TOKEN CONTROLLED CIRCUIT FOR MACHINE ACTUATION SYSTEM

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ABSTRACT

The actuation system disclosed is operable for verifying authenticity of a token and conditioning the control circuit of a machine for selective energization by the operator. Verification of the token includes checking of the size, conductivity, and heat deformability characteristics of the token. Actual energization of the machine is effected by an operator-actuated switch.

8 Claims, 5 Drawing Figures
3,710,910

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CROSS REFERENCE TO RELATED APPLICATION

This application is a continuation of Ser. No. 801,325 filed Feb. 24, 1969, now abandoned.

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to token-actuated machines and more particularly to an actuation system including use of a token for conditioning a machine for subsequent selective energization by the operator.

2. Description of the Prior Art

Prior art U.S. Pat. Nos. 3,136,402 and 3,165,187 issued to T. R. Smith and assigned to the assignee of the instant invention disclose control systems including use of a token for effecting actual energization ad initiating operation of a machine. U.S. Pat. No. 3,165,187, for example, discloses a circuit in which the machine is actuated responsive to a heat deformation of the token. In the systems disclosed in these patents, the control of the machine is removed from the operator upon insertion of the valid token.

SUMMARY OF THE INVENTION

It is an object of the instant invention to provide a token actuation system having increased flexibility for permitting the operator to control actual energization of the controlled machine.

It is a further object of the instant invention to provide a token actuation system including selective manual energization of the controlled machine subsequent to the verification of the token.

It is a still further object of the instant invention to provide a token actuation system including a holding circuit responsive to insertion of a valid token and manual operation by an operator for effecting energization of the controlled machine.

The instant invention achieves these objects in a token actuation system operable for checking the token characteristics and conditioning the machine control circuit for selective manually initiated energization by the operator.

Operation of the device and further objects and advantages thereof will become evident as the description proceeds and from an examination of the accompanying two pages of drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

The drawings illustrate a preferred embodiment of the invention with similar numerals referring to similar parts throughout the several views, wherein:

FIG. 1 is an enlarged longitudinal section view of the token receiver and inserted token as taken substantially along lines 1—1 of Fig. 2;

FIG. 2 is a bottom view of the token receiver of FIG. 1 with a fragmentary portion of the heater lamp shown;

FIG. 3 is an enlarged plan view of a token for use with the receiver shown in FIG. 1;

FIG. 4 is a schematic electrical circuit including the actuation circuit of the instant invention; and

FIG. 5 is a schematic electrical circuit embodying an alternate actuation circuit based on the instant invention.

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DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the accompanying drawings, there is illustrated in FIGS. 1 and 2 a token receiver assembly 10 including a front plate 11, a top wall 13 having a printed circuit on its lower face, and a bottom wall 14 spaced from the top wall 13 by a contact retainer 15. The top wall 13 and contact retainer 15 are formed of a non-conductive material and are held together in sandwich form with the bottom wall 14 by a plurality of screws 16. This sandwich assembly is attached to the front plate 11 at the downwardly extending front flange 19 of the bottom wall 14 by a pair of screws 20. The front plate 11 is formed with a semispherical recess 21 and a slot 23 to facilitate insertion of a token 24 into the space between the contact retainer 15 and bottom wall 14. The front plate 11 is also formed with studs 25 to facilitate attachment of the token receiver assembly 10 to a panel (not shown) of the controlled machine.

 Though not shown in FIG. 1, the token receiver assembly 10 of the preferred embodiment as shown in FIG. 2 includes a heater lamp 26 attached to the lower side of the bottom wall 14. The heater lamp 26, shown partially in phantom outlines, is positioned below the bottom wall 14 and partially enclosed by a reflector shield 29. The heater lamp 26 is secured to the bottom wall 14 by insertion of its base into a socket 30 attached to the bottom wall 14 by a bracket 31. The heater lamp 26 is useful in the actuation circuit as will be more fully shown hereinafter.

 Referring to FIG. 1, a bracket 33 is mounted on the top wall 13 and attached with screws 34. Formed in the bracket is a sloping clutch ramp 35 which in conjunction with a spring 36, extending through a narrow slot 39, and roller 40 provides a one-way clutch for engaging the inserted token 24 and preventing removal thereof.

 As also shown in FIG. 1, the contact retainer 15 is formed with several holes 41 to accommodate an electrically conductive spring 43 and ball 44 which cooperate to function as an electrical contact 45 engageable between the printed circuit of the top wall 13 and the inserted token 24. In a preferred embodiment of the invention, nine identical contacts 45 are provided but this number may be greater or smaller. The top wall 13 is also provided with means at the rear end 49 of the top wall for receiving electrical connectors (not shown) to connect the circuitry of the top wall, and in turn each of the contacts 45, with the control circuit. The token 24 in turn contains an electrically conductive printed circuit on its surface for completing a circuit between selected contacts. A circuit gay be completed from an electrical terminal connected to the top wall 13, through the printed circuit of the top wall 13, through the contact spring 43 and contact ball 44, and through the circuit on the surface of the token 24.

 Mounted on the bracket 33 of the token receiver assembly 10 is a single pole, double throw switch 50. The switch 50 is actuated by a pivotal arm 51 which extends downwardly through an opening in the sandwich assembly. The pivotal arm 51 terminates at its lower extremity in a finger 53 which is abutted by an inserted token 24 so as to move the arm 51 to close the normally open contacts of the switch 50.
This token receiver assembly 10 is similar to the device shown in U.S. Pat. No. 3,165,187 issued Jan. 12, 1965 to T. R. Smith and assigned to the assignee of the instant invention. Reference may be had to that patent for further description of the construction and operation of the ticket receiver assembly.

Referring now to FIG. 3, there is shown the token 24 having on at least one face thereof electrically conductive material in a prearranged pattern and shown as the darker areas 54 in FIG. 3. The token 24 may be in the form of a ticket or card base member with the electrically conductive material 54 arranged so as to be engaged by at least some of the contacts 45. The electrical contacts 45 complete an electrical circuit through the conductive portion 54 on the face of the token 24 to perform a step in the actuation of the device and for this reason the conductive material 54 is in a pattern related to the arrangement of the electrical contacts 45. As previously indicated, the preferred embodiment of the invention utilizes nine contacts 45 which are arranged to engage the token 24 at the contact points 60 through 68 indicated by broken lines on the token in FIG. 3. Thus it is seen that an electrical circuit may be completed between contact points 60-61 or 62-64.
The circuit may also be arranged by bussing or jumpers in the ticket receiver assembly 10 so that the circuit must be completed through both of the conductive portions engaged by the two pairs of contacts at contact points 60-61 and 62-64.

In order to render more difficult counterfeit duplications of the token and its pattern of electrically conductive material, the face of the token may additionally contain non-conductive printed material which is shown by the lighter shaded areas in FIG. 3. The non-conductive material has an appearance substantially indistinguishable from the conductive material on an authentic token but is shown with lighter shading then the conductive material in FIG. 3 for purposes of explanation. The conductive and non-conductive patterns may be arranged in various designs to disguise and conceal the location of the electrically conductive material.

The actuating circuit, as will be more fully described hereinafter, requires that selected ones of the contacts 45, which shall be called operating contacts, engage the token 24 at preselected locations on the electrically conductive material 54 to complete a circuit therethrough and also requires that selected others of the contacts 45, which shall be called discharging contacts, engage the token 24 at locations which are not electrically connected to any of the operating contacts.

In this embodiment, the camouflaging non-conductive material 70 on the surface of the token 24 is engaged by selected discharging contacts at contact points 63, 65, 66, 67, 68 in FIG. 3, but it is also pointed out that these discharging contacts could engage the token base member directly if it is of electrically non-conductive material.

The base sheet of the token is preferably disposable so that it can be invalidated in the preferred embodiment circuit. For this purpose, it is made of a heat deformable material such as a thermoplastic having a plasticizing temperature in a range which permits it to be readily deformed by a heating element. Additional benefits and advantages may be secured with the use of a biaxially oriented thermoplastic which will tend to shrink and contract as with a plastic memory rather than sag or flow as some thermoplastics. These deformation characteristics, under controlled conditions, permit the heat distortion of a token 24 within the token receiver assembly 10 without the danger of jamming and therefore permit the use of the heat distortion for performing a function in the actuation of the device to secure an additional verification of the authenticity of the token.

To facilitate localized heating of the token 24 by the heater lamp 26, the bottom wall 14 is formed with openings 71 and 73 which allow more rapid absorption of heat from the heater lamp 26 on selected portions of the token 24. The token is further prided with heat absorbing material 74 in localized areas, and exposed to the lamp 26 at openings 71 and 73, to facilitate more rapid heat absorption by the base sheet of the token.

Thus when the heat 26 is energized, the token 24, when formed of a heat deformable material such as biaxially oriented thermoplastic, will be rendered plastic and will tend to shrink and contract.

The controlled deformation characteristics of the material for the base sheet of the token 24 are utilized in conjunction with the heater lamp 26 as an additional verification of the authenticity of the token in the preferred embodiment. This verification is accomplished by requiring that the token deform or shrink a predetermined amount at the point of abutment of the finger 53 of the spring-loaded switch 50 before the device may be actuated. This shrinkage is characterized by the tendency of the thermoplastic to pull inwardly at the edge of the original token base member at the localized areas juxtaposed to the openings 71, 73 in the bottom wall. This pulling away at the edge tends to form an indentation in the token 24 as shown by the broken line 75 in FIG. 2 and FIG. 3. This initial invalidating deformation allows the finger 53 of the pivot arm 51 to return to its normal spring-loaded position and thus allows the switch 50 to complete an electrical circuit for performing a step in the actuation of the machine.

Additional deformation may be accomplished by further energization of the heater 26 to deform the token to the extent that it cannot be reinserted into the receiver assembly 10.

Referring now to FIG. 4, a preferred embodiment of the invention will be described in connection with the energization and control of an automatic washing machine.

The circuit is supplied with 110 volt 60 cycle alternating current between lines 80 and 81. The machine control circuit includes a plurality of sequentially-operated timer or program control switches 83 through 87 shown in FIG. 4 as pairs of contacts and sequentially operable between open and closed positions under control of a timing motor 89 and which will be referred to as timer switches 83 through 87. The machine control circuit further includes a water level control in the form of a pressure responsive switch 90 operable between first and second contacts 91 and 93. Operation of the switch 90 to the "empty" contact 91 completes a circuit to a water valve coil 94 through the timer switch 86. The washing machine circuit also includes a drive motor 95 selectively energized under control of the timer switch 85 shown in the open condition in FIG. 4.
The token switch 50 is responsive to the insertion of the token 24 and to the localized distortion of the token for operation between its two contacts 110 and 111. Specifically, the switch 50 operates to a first contact 110 upon insertion of a token of the proper size and to a second contact 111 responsive to a predetermined heat distortion of the token.

The actuating circuit of the instant invention shown in FIG. 4 includes a first portion operable for verifying the authenticity of the printed circuit or conductive portions on the face of the token. This portion of the circuit is under control of the token switch 50 and includes a rectifier 99, a charging resistor 100, and a charging capacitor 101 in a series connection. The circuit also includes a neon tube 103 and a pair of isolation resistors 104 and 105 in a circuit in parallel to the charging capacitor 101 and responsive to completion of a circuit across the contacts 45 at contact points 62 and 64, for example, and through the conductive portion 54 on the token 24 for energizing the neon tube 103. A small filter capacitor 106 is connected in parallel with the neon tube 103 to prevent erratic and accidental energization thereof. The circuit also includes at least one additional contact engageable with the token at contact point 65, for example, and operable for shunting the neon tube 103 and effecting discharge of the charging capacitor 101 if an improperly conductive token is inserted into the receiver assembly 10.

A light responsive resistor, such as a photoelectric cell 113 is positioned for illumination by the neon gas discharge tube 103. The photoelectric cell 113 is connected on one side to the contact 110 of the double throw switch 50 and on its other side to a relay coil 114. When the photocell 113 is illuminated, it becomes conductive and completes a circuit through the coil 114 for energization thereof. Energization of the relay coil 114 closes switches 115 and 116 and operates switch 117 to contact 118. A relay holding circuit in parallel to the photoelectric cell 113 includes the closed switch 115.

The closing of switch 117 to contact 118 completes a circuit to energize the heater lamp 26 for verifying the material of the token base sheet through heat distortion. Following a short period of heating, the ticket distorts at the edge engaged by the lever of switch 50 and the switch 50 operates from contact 110 to contact 111.

The circuit of FIG. 4 further includes a second relay coil 119 operable for closing a pair of switches 120 and 121. There is also shown a momentary switch 123 manually operable for completing a circuit to the second relay coil 119 after the token switch 50 has operated to contact 111. Energization of the second relay 119 completes a holding circuit to the relay coil 119 through the first switch 120 and switch 50 made to contact 111. The closing of the second switch 121 effectively completes a bypass circuit around the open timer switch 87 for effecting actual energization of the washing machine. Energization of the second relay coil 119 might also unlatch or unlock a switch which could then be manually operated.

Energization of the machine effects energization of the fill valve coil 94 for adding water to the washing machine and also effects energization of the timing motor 89. The timer is programmed to effect opening of timer switch 84 and the closing of the timer switch 87 to remove the token-checking circuit from the control circuit while placing control of operation of the machine on the timer. Timer switch 85 will also be closed to effect energization of the drive motor 95. The machine may then proceed through a normal cycle of operations under control of the timer.

Briefly, it is seen that operation of the washing machine is initiated by a sequence including: operation of the token switch 50 to a first contact 110 upon insertion of a token; energization of a first relay coil 114 responsive to completion of a circuit through the conductive pattern 54 on a proper token; operation of the token switch 50 to a second contact 111 responsive to the heat deformation of an authentic token after a short period of heating; and operation of a manually actuable momentary switch 123 to effect actual energization of the machine. Each of the first three steps including deformation of the token 24 is accomplished automatically upon insertion of a proper token; however, actual energization of the washing machine remains under the selective control of the operator. After manual operation of the momentary switch 123 and the ensuing energization of the timer motor 89, the control of the machine passes from the operator to the control circuit and timer.

The manual operation of the momentary switch might also include other manual maneuvers such as setting a timer dial, secondary movement of the ticket, or operating some other switch.

More specifically, the circuitry and operation of the components will now be described. The circuit shown in FIG. 4 is depicted as at the point in time at which a valid token 24 has been inserted into the receiver assembly 10, the lid switch 124 is closed, timer switches 83, 84 and 86 are in the closed position and timer switches 85 and 87 are in the open position. Furthermore, the two relay coils 114 and 119 are shown as being de-energized with their respectively controlled switches 115, 116, 117, 120, and 121 in the open position. In such a circuit condition the washing machine is de-energized.

Upon insertion of a valid token 24, the token switch 50 operates to its first contact 110 as shown in FIG. 4, for completing a circuit to the token circuit checking portion. A charging circuit is completed from line 80 through the ticket-operated switch 50 made to its first contact 110, through rectifier 99, charging resistor 100, charging capacitor 101, conductor 125 and through switches 84 and 83 to line 81. The values for the charging resistor 100 and charging capacitor 101 are selected to permit very rapid charging of the capacitor 101 during the insertion operation of the token. When the token reaches the fully inserted position as shown in FIG. 1, the contacts 45 in the receiver assembly 10 engage the conductive pattern 54 on the token to complete a circuit for effecting discharge of the capacitor 101 through the neon tube 103. A slower time delay charging through the ticket circuit may also provide as in U.S. Pat. No. 3,165,187, assigned to the assignee of the instant invention.

The discharging circuit for the capacitor extends from one side of the capacitor 101 through a conductor 126, isolation resistor 105, and the ticket receiver assembly 10 including contact point 64, conductive material 54 on the token and a second contact point 62 to one side of the neon tube 103. The other side of the
neon tube 103 is connected to the other side of the capacitor 101 through an isolation resistor 104. The discharge of the capacitor 101 through the neon tube 103 effects energization of the neon tube 103 for emitting illumination which is received by the photoelectric cell 113, causing it to in turn become conductive.

Energetization of the photoelectric cell 113 completes a circuit from line 80 through the token switch 50, the photoelectric cell 113, the relay coil 114, the conductor 125, and the pair of closed timer switches 83 and 84 to line 81. Energetization of relay coil 114 effects closure of the switches 115 and 116 and operation of switch 117 to contact 118. Closure of switch 115 completes a holding circuit for maintaining the relay coil 114 energized between power lines 80 and 81. Closure of the switch 117 to contact 118 completes a circuit to the heater lamp 26 as follows: line 80 through the closed lid switch 124, conductor 129 and switch 117 to one side of the heater lamp 26. The other side of the heater lamp 26 is connected to line 81 through the closed timer switches 83 and 84. Energetization of the heater 26 for a short period of time causes localized heating of the token base member to effect a contraction at the point of contact with the switch level of token switch 50. Upon a predetermined amount of distortion, the token switch 50 will operate to its biased position and make to the second contact 111 and condition the washing machine for subsequent energization as will be shown.

As previously indicated, a second relay is provided between power lines 80 and 81 and including a coil 119 in series with a manually operable momentarily closable switch 123. Therefore, operation of the momentary switch 123 by the operator will complete a circuit from line 80 through the token-operated switch 50 made to the second contact 111 and through conductor 130, the second relay coil 119, the momentary switch 123, and the pair of closed timer switches 83 and 84 to line 81. Energetization of relay coil 119 completes a holding circuit to the relay coil through switch 120 for bypassing the momentary switch 123. The relay coil also closes a second switch 121 in series with the switch 116 operated by the first relay coil 114. The series-connected pair of switches 116 and 121 operated respectively by the first and second relay coils 114 and 119 complete a circuit for bypassing the open timer switch 87 and effecting energization of the washing machine.

Energetization of the water valve coil 94 is effected by a circuit extending from line 80 through the timer switch 50 made to contact 111, the conductor 130, switches 121 and 116, and conductors 131 and 133 to one side of the water valve coil 94. The other side of the water valve coil 94 is connected to line 81 through the closed timer switch 86 and the pressure switch 90 made to contact 91. The energizing circuit for the timing motor 89 extends from the conductor 133 to line 81 through the junction 134 and through the closed timer switch 83. After a predetermined period of operation of the timer motor 89, one increment of advance for example, timer switch 84 will open and timer switch 87 will close to effectively remove the token-checking circuit portion from the control circuit and to energize the drive motor 95 under control of the timer.

It is thus seen that the system described by FIG. 4 requires a thorough verification of the token before the machine is energizable. This verification includes the checking of the size of the token, the pattern of electrically conductive and non-conductive portions of its face, and the heat deformability of the token base. This checking of a token results, after a short time delay, in the conditioning of the washing machine circuit for subsequent actuation by the operator.

An alternate embodiment including the instant invention is shown in FIG. 5. The circuit of FIG. 5 includes timer switches 83-87, pressure switch 90, timing motor 89, drive motor 95, and water valve coil 94 similar to those in FIG. 4. The circuit also includes a similar token circuit-checking portion comprising the rectifier 99, charging resistor 100, charging capacitor 101, isolation resistors 104 and 105, neon tube 103, capacitor 106, and photoelectric cell 113.

The circuit also includes a pair of relay coils 140 and 141 and a momentarily operable manual switch 143; however, the operation and function of these relay coils 140, 141 and their related switches 144 through 148 are slightly different than shown in FIG. 4. Switches 144 and 145 are operated by coil 140. Switches 146, 147, and 148 are operated by coil 141.

The circuit of FIG. 5 is adapted for actuation of the machine without invalidating the token in the actuation process. It is noted there is no heat lamp shown in this circuit; however, a heater lamp may be shown between lines 80 and 81 under control of the sequential control mechanism to invalidate the token independently of the actuation process if such an invalidation is desired.

Operation of the circuit in FIG. 5 will best be shown by considering an actuation sequence. The token-operated switch 50 is shown in the position it would assume if the receiver assembly 10 contained a token 24 used during the previous cycle but which remains undistorted, thus maintaining the switch 50 made to its first contact 110. Upon insertion of a new token, the switch 50 would operate to its second contact 111 upon the ticket being inserted a distance sufficient for the switch lever 51 to drop into the notch created by the juxtaposed radii 150 of the tokens. Thus, when the switch lever 51 drops off the token corner radius 150, a circuit is completed from line 80 through the token switch 50 made to the second contact 111, relay coil 141, normally closed manually operable momentary switch 143 and the closed timer switches 83 and 84 to line 81. Operation of this relay coil 141 closes first and second normally open switches 146, 147 and opens a normally closed second switch 148. The switch 147 provides a holding circuit for the relay coil 141. As the token is inserted further, however, the token switch 50 operates back to the first contact 110 for completing a circuit to the ticket circuit checking portion of FIG. 5 through the now closed switch 146.

In a manner similar to that described for FIG. 4, the photoelectric cell 113 is energized for in turn energizing the second relay coil 140. The circuit for the relay coil 140 extends from line 80 through token switch 50, relay switch 146, and photoelectric cell 113 on one side and through a conductor 125 and closed timer switches 83 and 84 on the other side. Operation of this relay coil 140 closes switch member 144 operable for effecting a holding circuit for the second relay coil 140 and also
closes a second switch 145 in the bypass circuit around the open timer switch 87. It is thus noted that at this point in time, switch 148 is open whereas the other series-connected switch 145 is closed. The machine is now in condition for energization by the operator at the operator's desire. This may be accomplished by depressing the momentary switch 143 to open the circuit to the relay coil 141 which permits the switch 148 to return to its normally closed position for completing a circuit around the open timer switch 87 to effect energization of the washing machine as in the circuit of FIG. 4.

It is thus seen that FIGS. 4 and 5 provide actuation circuits operable for conditioning a machine for actuation by the operator. Such a conditioning process includes use of a token for effecting an unlocking, so to speak, of the machine for subsequent initiation by the operator. This type of control provides an improved degree of flexibility so that the operator may maintain control over the actual initiation of the machine cycle.

In the drawings and specification, there has been set forth a preferred embodiment of the invention and although specific terms are employed these are used in a generic and descriptive sense only and not for purposes of limitation. Changes in form and the proportion of parts as well as the substitution of equivalents are contemplated as circumstances may suggest so as not to depart from the spirit or scope of this invention as further defined in the following claims.

I claim:

1. A token actuation system for an electrically operable device, the combination comprising: control circuit means for energizing said device and for controlling said device through a cycle of operations; receiver means for reception of a token having electrically conductive portions; means responsive to insertion of a valid token into said receiver means including means for verifying the authenticity of at least one of a group of token characteristics including size, electrical conductivity, and heat deformability and further including a first relay switch responsive to a valid token for conditioning said control circuit means for subsequent energization; and initiating means operable after the authenticity of said token characteristic is verified including in series connection with said first relay switch a second relay switch, said second relay switch being normally open and operable to an open condition responsive to the inserting of a valid token and then to a closed condition responsive to a manual maneuver by the operator of said device for selectively completing an energizing circuit to said control circuit means whereby said device is operable.

2. A token actuation system as defined in claim 1 wherein said initiating means further includes a momentary switch and wherein said second relay switch is responsive to operation of the momentary switch for completing in cooperation with said first relay switch said energizing circuit through said control circuit means and effecting initiation of said device.

3. A token actuation system as defined in claim 1 and further including means for invalidating the token and preventing its subsequent reuse.

4. A token actuation system for an electrically operable device, the combination comprising: control circuit means including a plurality of timer switches sequentially operated by means driven by a timer motor for energizing said device and for controlling said device through a cycle of operations, one of said timer switches having an open electrical posture at an off condition of said device for preventing energization of said timer motor; receiver means for reception of a token having electrically conductive portions; circuit actuation means responsive to a token in said receiver means and including means for verifying the authenticity of at least one of a group of token characteristics including size and electrical conductivity, normally open master relay switch means in circuit with said circuit actuation means and operable to a closed condition responsive to movement of said token into said receiver means, said circuit actuation means further including a first relay coil controlling a first switch and being responsive to a valid token in said receiver means for causing said master relay switch means in said closed condition for effecting energization of said device through a cycle of operations; holding means including a second relay coil operable for controlling said second switch in a series circuit with said first switch and for controlling said master relay switch means, said series connected first and second switches being in parallel connection to said one timer switch for completing a bypass energizing circuit to said timer motor to initiate said cycle of operations; and means manually operable by the operator of said device for actuating said second relay coil to actuate said second switch and to operate said master relay switch means to the normally open condition whereby initiation of the cycle of operations of said device is selectively effected by the operator after the validity of the token has been verified and whereby recycling of said circuit actuation means at completion of said cycle of operation is prevented.

5. A token actuation system as defined in claim 4 wherein said means manually operable by the operator includes a momentary switch for effecting energization of said second relay coil to achieve a second condition of energization of said control circuit means for initiating said cycle of operations.

6. A token actuation system as defined in claim 4 and further including a token switch engageable with an inserted token and associated with said master relay switch means for operation from a first condition to a second condition.

7. A token actuation system as defined in claim 6 wherein said manually operable means includes a momentary switch selectively operable by the operator for selectively energizing said second relay coil and thereby effecting initiation of said cycle of operation and resetting said master relay switch means to prevent recycling of said circuit actuation means.

8. A token actuation system for an electrically operable device, the combination comprising: control circuit means for energizing said device and for controlling said device through a cycle of operations; receiver means for reception of a token having electrically conductive portions; circuit actuation means associated with said receiver means and operable for verifying the
authenticity of at least one of a group of token characteristics including size and electrical conductivity; master switch means having a first condition preventing energization of said circuit actuation means and a second condition enabling energization thereof and operable from said first to said second condition responsive to movement of said token into said receiver means, said circuit actuation means including a first relay switch responsive to a valid token in said receiver means with said master switch means in said second condition for conditioning said control circuit means for subsequent energization; and initiating means selectively operable after the authenticity of said token characteristics is verified and including a second relay switch responsive to a manual maneuver by the operator of said device for energizing said control circuit means whereby said cycle of operations of said device is selectively initiated by the operator after the validity of said token is verified, said master switch means being responsive to said manual maneuver for operating from said second condition to said first condition while said token remains in said receiver means for preventing recycling of said circuit actuation means at completion of said cycle of operations.

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