

(No Model.)

F. A. LANE.  
CLOCK MOVEMENT.

No. 467,354.

Patented Jan. 19, 1892.

Fig. 1

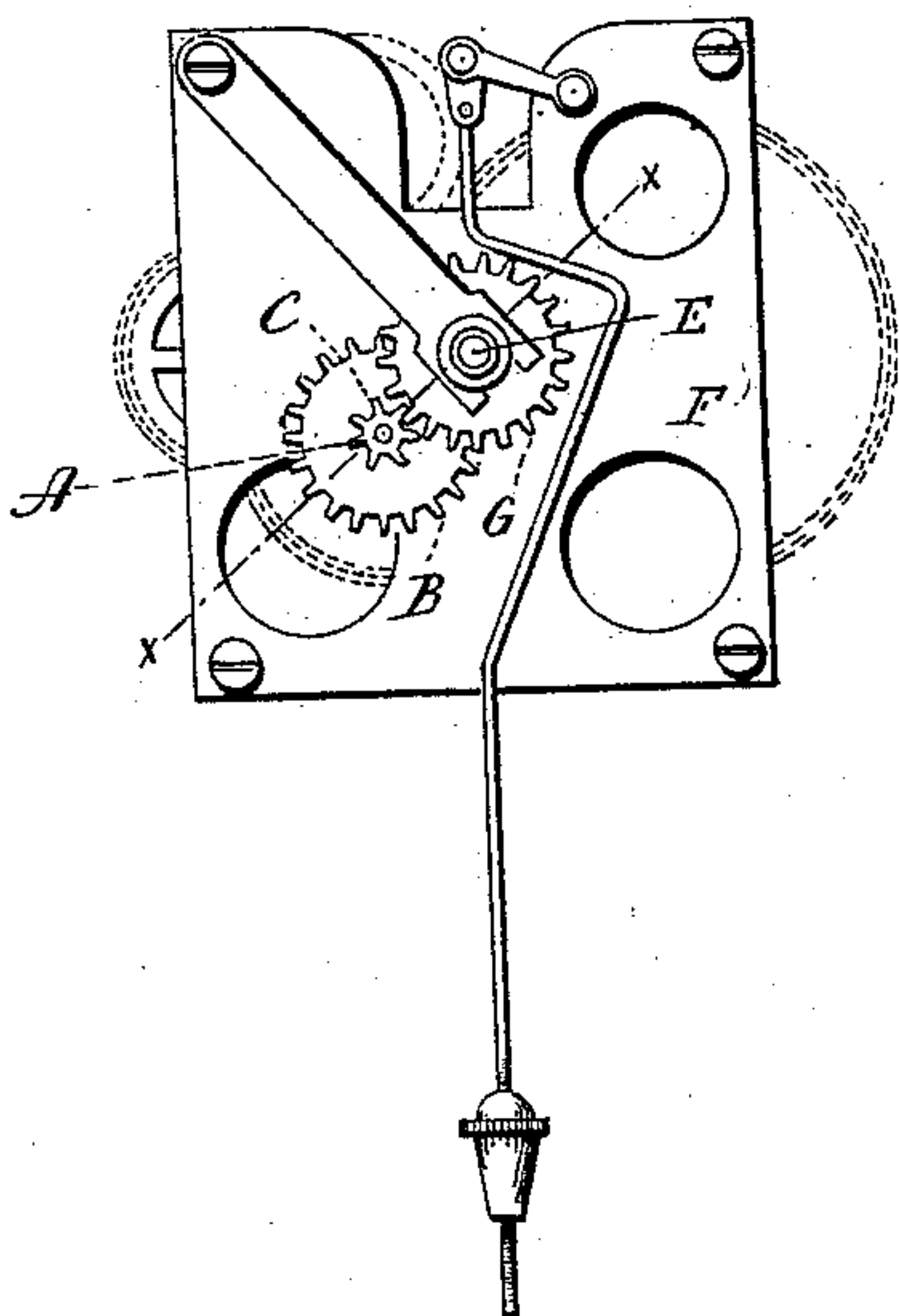
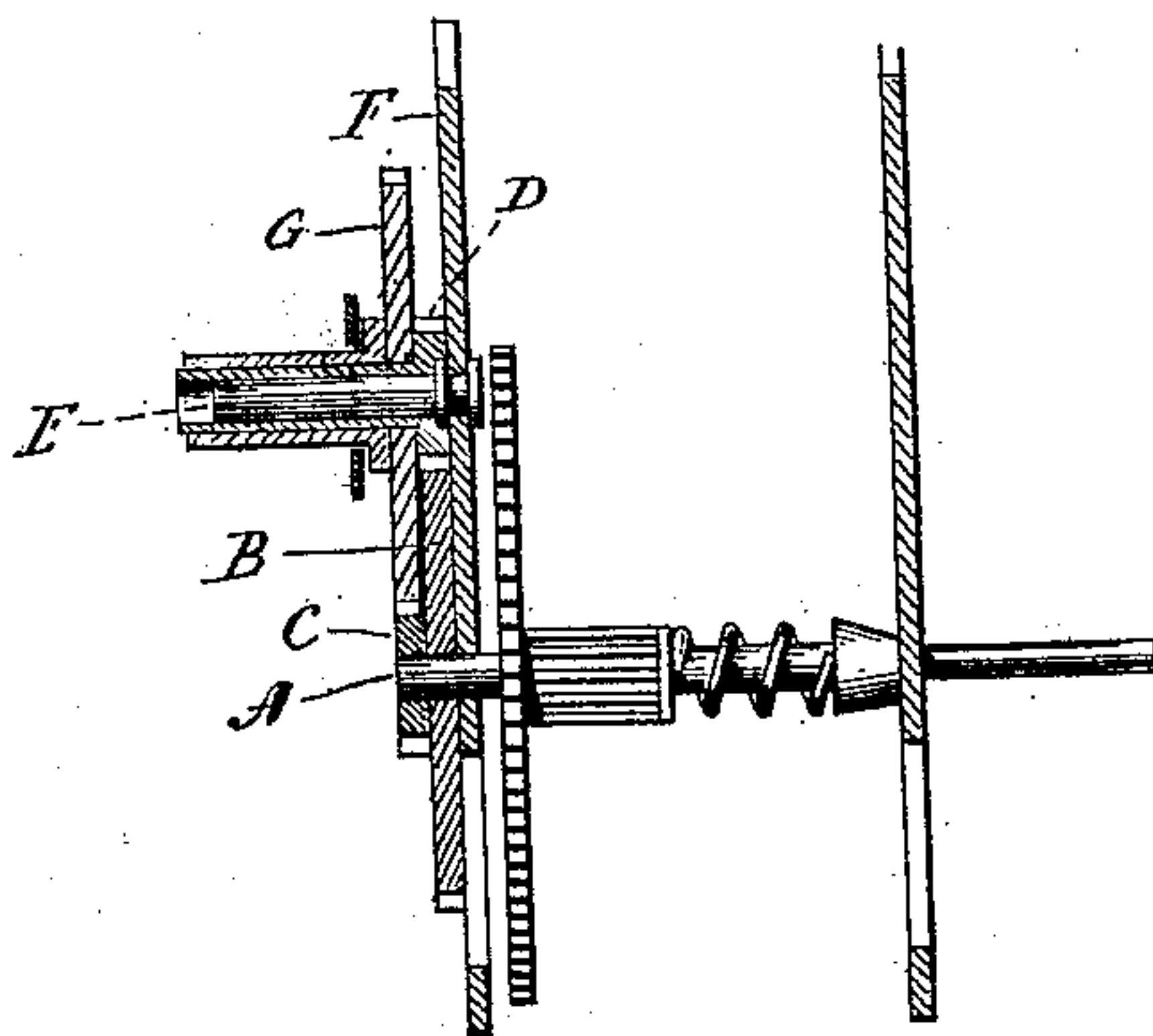


Fig. 2



Witnesses,  
J. H. Shumway,  
Lillian D. Kelsey.

Frederic A. Lane,  
Inventor  
By Atty. Earl Seymour

# UNITED STATES PATENT OFFICE.

FREDERIC A. LANE, OF NEW HAVEN, CONNECTICUT, ASSIGNOR OF ONE-HALF  
TO FRANK E. MORGAN, OF SAME PLACE.

## CLOCK-MOVEMENT.

SPECIFICATION forming part of Letters Patent No. 467,354, dated January 19, 1892.

Application filed August 3, 1891. Serial No. 401,582. (No model.)

*To all whom it may concern:*

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

Figure 1, a view in front elevation of one form which a clock-movement constructed in accordance with my invention may assume,  
15 and Fig. 2 an enlarged sectional view thereof on line *xx* of the preceding figure.

My invention relates to an improvement in that class of clocks in which the going rate of the pointers is not derived from a shaft of  
20 the escapement-train rotating once an hour and called the "center shaft," but from one or more wheels driven by the said train and adapted in size and in the number of their teeth to convert the running rate—whatever  
25 that may be—of one of its members into time. Such was the principle of the clock patented to me in United States Patent No. 456,583, dated September 16, 1890, which disclosed the  
30 use of one or more equalizing-wheels for converting into time the running rate of ordinary dial-work, partaking of the rate of an escapement-train constructed and operated as a constant motor rather than as a keeper of time.

My present invention has the same objects  
35 in view as set forth in that patent, but aims also at a still greater simplicity of construction.

With these objects in view my invention consists in the combination, with an escapement-train, of a wheel fixed to an arbor of  
40 the said train and carrying an intermediate wheel, a cannon-pinion meshing into the said arbor-wheel, and a socket-wheel meshing into the said intermediate wheel, the said wheels  
45 and pinion being adapted in the number of their teeth to convert the running rate of the said arbor into time.

My invention further consists in certain details of construction and combination of  
50 parts, as will be hereinafter described, and pointed out in the claims.

In illustrating my invention I have shown a clock-movement which when running at the desired rate is found to rotate the arbor  
A of the first wheel of its escapement-train 55 once in three hours. In order to convert that running rate of the train into time, I rigidly attach to the projecting outer end of the said arbor a wheel B, having thirty teeth and carrying an intermediate wheel C of eight teeth. 60  
This wheel meshes into a cannon-pinion D, having ten teeth, and mounted upon a suitable stud E, projecting from the center of the outer plate F of the clock-movement. The intermediate wheel C of eight teeth meshes 65  
into and drives a socket-wheel G, having thirty-two teeth and adapted to be sleeved over and rotate upon the cannon-pinion before mentioned. It will be understood that  
70 the minute-pointer, which is not shown, will be fastened to the outer end of the cannon-pinion, while the hour-hand, which is also not shown, will be fastened to the outer end of the socket-wheel. By employing these two  
75 wheels and two pinions, constructed and arranged as described, the running rate of the escapement-train will be converted into time, whereby the clock-movement is made to keep  
80 time without constructing its escapement-train to rotate any one of its members once an hour, according to the construction heretofore adopted.

My invention is not of course limited to use in connection with movements which have  
85 a member rotating once in three hours, but is applicable to any movements in which it is practicable to employ two wheels and two pinions for converting the running rate of their trains into time by constructing the said  
90 wheels and pinions with a suitable number of teeth, the range of usefulness of this idea being only limited by the space in which the wheels and pinions must be confined.

It may be well for me to call attention to the fact that the wheels and pinions employed  
95 by me do not correspond to the dial-work ordinarily used in clocks, for the reason that ordinary dial-work reproduces in a true ratio the running rate of the escapement-train with which it is employed, while the wheels and  
100 pinions that I use do not do this, but in themselves convert into time the running rate of



an escapement-train not designed in itself to keep time.

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

1. In a clock, the combination, with an escapement-train, of a wheel fixed to an arbor of the said train and carrying an intermediate wheel, a cannon-pinion meshing into said arbor-wheel, and a socket-wheel meshing into the said intermediate wheel, the said wheels and pinion being adapted in the number of their teeth to convert the running rate of the said arbor into time, substantially as described.

2. In a clock, the combination, with an escapement-train having one of its arbors ro-

tating once in three hours, of a wheel having thirty teeth fixed to the projecting outer end of the said arbor and carrying an intermediate wheel having eight teeth, a cannon-pinion having ten teeth meshing into the said arbor-wheel, and a socket-wheel having thirty-two teeth meshing into the said intermediate wheel, substantially as set forth, and whereby the said wheels and pinion convert the running rate of the escapement-train into time.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

FREDERIC A. LANE.

Witnesses:

FREDERIC C. EARLE,  
LILLIAN D. KELSEY.