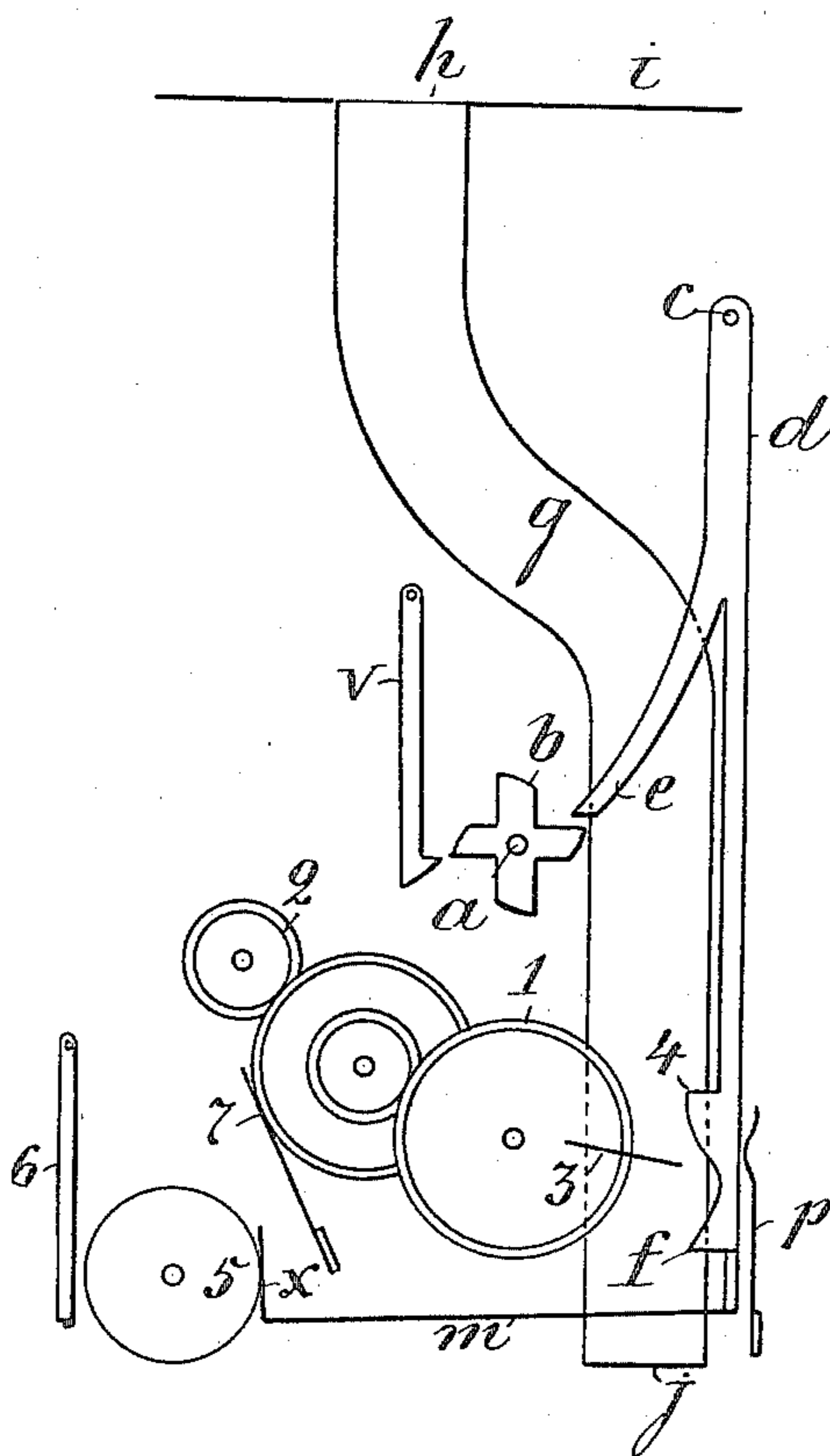


914,907.

Patented Mar. 9, 1909.



W. M. Avery

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BY *Mumolo*

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# UNITED STATES PATENT OFFICE.

AAGE GEORG PETER WIINGAARD, OF COPENHAGEN, DENMARK.

CLOCK COMBINED WITH COIN-FREED WINDING-UP APPARATUS.

No. 914,907.

Specification of Letters Patent.

Patented March 9, 1909.

Application filed February 15, 1908. Serial No. 416,064.

*To all whom it may concern:*

Be it known that I, AAGE GEORG PETER WIINGAARD, citizen of the Kingdom of Denmark, and a resident of Romersgade 3, Copenhagen, Denmark, engineer, have invented new and useful Improvements in and Relating to Clocks Combined with Coin-Freed Winding-Up Apparatus, of which the following is a specification.

10 The present invention relates to that type of clock in which a clock combined with a winding up mechanism is provided with a stop device arranged in the clock, which device when in the normal position prevents  
15 the clock from being wound up. This device is released by means of a coin introduced into the clock through a coin chute.

The coin operates on the stopping device, holding it clear of the winding up mechanism  
20 while the clock is being wound up and afterward passes down the chute into a coin receiver or till arranged in the clock, upon which the stopping device is released and returns to its normal position.

25 The object of this device is to enable the clock to serve as a collector of sums of money which are paid in fixed rates at fixed times, for instance insurance premiums. The times for winding up the clock and the value of the  
30 coin required to release the winding up device correspond with the times for the payment of the premium and the amount of the premium.

Although a clock arranged in the above  
35 manner is suitable for collecting premiums where the times for paying the premiums correspond with the times for winding up the clock, it may in some cases be desirable if the mechanism is arranged in such a manner,  
40 that the times for the payment of the premiums are independent of the times for winding up the clock, as for instance, in a case where it is desired to use for daily payments a clock which has to be wound up weekly, or  
45 in a case where a clock is used which has to be wound up daily for weekly payments.

The present invention relates to a special form of the above type of clock in which the times for the payments of the premiums are  
50 independent of the times for winding up the clock.

According to the present invention the device is arranged in such a manner that the coin introduced into the coin chute remains  
55 there during a certain number of following

payments, the winding up mechanism being unobstructed as long as the coin remains in the coin chute. The device is also arranged in such a manner that the escapement of the clock does not stop at the same time as the winding up mechanism is released but only  
60 when one of the payments, which must take place at certain intervals, is omitted, making it necessary to introduce another coin into the coin chute in order to start the escape-  
65 ment wheel of the clock again.

My device is illustrated in the accompanying drawing in which,

*a* is a shaft upon which the key or the like necessary for winding up the clock may be  
70 or is arranged.

*b* is a wing wheel arranged on the said shaft *a* cooperating with the stop *d* which is pivoted at *c* and provided with an arm *e* adapted to engage with the wing wheel *b*, thus preventing the clock from being wound up until  
75 the said stop *d* has been moved to a position in which the wing wheel is clear of the said arm *e*. The lower end of the stop *d* is provided with a heel *f* projecting into the lower  
80 end of the coin chute *g*, the upper end of said coin chute registering with a coin slit *h* arranged in the cover plate *i* of the clock. The coin when introduced through the slit *h* passes  
85 through the lower end *g* of the coin chute into the locked till or coin receptacle if the passage of the coin is not barred by the said heel *f*. Behind the lower end of the said stop  
90 *d* a spring *p* is arranged, operating in such a manner that a coin introduced into the coin chute moves the stop to such a position that its arm *e* releases the wing wheel *b* and allows  
95 the clock to be wound up, but at the same time prevents the stop from being turned back to a position in which the coin can pass from the coin chute into the till. In front of  
100 the said stop is arranged a toothed wheel 1 adapted to be rotated through a convenient train of gearing from the main shaft 2 of the clock. On the said toothed wheel 1 an arm  
105 or the like 3 is arranged which, during the revolution of said wheel, engages with a projecting cam surface 4 arranged on the said stop *d* in such a manner that the latter is pressed back and the coin lying in the coin  
110 chute passes down into the till. As soon as the arm 3 has passed the said projecting cam surface 4 the stop moves back into its normal position, shown in the drawing, in which position its arm *e* prevents the winding up mech-

anism from being operated while at the same time an arm *m*, *x*, connected with the lower end of said arm engages with the balance wheel 5 stopping the escapement of the clock, so that independently of its winding up mechanism the clock cannot be set going until another coin has been introduced into the coin chute. The period of time between two following payments depends on the time required for a revolution of the toothed wheel 1 and the number of the arms 3 arranged on said toothed wheel. I may arrange one, two or more of the said arms 3 according to the interval of time required.

15 Stops *v* and 6 are arranged respectively near said wing wheel *b* and the balance 5 adapted to prevent the release of said wing wheel or the balance by tilting the clock to one side.

20 A braking spring 7 prevents the train of gearing driving the toothed wheel 1 from becoming slack. The projecting cam surface 4 on the said stop *d* is of such a size and form that the clock will not immediately stop if the payments are not paid into the clock at the exact time at which the clock is set for such payment. Owing to the form of said projecting cam surface a convenient time is allowed to expire between the moment when the coin falls into the till and that in which clock is caused to stop if no new payment has been dropped into it.

What I claim, and desire to secure by Letters Patent, is:

35 1. The combination with the clock and the winding mechanism thereof, of a wing wheel in connection with the winding mechanism, a coin chute, a swinging arm having a cam portion projecting into the chute for preventing the downward movement of the coin, a stop connected with the arm for engaging the wing wheel to prevent the winding of the clock, a spring engaging said arm and normally retaining the cam portion in the chute, a toothed wheel driven by the clock mechanism and provided with a radial arm for engaging the cam portion of the swinging arm which projects into the chute

whereby to move said arm backwardly to permit the further movement of the coin. 50

2. The combination with the clock and the winding mechanism thereof, of a wing wheel in connection with the winding mechanism, a coin chute, a swinging arm having a cam portion projecting into the chute for preventing the downward movement of the coin, a stop connected with the arm for engaging the wing wheel to prevent the winding of the clock, a spring engaging said arm and normally retaining the cam portion in the chute, a toothed wheel driven by the clock mechanism, and provided with a radial arm for engaging the cam portion of the swinging arm which projects into the chute whereby to move said arm backwardly to permit the further movement of the coin, and a swinging pawl mounted adjacent the wing wheel for engaging the same when the clock is tilted to dis-engage the swinging arm. 65 70

3. The combination with the clock and the winding mechanism thereof, of a wing wheel in connection with the winding mechanism, a coin chute, a swinging arm having a cam portion projecting into the chute for preventing the downward movement of the coin, a stop connected with the arm for engaging the wing wheel to prevent the winding of the clock, a spring engaging said arm and normally retaining the cam portion in the chute, a toothed wheel driven by the clock mechanism, and provided with a radial arm for engaging the cam portion of the swinging arm which projects into the chute whereby to move said arm backwardly to permit the further movement of the coin, a lever connected with the arm whose free end is adapted to engage the balance wheel for the purpose set forth. 85

Signed by me at Copenhagen, Denmark this 28th day of January 1908. 90

AAGE GEORG PETER WIINGAARD.

Witnesses:

CHARLES HUDE,  
OISBRAW WOLSING.