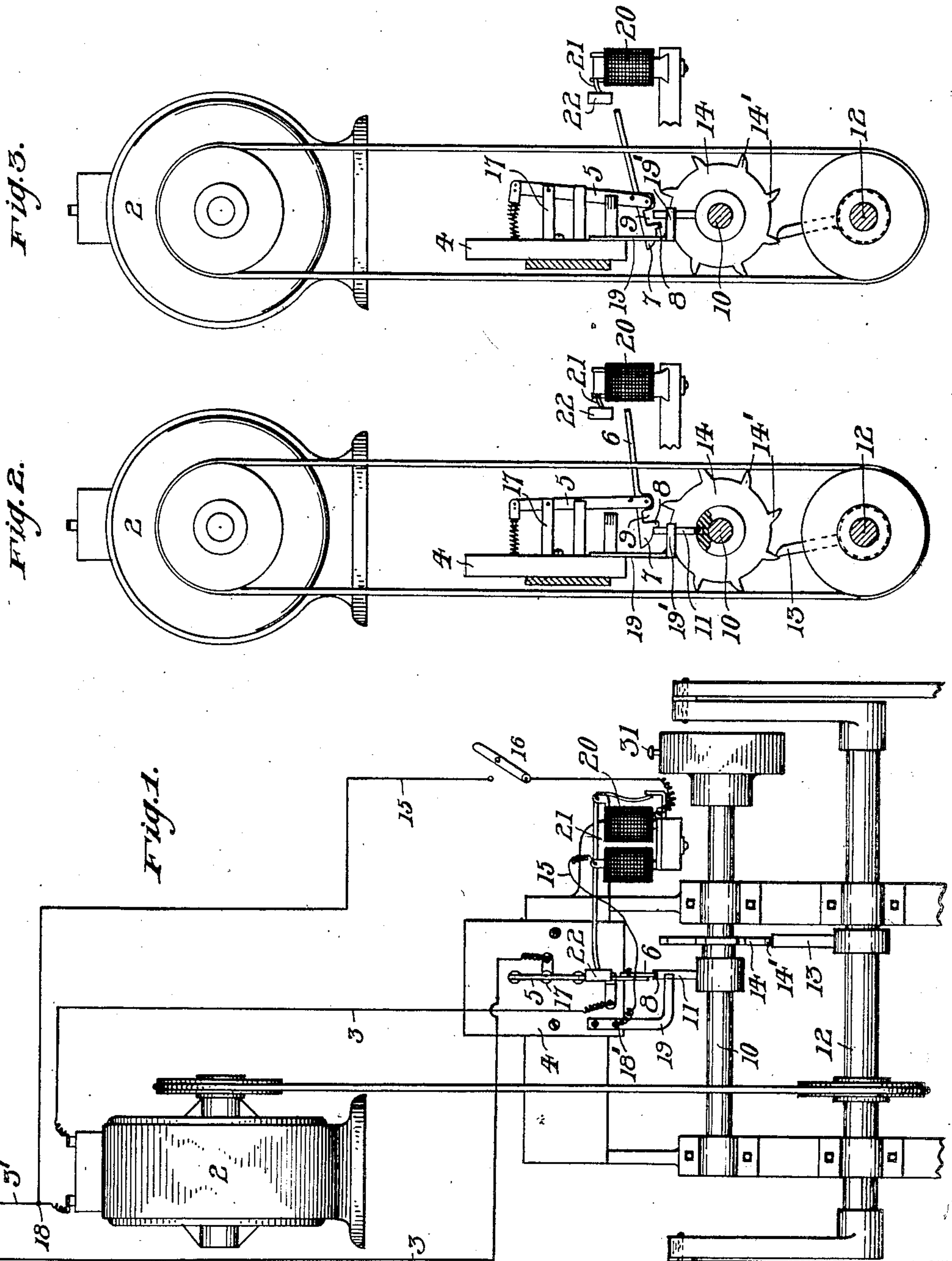


F. MAGIDSON.  
 COIN CONTROLLED APPARATUS.  
 APPLICATION FILED APR. 13, 1908.

919,904.

Patented Apr. 27, 1909.  
 2 SHEETS—SHEET 1.



witnesses:  
*J. P. Applman,*  
*Attn: Richard*

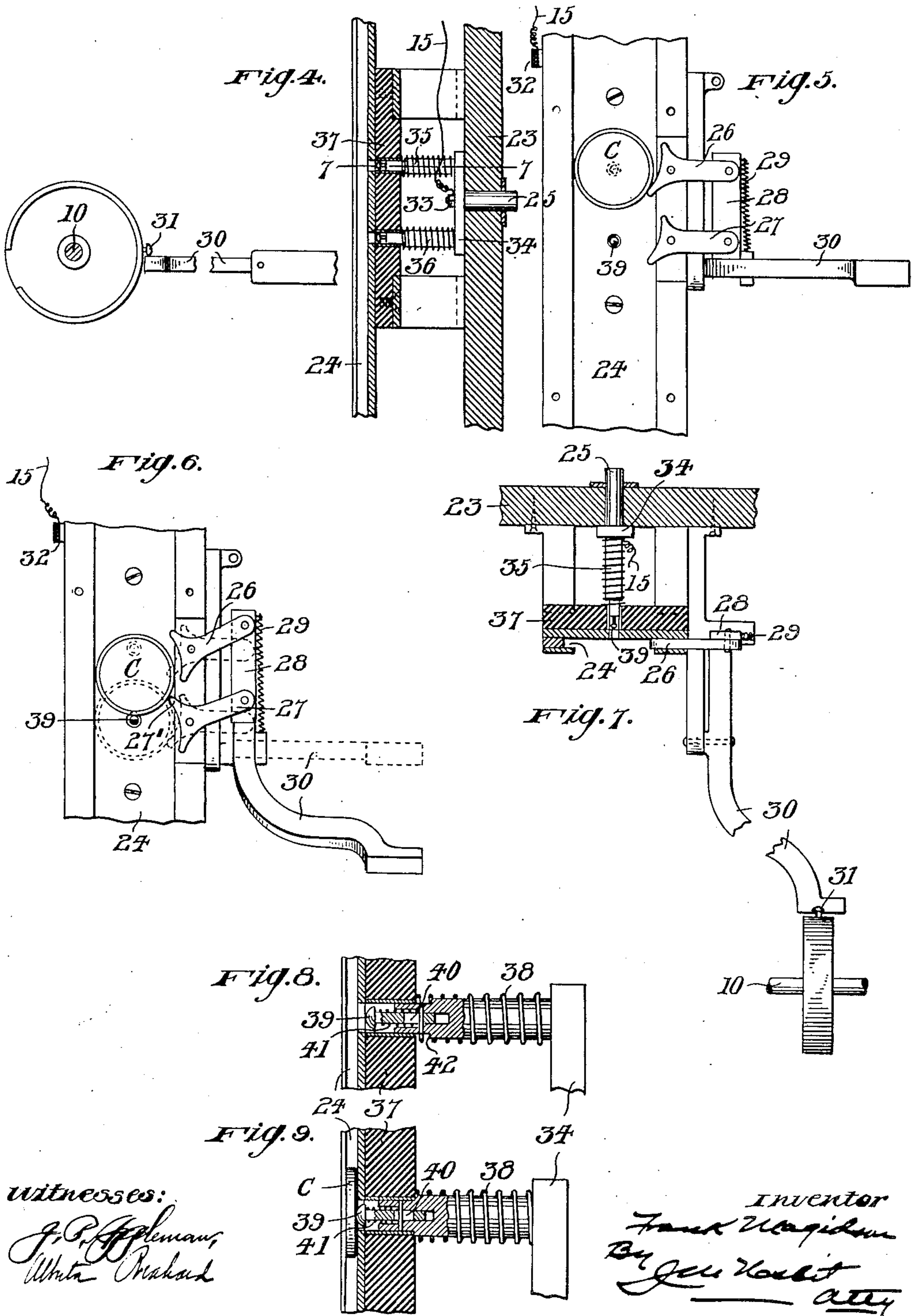
Inventor  
*Frank Magidson*  
*By Lee Kest*  
*att.*

F. MAGIDSON.  
 COIN CONTROLLED APPARATUS.  
 APPLICATION FILED APR. 13, 1908.

919,904.

Patented Apr. 27, 1909.

2 SHEETS—SHEET 2.



Witnesses:  
*J. P. Appleman,*  
*Albert Mahach*

Inventor  
*Frank Magidson*  
 By *J. H. Korb* atty



# UNITED STATES PATENT OFFICE

FRANK MAGIDSON, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO WESTMORELAND  
AUTOMATIC MACHINE COMPANY, OF IRWIN, PENNSYLVANIA, A CORPORATION OF  
PENNSYLVANIA.

## COIN-CONTROLLED APPARATUS.

No. 919,904.

Specification of Letters Patent.

Patented April 27, 1909.

Application filed April 13, 1908. Serial No. 426,835.

*To all whom it may concern:*

Be it known that I, FRANK MAGIDSON, a resident of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Coin-Controlled Apparatus, of which the following is a specification.

This invention relates to that type of electric motor driven mechanism in which the closing of the motor circuit is controlled by a coin or check inserted by the person desiring the service of the mechanism actuated by the motor, and the primary object is to provide an improved and highly efficient means for effecting the closing of the circuit.

A further object is to provide improved means for transmitting motion from the motor to the controlling mechanism for actuating the latter to open the motor circuit and hold it open upon the completion of the service; also to improve the device for closing the motor circuit switch.

Still a further object is to provide an improved push button switch or contact of such form as to insure the positive closing of the starting circuit when the button is pressed.

While the improvement may be employed in various forms of apparatus, it is designed with special reference to the requirements of automatic shoe polishing machines, and for this reason means are provided for securing two operations of the machine from a single coin.

In the accompanying drawings, Figure 1 is an elevation of the improved mechanism, shown partly in diagram. Figs. 2 and 3 are edge views showing, respectively, the motor circuit switch open and closed. Fig. 4 is a section of the push button switch. Figs. 5 and 6 are face views of the coin-holding devices. Fig. 7 is a sectional plan taken on line 7—7 of Fig. 4. Figs 8 and 9 are detail views of the coin contact.

Referring to the drawings, 2 designates the motor and 3 the motor circuit, with switch 4 in the latter having the pivoted spring-closed blade 5. The blade is preferably disposed vertically, and pivoted to its lower end is the vertically oscillating arm 6. The inner end 7 of this arm is of arrow shape and

formed with depending shoulder 8, while behind the shoulder is the upward recess 9 in the under edge of the arm.

10 is a timing shaft intermittently moved by the motor, as will presently be described, and secured to and insulated from the shaft is finger 11. Inner end 7 of arm 6 is normally in the path of this finger, so that the latter advances beneath the arrow-shaped end 7 and engages shoulder 8, and thus moves arm 6 and switch-blade 5 outward, thus opening the switch, and with the power thus shut off, shaft 10 and finger 11 stop in the position shown in Fig. 2 and hold the switch open. Thus, the switch is opened and held open each time shaft 10 makes a complete rotation.

In the mechanism here shown for effecting the intermittent movement of shaft 10, a shaft 12 is geared to and rotated by the motor. Secured to this shaft is finger 13 which engages, successively, the teeth 14' of wheel 14 secured to timing shaft 10, the latter being advanced a certain portion of its intermittent rotation on each complete revolution of shaft 12. The rapidity of this intermittent movement is of course determined by the number of teeth on wheel 14, and thus a complete rotation may be imparted to shaft 10 during either a greater or less number of rotations of finger 13, as the particular form of machine to which the invention is applied may require.

I will now describe the preferred means for closing the switch and starting the motor.

15 designates an auxiliary or starting circuit which by preference is merely a branch of the main circuit. This auxiliary circuit has two interruptions, one adapted to be closed by blade 5 of the motor-circuit switch and the other by a push-button switch mechanism 16, presently to be described. As to the first mentioned interruption, one terminal 18 of the auxiliary circuit is connected to the circuit feed wire 3', and the other terminal 18' is secured to the spring contact 19 which projects into the path of finger 11. Within auxiliary circuit 15 is magnet 20, having its armature 21 provided with a hammer-like extremity 22



positioned over the outer end of pivoted arm 6. When switch-blade 5 is in open position with the motor circuit open, the interruption in the auxiliary circuit is closed through blade 5, arm 6, finger 11, and spring contact 19, the latter being at such time in engagement with and its extremity 19' pressed outwardly by finger 11. Auxiliary circuit 15 is however normally open at the push-button or controlling switch 16. Upon closing the latter, as when the user of the machine is ready for the operation, the circuit is closed. This results in the energizing of magnet 20, and the resulting vertical vibrations of hammer-armature 21 depresses the outer end of latch-arm 6, thereby raising shoulder 8 out of engagement with finger 11 and permitting switch-blade 5 to close under the pressure of its spring, thereby closing the motor circuit and starting the motor. Arm 6 moves inward with the switch blade, with recess 9 over finger 11, as in Fig. 3, thus opening auxiliary circuit 15. Thus, the instant the auxiliary circuit is closed it is automatically opened and the movement which opens it closes the motor circuit. The action is so quick—practically instantaneous—that the magnet coils cannot become injuriously heated. Switch blade 5 remains closed and the motor and motor driven mechanism continue to operate until finger 11 has completed its circular travel, when it engages end 7 of arm 6 and shoulder 8 and moves blade 5 to open position, as above described, thus opening the motor circuit, and at the same time closing the interruption in the auxiliary circuit and placing the parts in position for again starting when the auxiliary circuit is closed by switch 16.

Referring now to the controlling switch mechanism 16, the same is preferably of push-button form which is a convenient type to be operated, although obviously the invention is not limited thereto. In the present adaptation, 23 indicates a portion of casing which incloses the mechanism, and located therein is the coin chute 24 leading to a coin receptacle, not shown. Within and interrupting the coin passage are the coin holders 26 and 27 arranged one beneath the other and pivoted to oscillate vertically, the outer ends of the holders being connected by link 28, with said outer ends held normally depressed and the inner or coin-holding ends raised in coin-stopping position by spring 29. When the coin is inserted its movement is stopped and it is held by holder 26, and while in this position the mechanism is started for the first operation, and at the completion of the latter the holders are oscillated and the coin permitted to drop from holder 26 to holder 27, when its movement is again stopped and it is held until the sec-

ond operation of the machine has been started. Holders 26 and 27 are oscillated by the vertically swinging arm 30, this arm being actuated by the trip device 31 on shaft 10. Fig. 5 illustrates the coin or check C operatively held by the first holder 26, from which position the holders are oscillated to the full line position of Fig. 6, permitting the coin to drop into engagement with the upper extremity 27' of holder 27. And when spring 29 returns the holders to the dotted line position of Fig. 6, the coin rolls down and is held by the lower extremity of the holder, ready for the second circuit-closing operation. Circuit 15 has one terminal connected at 32 with the metallic coin chute 24, while the other terminal 33 of the circuit interruption is connected to switch-head 34 having the push stem 25 exposed through casing 23. The switch is located at one side of the coin passage, and head 34 carries two stems 35 and 36 movable through insulated block 37 toward the coin stopping positions, being held normally out of engagement with the coin by springs 38. At the inner extremity of each of stems 35 and 36 is an independently movable coin contact 39, having a pin and slot connection 40 with the tubular extremity of the stem and held normally projected by spring 41. Each of stems 35 and 36 is shouldered at 42 and engages the face block 37 before the stem extremity can engage the coin, so that the only pressure on the latter emanates from the light spring 41, and such pressure is not sufficient to resist the gravity and rolling action of the coin when holders 26 and 27 are oscillated. If it were possible to push stems 35 and 36 into direct engagement with the coin, the latter would be held and the machine kept running indefinitely by not releasing the push-button.

In operation, the inserted coin is first held by holder 26 opposite contact 35, and when the operator desires the mechanism to start, he merely presses push-button 25 which forces inward stem 35 and engages its contact 39 with the side face of the coin, at the same time pressing the coin against the wall of coin chute 24 to which the starting circuit 15 is connected. Thus, a positive and thoroughly effective closing of the circuit is accomplished, the action being far more certain than though gravity were depended upon for holding the coin in engagement with two contacts, as has been proposed heretofore. Upon the completion of the first operation, as when one shoe has been cleaned and polished, the coin has already been released from its first position and is stopped by holder 27 opposite the lower contact stem 36, and it is only necessary for the operator to again press the button for securing another complete operation of the mechanism, as for cleaning



and polishing the second shoe. During this second operation, the coin holding mechanism is actuated to release the coin and permit it to drop from circuit closing position into a receptacle to which the chute leads.

I claim:—

1. The combination of a motor and motor circuit—the latter having an interruption, an auxiliary circuit having an interruption, a movable member, said member in one position closing the motor circuit interruption and opening the auxiliary circuit interruption and in another position closing the auxiliary circuit interruption and opening the motor circuit interruption, the auxiliary circuit having a second interruption, coin controlled means for closing the said second interruption, and electrically operated means actuated when the auxiliary circuit is closed to move said member into position to close the motor circuit.

2. The combination of a motor and motor circuit, the latter having an interruption, an auxiliary circuit having an interruption, a movable member in one position closing the motor circuit interruption and opening the auxiliary circuit interruption and in another position opening the motor circuit interruption and closing the auxiliary circuit interruption, a spring opposing the movement of said member which opens the motor circuit, means actuated by the motor for moving said member in opposition to the spring and means for holding the member when thus moved, the auxiliary circuit having a second interruption, coin operated means for closing the second interruption, and an electrically operated device actuated when the auxiliary circuit is closed to release said member and permit it to respond to the action of the spring and close the motor circuit.

3. The combination of a motor and motor circuit—the latter having an interruption, an auxiliary circuit having an interruption, a circuit closing mechanism common to the interruptions in said circuits and operating to close the same alternately, a coin-closed interruption in the auxiliary circuit, and means operating when the auxiliary circuit is fully closed to move said circuit-closing mechanism to open the auxiliary circuit and into position for closing the motor circuit.

4. The combination of mechanism to be operated, an electric circuit controlling the same and having coin-bridged terminals, means for holding a coin in engagement with one of the circuit terminals, and means for moving the other terminal into engagement with the coin.

5. The combination of a motor and motor circuit, a spring closed switch-blade for said circuit, an auxiliary circuit having the switch-blade forming a part thereof, mechanism ac-

tuated by the motor including a rotating metallic member, a terminal for the auxiliary circuit adapted to engage said member, a trip-arm pivoted to the switch blade and engaged by said rotating metallic member for opening the motor-circuit switch and at the same time making contact with said auxiliary circuit terminal, a magnet in the auxiliary circuit operating when energized to disengage said pivoted arm from the rotating member and permit the switch blade to close, and a coin-closed interruption for the auxiliary circuit.

6. The combination of a motor and motor circuit, a self closing switch for said circuit, a shaft rotated by the motor, an arm rotated the motor, a toothed wheel on the shaft engaged and moved intermittently by said arm, means actuated by the shaft for opening the switch and for holding it open, an auxiliary circuit, means actuated by the auxiliary circuit for releasing the switch and permitting it to close, and a coin-closed interruption for the auxiliary circuit.

7. The combination of mechanism to be operated, an electric circuit controlling the same, a coin passage interrupting the circuit with one terminal of the interruption connected to said passage, and a laterally movable contact normally out of engagement with the coin and adapted when moved inward to engage the side face thereof, the other terminal of the circuit interruption being connected to said contact.

8. The combination of mechanism to be operated, an electric circuit controlling the same, a coin passage interrupting the circuit with one terminal of the interruption connected to the passage, means for holding the coin within the passage, and push-button mechanism normally out of coin-engaging position but adapted to engage the coin as the latter is held within the coin passage, the other terminal of said circuit being connected to the push-button mechanism.

9. The combination of mechanism to be operated, an electric circuit controlling the same, a coin passage interrupting the circuit with one terminal of the interruption connected to the passage, mechanism for holding the coin in two different positions in the passage, means actuated by the motor for passing the coin from the first to the second position and for finally releasing it from the second position, a push-button device having two contacts normally out of coin-engaging position and adapted successively to engage the coin in its first and second stopped positions, the other terminal of the circuit interruption being connected to the push-button contacts.

10. The combination of mechanism to be operated, an electric circuit controlling the



same, a coin passage interrupting the circuit  
with one terminal of the interruption con-  
nected to the passage, a spring-pressed con-  
tact normally out of coin engaging position,  
5 and a contact carrier movable toward but  
stopping short of coin-engaging position  
but operating to press said contact into en-  
gagement with the coin, the other terminal

of the circuit interruption being connected  
to said contact.

In testimony whereof I affix my signature  
in presence of two witnesses.

FRANK MAGIDSON.

Witnesses:

J. M. NESBIT,  
F. E. GAITHER.