(No Model.)

R. J. CLAY.

CARRIAGE CLOCK.

No. 277,234. Patented May 8, 1883.

Fig 1.

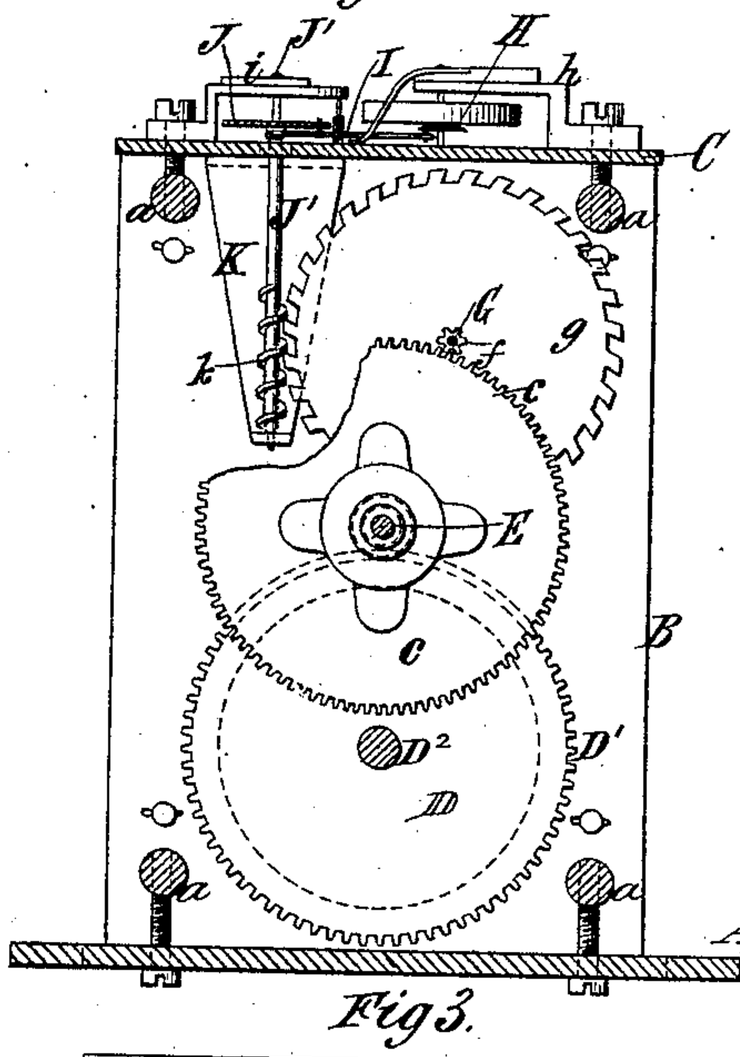


Fig 2.

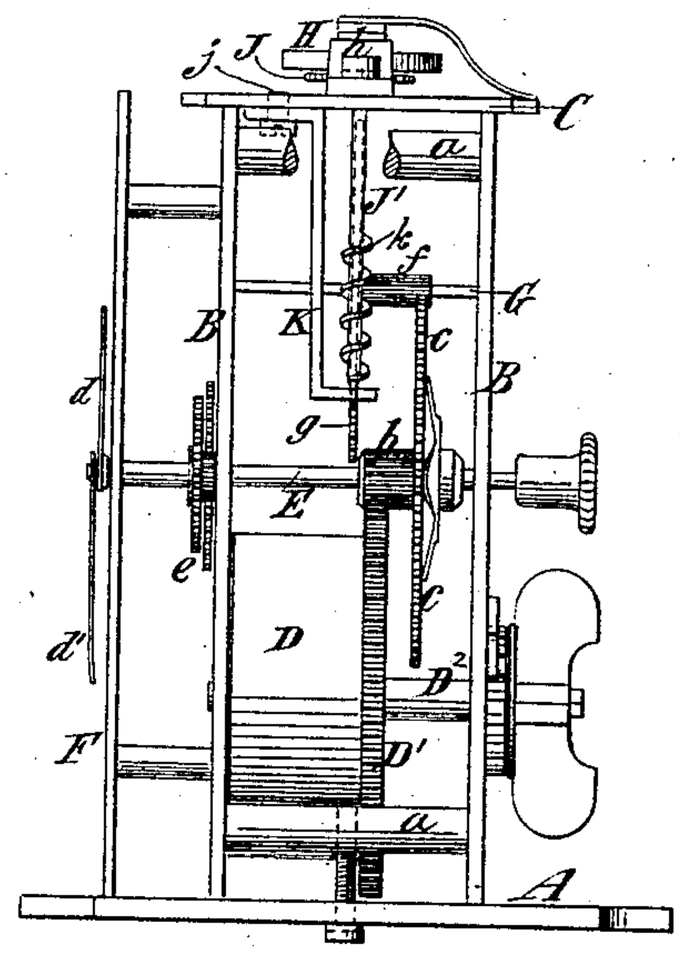
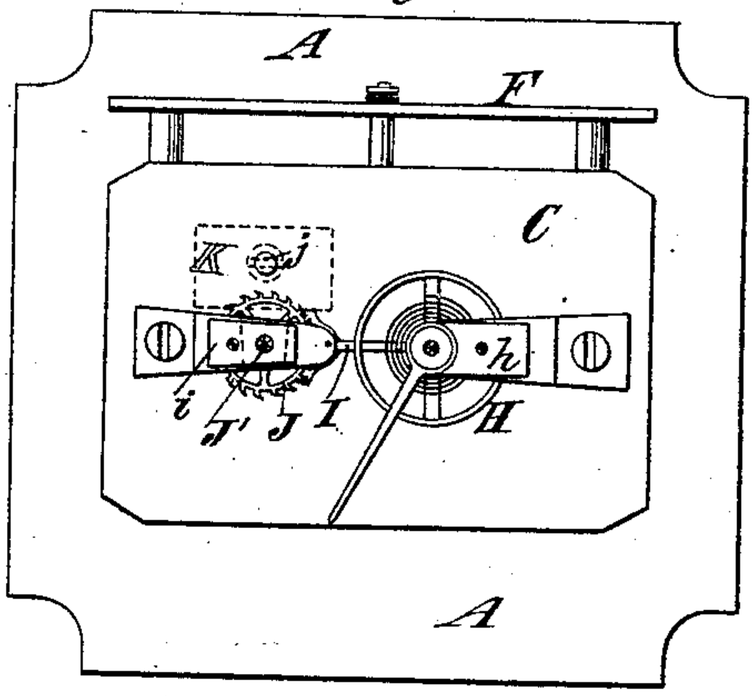


Fig 3.



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UNITED STATES PATENT OFFICE.

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CARRIAGE-CLOCK

SPECIFICATION forming part of Letters Patent No. 277,234, dated May 8, 1883.

Application filed February 14, 1883. (No model.)

To all whom it may concern:

Be it known that I, ROBERT J. CLAY, of Jersey City, in the county of Hudson and State of New Jersey, have invented a new and useful Improvement in Carriage or Traveling Clocks, of which the following is a specification.

In carriage or traveling clocks the escapement is arranged upon and above a horizontal plate, and the lever works in a horizontal plane at right angles to the planes of revolution of the wheels of the time-train; hence it is necessary to employ a contrate-wheel for transmitting motion to the escapement.

In carrying out my invention I make use of a screw which gears into the teeth of one of the wheels of the time-train and carries the escape-wheel; and my invention consists in the combination, in a carriage or traveling clock, of an upright frame and a time-train supported therein, a top plate surmounting said frame, a screw engaging with one of the wheels of said time-train, and having secured to its shaft above the top plate an escape-wheel, a balance, also arranged upon the top plate, and a hanger for supporting said screw, pivoted to and depending from said top plate, and adapted to be adjusted by swinging on its pivot to cause the screw to intermesh more or less with the wheel with which it engages.

The invention also consists in other details of construction and combinations of parts, hereinafter described.

In the accompanying drawings, Figure 1 is a sectional elevation of a clock-movement embodying my invention. Fig. 2 is an elevation at right angles to Fig. 1, and Fig. 3 is a plan.

Similar letters of reference designate corresponding parts in the several figures.

A designates a base-plate, and B B designate upright plates erected thereon and connected by posts *a*, so as to form an upright frame, which is surmounted by a top plate, C.

D designates the spring-barrel, on which is the barrel-wheel D′, and D^2 designates the winding-arbor.

E designates the main spindle or arbor, which has upon it a pinion, *b*, through which the wheel D′ imparts motion, and a wheel, *c*, and it carries at its end the hands *d d′*, which are in front of the dial F. In front of the plate B are the dial-wheels *e*.

G designates a spindle or arbor, which has upon it a pinion, *f*, through which it receives motion from the wheel *c*, and a wheel, *g*, which is best shown in Fig. 1.

The escapement is mounted on and above the top plate, C. H designates the balance. I designates the lever, and J designates the escape-wheel, fixed upon a shaft or spindle, J′. The balance is journaled in the usual cock, *h*, and the upper end of the shaft or spindle J′ is journaled in a cock, *i*, in which the escapement-lever I is also fulcrumed. The shaft or spindle J′ projects considerably below the plate C, and its lower end is supported by a hanger, K, which depends from the plate C, and is secured to the under side thereof, in this example of my invention, by a single screw, *j*. Upon the lower portion of the shaft or spindle J′ is formed a screw-thread, *k*, which engages with the wheel *g* and receives a rotary movement therefrom. The shaft or spindle J′ is arranged in a plane parallel with the planes of rotation of the several wheels of the time-train, which are below the plate C, and the escape-wheel J is made to rotate in a horizontal plane, or a plane at right angles to the planes of rotation of the wheels of the time-train. The hanger K, being pivoted to the top plate by a single screw, *j*, may be slightly swung or adjusted laterally, and the screw-thread *k* may thereby be made to engage more or less with the teeth of the wheel *g*. In order to reduce friction as far as possible, I prefer to make the wheel *g* with its teeth inclined forward, or in the direction in which it rotates, as shown in Fig. 1, so that their points only will bear on the thread of the screw.

The example of the invention here represented illustrates its application to a thirty-hour clock; but it will be well understood by those skilled in the art that by the addition of another wheel and pinion the invention may be adapted to an eight-day movement.

The shaft J′ might, if desired, have a double or multiple thread instead of a single thread, as shown.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of the upright frame and its top plate, C, the time-train, the screw-shaft or spindle J′, the escape-wheel J, the

lever and balance I H, and the hanger K, pivoted to and depending from said top plate, and adapted to be swung or adjusted laterally in order to adjust the said screw relatively to the wheel with which it engages, substantially as described.

2. The combination of the balance H, lever I, escape-wheel J, screw-shaft or spindle J′, and the wheel *g*, having its teeth inclined forward, or in the direction of its rotation, substantially as described.

3. In a clock-movement, the frame B B and top plate, C, the spindles D^2 E G, the spring-barrel D, the wheels D′ *c* *g*, the pinions *b f*, the balance H, the lever I, and the escape-wheel and its screw-shaft J J′, all combined and adapted to operate substantially as described.

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