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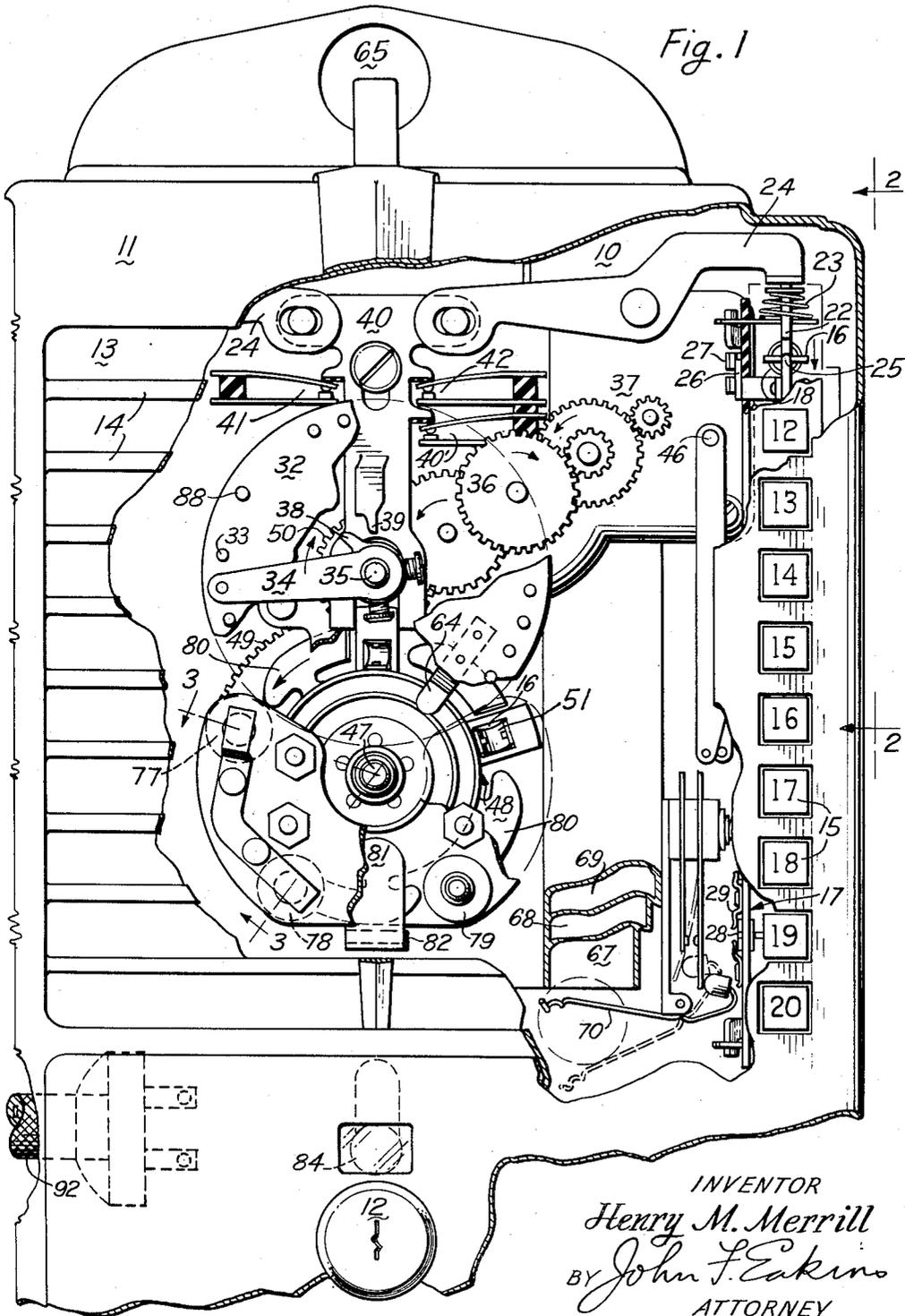
H. M. MERRILL

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COIN CONTROLLED CREDIT MECHANISM

Filed March 22, 1947

4 Sheets-Sheet 1



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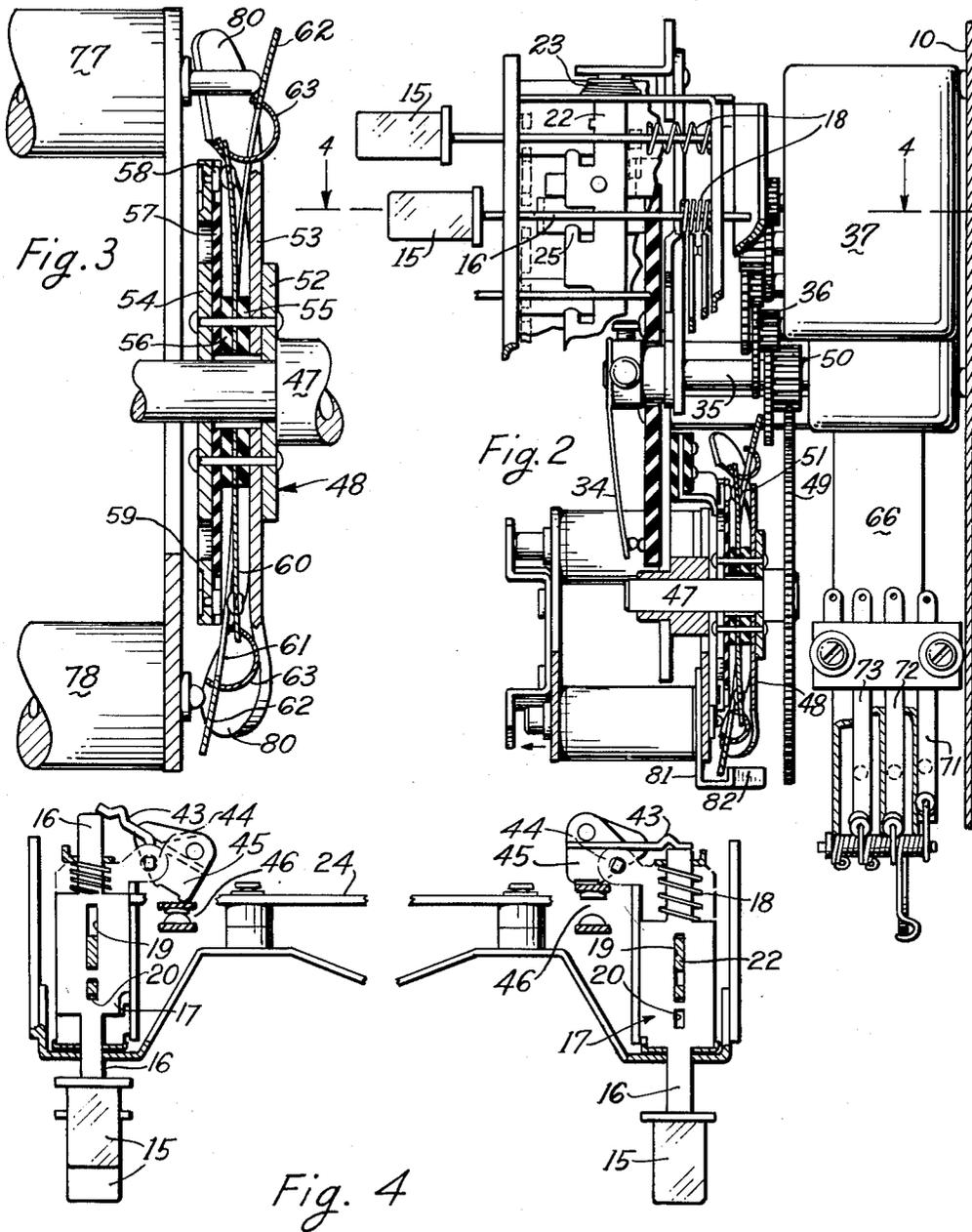
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COIN CONTROLLED CREDIT MECHANISM

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4 Sheets-Sheet 2



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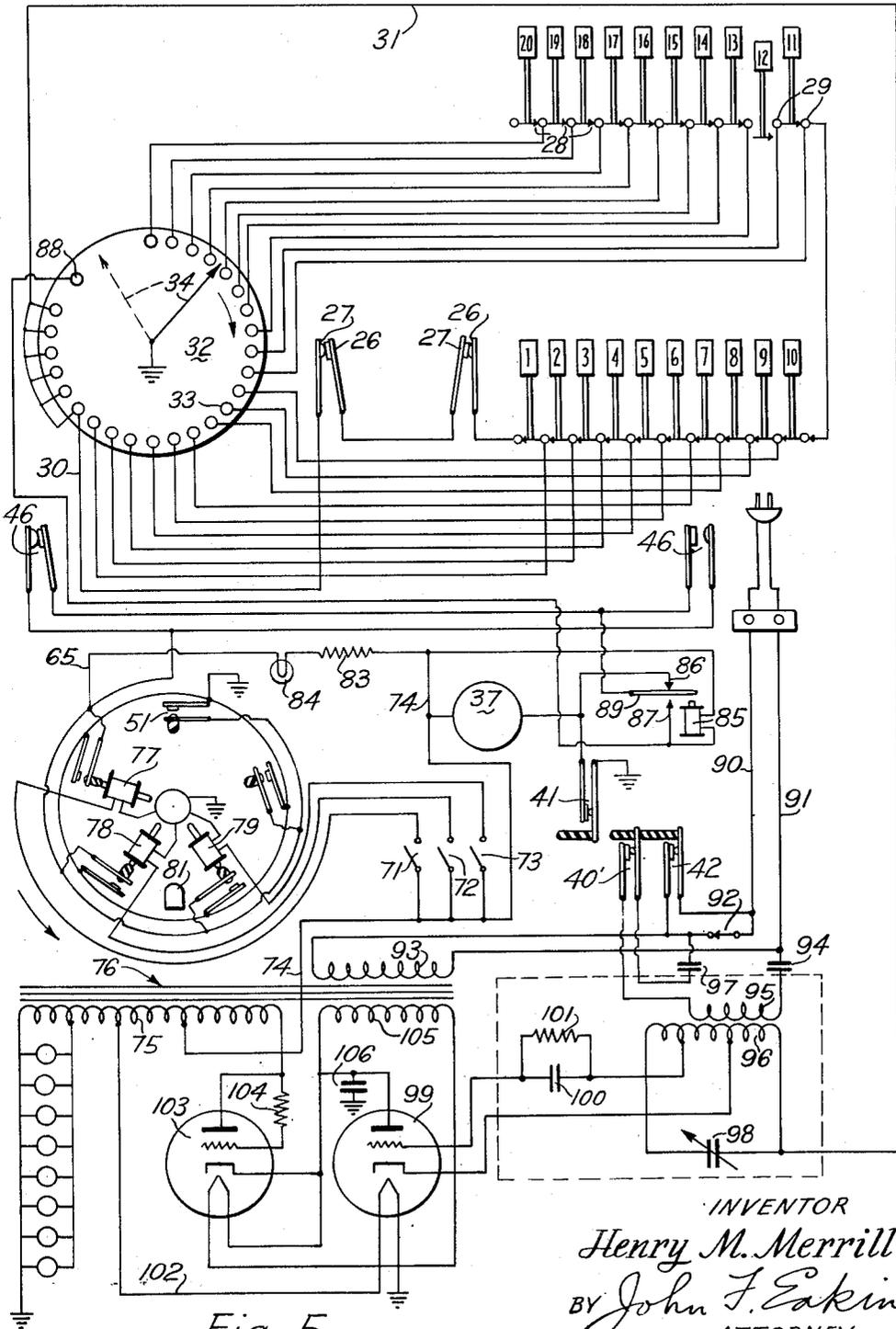


Fig. 5

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# UNITED STATES PATENT OFFICE

2,621,770

## COIN CONTROLLED CREDIT MECHANISM

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Application March 22, 1947, Serial No. 736,446

14 Claims. (Cl. 194—9)

1

This invention relates to a credit mechanism whereby credit may be established by insertion of one or more coins to enable a device to be put into operation a number of times corresponding to the value of the coins inserted in the apparatus.

The credit mechanism most commonly employed in the coin controlled phonograph art employs a ratchet wheel. In its normal position the ratchet wheel opens a control switch. When the coins, for example, a nickel is inserted in the machine it falls down a chute and closes a switch. The closing of this switch energizes an electromagnetic device which steps the ratchet wheel one step from its normal position, allowing the control switch to close. The machine is now put into operation or it is conditioned so that it can be put into operation by the actuation of a selector, for example. If several nickels are inserted the ratchet wheel is stepped away from normal position by a corresponding number of steps. Each operation of the machine, for example to play a record, or each time a selection is made the ratchet wheel is stepped back one step towards its normal position and eventually when the number of operations paid for have been carried out the ratchet wheel is back at its normal position and the control switch is open so that the machine is out of operation until further coins are inserted. Many such machines are arranged to take coins of different denominations, for example, a nickel, a dime and a quarter. A dime closes two switches and the electromagnetic means is energized twice so that the ratchet wheel is moved two steps from its normal position. The quarter closes five switches with the result that the ratchet wheel is moved five steps away from its normal position. Machines of this type are protected by slug rejectors which reject spurious coins and these slug rejectors have a substantial height. Since the quarter must pass through the slug rejector and also down a chute long enough to provide five switches for actuation one after the other, the total height becomes prohibitive for some machines or devices which must be of small dimensions. Thus, for remote control selector boxes for automatic phonographs it is not practicable to provide sufficient height for slug rejector and a chute having five switches which must be operated with sufficient intervals to insure five actuations of the electromagnetic device.

A principal object of the invention is to provide an improved credit mechanism.

2

A further object of the invention is to provide an improved credit mechanism which is small, compact and which does not need to be located in any particular relation to the path of the coins.

Other objects, advantages and capabilities of the invention will appear from the following description of a preferred embodiment thereof illustrated in the accompanying drawings. In these drawings I have disclosed the invention as applied to a remote control selector box for automatic phonographs of generally known type, but it must be understood that the credit mechanism herein described is not intended to be limited to this particular kind of device because it can be advantageously employed in all kinds of mechanisms where a credit mechanism can advantageously be employed. Referring to the drawings,

Figure 1 is a front view of a remote control selector box for automatic phonographs, parts thereof being broken away to disclose mechanism in the interior of the box;

Fig. 2 is a side elevation of the upper right hand portion of the box as viewed on the line 2—2 of Fig. 1, the cover being removed and parts broken away;

Fig. 3 is a sectional detail view taken on the line 3—3 of Fig. 1;

Fig. 4 is a fragmentary plan detail of the switch banks as viewed from above;

Fig. 5 is a wiring diagram;

Fig. 6 is a fragmentary sectional side elevation of a modified form of credit mechanism;

Fig. 7 is a front elevation thereof; and

Fig. 8 is a partial wiring diagram.

Referring to the drawings, the mechanism illustrated therein is a remote control selector box of the general type described and claimed in Patents Nos. 2,388,595, 2,411,612 and 2,378,557. Such remote control selector boxes are rendered operable by a coin or coins and the actuation of one of a plurality of selector buttons each corresponding to an individual recording. The general operation is that a number of impulses are transmitted to the phonograph unit, the number of impulses depending upon which button is actuated.

In the present case the mechanism is supported on a base plate 10 which may suitably be secured to the wall and is enclosed by a cover 11 which is secured to the base plate by means of a lock 12. The front of the box is provided with windows 13 behind which are located a plurality of title strips 14 which are intended

3

to carry the names of the recordings. The selector buttons 15 project forwardly through openings in the cover 11. There are two series of buttons 15, one on each side of the box and these buttons register with the title strips 14.

The buttons 15 are mounted on the outer ends of switch bars 16 which are mounted in two switch banks 17. Each bar is biased outwardly by a spring 18 and is provided with a large opening 19, and a small opening 20. Extending through each switch bank and through the openings 19 is a locking bar 22, the openings 19 being sufficiently large to enable a bar to be displaced inwardly. Each locking bar 22 is biased upwardly by a spring 23 which bears against the upper end of the switch bank and against a washer secured to the upper end of the locking bar. Normally the locking bars are held downwardly out of locking position by means of a lever 24 which engages the top of the locking bar. Each locking bar is provided with a series of tongues 25 which are arranged so as to enter the opening 19 of each unactuated switch bar 16 and into the opening 20 of an actuated bar 16. As will hereinafter be described the locking bars 22 move upwardly immediately after credit has been established by the insertion of a coin or coins and one of the buttons 15 is pressed inwardly. Consequently, the actuated bar 16 is locked in and the other switch bars 16 are locked against actuation until after the impulses are transmitted. Thereafter the locking bars are returned to their normal position by the levers 24. Each locking bar carries an insulated contact 26 which is adapted to engage an insulated contact 27 when the bar is moved upwardly into locking position. Each switch bar 16 carries an insulated contact 28 which normally engages two contacts 29 of which a series is carried by each switch bank. Normally the contacts 28 and 29 are connected in series, the lowermost contact 29 of the left bank being connected to the uppermost contact 29 of the right bank. The uppermost contact 29 of the left bank is connected to the two series switches constituted by the contacts 26 and 27 so that when both locking bars 22 are up the contacts 28 and 29 are connected in series to the line 30 which is connected to the line 31. A stationary disc 32 of insulating material carries an arc of contacts 33 which are adapted to be engaged seriatim by a grounded arm 34. The apparatus illustrated is intended to make twenty selections there being twenty buttons 15. There are twenty-five contacts 33 and the arrangement is such that for selection No. 1 five impulses are transmitted, for selection No. 2 six impulses are transmitted and for selection No. 20 twenty-five impulses are transmitted. Thus, to obtain the playing of any records at least five impulses must be transmitted. The reason this is done is that the impulses are radio frequency signals and the apparatus at the main unit is arranged to be operated only by a regular series of such impulses of at least five in number so that it is unaffected by accidental surges in the line. The second contact 29 of the left hand bank is connected to the nineteenth contact 33, assuming these contacts are numbered in the clockwise direction. The third contact 29 of the left hand bank is connected to the eighteenth contact 33, etc. The lowermost contact 29 of the right hand series is unconnected. The next higher contact 29 of the right hand bank is connected to the first contact 33, etc. The last six contacts 33 are connected to the line 31. It will thus be seen that if button No. 12 is depressed as shown in

4

Fig. 5 the first eight contacts 33 are disconnected from the line 31 and consequently the line 31 is grounded seventeen times when the arm 34 is given one revolution in the manner hereinafter to be described. If the button No. 20 is actuated, twenty-five impulses are transmitted and if the button No. 1 is actuated the line 31 is grounded six times. As will hereinafter be explained each grounding of the line 31 results in the transmission of an impulse.

The arm 34 is carried by a shaft 35 which is driven through a train of gears 36 from a motor 37. The shaft 35 carries a cam 38 which is adapted to contact a projection 39 on a bar 40 which is mounted to slide vertically. The upper end of the bar 40 has pin and slot connections with the levers 24. When the bar 40 is in its lowermost position as shown in Fig. 1 it effects the closing of three normally opened switches 40', 41 and 42. At the end of a revolution of the arm 34 the cam 38 engages the projection 39 and raises the bar 40 so that the levers 24 move the locking bars 22 downwardly into unlocking position and the switches 40', 41 and 42 open terminating the operation of the motor as will hereinafter be described.

Along the back of each switch bank extends a bar 43 which is pivotally mounted in lugs 44 provided at the ends of the banks and arranged to be displaced in the manner shown at the left hand side of Fig. 4 by an actuated bar 16. The bar 43 carries a piece of insulation 45 which engages one leaf of a switch 46 so that this switch is closed when a bar 16 is actuated or locked in actuated position.

Below the shaft 35 is rotatably mounted a shaft 47 which rigidly carries a switch assembly 48. The shaft 47 carries a gear 49 which meshes with a pinion 50 carried by the shaft 35. The gear 49 and the pinion 50 have a five to one ratio since the switch assembly 48 includes five switches. Of course any number of switches could be used in the switch assembly and the gear ratio changed accordingly. In the present instance, the machine is adapted to take nickels, dimes and quarters and five switches in the switch assembly are sufficient for this purpose. The switches 51 on the switch assembly 48 are equally spaced so that each switch 51 is moved from one position to the next position through  $\frac{1}{5}$  of a revolution each time the shaft 35 makes one revolution.

The switch assembly 48 is best seen in Fig. 3. It comprises metal discs 52, 53 and 54, and discs 55, 56 and 57 of insulating material. Each switch 51 comprises a contact 58 carried by the disc 57 and electrically connected to a slip ring 59 also carried by the disc 57. Each switch 51 also comprises a movable pole 60 which is grounded to the shaft 47, this pole being adapted to engage the contact 58 as shown at the top of Fig. 3. The pole 60 is movable within a slot 61 in a surrounding arm 62. The poles 60 and the arms 62 are of spring material and are firmly mounted between the discs 55 and 56. The poles 60 and arms 62 may suitably be stamped out of the same material which is of spider form providing the necessary elements for each of the five switches. The outer end of each pole 60 is connected to the outer end of the arm 62 by means of a horseshoe spring 63. The arrangement is such that when an arm 62 is deflected to the right, as at the top of Fig. 3, the spring 63 snaps the arm 62 to the right and the associated pole 60 to the left. Again when the arm 62 is moved to the left, the associated pole 60 snaps to the right so that

the switch is opened. Thus, I have five snap switches on the switch assembly. The slip ring 59 is engaged by a brush 64 which is connected to a line 65 (Fig. 5).

The machine is provided with an opening 65 for acceptance of coins, for example, dime, nickel and quarter. The coins pass through slug rejector 66 and the accepted coins drop through coin chutes 67, 68 and 69 into a cash box (not shown). Below these coin chutes are provided three arms 70 pivotally mounted and arranged so that one of them is deflected by each coin. Each arm 70 is arranged to close one of the three switches 71, 72 or 73. Thus, the switch 71 is closed by a dime, the switch 72 is closed by a nickel and the switch 73 is closed by a quarter. The switches 71, 72 and 73 are connected to a line 74 which is connected to a suitable point on the secondary 75 of the transformer 76. The switches 71, 72 and 73 are connected to the solenoids 77, 78 and 79, respectively. The solenoids 77, 78 and 79 are located so that they register with three of the switches 51 in the normal position of the switch assembly 48. Consequently, when one of the solenoids, for example, solenoid 77, is energized the registering switch 51 is closed as shown in Fig. 3. The disc 53 is provided with vanes 80 which are located between adjacent switches 51 and are bent into position to serve as cams for the return of the armatures of the solenoids 77, 78 and 79. Consequently, when one of the solenoids has closed switch 51, the switch assembly is driven in the counterclockwise direction as viewed in Figure 1 and the actuated armature is promptly returned to its normal position. Each closed switch 51 is opened by a stationary cam 81 which provides an inclined flange 82 which engages the arm 62 associated with a closed switch and snaps the switch into open position. Since the present machine is intended for establishing credit for one, two or five selecting operations, the cam member 81 is located somewhat less than one, two and five switch spacings from the solenoids 78, 77 and 79, respectively. Thus, when a nickel is inserted, the solenoid 78 is energized and when the operator makes one selection, the shaft 35 is given one rotation and the switch assembly 48 moves  $\frac{1}{5}$  of a revolution in the counterclockwise direction as viewed in Figure 1 and the closed switch is opened. Carryover switch means insures the drive of the arm 34 for a complete revolution and the drive terminates with the switch assembly 48 in normal position with three of its switches 51 in alignment with the solenoids 77, 78 and 79. The insertion of a dime energizes the solenoid 77 and permits two selecting operations. At the end of the first selecting operation, the closed switch 51 has not reached the cam member 81. The second selecting operation opens the closed switch 51 and the switch assembly 48 is driven until the machine is again stopped in its normal condition. When a quarter is inserted, the solenoid 79 is energized and five selections can be made before the machine is again brought to normal condition. The line 74 is connected through a suitable resistor 83 and signal lamp 84 to the line 65. Consequently, when any of the switches 51 is closed the signal lamp 84 is illuminated so that the user is informed that he has credit established on the machine. When this credit is exhausted by making selections, the lamp 84 goes out. The line 74 is connected to one side of the motor 37 and to one side of an electromagnet 85. The other side of the motor 37 is connected to the ungrounded side

of the carryover switch 41 and to a contact 86. The other side of the electromagnet 85 is connected to contact 87 and to a contact 88 on the disc 32 arranged to be engaged by the grounded arm 34 after it has passed over the contacts 33 and is approaching the end of its complete revolution. The electromagnet 85 controls an armature 89 which is normally in engagement with the contact 86. When the electromagnet 85 is energized the armature 89 moves into engagement with the contact 87 and out of engagement with the contact 86. The armature 89 is connected to one side of each of the switches 46. The other sides of these switches is connected to the line 65 and consequently, to the ungrounded sides of the switches 51.

When one of the switches 51 is closed by the insertion of a coin, the lamp 84 becomes illuminated. When one of the buttons 15 is depressed one of the switches 46 is closed. The motor is now driven owing to the completion of the circuit 74, motor 37, contact 86, armature 89, the closed switch 46 and the closed switch 51. The initial movement of the shaft 35 disengages the cam 38 from the projection 39 so that the member 40 moves downwardly closing the carryover switch 41 and the switches 40' and 42. The downward movement of the member 40 permits the locking bars 22 to move upwardly locking the actuated button 15 in and preventing actuation of the other buttons. In the event that the operator tries to cheat the machine by blocking the movement of either locking bar by a partial return of the button 15, no impulses will be transmitted because holding either of the locking bars prevents engagement between one contact 26 with the other contact 27. The closing of the carryover switch 41 insures the drive of the arm 34 through a complete revolution. Near the end of this complete revolution the arm 34 engages the contact 88 and energizes the electromagnet 85. The armature 89 engages the contact 87 and the electromagnet 85 remains energized as long as one of the switches 46 and one of the switches 51 remains closed. At the end of a complete revolution of the arm 34 the switch 41 is opened and the motor 37 stops. This arrangement prevents a careless operator from dissipating his credit by holding in a button and transmitting the same signal repeatedly, in which case he would obtain only one play instead of several to which his credit entitles him. If the operator does hold in a button after it would normally be released by the return of the locking bars 22, the electromagnet 85 is maintained energized and the motor 37 cannot be started again until after the operator releases the displaced button 15 whereupon the opening of the switch 46 deenergizes the electromagnet 85 and establishes the engagement between the contacts 86 and 89 which is necessary for starting the motor 37.

The machine is energized by power lines 90 and 91. The power line 90 is connected to one side of the switch 42 and to a key operated switch 92 whereby the machine may be turned on or off. The power line 91 is connected to one side of the primary 93 of the transformer 76 and through a by-pass condenser 94 to a coil 95 which is coupled to an oscillator coil 96. The other side of the coil 95 is connected to one side of the switch 40'. The other side of the switch 92 is connected to the other side of the primary 93 to the other side of the switch 42 and through a by-pass condenser 97 to the other side of the switch 40'. The oscillator coil 96 is tuned to de-

7

sired radio frequency by means of a condenser 98. The tank circuit constituted by the coil 96 and condenser 98 is connected to the line 31. The oscillator tube 99 may suitably be a triode. Its cathode is connected to a tap on the coil 96. Its grid is connected through a by-pass condenser 100 and a parallel resistor 101 to another tap on the coil 96. Its heater is energized by a line 102 which is connected to a tap on the secondary 75, its other side being grounded. A rectifier 103 provides plate voltage for the oscillator tube 99. The plate of the rectifier 103 is connected to the ungrounded side of the secondary 75 and is connected to the grid of the tube 103 through a limiting resistor 104. The heater of the tube 103 is energized by a secondary 105 of the transformer 76. The cathode of the tube 103 and the plate of the tube 99 are connected to one side of the winding 105 and this side is connected to ground through a by-pass condenser 106. It will readily be understood that when the arm 34 passes over the contact 23 which is connected to the line 31, the tank circuit is grounded so that the oscillator operates to transmit a radio frequency signal over the lines 90 and 91. Once a transmitting cycle has been initiated the transmission cannot be interfered with by opening and closing the switch 52. If the switch 52 were opened during a transmitting cycle the machine remains energized since the switch 42 is closed. Furthermore, the train of radio frequency impulses cannot be interrupted by opening the switch 52 since the transmitting circuit is completed through line 91, condenser 94, coil 95, closed switch 40', condenser 97, closed switch 42 and line 90.

In Figs. 6, 7 and 8 I have disclosed a further embodiment of my invention in which I utilize displaceable members 107 on an assembly 48' which takes the place of the switch assembly in the previously described embodiment. The members 107 are pivotally mounted on the assembly 48' and springs 108 hold them in normal or actuated position. The normal position of one of the members 107 is illustrated in phantom at the upper part of Fig. 6. The members 107 are normally located relative to the solenoids 77, 78 and 79 similarly to the location of the switches 51 in the previously described embodiment. Consequently, when one of the solenoids, 78 for example, is energized, the registering member 107 is displaced into actuated position as shown in full lines in the upper part of Fig. 6. The armatures of the solenoids may be returned to normal position by springs 109. The displaced member 107 is returned by a cam 109 during the first, second or fifth selecting operation depending upon which of the solenoids 78, 77 or 79, respectively, have been energized by the insertion of a coin. Before the cam 109 returns the displaced member 107, this member opens a switch 110 which is located out of the path of unactuated members 107. A single switch 51' takes the place of the plurality of parallel switches 51 in the previously described embodiment. One side of the switch 51' is grounded and the other side is connected to the line 65. The switch 51' and a holding switch 111 are controlled by a relay 112. One side of the relay is connected to the line 74. Its other side is connected to the coin switches 71, 72 and 73 and also to one side of the holding switch 111. The other side of the holding switch 111 is connected to one side of the switch 110, the other side of which is grounded. A resistor 113 is located in series with the switch 110 to limit the holding current to desired degree.

If a quarter is inserted, the switch 73 is momen-

8

tarily closed energizing the solenoid 79 so that the aligned displaceable member 107 is displaced, and the relay 112 is energized closing switches 51' and 111. The relay 112 is locked in through the circuit 74, relay 112, holding switch 111 and the closed switch 110. Selections may now be made and as each impulsing circuit occurs the actuated member 107 moves one member space in the counterclockwise direction as viewed in Figs. 7 and 8. During the transmission of the impulses corresponding to the fifth selection the displaced member opens the switch 110 deenergizing the relay 112. The train of signals continues since the motor operates until it opens the carryover switch 41. After the switch 110 has been opened the displaced member 107 is returned to its normal position by the cam 109 and the machine remains out of operation until another coin has been inserted.

It will be noted that in both cases I have provided an improved credit mechanism which permits a number of operations of the machine depending upon the denomination of the coin which has been inserted.

My improved credit mechanism is described and claimed in relation to a dispensing machine in my pending application, Serial No. 736,501, filed of even date.

Although the invention has been described in connection with the specific details of a preferred embodiment thereof, it must be understood that such details are not intended to be limitative of the invention except so far as set forth in the accompanying claims.

Having thus described my invention, I declare that what I claim is:

1. A credit mechanism for a manually controlled mechanism, comprising a rotary assembly having a series of equally spaced displaceable members, a relay rendering, when energized, the controlled mechanism operative, coin-controlled means for displacing a displaceable member and energizing said relay, means operatively connected to said controlled mechanism for moving said assembly as the mechanism is operated, and means actuated by a displaced member for deenergizing said relay, the last mentioned means and the displacing means being displaced to determine the amount of credit established.

2. In combination, a manually controlled mechanism, a rotary assembly having a series of equally spaced displaceable members, switch means rendering, when closed, the controlled mechanism operative, a plurality of electromagnetic means, each arranged to displace one of said displaceable members, a plurality of coin actuated means, each arranged to close said switch means and energize a corresponding displacing means, means operatively connected to said controlled mechanism for moving said assembly as the mechanism is operated, and means cooperating with a displaced member for opening said switch means, each of said displacing means being displaced from the last mentioned means by a different distance to establish corresponding various amounts of credit.

3. In combination, a manually controlled mechanism, an assembly of equally spaced normally open snap switches, each switch, when closed, rendering said controlled mechanism operative, a plurality of electromagnetic means, each arranged to displace one of said switches to closed position, a plurality of coin actuated means, each arranged to energize a correspond-

75

connected to said controlled mechanism for moving said assembly as the mechanism is operated, and means for returning a closed switch to open position, each of said electromagnetic means being displaced from the last mentioned means by a different distance to establish corresponding various amounts of credit.

4. A credit mechanism for a manually controlled mechanism, comprising a rotary assembly having a series of equally spaced displaceable members, a relay having a switch rendering, when the relay is energized, the controlled mechanism operative, a plurality of electromagnetic means, each arranged to displace a corresponding displaceable member, a plurality of coin actuated means, each arranged to energize said relay and a corresponding electromagnetic means, means operatively connected to said controlled mechanism for moving said assembly as the mechanism is operated, and means actuated by a displaced member for de-energizing said relay, each of said electromagnetic means being displaced from the last mentioned means by a different distance to establish corresponding amounts of credit.

5. In combination, a mechanism, arranged to perform automatic operations, manually actuable means for initiating each operation, and a credit mechanism comprising a rotary assembly having a series of equally spaced displaceable members, a relay rendering, when energized, the first mentioned mechanism operative by actuation of said manually actuable means, coin-controlled means for displacing a displaceable member and energizing said relay, means operatively connected to the first mentioned mechanism for moving said assembly each time the first mentioned mechanism is operated, and means actuated by a displaced member for de-energizing said relay, the last mentioned means and the displacing means being displaced to determine the number of operations for the first mentioned mechanism.

6. In combination, a mechanism, arranged to perform automatic operations, manually actuable means for initiating each operation, and a credit mechanism comprising a rotary assembly having a series of equally spaced displaceable members, switch means rendering, when closed, the first mentioned mechanism operative by actuation of said manually actuable means, a plurality of electromagnetic means, each arranged to displace one of said displaceable members, a plurality of coin actuated means, each arranged to close said switch means and energize a corresponding displacing means, means operatively connected to the first mentioned mechanism for moving said assembly each time the first mentioned mechanism is operated, and means cooperating with a displaced member for opening said switch means, each of said electromagnetic means being displaced from the last mentioned means by a different distance to establish a definite individual number of operations for the first mentioned mechanism for each electromagnetic means.

7. In combination, a mechanism, arranged to perform automatic operations, manually actuable means for initiating each operation, and a credit mechanism comprising a rotary assembly having a series of equally spaced switches, each arranged, when closed, to render the first mentioned mechanism operative by actuation of said manually actuable means, a plurality of electromagnetic means, each arranged to displace one of said switches to closed position, a plurality of coin actuated means each arranged to energize a

corresponding electromagnetic means, means operatively connected to the first mentioned mechanism for moving said assembly each time the first mentioned mechanism is operated, and means for returning a closed switch to open position, each electromagnetic means being displaced from the last mentioned means by a different distance to establish a definite individual number of operations for the first mentioned mechanism for each electromagnetic means.

8. In combination, a mechanism, arranged to perform automatic operations, manually actuable means for initiating each operation, and a credit mechanism comprising a rotary assembly having a series of equally spaced displaceable members, a relay having a switch rendering, when the relay is energized, the first mentioned mechanism operative by said manually actuable means, a plurality of electromagnetic means, each arranged to displace a corresponding displaceable member, a plurality of coin actuated means, each arranged to energize said relay and a corresponding electromagnetic means, means operatively connected to the first mentioned mechanism for moving said assembly each time the first mentioned mechanism is operated, and means actuated by a displaced member for de-energizing said relay, each of said electromagnetic means being displaced from the last mentioned means by a different distance to establish a definite individual number of operations for the first mentioned mechanism for each electromagnetic means.

9. A selector for automatic phonographs, comprising a plurality of manually operable selector elements adapted to control a plurality of individual selector circuits corresponding to individual recordings, and a credit mechanism comprising a rotary assembly having a series of equally spaced displaceable members, means normally maintaining said circuits unresponsive to said selector elements, coin-controlled means for displacing one of said members and rendering said circuits responsive to said selector elements, means controlled by each selecting operation for moving said assembly stepwise, and means cooperating with a displaced member for rendering said circuits unresponsive to said selector elements, the last mentioned means being displaced from the displacing means by a distance which ensures a definite number of selecting operations.

10. A selector for automatic phonographs, comprising a plurality of manually operable selector elements adapted to control a plurality of individual selector circuits corresponding to individual recordings, and a credit mechanism comprising a rotary assembly having a series of equally spaced switches, each arranged, when closed, to render said circuits responsive to said selector elements, coin controlled means for closing one of said switches to establish credit, means controlled by each selecting operation for moving said assembly stepwise, and means for opening a closed switch, said switch opening means being displaced from said switch closing means by a distance which ensures a definite number of selecting operations.

11. A selector for automatic phonographs, comprising a plurality of manually operable selector elements adapted to control a plurality of individual selector circuits corresponding to individual recordings, and a credit mechanism comprising a rotary assembly having a series of equally spaced displaceable members, a relay, rendering, when energized, said circuits effective,

11

means for displacing a displaceable member and energizing said relay, means controlled by each selecting operation for moving said assembly, and means actuated by a displaced member for de-energizing said relay, the last mentioned means and the displacing means being displaced by a distance which ensures a definite number of selecting operations.

12. A selector for automatic phonographs comprising a plurality of manually operable selector elements adapted to control a plurality of individual selector circuits corresponding to individual recordings, and a credit mechanism comprising a rotary assembly having a series of equally spaced displaceable members, switch means rendering, when closed, said circuits effective, a plurality of electromagnetic means, each arranged to displace one of said displaceable members, a plurality of coin actuated means, each arranged to close said switch means and energize a corresponding displacing means, means controlled by each selecting operation for moving said assembly, and means cooperating with a displaced member for opening said switch means, each displacing means being displaced from the last mentioned means by a different distance to establish a definite individual number of selecting operations for each displacing means.

13. A selector for automatic phonographs comprising a plurality of manually operable selector elements adapted to control a plurality of individual selector circuits corresponding to individual recordings, and a credit mechanism comprising a rotary assembly having a series of equally spaced switches, each arranged, when closed, to render said circuits responsive to said selector elements, a plurality of electromagnetic means, each arranged to displace one of said switches to closed position, a plurality of coin actuated means, each arranged to energize a corresponding electromagnetic means, means

12

controlled by each selecting operation for moving said assembly stepwise, and means for returning a closed switch to open position, each electromagnetic means being displaced from the last mentioned means by a different distance to establish a definite individual number of selecting operations for each electromagnetic means.

14. A selector for automatic phonographs, comprising a plurality of manually operable selector elements adapted to control a plurality of individual selector circuits, corresponding to individual recordings, and a credit mechanism comprising a rotary assembly having a series of equally spaced displaceable members, a relay having a switch, rendering, when the relay is energized, to render said circuits effective, a plurality of electromagnetic means, each arranged to displace a corresponding displaceable member, a plurality of coin actuated means, each arranged to energize said relay and a corresponding electromagnetic means, means controlled by each selecting operation for moving said assembly, and means actuated by a displaced member for de-energizing said relay, each of said electromagnetic means being displaced from the last mentioned means by a different distance to establish a definite individual number of selecting operations for each electromagnetic means.

HENRY M. MERRILL.

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