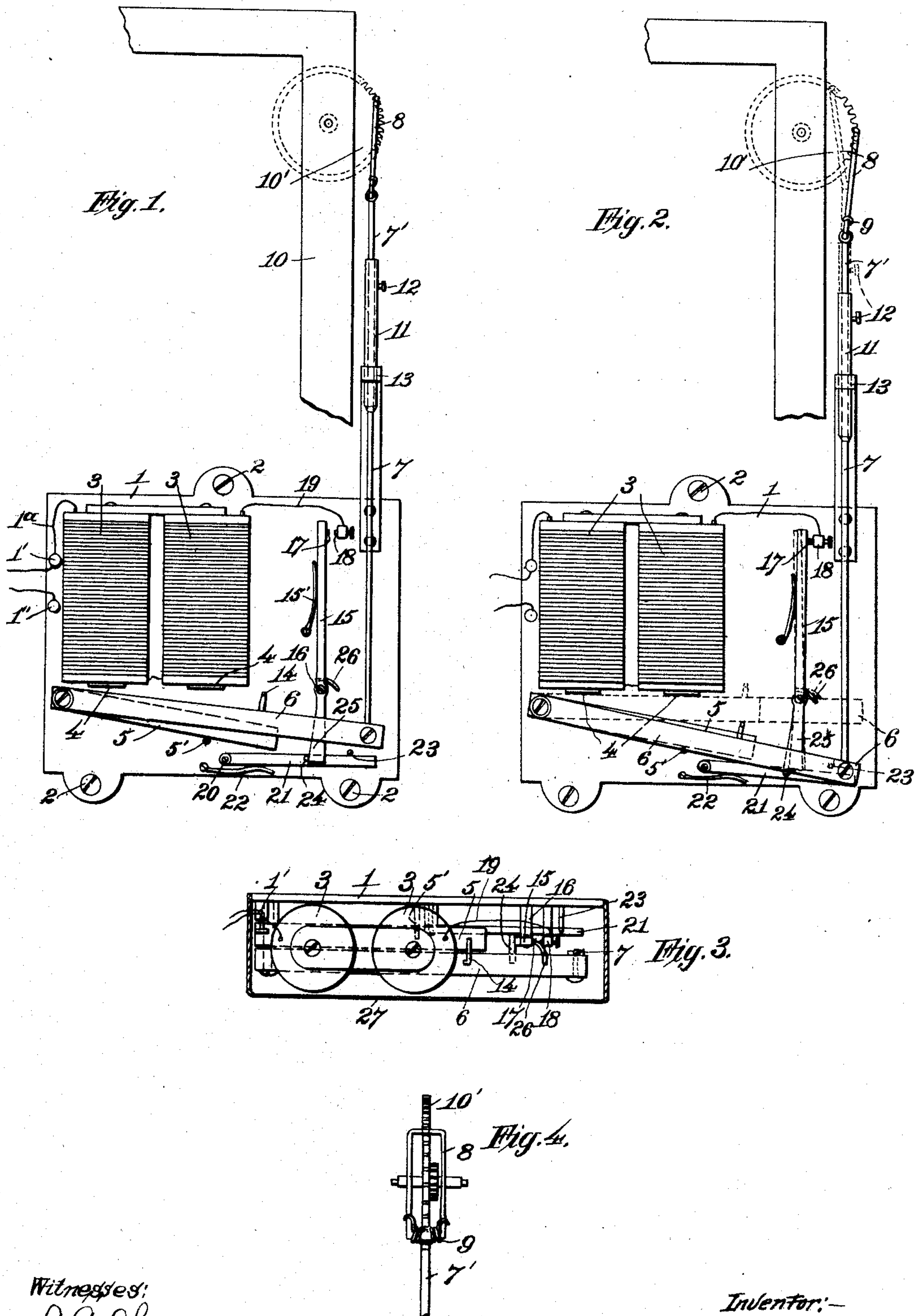


No. 886,157.

PATENTED APR. 28, 1908.

D. SANDRETTO.
ELECTRICALLY OPERATED CLOCK.
APPLICATION FILED NOV. 21, 1907.



Witnesses:
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UNITED STATES PATENT OFFICE.

DOMINIC SANDRETTO, OF LADD, ILLINOIS.

ELECTRICALLY-OPERATED CLOCK.

No. 886,157.

Specification of Letters Patent.

Patented April 28, 1908.

Application filed November 21, 1907. Serial No. 403,149.

To all whom it may concern:

Be it known that I, DOMINIC SANDRETTO, a citizen of the United States of America, and a resident of Ladd, county of Bureau, and State of Illinois, have invented certain new and useful Improvements in Electrically-Operated Clocks, of which the following is a specification.

My invention relates to electric clocks and particularly to an attachment for ordinary clocks whereby they may be transformed into electrically operated clocks.

The object of my invention is to provide an attachment for ordinary clocks by means of which they may be transformed into electrically operated clocks after having removed the main spring and wheel.

A further object of my invention is to provide a device as mentioned, of few parts, of simple construction and one which may be readily and quickly attached to the clock by almost any one, and that without any change whatever in the works of the clock except the removal of the main spring and wheel.

Other objects will appear hereinafter.

My invention will be more readily understood by reference to the accompanying drawings forming a part of this specification and in which,

Figure 1 is an elevation of an electric attachment for clocks embodying my invention in its preferred form, Fig. 2 is a similar view with the operating parts shown in a different position, Fig. 3 is a plan view thereof, and Fig. 4 is a detail.

Referring to the drawings, 1 indicates a plate forming the frame of the device and by which it is secured within the clock casing as by the screws, 2. Secured to the plate, 1, are a pair of electro-magnets, 3 beneath the poles, 4 of which are pivotally mounted the bars, 5 and 6. The bar, 6 is somewhat longer than the bar, 5, and to its outer end is pivotally connected a vertically disposed rod, 7 having a suitable device at its upper end for engaging the teeth of one of the wheels of the clock. This comprises the loop, 8 pivotally connected to the upper end of the rod, 7 and held in engagement with a wheel of the clock by a spring, 9.

In Figs. 1 and 2 of the drawings, I have illustrated a portion of a clock frame and one of the wheels, 10 indicating the frame and 10' the wheel. In order to properly adjust the loop, 8, to the wheel, 10', after the device is secured within the clock case, I make the rod,

7 adjustable. To this end, the rod is formed in two parts or sections 7—7' and to the upper end of the part 7 is secured a sleeve, 11, into which the lower end of the part 7' is slidably fixed.

12 is a set screw for securing the parts against relative movement after having been adjusted.

13 indicates a guide for the rod, 7, the same being secured to the plate, 1.

1' and 1'' are binding posts by which the device is connected to a battery (not shown). For convenience the battery may be arranged within the clock case, two small dry cells being sufficient. The post 1' is connected by a wire 1^a to the magnet and by the other post the opposite pole of the battery is connected to the frame 1 of the device. When the magnet is deenergized the bars 5 and 6 drop by gravity. The bar 5 drops quickly and its movement is limited by a pin or stop 5'. The bar 6 drops slowly and as it drops, it turns the wheel, 10' causing the clock to run. It is obvious that the downward movement of the bar 6, to operate the clock must be limited, hence, I provide means for quickly raising it as soon as it reaches a certain predetermined position in its downward travel.

To this end I provide means for energizing the magnet, 3, at the proper time to raise the bars, 5 and 6, the energizing and deenergizing of the magnet being governed by the movements of the bar, 6. When said bar reaches its lower limit of movement, it causes the circuit to the magnet to be closed. It is then immediately drawn up and as it reaches its upper limit of movement it causes the circuit to be broken. The bar 5 merely assists in raising the bar, 6 the latter being of greater weight and passing further from the poles of the magnet, it is not so readily raised as the lighter one. When the magnet is energized the bar 5 is quickly raised and in raising, it engages a pin or arm, 14 on the bar, 6 thus assisting in raising the bar, 6, and bringing it further into the magnetic field.

The means for making and breaking the circuit through the magnet will now be described. 15 indicates a lever pivotally mounted upon a stud, 16 extending from the plate, 1. Upon the end of the lever, 15 is a contact piece, 17 which at the proper time engages with a contact 18 mounted upon but insulated from the plate, 1. The contact 18 is connected to the magnet by a wire, 19. Pivotal mounted as at 20 upon the plate, 1.

beneath the plane of the bars 5 and 6 is a lever, 21. This is normally held in raised position by a spring, 22, its upward movement being limited by a stop, 23. Extending later-
 5 ally from the lever, 21 is pin, 24, which extends beyond the lower end, 25 of the lever, 15 into the path of the bar, 6. When the lever 21 is in raised position, as shown in Fig. 1 the end of the lever 25 rests against it holding the
 10 contact, 17 out of engagement with the contact, 18. As the bar, 6 reaches its lower limit of movement it engages the pin, 24, depressing the lever, 21 against the tension of the spring, 22. This moves the pin, 24, be-
 15 yond the lower end 25 of the lever, 15, permitting the contact, 17 to engage with the contact, 18, a spring, 15' serving to throw the lever. This closes the circuit energizing the magnet, 3. As soon as the magnet is en-
 20 ergized, the bar, 5 is quickly raised until it engages the arm, 14, at which time it is further into the magnetic field than the bar, 6 and assists in raising the latter into the field. As soon as the bar, 6 reaches its up-
 25 ward limit of movement it engages an arm, 26, on the lever 15. This throws the lever into normal position breaking the contact between the points, 17 and 18. As soon as the lever 15 is thrown back, the lever, 21
 30 raises and locks it in normal or retracted position until the bar, 6 again descends. Each time that the bar, 6, is raised, the loop, 8 is moved a few teeth higher on the wheel, 10' and it is obvious that the clock will continue to
 35 run indefinitely as long as the device is supplied with a suitable electric current for energizing the magnet, 3. If desired a cover 27 may be provided for boxing in the mechanism.

Having described my invention what I
 40 claim as new and desire to secure by Letters Patent is:

1. In a device of the class described, an electro-magnet, in combination with a bar pivotally mounted beneath said magnet, a
 45 rod extending upwardly from the free end of said bar and having means at its upper end for engaging the teeth of a wheel of a clock, means operable by said bar when at its lower

limit of movement for energizing said mag-
 net and when at its upper limit of movement 50
 for deenergizing said magnet, and a second bar pivoted adjacent to the first said bar and adapted to assist in bringing said bar further into the magnetic field, substantially as de-
 scribed. 55

2. In a device of the class described, an electro-magnet, in combination with a bar pivotally mounted beneath said magnet, means for connecting the free ends of said bar with the teeth of one of the wheels of a 60
 clock, a circuit closing lever pivoted adjacent to said bar and adapted in one position to close the circuit to said magnet and when in retracted position to break the circuit, a sec-
 ond lever pivotally mounted beneath said 65
 bar and having a pin adapted to engage said circuit closing lever to hold the same in retracted position, said pin extending into the path of said bar and adapted to be disen-
 70 gaged from the circuit closing lever by the downward movement of said bar and an arm on said circuit closing lever adapted to be en-
 gaged by said bar at its upward limit of movement to move said circuit closing lever into retracted position to break the circuit, 75
 substantially as described.

3. A device for transforming an ordinary clock into an electrically operated clock and comprising a frame adapted to be secured in a clock case, a bar pivotally mounted on said 80
 frame, an electro-magnet arranged above said bar, means operable by said bar for energizing said magnet when said bar reaches its lower limit of movement and for deenergiz-
 ing said magnet when it reaches its upper 85
 limit of movement, and an adjustable member for connecting the free end of said bar with one of the wheels of the clock, substantially as described.

In testimony whereof I have signed my 90
 name to this specification in the presence of two subscribing witnesses.

DOMINIC SANDRETTO.

Witnesses:

PETER GRIVETTO,
 DOMENICO GALLO.