

F. A. PICA.
CLOCK.

APPLICATION FILED NOV. 12, 1909.

997,004.

Patented July 4, 1911.

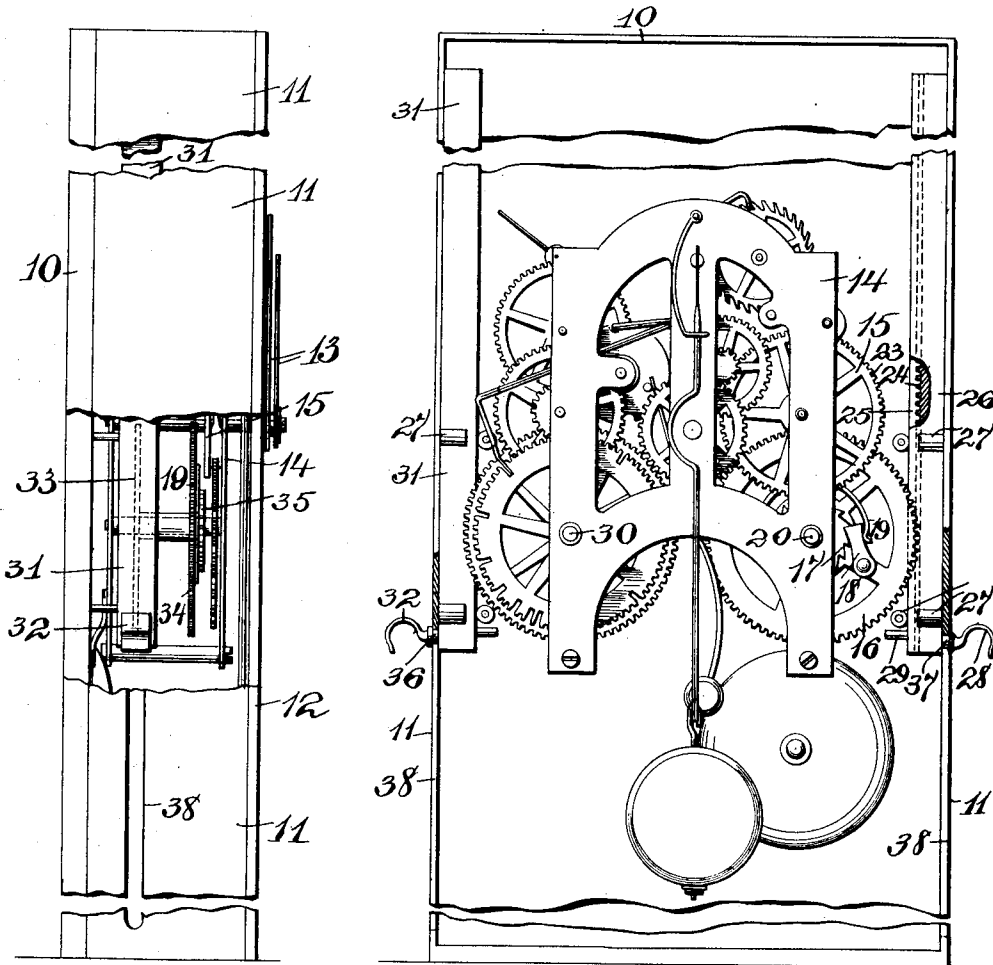


Fig. 1

Fig. 2

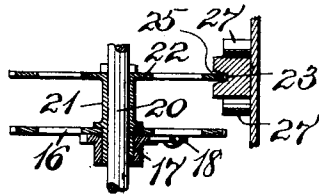


Fig. 3

WITNESSES:
E. A. Pell
M. A. Johnson.

INVENTOR
Francesco Antonio Pica,
BY
Wm. H. Caulfield,
ATTORNEYS

UNITED STATES PATENT OFFICE.

FRANCESCO ANTONIO PICA, OF HARRISON, NEW JERSEY.

CLOCK.

997,004.

Specification of Letters Patent.

Patented July 4, 1911.

Application filed November 12, 1909. Serial No. 527,613.

To all whom it may concern:

Be it known that I, FRANCESCO ANTONIO PICA, citizen of the United States, residing at Harrison, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Clocks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to figures of reference marked thereon, which form a part of this specification.

This invention relates to an improved timepiece, preferably a clock, which is designed to have a combined winding means and driving mechanism, the invention comprising a weight which, when raised, winds the clock, the weight, when descending, propelling the clock, this structure doing away with the use of springs in the clock. The method that requires the use of keys necessitates a half turning of the key a great number of times, each of which turns retards the progress of the clock-train.

In this device the winding is quickly done and but one movement of the winding means is necessary, and the retarding of the clock-train is not sufficient to affect the time to any appreciable extent.

The invention is illustrated in the accompanying drawing, in which—

Figure 1 is a side view of the clock of my improved construction broken away to show the interior at parts thereof, and Fig. 2 is a front view with the face of the clock removed and illustrating the casing and part of one of the winding weights in section. Fig. 3 is a detail section showing one of the winding weights, the winding wheel and the driving wheel of the clock-train in section.

I employ a clock casing 10 which is provided with the sides 11 and the front 12 on which is mounted the face of the clock on which time is indicated by the hands 13. Within the casing are the works 14 into which is mounted the usual clock-train 15 with the attendant gears and balance of any usual form, and in which no invention is claimed. The train is propelled by the driving-gear 16, which driving-gear has motion transmitted to it by means of the ratchet 17 and the pawl 18, which pawl 18 is held in contact with the ratchet by means of the spring 19. The driving-gear 16 is

loosely mounted in its relation to the ratchet 17 and the shaft 20, the driving-gear 16 being preferably mounted on the sleeve 21 which is adapted to be rotated with the winding gear 22, the teeth 23 of which mesh with the teeth 24 are set in the recess 25 of a winding weight 26, this winding weight preferably resting against the side 11 of the casing and being held in its place, but free to ascend and descend easily by the rollers 27. The weight is raised by a finger-piece 28, and when this finger-piece raises the weight the weight has its movement limited by a pin 29 which engages one of the lower rollers 27, although other means of limiting the movement of the winding weight can be used. In its ascent the winding weight rotates the winding gear 22 and consequently the ratchet 17 which is fastened to the sleeve 21, and the driving-gear 16 is not rotated as the ratchet and the pawl are in sliding engagement during the winding process. On the removal of the finger from the finger-piece 28 the winding weight, which is preferably made of metal, exerts its weight on the winding gear 22 which in turn transmits it to the ratchet 17 which rotates the pawl 18, and the driving-gear 16 and the clock is made to run.

A mechanism can be mounted on the shaft 30 similar to the mechanism mounted on the shaft 20, and the winding weight 31, similar to the winding weight 26, can be lifted by the finger-piece 32 and acts to propel the winding gear 33 which in turn will rotate the driving gear 34 by means of the ratchet 35, these all tending to operate the striking mechanism. The winding weights 26 and 31 have the finger-pieces 32 and 28, respectively, mounted on their studs 36 and 37, which studs pass through the slots 38 in each of the side pieces 11 of the casing, although other means of operating the winding weights can be devised.

This device provides for a quick winding of the timepiece; one in which the set-back to the clock-train by means of the winding is of very short duration, and one in which the running of the clock is assured, the gravitation of the weight acting directly on the winding gear making a positive means for propelling the works of the clock.

Having thus described my invention, what I claim is:—

1. A clock comprising a clock casing having sides, a clock train mounted in the clock

casing, a side of the casing having a slot therein, a driving gear connected with the clock train, a winding gear arranged to propel the driving gear when operated in one direction and be released from the driving gear when operated in the opposite direction, a winding weight arranged to slide within the clock casing and adapted to operate the winding gear in both directions and acting to operate the clock train by gravity when raised and released, and a finger piece on the winding weight projecting through the slot in the casing whereby the weight can be raised.

2. A clock comprising a clock casing, the sides of the clock casing having vertical slots therein, a clock train in the casing, a pair of driving gears connected with the clock train, a winding gear for each driving gear and arranged to operate the driving gear when operated in one direction, a pair of weights, each weight having teeth thereon, the teeth on each weight being adapted to mesh with the teeth of a winding gear, the weights being arranged to slide within the casing on the sides thereof, and a finger piece on each weight and projecting through

the slot on its side of the casing whereby each winding weight can be raised.

3. A clock comprising a clock casing, a clock train mounted in the clock casing, a driving gear connected with the clock train, a winding gear arranged to propel the driving gear when operated in one direction and be released from the driving gear when operated in the opposite direction, a winding weight having a vertical recess therein, the bottom of the recess being formed into teeth, means for mounting the winding weight so that it slides in the clock casing with the periphery of the winding gear within the recess, the teeth of the winding gear being in mesh with the teeth of the winding weight, and means for raising the winding weight so that when it is raised and released it is free to descend and operate the clock train.

In testimony, that I claim the foregoing, I have hereunto set my hand this 10th day of November 1909.

FRANCESCO ANTONIO PICA.

Witnesses:

WM. H. CAMFIELD,
WILLIAM DANTONA.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."