Sept. 13, 1955 C. REYKJALIN 2,717,781

AMUSEMENT DEVICE OPERATED BY AUTOMATIC PHONOGRAPH SELECTOR MECHANISM

Filed Feb. 3, 1953 2 Sheets-Sheet 1

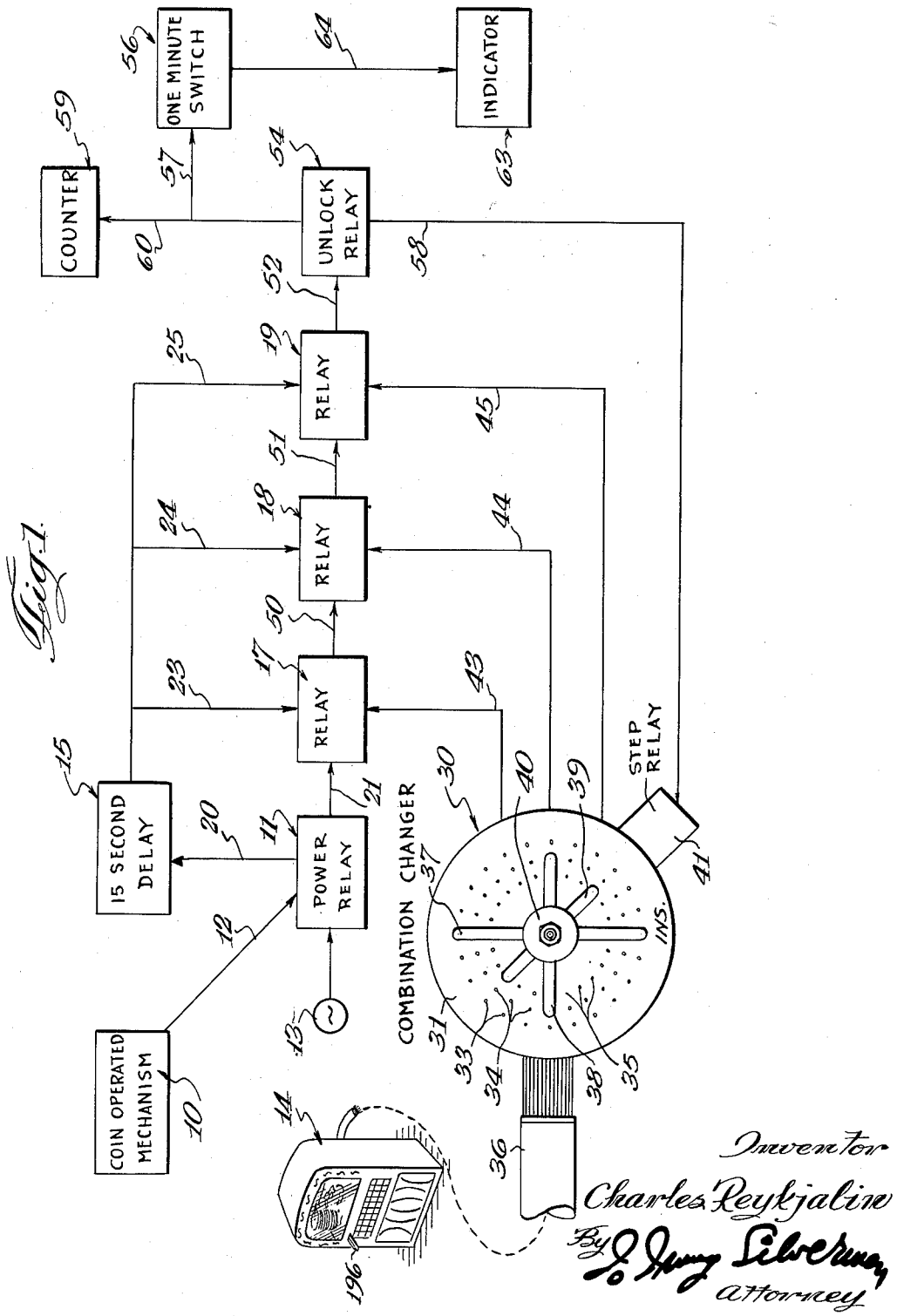

Fig. 1.

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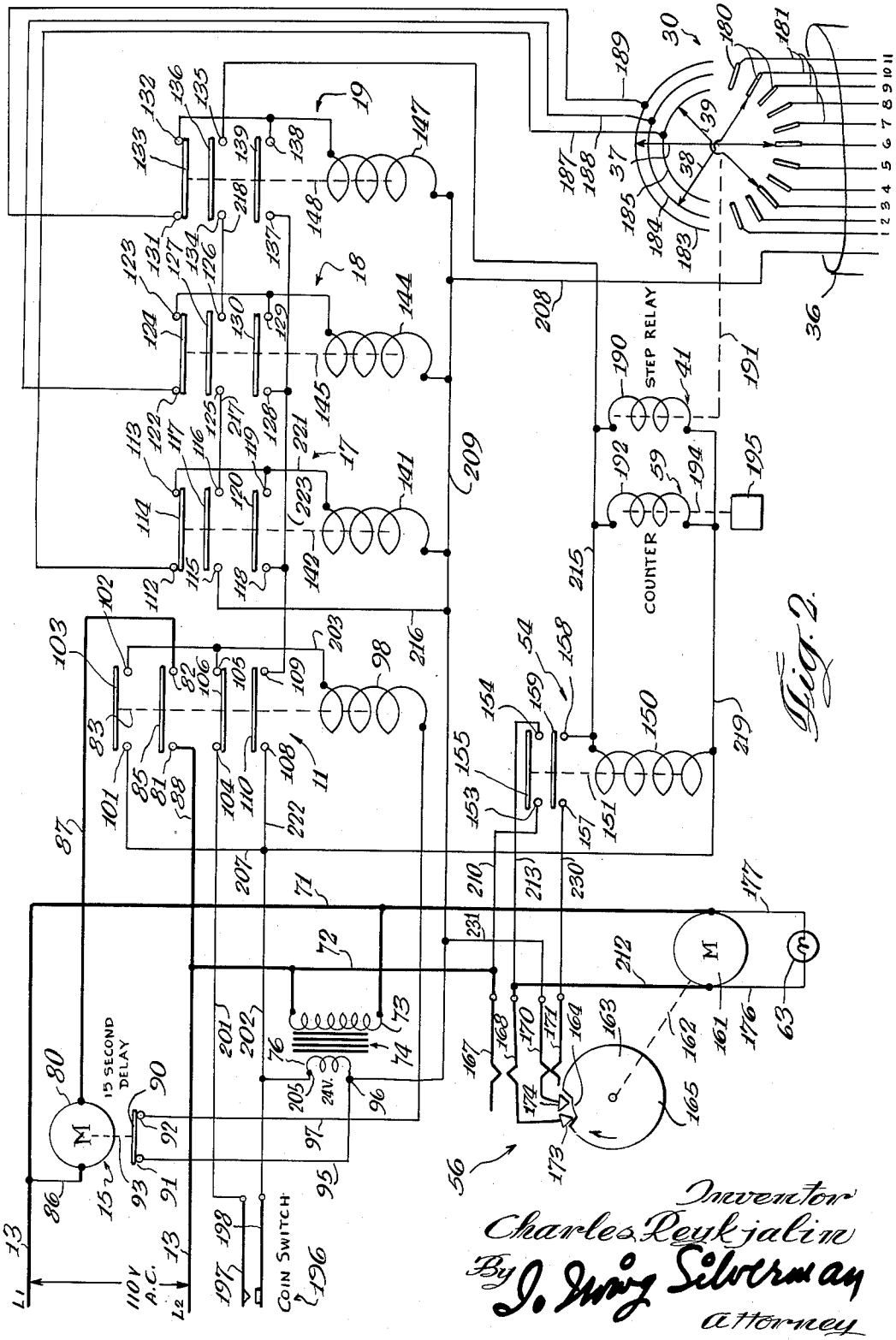

Fig. 2.

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2,717,781

AMUSEMENT DEVICE OPERATED BY AUTOMATIC PHONOGRAPH SELECTOR MECHANISM

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Application February 3, 1953, Serial No. 334,883

16 Claims. (Cl. 273—138)

This invention relates generally to an amusement device, and more particularly is concerned with an amusement device which is operated or controlled by the well-known automatic phonograph selector mechanism.

The device is intended as an accessory to an ordinary automatic phonograph and as such is not of a construction requiring any important changes in the mechanism of the phonograph. As well-known, the modern automatic phonograph is a self-contained unit which has a coin receiving apparatus which unlocks the machine and permits it to be played. The player usually selects the numbers it is desired to be played, the selection being made either before or after the coin is deposited in the coin receiving lock. In the present-day machines, the player is usually permitted to have three numbers played for a twenty-five cent piece.

The apparatus of my invention is a means of amusement and is also a stimulus for the playing of the automatic phonograph. It serves to spread the play of the machine over all of the records contained therein so that no particular one or ones will be played continuously to the annoyance of other patrons of the establishment wherein the apparatus is located, thereby the records are uniformly worn, as well.

The principal object of the invention is to provide an amusement device in which an indication, such as a bell, gong, horn, light or the like is actuated when a proper choice of selections upon an automatic phonograph is made.

Another object of the invention is to provide a system of the character described in which the amusement device is rendered active by the insertion of the coin in the automatic phonograph coin receiving mechanism, but remains active only for a predetermined time within which the selections must be made, after which the amusement device is automatically rendered inactive.

A further object of the invention lies in the provision of a system of the character described in which the combination of selections which will actuate the indicating circuit are changed with each actuation thereof.

Many other objects reside in the provision of various electrical circuits and structure for accomplishing the above and other objects. All of this will be brought out as the description of the device proceeds. To the end that the patent statutes will be complied with, I have illustrated and fully explained a practical and preferred embodiment of the invention from an inspection and study of which the advantages and features of the invention should be fully understood and appreciated. It is pointed out that considerable variation is possible without in any way departing from the spirit of the invention.

In the drawings,

Fig. 1 is a schematic block diagram, showing the various components of the invention and used to illustrate and describe generally the manner of operation.

Fig. 2 is a circuit diagram of the apparatus, certain mechanical portions being shown schematically.

Referring now to Fig. 1, it is desired to emphasize

that the block diagram is not intended to represent electrical components individually, nor are the inter-connecting lines intended to signify electrical paths. The blocks merely represent major parts of the apparatus, and the lines may represent either electrical conduits or functional flow paths.

In general, the device is attached to or associated with a coin-operated automatic phonograph. The player understands that of all the available selections that can be played by the phonograph, there is one, or two, or three (depending upon the construction of the amusement apparatus) selections which, if chosen, will cause a signal or indication signifying this proper choice. For example, a bell may ring or a light flash. In other instances, a check or checks may be dispensed giving the player an opportunity to hear other selections from the phonograph if he likes. In such a case variations of the indicating mechanism may be used, such as for example a sign reading "Winner" may be illuminated, and/or a relay operated to unlock a door or check dispensing mechanism.

The apparatus is provided with a mechanism through which the "winning" combination is controlled. The push button or switch selector mechanism of the phonograph is connected with this combination changer and electrical contacts are provided, a pair for each number. Wiping contact arms are arranged to bridge pairs of contacts to close circuits to the amusement apparatus. Each time there is a "win" or indication, the wiping contact arms are changed, changing the "winning" combination.

Upon deposit of a coin in the phonograph apparatus, the amusement device is unlocked for a pre-determined time, within which, unless the numbers are properly selected to give an indication, the device will automatically become de-energized. Thereafter, even if the proper numbers are chosen and the buttons pushed or switches closed, the amusement device will not operate. This arrangement prevents a player from attempting to alter his selection of numbers after he has deposited his coin.

Referring now to the block diagram of Fig. 1, there is illustrated in the upper left hand corner a coin or check operated mechanism **10**. This can be in the form of an unlocking device, or it may be any of the check operated devices available upon the market. Its principal function insofar as the amusement device is concerned is to set the device in operation at the same time or slightly after the automatic phonograph **14** has been energized. The same coin operated mechanism may be used for both functions. Thus, for example, the coin-operated mechanism of the automatic phonograph may have a pair of electric switch contacts independently connected with the amusement device through a cable or the like.

When the coin is deposited, the power relay **11** is energized, this function being indicated by the line **12**. The relay obtains power from a suitable source **13**, starts the fifteen second delay mechanism **15** and makes power available to the three relays **17**, **18** and **19**. The actuation of the delay mechanism **15** is indicated by the flow line **20**, and the power availability is indicated by the line **21**. The delay mechanism is in the form of a temporary switch mechanism that, when actuated assumes a closed position for a given period of time, then returns to open position. This could be a thermal device, a motor-operated device, or any of the known timing contrivances. I have chosen a fiteeen second delay for the preferred embodiment, but obviously the apparatus is not limited to that time.

It will be seen that the delay device **15** has three flow lines **23**, **24** and **25** which extend to the respective relays **17**, **18** and **19**. In effect, the delay mechanism unlocks these relays for a period of fifteen seconds, during which they can function. If permitted to run beyond the fifteen

seconds, the delay device 15 automatically locks these relays against operation. This gives the player a short time within which to make his choice of numbers. The choice may have been made before the coin was deposited in which case the player may decide to change one or two after deposit, but in any event the time within which this can be done should be short so that a great many trials cannot be made in order to find the unlocking combination.

In the lower left hand corner of the diagram I have shown a combination changer 30 which is actually a switch mechanism whereby circuits may be completed from the various selection switches of the phonograph to the relays 17, 18 and 19. It is pointed out that the circular member 31 has three concentric circular rows of contacts 33, 34 and 35. The contacts on the left hand may be connected at random with switches actuated by the selector mechanism of the automatic phonograph. There is shown a cable 36 conducting a plurality of wires to the changer 30 for this purpose. Power or other leads may be brought through this same cable. The right hand side of the member 31 has its three rows of contacts connected respectively to the relays 17, 18 and 19. In other words, all of the contacts in row 33 are connected to one another and to relay 17, the contacts of row 34 are connected one to the other and to relay 18, and the same with contacts of row 35 and relay 19. Three bridging members 37, 38 and 39 are insulated one from the other and commonly mounted on a pivot member 40 which is adapted to be actuated by a step relay 41. When the proper selections are made, circuits are completed from the automatic phonograph selector switches, through a contact in each of the rows 33, 34 and 35, through the respective bridging members 37, 38 and 39 to the relays 19, 18 and 17 thereby rendering these relays active. The circuit may be arranged so that the closing of the circuit to the respective relays may close the relays. In such case power may be obtained from the automatic phonograph or through the medium of a source in the amusement device itself. Which is utilized is immaterial to the invention.

The flow lines 43, 44 and 45 represents the unlocking of the relays 17, 18 and 19 through the medium of the rows of contacts and bridging members of the combination changer 30. Obviously if the selection buttons or switches which are actuated by the player at the automatic phonograph are not at the moment connected to be engaged by one of the bridging members 37, 38 or 39, the relays 17, 18 and 19 will not all become unlocked.

Consider that the power relay 11 applies power to the unlock relay through the three relays 17, 18 and 19 in series. If any of these relays does not provide for the passage of this power, the unlock relay will not open. The series path is indicated by the flow lines 50, 51 and 52. If all three relays 17, 18 and 19 are energized, that is to say—unlocked, the unlock relay 54 is actuated. This occurs only when there is a "winnner." The unlock relay 54 is now required to perform several functions. First it sets a motor in operation which closes a switch for a minute or some other desired time. This device is referred to as a one minute switch 56 and its connection with relay 54 indicated by the flow line 57. The unlock relay 54 also operates the step relay 41 through the line 58. This step relay moves the pivot member 41, swinging the bridging arms 37, 38 and 39 one step about the member 31. Obviously this will change the combination of winning selections each time there is a winner. In order to determine the number of winners between inspections of the device, the unlock relay 54 also actuates a counter 59 through the line 60. The one minute switch 56 actuates the indicator 63 through the line 64. This indication is then continued for one minute, during which the device used for indicating operates.

Through the use of self-holding arrangements the device is self-sustaining once there is a winner, enabling the apparatus to be resorted to completely de-energized condition while the one-minute switch is closed. Thus, after the indication is completed the device is ready for further play.

It is again desired to point out that the block diagram does not necessarily represent the actual connections and electrical leads of the device. It is merely to assist in an understanding of the actual circuit, a description of which follows.

Referring now to Fig. 2, the same reference characters are generally used to designate the components of Fig. 1 insofar as is practical, but the electrical leads will be given other reference characters. In Fig. 2 the upper left hand corner illustrates a conventional 110 volt line 13, which may be independent of the automatic phonograph 14 or may be brought from the phonograph via the cable 36. This line 13 is connected by leads 71 and 72 to the primary 73 of a transformer 74. The transformer 74 is a step-down transformer, and hence its secondary 76 is of lower voltage. As conventional in automatic phonographs and allied equipment, I utilize 24 volts. The equivalent components of Fig. 1 are indicated in the diagram. The power relay 11; relays 17, 18 and 19; the unlock relay 54; the combination changer 30; counter 59; step relay 41; all are generally indicated.

The delay device 15 includes a motor 80 connected across the line 13 through the contacts 81 and 82 of the relay 11. The armature 83 carries, among other such structures, a bridging member 85 which when closed completes the circuit to the delay motor 80 through the electrical leads 86 and 87. There is a connecting conductor 88 from the lead 72 to the contact 81. The motor 80 may have some cam or switch arrangement which has symbolically been represented as comprising a movable bridge member 90, contacts 91 and 92 normally closed, and an actuating linkage 93. Contact 91 connects by way of lead 95 to terminal 96 of secondary 76, while the contact 92 connects by way of the lead 97 to a terminal of the solenoid 98 of the relay 11.

The relay 11 is also provided with various bridging arms and contacts which, in addition to the normally open contacts 81 and 82 include the following: contacts 101 and 102, bridged by member 103, normally open; contacts 104 and 105 bridged by member 106, normally closed; contacts 108 and 109, bridged by the member 110, normally open.

The relay 17 is provided with various bridging arms and contacts as follows: contacts 112 and 113 bridged by member 114, normally closed; contacts 115 and 116 bridged by member 117, normally open; contacts 118 and 119 bridged by the member 120, normally open.

Relays 18 and 19 are constructed exactly like the relay 17, with the same arrangement of contacts and bridging arms. The contacts and bridging arms of relay 18 are: 122, 123 and 124; 125, 126 and 127; 128, 129 and 130. The contacts and bridging arms of relay 19 are 131, 132 and 133; 134, 135 and 136; 137, 138 and 139.

Each of the relays includes a solenoid and an armature for moving the bridging members to establish or break the various circuits. Relay 17 has solenoid 141 and armature 142; relay 18 has solenoid 144 and armature 145; relay 19 has solenoid 147 and armature 148.

The unlocking relay 54 has a solenoid 150, armature 151, a pair of contacts 153 and 154 bridged by member 155, and a pair of contacts 157 and 158 bridged by member 159.

In conjunction with the relay 54 there is provided the one minute switch 56. This includes a motor 161 driving a cam 163 through shaft 162. The cam 163 is shown to have a recessed portion 164 interrupting its otherwise continuous circumferential edge 165. Two pairs of contacts are controlled by this cam. The contacts 167 and 168 are normally open while the switch is quiescent and the contacts 170 and 171 are nor-

mally closed. The switch 56 is arranged so that when the cam member 163 begins to rotate, first the contacts 167 and 168 will close, and immediately afterwards the contacts 170 and 171 will open. This is symbolically represented by having each of the contacts 168 and 170 provided with a follower, as shown at 173 and 174. The normal position is shown in the diagram with both followers in the recess 164. The direction of motion of the cam being clockwise, when the same begins to rotate, the follower 173 first will ride up on the peripheral edge 165 closing cicuit controlled by contacts 167 and 168. As the cam continues to rotate the follower 174 will climb up on the edge 165 and open contacts 170 and 171.

The indicator 63 is connected across the motor 161 of the switch 56 by leads 176 and 177 so that it is operating while the motor is energized.

The combination changer 30 is represented in the lower right hand corner of the diagram of Fig. 2. For simplicity, the construction is shown in a different manner from that of Fig. 1. The left side of the member 31 is represented on the lower half of the changer 30 in Fig. 2 as a plurality of elongate contacts 180 arranged in a semi-circle with the various leads 181 connected to the various contacts. Thus, this is the equivalent of connecting similarly positioned contacts of each of the three rows 33, 34 and 35 together and to one lead 181 coming from a selector switch in the automatic phonograph. Obviously, each of the contacts 180 could be formed as three separate contacts if desired so that the same selector switch lead could go to a multiple of different contacts, or in case the number of selector leads is so great that there is room for three different leads to be connected with three different contacts at any given radius of the member 31.

In the case of a construction like that of Fig. 2, the lower portions of each of the arms 37, 38 and 39 can be of the same physical length. The arrowheads on the various arms represent electrical wiping contacts.

The right hand half of the switch 30 depicted in Fig. 1 is represented by three semi-circular rings 183, 184 and 185 which are adapted to be wiped by the respective arms 37, 38 and 39 during movements of said arms about the center of the member 31. The contact rings are respectively connected to the relays 17, 18 and 19 by the electrical conductors 187, 188 and 189 respectively for a purpose which will be described.

The combination changer is operated by the simultaneous rotation of the arms (whose position relative one another may be readily adjusted) through a step relay 41 whose solenoid 190 is in parallel with the solenoid 150 of the unlock relay 54. The armature or actuating link of the step relay is indicated at 191.

The counter 59 also includes a solenoid 192 parallel with solenoids 150 and 190 whose armature 194 actuates a conventional mechanical counter 195. The entire electrically operated counter is commercially available as a single unit including relay, linkage, etc.

Operation

I shall now described the operation of the invention with reference to the structure hereinabove set forth.

The coin switch 196 is shown in Fig. 1 as being located on the automatic phonograph 14, but this need not be necessary. In any event, same includes a pair of normally open contacts 197 and 198, which are closed when the coin is deposited. Through leads 201 and 202 the solenoid 98 on the power relay 11 is energized. This is done by way of the following circuitry: lead 201 connects with contact 104, bridging member 106, contact 105, lead 203, solenoid 98, lead 97, contact 92, bridging member 90, contact 91, lead 95 and terminal 96 of the 24 volt secondary 76. The other terminal 205 of the secondary is connected to the lead 202 which completes the circuit.

Now the armature 83 of relay 11 pulls each of the bridging members downwardly as viewed in Fig. 2. The circuit including the coin switch 196 is thereby opened, while the other three circuits controlled by this relay are closed. Starting at the top of the relay 11, the contacts 101 and 102 are bridged by the member 103 thereby establishing a circuit from the 24 volt winding 76 to the solenoid exclusive of the coin switch 196. This is caused by reason of the establishment of the following circuit: from one side of the secondary 76, i. e., terminal 205 to lead 202, lead 207, contact 101, bridging member 103, contact 102, lead 203, solenoid 98, lead 97, contact 92, bridging member 90, contact 91, lead 95 back to the opposite side of the secondary 76, i. e., terminal 96. This is a holding circuit, and it renders the relay independent of the original act required to energize the amusement device, i. e., the placing of a coin in the coin lock 196.

The next circuit controlled by the relay 11 is that of the motor 80 of the fifteen second delay switch 15. Tracing this circuit we see that it is completed as follows: starting from the lead 71 of the 110 volt line 13, through the lead 86, motor 80, lead 87, contact 82, bridging member 85, contact 81, lead 88 to the other side 72 of the line 13. Obviously this is not a 24 volt circuit, but is 110 volts, and it starts the motor 80. This motor will operate for fifteen seconds, and then open the contacts 91 and 92 through movement of the bridging member 90 by way of the link 93.

Let us presume that the combination changer has been set as indicated in Fig. 2 in which the three numbers which must be selected by the player are, starting from the left, 3, 6 and 10. Let us also presume that the player chooses three numbers as his selection to be played by the automatic phonograph, and further that these three numbers are not included in this group of predetermined selections. Presume, for example that he chose 1, 4 and 7. Obviously no circuits are completed through the contacts and rings of the changer 30 to the leads 187, 188 and 189. In the embodiment shown, the automatic phonograph 14 is used to provide the power for initial actuation of the relays 17, 18 and 19, and hence there is a common return lead 208 coming through the cable 36 and connected to the common 24 volt return conductor 209. It will be noted that the lead 209 is permanently connected with the terminal 96. Since no circuits are completed through leads 187, 188 and 189, none of the relays 17, 18 or 19 are energized, and all remain in the condition shown in Fig. 2.

Under the above conditions, that is, when none of the three required selections have been made, none of the other equipment in the device is energized beyond the power relay 11, except for the delay switch 15. For example, note that the lead 72 connects with contact 167 which is open and with contact 153 which is open, the latter connection being by way of a conductor 210. Note also that lead 71 extends through motor 161 to lead 212, conductor 213 and to contact 168 which is open, and contact 154 which is open. There is also no energization of the indicator 63 due to the open condition of the circuits.

The self-sustaining circuit, i. e., the holding circuit of relay 11 is in series with the delay switch 15. At the end of fifteen seconds, presuming that the proper choice of selections has not been made, the contacts 90 and 91 open, de-energizing the relay 11, causing same to assume the position shown in Fig. 2, and thereby de-energizing the entire device. In the meantime, of course, the numbers chosen are played by the automatic phonograph without regard to what has or has not occurred in the amusement device.

Attention is now invited to the unlock relay 54. It is required that this relay be energized in order for the indicator 63 to operate, i. e., for a "win" to be achieved. Note that while the contacts 157 and 158 are open, the

solenoid **150** is connected by way of lead **215** through each of the relays **19**, **18** and **17** in series in that order across the 24 volt secondary **76**. Following the circuit, from one terminal **96** through the common lead **209** and lead **216** to the contact **115**, across bridging member **117** (normally not engaging its contacts) to contact **116**, lead **217**, contact **125**, bridging member **127** (normally not engaging), contact **126**, lead **218**, contact **134**, bridging member **136** (normally not engaging), contact **135**, lead **215**, solenoid **150**, lead **219**, lead **202**, and back to terminal **205**, the other side of the secondary **76**. Obviously if any one or two of the bridging members **117**, **127** and **136** are moved downward through the choice of one or two (but not three) of the proper numbers, the situation will in nowise be altered because the solenoid **150** will not be energized.

Let us suppose now that the player has actually chosen the three proper numbers to be played, i. e., 3, 6 and 10. Such could have been made either before or after energization of the entire system by the insertion of a coin and closure of switch **196**. Now, relay **11** has been energized, is holding itself in energized condition, and the delay switch **15** has started its movement. Each of the relays **17**, **18** and **19** is energized pulling the bridging members down. In each case this is done by the completion of a circuit through the combination changer. Thus, taking number 3 selection, there is a 24 volt circuit completed from the selector switch in the automatic phonograph **14** through third lead **181** in the cable **36** to third contact **180**, arm **39**, ring **185**, lead **187**, contact **112**, across bridging member **114** (normally engaged against its contacts) to contact **113**, lead **221**; solenoid **141**, common return **209**, lead **208** back to the 24 volt source in the automatic phonograph. This will energize the solenoid **141**, pulling the armature **142** down and closing the contacts **115** and **116**, completing one link in the series connection to the solenoid **150**. Also, the contacts **118** and **119** are closed by the bridging member **120**, simultaneously with the opening of the contacts **112** and **113**. This removes the automatic phonograph 24 volt power from the solenoid **141** and applies the 24 volt power from the secondary **76** in a self-sustaining manner. Tracing the power circuit, starting from the terminal **205** of the transformer **74**, lead **202**, lead **222**, contact **108**, bridging member **110**, contact **109**, common lead **223**, contact **118**, bridging member **120**, contact **119**, lead **221**, solenoid **141**, common lead **209**, back to the opposite side of the secondary **76** at terminal **96**. Obviously the relay **17** will thereby become self-sustaining and disconnected from the power supply of the automatic phonograph.

It will be further seen that unless the relays **17**, **18** or **19** are energized, the lead **223** is a dead end.

Like circuits are completed through leads **188** and **189** to cause relays **18** and **19** to be energized. In each case there is a holding circuit and the power supply from the transformer **74** takes over the energization of the respective solenoids **144** and **147** to hold bridging members **130** and **139** against their respective pairs of contacts.

With the above circuits completed, the circuit to the solenoid **150** is now completed, and same is energized thus pulling armature **151** down and closing the contacts **153–154** and **157–158**. The various functions that now simultaneously occur are best tabulated and handled separately:

1. The step relay **41** is energized, its solenoid **190** being connected across the now active leads **215** and **219**. Armature **191** moves the arms **37**, **38** and **39** one step, say in a clockwise direction so that the next time there is a "winner" the selections 2, 5 and 9 will have to be made. Since the leads **187**, **188** and **189** are thereby opened, nothing occurs in relays **17**, **18** and **19**.

2. The counter **59** is also energized and registers one unit. Its solenoid **192** is also across leads **215** and **219**.

3. The bridging member **155** is drawn against contacts **153** and **154**. This completes a 110 volt circuit to the motor **161** by way of the following: lead **72**, lead **210**, contact **153**, bridging member **155**, contact **154**, lead **213**, lead **212**, motor **161**, lead **71**. Leads **71** and **72** are connected across line **13**, so the motor **161** begins to rotate.

4. The indicator **63** being across the motor and hence in parallel with the 110 volt line, is energized. If a light, it becomes illuminated. If a bell, or gong or buzzer, it sounds. If a check dispensing mechanism, it is energized and dispenses checks. Obviously it will remain energized so long as the motor is rotating and is energized.

5. The bridging member **159** is drawn against contacts **157** and **158**. This completes a 24 volt circuit to the solenoid **150** independent of the other relays of the device in the following manner: from one side of the secondary **76** through lead **202**, lead **219**, solenoid **150**, contact **158**, bridging member **159**, contact **157**, lead **230**, contact **171**, contact **170** (these last two contacts being normally closed), lead **231**, common lead **209** and back to the other side of the secondary **76**. This, then, is another sustaining or holding circuit for the relay **54**.

It is desired that the motor **161** be energized for one minute or whatever time is chosen for the indication to be given by the indicator **63**. As the motor **161** commences to rotate the cam **163**, first the contacts **167** and **168** will be engaged, thereby cutting out the circuit through contacts **153** and **154** of relay **54**. This renders the rotation of the motor **161** independent of the relay, this arrangement being in effect a self-sustaining or holding circuit. Obviously, with the motor **161** independent of relay **54**, it is likewise independent of the entire amusement device circuit, hence it is free to operate as long as it can, and keep the indicator device **63** energized also during that time. Obviously, the delay switch **15** may in the meantime de-energize the power relay **11**, and hence de-energize the other relays **17**, **18** and **19** without affecting the indication.

It is to be remembered that the relay **54** was self-sustaining through the medium of the normally closed contacts **170** and **171**. If this situation were permitted to prevail, in addition to the fact that current would be flowing through the solenoids **150**, **190** and **192** during the entire minute that the motor **161** was rotating, when the minute period had passed, if the contacts **153** and **154** were still closed, the motor would continue to run, regardless of what happened to contacts **167** and **168**. Hence, it is necessary to de-energize the solenoid **150** as soon as its usefulness ceases. The contacts **170** and **171** are arranged to open immediately after the contacts **167** and **168** have closed rendering the motor **161** self-sustaining. This is done in the manner described in connection with the recess **164** and cam edge **165**.

With the solenoid **150** de-energized, when the contacts **91** and **92** are opened, everything in the device is de-energized except for the motor **161** and the indicator **63**. When the recess **164** next comes around to the position of the followers **173** and **174**, the contacts **170** and **171** are closed and the contacts **167** and **168** opened, de-energizing the motor and the indicator **63**. In coming to the end of the cycle it is immaterial which pair of contacts is acted upon first. The contacts **170** and **171** must be closed to poise the device for the next "win" but such closure at this time has no effect upon the solenoid **150** because the contacts **157** and **158** have in the meantime been opened.

It is felt that the above explanation should be complete and afford a full description of the invention, its features, advantages and its uses and operation without further detail. It is emphasized that many variations are possible due to the wide variety of circuit components and other parts of the system, but it is desired that the invention should be limited only insofar as the claims set the same forth.

I claim:

1. In an amusement device of the character described

associated with an automatic phonograph having manual selection means and adapted to give an indication when a predetermined selection is made and the phonograph is initially energized, an electrically operated indicating device, a source of power connected therewith and adapted to actuate the same, an electromagnetic switch for completing connection between said source and indicating device, said electromagnetic switch having connection with said source and an interrupter between the source and switch and normally holding the connection open, a time delay mechanism for rendering the interrupter inoperative for a predetermined time after energization of said phonograph and thereafter rendering same operative to open the connection between the source and switch, and an electrical circuit between a predetermined one of said manual selection means and the interrupter and serving to cause the interrupter to complete the said connection when the phonograph is energized.

2. In an amusement device of the character described associated with an automatic phonograph having manual selection means and adapted to give an indication when a predetermined selection is made and the phonograph is initially energized, an electrically operated indicating device, a source of power connected therewith and adapted to actuate the same, an electromagnetic switch for completing connection between said source and indicating device, said electromagnetic switch having connection with said source and an interrupter between the source and switch and normally holding the connection open, a time delay mechanism for rendering the interrupter inoperative for a predetermined time after energization of said phonograph and thereafter rendering same operative to open the connection between the source and switch, and an electrical circuit between a predetermined one of said manual selection means and the interrupter and serving to cause the interrupter to complete the said connection when the phonograph is energized, a plurality of additional electric circuits extending from other of said manual selection means, and a second switch for connecting any one of said additional circuits and said aforementioned circuit with said interrupter.

3. In an amusement device of the character described associated with an automatic phonograph having manual selection means and adapted to give an indication when a predetermined selection is made and the phonograph is initially energized, an electrically operated indicating device, a source of power connected therewith and adapted to actuate the same, an electromagnetic switch for completing connection between said source and indicating device, said electromagnetic switch having connection with said source and an interrupter between the source and switch and normally holding the connection open, a time delay mechanism for rendering the interrupter inoperative for a predetermined time after energization of said phonograph and thereafter rendering same operative to open the connection between the source and switch, and an electrical circuit between a predetermined one of said manual selection means and the interrupter and serving to cause the interrupter to complete the said connection when the phonograph is energized, a plurality of additional electric circuits extending from other of said manual selection means, and a second switch for connecting any one of said additional circuits and said aforementioned circuit with said interrupter and means for connecting said second switch from one circuit to a second circuit in a predetermined sequence when the indicating device is actuated.

4. In an amusement device of the character described associated with an automatic phonograph having manual selection means and adapted to give an indication when a predetermined selection is made and the phonograph is initially energized, an electrically operated indicating device, a source of power connected therewith and adapted to actuate the same, an electromagnetic switch for completing connection between said source and indicating device, said electromagnetic switch having connection with said source and an interrupter between the source and switch and normally holding the connection open, a time delay mechanism for rendering the interrupter inoperative for a predetermined time after energization of said phonograph and thereafter rendering same operative to open the connection between the source and switch, and an electrical circuit between a predetermined one of said manual selection means and the interrupter and serving to cause the interrupter to complete the said connection when the phonograph is energized, a plurality of additional electric circuits extending from other of said manual selection means, and a second switch for connecting any one of said additional circuits and said aforementioned circuit with said interrupter and means for connecting said second switch from one circuit to a second circuit in a predetermined sequence when the indicating device is actuated comprising a step-relay connected with said source and energized simultaneously with actuation of said indicating device.

5. In an amusement device of the character described associated with an automatic phonograph having manual selection means and adapted to give an indication when a predetermined selection is made and the phonograph is initially energized, an electrically operated indicating device, a source of power connected therewith and adapted to actuate the same, an electromagnetic switch for completing connection between said source and indicating device, said electromagnetic switch having connection with said source and an interrupter between the source and switch and normally holding the connection open, a time delay mechanism for rendering the interrupter inoperative for a predetermined time after energization of said phonograph and thereafter rendering same operative to open the connection between the source and switch, and an electrical circuit between a predetermined one of said manual selection means and the interrupter and serving to cause the interrupter to complete the said connection when the phonograph is energized and a self-sustaining, time-controlled switching device connected with said source for initial actuation by said electromagnetic switch, and said switching device holding said indicating device in operation for a predetermined time after said initial actuation.

6. A device as described in claim 2 in which there are a plurality of interrupters and said second switch includes means for connecting certain predetermined ones of said electrical circuits respectively to said interrupters.

7. A device as described in claim 2 in which there are a plurality of interrupters and said second switch includes means for connecting certain predetermined ones of said electrical circuits respectively to said interrupters and means for actuating said second switch from one group of circuits to another.

8. An amusement device adapted to be associated with an automatic electric phonograph having selector means enabling manual designation of the selections chosen by a player and a coin operated unlocking device for controlling operation of the phonograph for playing the selections successively, said device including an indicator device responsive to the choice of a predetermined combination of selections to indicate that said combination was chosen, a source of electrical power, an unlocking relay, a plurality of other relays between said source and unlocking relay, an electrical circuit between said selector mechanism and said other relays including switch means, and a delay mechanism, said indicator being connected through said unlocking relay to said source, said unlocking relay being connected to said source through said other relays and said delay mechanism being connected with said other relays, said device being energized upon insertion of a coin in the coin-operated unlocking device, the selection of said combination serving to permit current to flow in said electrical circuit to actuate the said other relays through said switch means

whereby to complete the circuit to said unlocking relay and operate said indicator, said delay mechanism serving to maintain the amusement device operative for a predetermined time after insertion of the coin in said coin-operated unlocking mechanism.

9. A device as described in claim 8 in which said switch means comprises a combination changer having an electrical connection with each of the selections of the phonograph terminating in switch terminals, and further connections with said other relays and terminating in other terminals, the number of said latter terminals corresponding to the number of selections in said pre-determined combination of selections, and there being switch fingers movable to establish electrical engagement between a number of the said former terminals and the latter terminals respectively, and means for moving the switch fingers.

10. A device as described in claim 9 in which the last mentioned means comprises a step relay connected for operation with the indicator device such that each time said indicator device is energized the step relay will move the fingers one step to change the unlocking combination.

11. In combination with an electric phonograph having circuit making selectors to be manually actuated to cause the phonograph to play records chosen in accordance with said selectors, an amusement device including a source of power, an indicator connected to the source of power but having the connection interrupted, an unlocking relay having contacts adapted to be closed to complete the circuit from the source to the indicator, an energizing circuit from the said source to the solenoid of the locking relay, a plurality of electromagnetically operated, normally open, series connected switches in the energizing circuit between the source and the unlocking relay solenoid such that said source cannot energize the unlocking relay unless the series connected switches are all closed, a combination changer comprising a group of simultaneously movable, circuit-making switch arms, the number of arms corresponding to the number of said series connected switches, a plurality of first terminals on said combination changer, an electrical circuit extending from each of the said selectors to various of the said first terminals, a plurality of second terminals corresponding to the number of said series connected switches and connected respectively with the solenoids of said switches, the arms being movable to complete circuits between said series switch solenoids and predetermined ones of said selectors and there being a power source energizing said last mentioned solenoids.

12. In combination with an electric phonograph having circuit making selectors to be manually actuated to cause the phonograph to play records chosen in accordance with said selectors, an amusement device including a source of power, an indicator connected to the source of power but having the connection interrupted, an unlocking relay having contacts adapted to be closed to complete the circuit from the source to the indicator, an energizing circuit from the said source to the solenoid of the locking relay, a plurality of electromagnetically operated, normally open, series connected switches in the energizing circuit between the source and the unlocking relay solenoid such that said source cannot energize the unlocking relay unless the series connected switches are all closed, a combination changer comprising a group of simultaneously movable, circuit-making switch arms, the number of arms corresponding to the number of said series connected switches, a plurality of first terminals on said combination changer, an electrical circuit extending from each of the said selectors to various of the said first terminals, a plurality of second terminals corresponding to the number of said series connected switches and connected respectively with the solenoids of said switches, the arms being movable to complete circuits between said series switch solenoids and predetermined ones of said selectors and there being a power source energizing said last mentioned solenoids, said electromagnetically operated switches having contacts for self-sustained closing of said switches after actuation and said contacts being connected to the source of power within the amusement device, the power source for initially energizing the said series switch solenoids being connected in said selector circuits in the phonograph, but being disconnected from the solenoids immediately upon initial energization.

13. An amusement device adapted to be associated with an automatic electric phonograph having selector means enabling manual designation of the selections chose by a player and a coin operated unlocking device for controlling operation of the phonograph for playing the selections successively, said device including an indicator device responsive to the choice of a predetermined combination of selections to indicate that said combination was chosen, a source of electrical power, an unlocking relay, a plurality of other relays between said source and unlocking relay, an electrical circuit between said selector mechanism and said other relays including switch means, and a delay mechanism, said indicator being connected through said unlocking relay to said source, said unlocking relay being connected to said source through said other relays and said delay mechanism being connected with said other relays, said device being energized upon insertion of a coin in the coin-operated unlocking device, the selection of said combination serving to permit current to flow in said electrical circuit to actuate the said other relays through said switch means whereby to complete the circuit to said unlocking relay and operate said indicator, said delay mechanism serving to maintain the amusement device operative for a predetermined time after insertion of the coin in said coin-operated unlocking mechanism and a counting device connected through said unlocking relay to said source automatically to register a selection of the said combination upon operation of the indicator.

14. In combination with an electric phonograph having circuit making selectors to be manually actuated to cause the phonograph to play records chosen in accordance with said selectors, an amusement device including a source of power, an indicator connected to the source of power but having the connection interrupted, an unlocking relay having contacts adapted to be closed to complete the circuit from the source to the indicator, an energizing circuit from the said source to the solenoid of the unlocking relay, a plurality of electromagnetically operated, normally open, series connected switches in the energizing circuit between the source and the unlocking relay solenoid such that said source cannot energize the unlocking relay unless the series connected switches are all closed, a combination changer comprising a group of simultaneously movable, circuit-making switch arms, the number of arms corresponding to the number of said series connected switches, a plurality of first terminals on said combination changer, an electrical circuit extending from each of the said selectors to various of the said first terminals, a plurality of second terminals corresponding to the number of said series connected switches and connected respectively with the solenoids of said switches, the arms being movable to complete circuits between said series switch solenoids and predetermined ones of said selectors and there being a power source energizing said last mentioned solenoids and an electrically operated counter connected with said unlocking relay so that same will be automatically operated when said series connected switches are closed.

15. In combination with an electric phonograph having circuit making selectors to be manually actuated to cause the phonograph to play records chosen in accordance with said selectors, an amusement device including a source of power, an indicator connected to the source of power but having the connection interrupted, an unlocking relay having contacts adapted to be closed to complete the circuit from the source to the indicator, an

energizing circuit from the said source to the solenoid of the unlocking relay, a plurality of electromagnetically operated, normally open, series connected switches in the energizing circuit between the source and the unlocking relay solenoid such that said source cannot energize the unlocking relay unless the series connected switches are all closed, a combination changer comprising a group of simultaneously movable, circuit-making switch arms, the number of arms corresponding to the number of said series connected switches, a plurality of first terminals on said combination changer, an electrical circuit extending from each of the said selectors to various of the said first terminals, a plurality of second terminals corresponding to the number of said series connected switches and connected respectively with the solenoids of said switches, the arms being movable to complete circuits between said series switch solenoids and predetermined ones of said selectors and there being a power source energizing said last mentioned solenoids and a time delay relay connected with said series connected switches and arranged to open the said switches a pre-determined time after operation of the said phonograph is initiated so that selection of said predetermined combination of selections after said predetermined time cannot energize the solenoid of said unlocking relay.

16. In a device of the character described associated with an apparatus having a plurality of selector switches and in which an indicating device is adapted to be actuated to indicate the proper choice of a number of selections substantially less than the number of selector switches, a source of electrical power, an indicator device connected to operate from said source, a relay having switch contacts breaking the connection between said source and indicator device and having a solenoid adapted to be energized to close said connection, an electrical path between the source and the solenoid of the said relay, a plurality of electromagnetic switches of the same number as the number of selections which comprise said proper choice interposed in series in said electrical path whereby all must be closed to enable energization of the solenoid, a switching device establishing connection between the electromagnetic switches and the selector switches of the selections making up said proper choice and completing energization circuits thereby to operate said electromagnetic switches, and a step relay connected in parallel with the first relay to change the said connections to other selected ones simultaneously with operation of said first relay.

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