wheels upon the same shaft, concentric with each other, a mainspring arranged between the said wheels, so that one end engages with one wheel and the other with the other wheel, whereby one of the said wheels is caused to revolve in one direction and the other in the opposite direction, a train of gearing leading from one of said driving-wheels to impart rotation to the escapement-wheel shaft and to the hour and minute pointers, with a second train of wheels leading from the other driving-wheel to a shaft from which an arm projects outward, and so as to engage the teeth of a wheel on the escapement-shaft, and from which teeth it escapes by the rotation of the escapement-shaft produced by the first train, and by such escapement of the said arm an intermittent movement is given to the said second train and communicated through said second train to an independent second-pointer on the central shaft, substantially as described.

ALMERON M. LANE.

Witnesses:

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