

(No Model.)

2 Sheets—Sheet 1.

A. M. LANE.
CLOCK.

No. 546,819.

Patented Sept. 24, 1895.

Fig. 1.

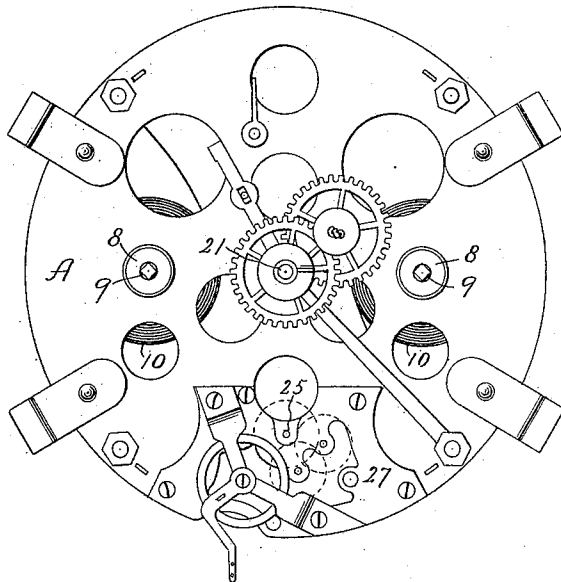


Fig. 2.

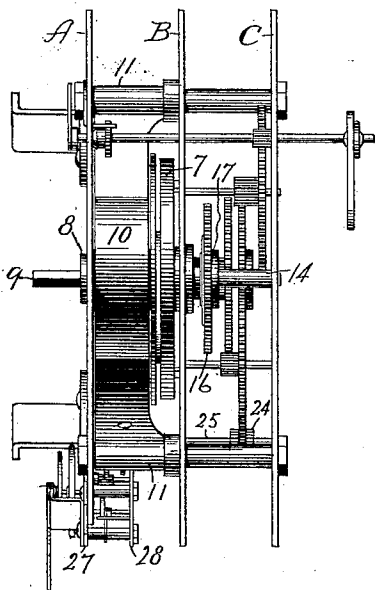
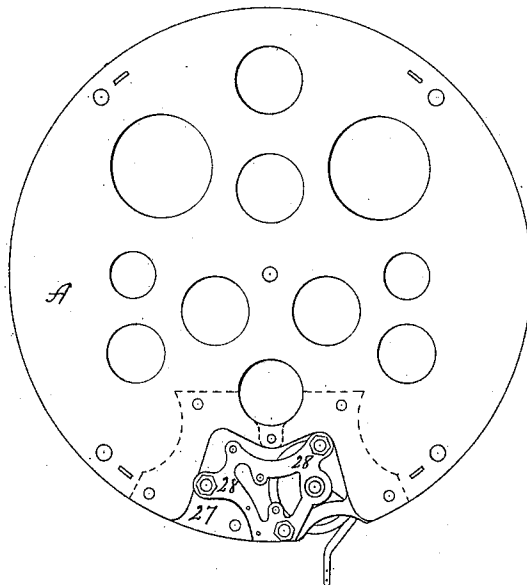


Fig. 3.



WITNESSES

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Fig. 4.

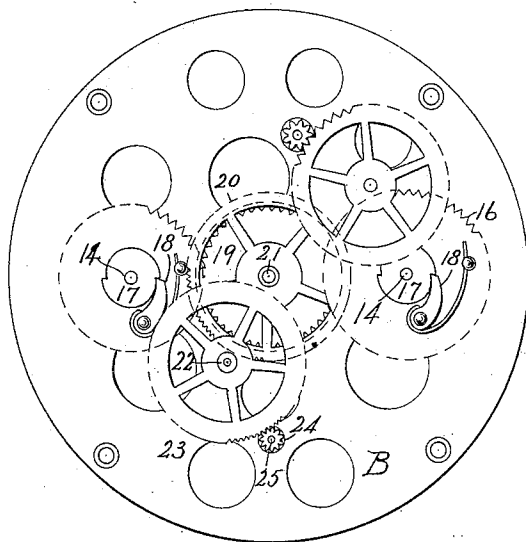


Fig. 5.

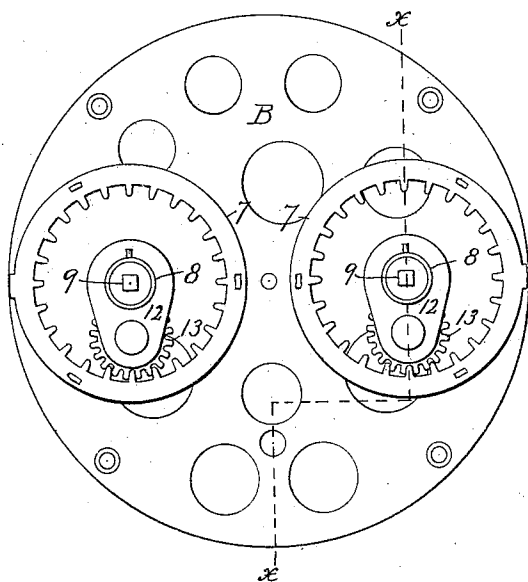
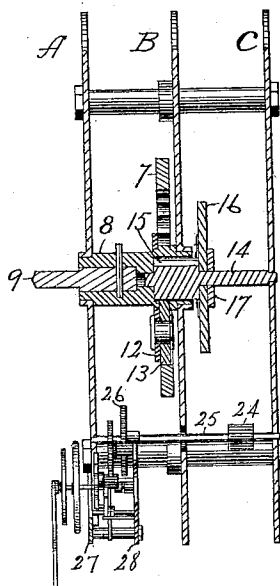


Fig. 6.



WITNESSES

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UNITED STATES PATENT OFFICE.

ALMERON M. LANE, OF MERIDEN, CONNECTICUT.

CLOCK.

SPECIFICATION forming part of Letters Patent No. 546,819, dated September 24, 1895.

Application filed April 26, 1895. Serial No. 547,212. (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 Clocks, of which the following is a specification.

My invention relates to improvements in clocks, and the main objects of my improvement are simplicity and convenience in construction and general efficiency of the clock.

In the accompanying drawings, Figure 1 is a front view of my clock-movement. Fig. 2 is a side elevation of the same. Fig. 3 is a rear view of the front plate and the escapement-frame attached thereto. Fig. 4 is a rear view of the movement with the rear plate removed. Fig. 5 is a front view of the middle plate, together with the spring-hub and planet-wheel; and Fig. 6 is a sectional view of all the plates on the two planes indicated by the line *x x*, Fig. 5, together with the pinion, wheel, and shaft that are driven by the planet-wheel, and some of the other parts.

I employ the well-known stationary internal rack and planet-wheel; but instead of putting the rack, planet-wheel, and mainspring at the rear part of the movement I place them at the front, so that the spring may be wound up from the front and by the direct application of the key to the squared portion of the spring-hub. Heretofore, so far as I know, this class of clock has always had the rack and planet wheel at the rear, although in my patent, No. 492,813, dated March 7, 1893, I arranged the same to wind from the front by the introduction of a special winding-shaft and gearing connecting it with the spring hub or shaft; but in my present improvement such special winding-shaft and gearing are dispensed with.

I employ three principal movement-plates and two minor plates. A is the front plate, B the middle plate, and C the rear plate. The stationary internal rack 7 (or racks in case of an alarm or striking clock) is secured on suitable studs to the front of the middle plate B. The rear end of the spring hub or shaft 8 is journaled in the said middle movement-plate, concentric with the rack, and the front end in the front plate A, said hub being provided with a projecting squared end or post 9,

rigidly and permanently secured to or formed on said hub for the application of the ordinary clock-key. Said hub has one end of the mainspring 10 secured to it, while the other end of the mainspring is secured to any suitable support—as, for example, one of the posts of the movement-frame, as at 11. An arm 12, mounted on the spring-hub 8, carries the usual planet-wheel 13. The shaft 14 is journaled at its rear end in the rear movement-plate and its front end within the rear end of the mainspring-hub 8, as shown in Fig. 6. The front end of this shaft carries a pinion 15, Fig. 6, which is driven by the planet-wheel 13. Said shaft 14 has loosely mounted thereon the wheel 16 and rigidly mounted thereon the ratchet 17, which is engaged by a spring-pressed pawl 18 on the wheel 16.

On the time side of the clock the wheel 16 engages with and drives the wheel 19, which carries the wheel 20, mounted on the same hub and upon the center shaft 21. The wheel 20 engages a pinion on the shaft 22, thereby driving said shaft and the wheel 23 mounted thereon, which wheel 23 engages the pinion 24 on the shaft 25. The center shaft 21 has its rear bearing in the rear plate and its front bearing in the front plate, said shaft passing through a hole in the middle plate without bearing therein. The shaft 25 also has its rear bearing in the rear plate, passes through a hole in the middle plate without bearing therein, and has its front bearing in the front plate. Near its front end is a wheel 26 for engaging and driving the finer wheels, &c., of the escapement-train, which train is journaled within the two minor plates 27 and 28, of which 27 is the larger, and is secured by screws or other suitable fastenings to the front of the front plate A, as shown, its contour being indicated by broken lines in Fig. 3.

From the spring-hub to the shaft 14 and wheel 16, with the ratchet and pawl, the time and strike sides are substantially alike, and from that point the remainder of the striking-train may be of any ordinary construction, varying for an alarm or regular strike, according to which of the two may be desired, in the same manner that alarm and regular striking-trains generally vary.

For the purposes of my claims, insofar as the striking side of the clock is concerned,

the construction beyond the wheel carrying the ratchet is immaterial, and hence I consider it unnecessary to specifically describe the remainder of the striking-train.

5 I claim as my invention—

1. A clock of the rack and pinion class having the three movement plates, the spring hub carrying the planet wheel and journaled within the front and middle plates, the stationary
10 internal rack mounted between said front and middle plates, the shaft 14 carrying the pinion for engaging the planet wheel and having its rear bearing in the rear plate, the wheel
15 16 loosely mounted on said shaft and the ratchet and pawl in connection with said wheel and shaft, whereby the spring may be wound from the front plate by the direct application of a key to the spring-hub substantially as described.

20 2. A clock of the rack and pinion class having three movement plates with the rack, spring, spring hub and planet wheel between

the front and middle plates, the shaft 25 having its rear bearing in the rear one of said plates and its front bearing in the front plate, 25
a wheel near the front end of said shaft, connecting gearing between said shaft 25 and the planet wheel, and an escapement train mounted in the minor plates and secured upon the front plate in connection with the 30
wheel near the front end of said shaft 25, substantially as described and for the purpose specified.

3. A clock of the rack and pinion class having the pinion which is driven by the planet 35
wheel mounted rigidly on its shaft, the wheel 16 loosely mounted upon said shaft, a pawl mounted on said wheel, and a ratchet also rigidly connected to said shaft, substantially as described and for the purpose specified.

ALMERON M. LANE.

Witnesses:

JAMES SHEPARD,
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