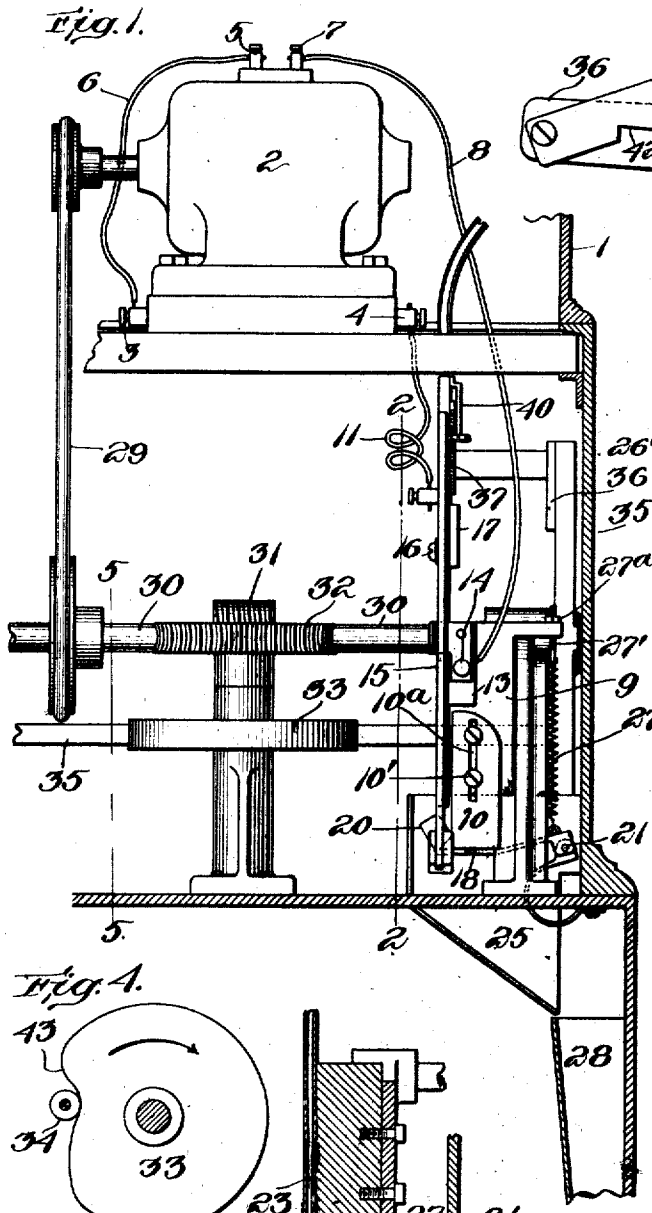
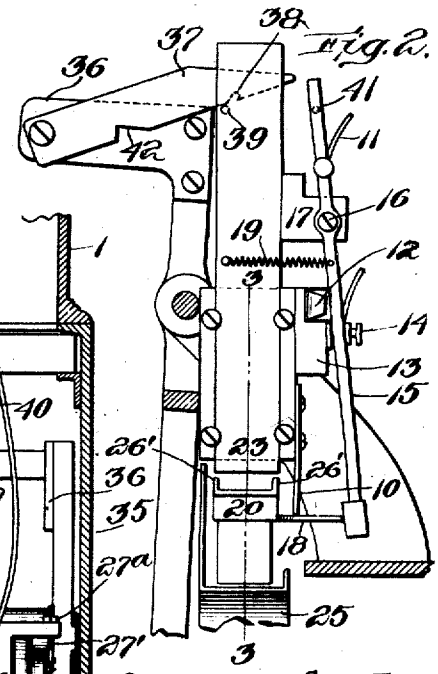
E. F. SYMONDS & G. W. BRANN.

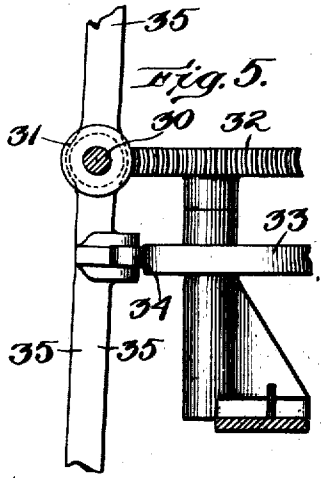
COIN OPERATING MECHANISM.

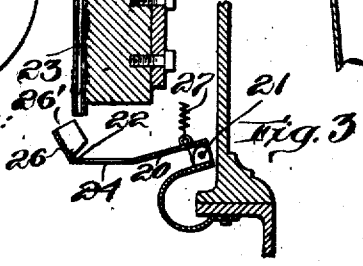
APPLICATION FILED NOV. 2, 1906.

909,253. Patented Jan. 12, 1909.









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UNITED STATES PATENT OFFICE.

ERNEST F. SYMONDS AND GEORGE W. BRANN, OF SALEM, MASSACHUSETTS, ASSIGNORS, BY DIRECT AND MESNE ASSIGNMENTS, TO STANDARD MACHINES COMPANY, OF BOSTON, MASSACHUSETTS, A CORPORATION OF MAINE.

COIN-OPERATING MECHANISM.

No. 909,253. Specification of Letters Patent. Patented Jan. 12, 1909.

Application filed November 2, 1906. Serial No. 341,692.

To all whom it may concern:

Be it known that we, ERNEST F. SYMONDS and GEORGE W. BRANN, citizens of the United States, and residents of Salem, Massachusetts, Essex county, have invented certain new and useful Improvements in Coin-Operating Mechanism, of which the following is a specification.

The invention relates to coin operating mechanism and its object is to provide a simple and reliable mechanism by which an electric circuit may be closed upon the introduction of a coin and thereafter automatically opened and the coin operated devices reset after a predetermined time has elapsed.

The invention consists of the various features and combination set forth in the claims and will be understood from the following detailed description of a mechanism embodying the various features in their preferred forms.

The various features of the invention may be embodied in any machine or construction in which it is desired to complete an electric circuit upon the introduction of a coin and to automatically open the circuit after a predetermined time.

Certain features of the invention relating to the circuit closing devices may be embodied in any construction wherein it is desired to control an electric circuit by the introduction of a coin.

In the accompanying drawings the features of the invention are shown embodied in a machine in which an electric motor is started into operation by the introduction of the coin and in which the circuit is automatically opened to stop the motor by a timing mechanism driven from the motor.

In these drawings—Figure 1 is an elevation of the mechanism embodying the invention, the inclosing casing being shown in section. Fig. 2 is a sectional view on line 2—2 Fig. 1. Fig. 3 is a sectional view on line 3—3 Fig. 2. Fig. 4 is a detail showing the timing cam; and Fig. 5 is a sectional view on line 5—5 Fig. 1.

In the apparatus shown in the drawings the various parts of the mechanism are inclosed within a casing 1 which completely incloses the mechanisms and protects them from injury or misuse. The parts and mechanisms which are to be thrown into operation upon the introduction of a coin are operated and driven by an electric motor 2 which is provided with binding posts 3, 4, to which wires leading from the source of electrical supply may be connected. One terminal 5 of the motor is connected by means of a wire 6 with the binding post 3 and the other terminal 7 is connected by a wire 8 with the devices by which the motor circuit is completed and broken in starting and stopping the motor. These devices consist of contact plates 12 mounted upon an insulating block 13 and connected with the wire 8 by means of a binding post 14. Cooperating with the contact 12 is a contact lever 15 pivoted at 16 to an insulating block 17 and connected with the binding post 4 by means of a wire 11.

Under normal conditions the contact lever 15 is held out of engagement with contacts 12 by means of a latch arm 18 which engages the lower end of the lever and holds it in position against the tension of the spring 19. The latch arm 18 is carried by a plate 20 which is pivoted at 21 and is provided at its forward end with a ledge 22 arranged below a coin chute 23. Directly in the rear of the ledge 22 is an opening 24 in the plate 20 which overlies a chute 25. The plate 20 is provided with guard flanges 26, 26′ for insuring the engagement of the coin with the ledge 22 as the coin falls out of the lower end of the coin chute 23. The guard flange 26 is inclined toward the opening 24 and acts to deflect the coin through the opening 24 immediately after the coin has struck the ledge 22.

The plate 20 with its connected latch arm 18 is held in normal position against the lower end of a stop plate 10 by means of a spring 27. The upper end of the spring 27 is connected to a bolt 27′ which may be adjusted by means of a nut 27^a to vary the tension on the spring 27 and thus vary the force required to operate the coin plate 20. The stop plate 10 is also adjustably mounted upon the supporting bracket 9 by means of screws 10′ passing through the vertical slot 10^a in the plate. By adjusting this plate the distance through which the latch arm 18 must travel in releasing the contact lever 15 may be varied in adjusting the devices to operate with coins of different weight.

When a coin is introduced into the coin chute 23 it falls down the chute and strikes upon the ledge 22, the blow of the coin causing the latch plate 20 to swing downward against the tension of its spring so that the contact lever 15 is released. When the contact lever is thus released it swings toward the left in Fig. 2 under the action of its spring 19, the lower end of the lever passing above the latch arm 18 so that the plate 20 and latch arm 18 are held in their depressed position. The coin is immediately deflected off of the ledge 22 by means of the guard plate 26 and falls through the opening 24 into the chute 25 by which it is directed into a coin receptacle 28.

When the contact lever 15 swings toward the left it passes between the contact plates 12 thus completing the electric circuit for the motor and starting the motor. The motor will now continue in action until the contact lever 15 is swung toward the right in Fig. 2 to disengage it from contacts 12 when the motor will come to rest.

The motor is connected by means of a belt 29 with a shaft 30 so that the shaft 30 is driven from the motor. This shaft may be connected with the mechanism or devices which it is desired to throw into operation upon the introduction of a coin and which are to remain in operation a definite period of time. The contact lever 15 is operated to disengage it from the contacts 12 and thus arrest the operation of the motor and the mechanism driven thereby after they have been in operation a predetermined time through the action of a timing mechanism operated from the shaft 30. This timing mechanism in the form shown comprises a worm 31 secured to the shaft 30 and engaging a worm wheel 32 which is secured to a vertical shaft. A timing cam 33 is secured to this shaft and is arranged to act upon a roll 34 carried by a yoke or frame 35 which is suspended upon the shaft 30. The roll 34 on the yoke is held in engagement with the timing cam 33 by the weight of the yoke or the parts carried thereby or may be thus held by the action of a spring. One arm of the yoke 35 extends above the shaft 30 and is provided with a rearwardly projecting plate 36. Pivoted to this plate is a latch arm 37 provided near its outer end with a notch or shoulder 38. The latch arm 37 is supported upon a pin 39 and is guided over the pin between the gear surface of the coin chute 23 and a guide strap 40 is secured to the rear side of the coin chute.

When the parts are in normal position with the motor out of action, the roll 34 rides upon the low part of the cam 33 and the latch arm 37 is supported upon the pin 39 in the position indicated in Fig. 2. When the motor is started by the introduction of a coin the cam 33 is rotated and the roll 34 rides on to the high part of the cam thus swinging the upper end of the yoke toward the right in Fig. 2 and carrying the recess 38 in the latch arm 37 to the right of a pin 41 which projects from the upper end of the contact lever 15. As the latch arm 37 is moved into this position the pin 39 enters a recess 42 in the lower edge of the arm so that the recess 38 will engage the pin 41 when the arm 37 moves toward the left. During the time that the roll 34 is riding on the high part of the cam the yoke 35 will remain in fixed position and the motor and parts driven thereby will remain in operation. When the cam has nearly completed a revolution the roller 34 will ride down the incline 43 on the cam so that the upper end of the yoke 35 and the latch arm 37 will move toward the left. During this movement the shoulder or recess 38 acting on the pin 41 will swing the lower end of the contact lever 15 toward the right disengaging it from the contacts 12. This movement of the contact lever will carry its lower end from above the latch arm 18 so that the coin plate 20 and latch arm 18 may swing up into the position indicated in Fig. 2 where the latch arm will act to hold the contact lever out of engagement with the contacts 12. When the motor circuit is thus broken the momentum of the parts will complete the revolution of the timing cam 33 so that the parts will be returned to the position indicated in the drawings. During this movement the inclined surface of the recess 42 in the arm 37 rides over the pin 39 lifting the notch 38 out of engagement with the pin 41.

While we prefer to employ the form and arrangement of devices indicated in the drawings in practicing our invention it will be understood that these forms and arrangements are not essential and that the features of invention may be embodied in various forms and arrangements.

Without attempting to point out in detail the various forms in which the invention may be embodied, what we claim and desire to secure by Letters Patent is:—

1. A coin controlled mechanism comprising, a circuit closer, a latch engaging said closer, a coin plate connected with the latch, a ledge on the plate, a coin chute above the ledge, and a guard plate at one side of the ledge for deflecting the coin off the plate when it strikes the ledge.

2. A coin controlled mechanism comprising a circuit closer, a latch engaging said closer, a yieldingly supported coin plate connected with said latch, a coin chute above the plate, and an adjustable stop for determining the position of the coin plate.

3. A coin controlled mechanism comprising a lever, a spring acting thereon, a latch arm engaging the end of the lever, a coin plate connected thereto, a spring supporting

the coin plate, and an adjustable stop for the coin plate.

4. A coin controlled mechanism comprising a circuit closer, a latch engaging said closer, a coin plate connected with the latch, a motor controlled by the closer, a latch arm provided with means for engaging the closer, means for reciprocating the latch arm from the motor to engage the closer and reset it, and means for disconnecting the latch arm and closer.

5. A coin controlled mechanism comprising a motor, a circuit closer for controlling the operation of the motor, coin controlled devices for operating the closer to start the motor, a swinging frame operated from the motor, devices connecting the frame and closer for operating the closer to stop the motor, and to re-set the coin controlled devices and means for disconnecting the frame and closer.

6. A coin controlled mechanism comprising a motor, a circuit closer for controlling the operation of the motor, coin controlled devices for operating the closer to start the motor, a swinging frame operated from the motor, a latch arm on the frame provided with a shoulder for engaging the closer and operating it to stop the motor, and means for disengaging the shoulder from the closer.

7. A coin controlled mechanism, comprising a lever, a coin operated latch for engaging said lever, a motor controlled by the lever, a frame operated by the motor, a latch arm on the frame provided with a shoulder for engaging the lever, a supporting pin for the latch arm and means on the lever for controlling the engagement of the shoulder with the lever.

In witness whereof, we have hereunto set our hands, this 29th day of October, 1906.

ERNEST F. SYMONDS.
GEORGE W. BRANN.

In the presence of—
PERCY W. F. BEALS,
BENJAMIN F. NASON.