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Verduin et al.

[11] **3,770,089**

[45] **Nov. 6, 1973**

[54] **LOTTERY TICKET MERCHANDISER**

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[21] Appl. No.: **226,667**

[52] **U.S. Cl.** ..... **194/1 N,** 194/10

[51] **Int. Cl.** **G07f 5/16**

[58] **Field of Search** ..... 194/4, 9, 10, 1 M, 194/1 N, 1 G, DIG. 8, DIG. 2, DIG. 4, DIG. 1, 94

[56] **References Cited**

UNITED STATES PATENTS

3,621,964 11/1971 Riddle 194/10

3,608,689 9/1971 Rosenhagen ..... 194/9 R

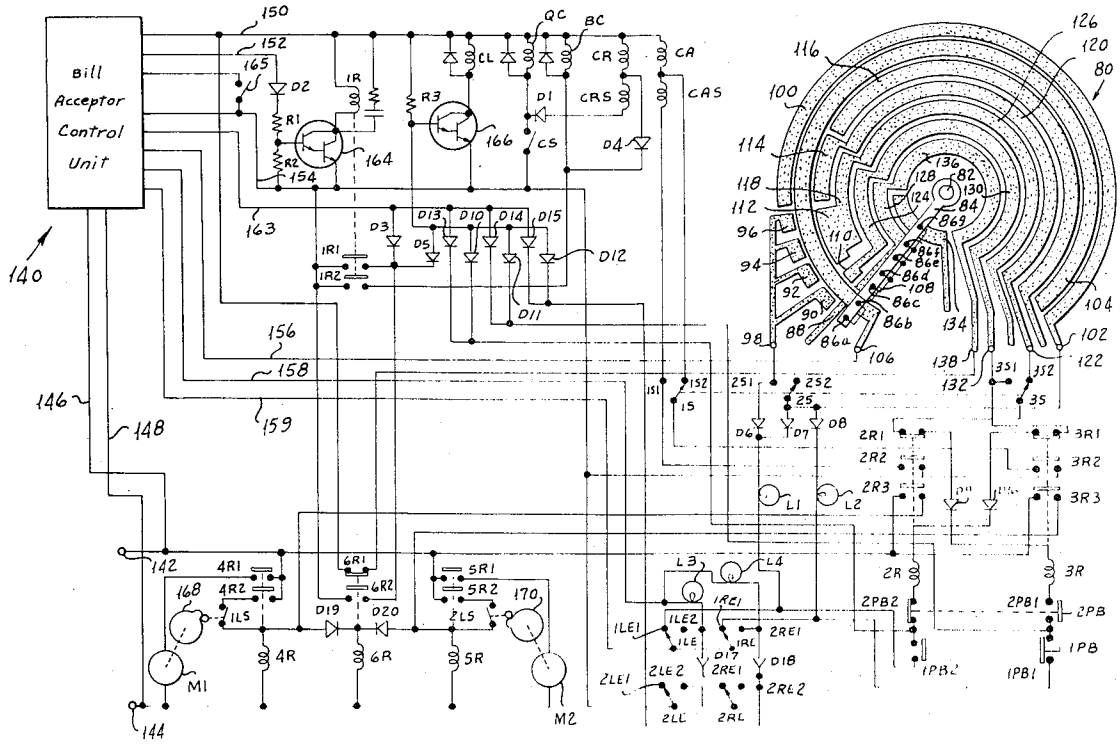
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[57] **ABSTRACT**

A lottery ticket merchandiser of tickets selling at two prices one of which is an integral multiple of the other, in which means responsive both to the deposit of coins and to the deposit of dollar bills establishes a credit aggregating the sum deposited to permit subsequent multiple and alternative selection of lower and higher-priced tickets until the credit is exhausted.

17 Claims, 4 Drawing Figures



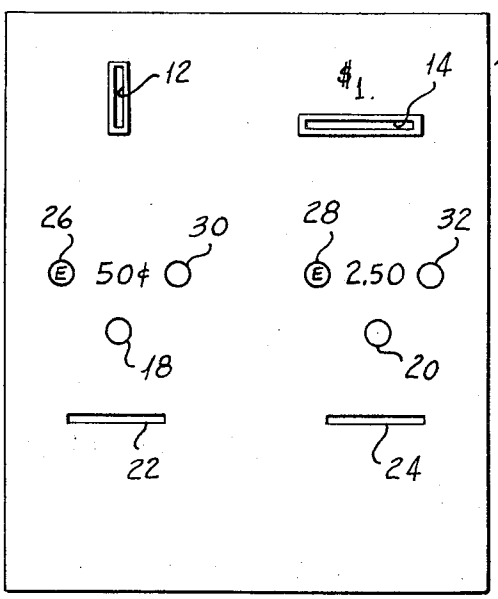
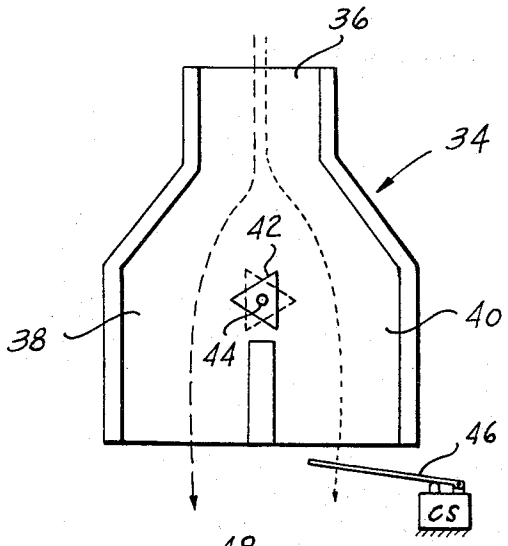


FIG 1

FIG 2



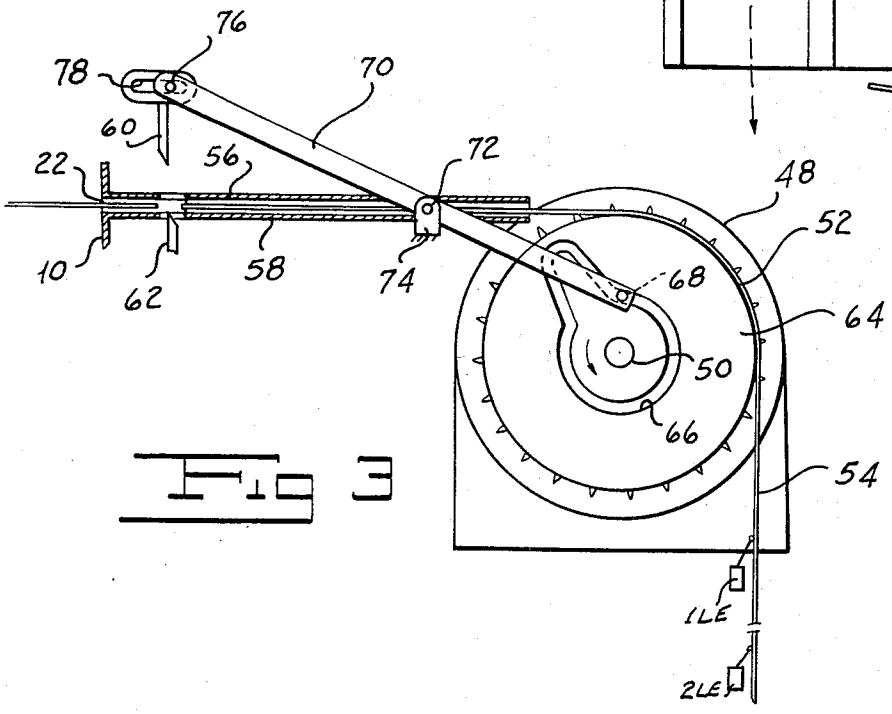


FIG 3

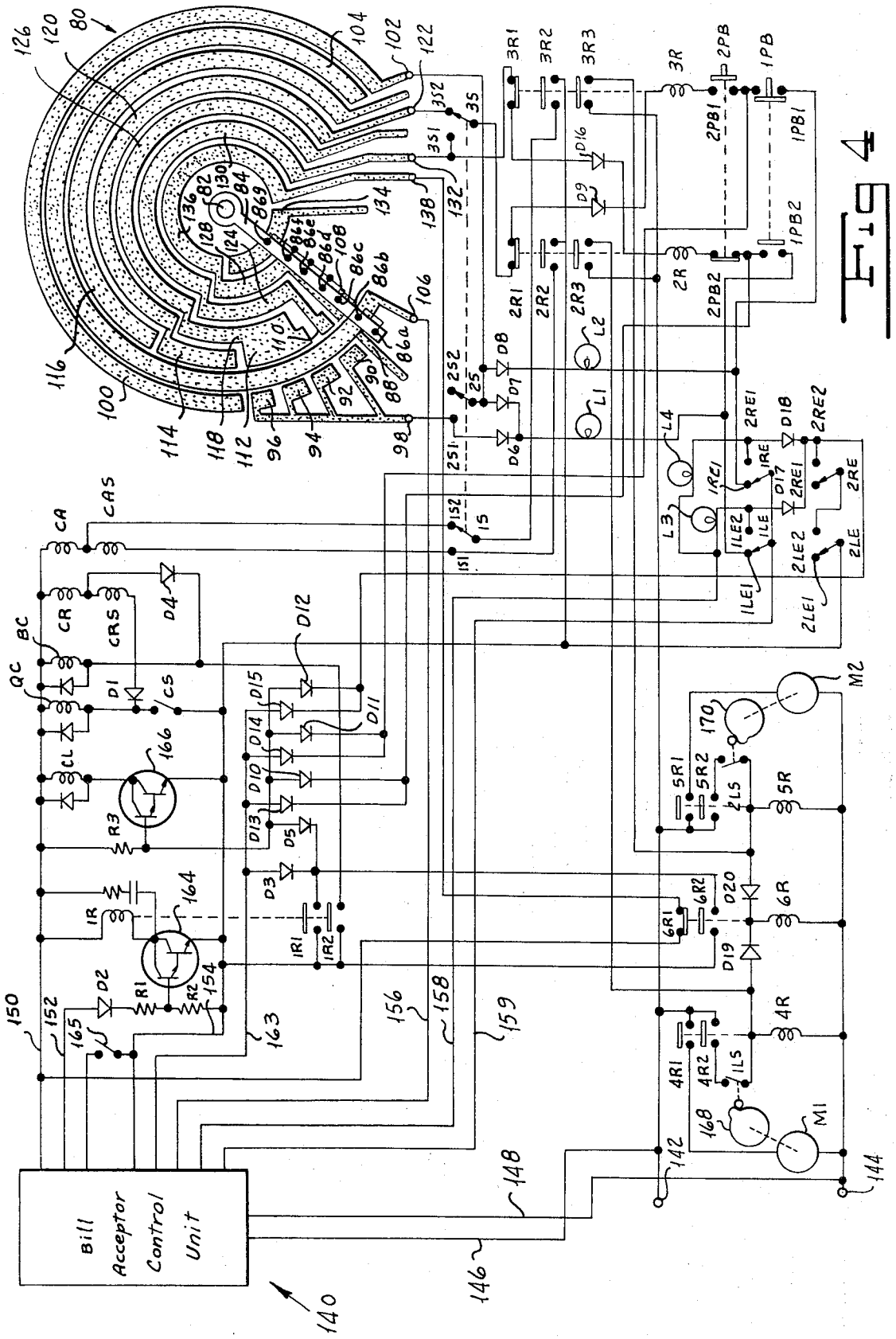

Bill Acceptor Control Unit
140
148
146
142
144
150
152
154
156
158
159
163
165
166
168
170
CA
CAS
CR
CRS
CL
CS
BC
QC
D1
D2
D3
D4
D5
D6
D7
D8
D9
D10
D11
D12
D13
D14
D15
D16
D17
D18
D19
D20
R1
R2
R3
IR
IR1
IR2
L1
L2
L3
L4
M1
M2
1PB
1PB1
1PB2
2PB
2PB1
2PB2
1RE
1RE1
2RE
2RE1
1LE
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1LE2
2LE
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1LS
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3R
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6R
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6R2
1S
1S1
1S2
2S
2S1
2S2
3S
3S1
3S2
80
82
84
86
86a
86b
86c
86d
86e
88
90
92
94
96
98
100
102
104
106
108
110
112
114
116
118
120
122
124
126
128
130
132
134
136
138

FIG 4

LOTTERY TICKET MERCHANDISER

BACKGROUND OF THE INVENTION

There are known in the prior art complicated arrangements for dispensing a ticket corresponding to one of a number of selections either at a single sum or at one of various prices in response to the deposit of tokens or coins. Not only are these arrangements complicated, but they do not permit multiple selections to be made after a single establishment of credit aggregating at least a multiple of the price at which the ticket is to be dispensed. These systems are responsive only to coins or tokens and will not accept and totalize dollar bills.

We have invented a lottery ticket merchandiser which establishes a credit in response both to the deposit of coins and to the deposit of bills therein. Our merchandiser permits selective dispensing of two tickets at prices which are respective multiples of each other. Our merchandiser permits multiple buys to be made after establishment of a credit which is that multiple of the purchase price. It is relatively simple in construction and in operation as compared with arrangements of the prior art adapted to sell tickets at more than a single price.

SUMMARY OF THE INVENTION

One object of our invention is to provide a lottery ticket merchandiser which permits multiple tickets to be purchased after establishment of a credit which is a multiple of the purchase price.

Another object of our invention is to provide a lottery ticket merchandiser which permits selective dispensing of tickets of different values.

A further object of our invention is to provide a lottery ticket merchandiser which totalizes both bills and coins deposited therein.

Still another object of our invention is to provide a lottery ticket merchandiser which is simple in construction and in operation.

Other and further objects of our invention will appear from the following description.

In general our invention contemplates the provision of a merchandiser for dispensing lottery tickets at two prices, one of which is an integral multiple of the other, in which a totalizer is responsive to the deposit both of coins and of dollar bills so as to permit selective and multiple purchases of tickets at the different prices up to the aggregate of the credit established in the machine.

BRIEF DESCRIPTION OF THE DRAWINGS

In the accompanying drawings which form part of the instant specification and which are to be read in conjunction therewith and in which like reference numerals are used to indicate like parts in the various views:

FIG. 1 is a front elevation of one form of our lottery ticket merchandiser.

FIG. 2 is a fragmentary view of a mechanical flip-flop forming a part of our lottery ticket merchandiser.

FIG. 3 is a schematic view of one form of ticket dispensing mechanism which may be employed in our lottery ticket merchandiser.

FIG. 4 is a schematic view of one form of electrical circuit which may be employed in our lottery ticket merchandiser.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to FIG. 1 of the drawings our lottery ticket merchandiser includes a cabinet **10** provided with a coin slot **12** through which coins such as quarters can be deposited in the machine. A dollar bill slot **14** permits dollars to be inserted in the machine to establish the credit in the manner to be described hereinbelow. In the particular form of our merchandiser illustrated in the drawings, quarters and dollar bills are totalized to permit the selective purchase of lottery tickets priced at 50 cents each or at $2.50 each.

After the establishment of at least 50 cents in credit, in order to purchase a 50 cent ticket, the customer actuates a push button **18** to cause a ticket to be delivered through a slot **22** in a manner to be described. Similarly, when the apparatus is set to sell $2.50 tickets also and when at least $2.50 credit established, operation of a push button **20** causes a $2.50 ticket to be delivered to the customer through a slot **24**. Respective empty signal lamps **26** and **28** are adapted to be illuminated to indicate to the customer that the supply of either the lower priced or higher priced tickets is exhausted. A lamp **30** is illuminated to indicate to the customer that sufficient credit has been established to permit him to purchase a lower priced ticket. Similarly, a lamp **32** lights to indicate to the customer that sufficient credit has been established to permit him to purchase a higher priced ticket. As will be explained more fully hereinbelow, we may provide our machine with means for enabling the operator to set the left and right units associated with buttons **18** and **20** to dispense tickets at the same price.

Referring now to FIG. **2**, quarters deposited in the coin slot **12** enter into a common coin path portion **36** of a coin path provided by an assembly indicated generally by the reference character **34**. From the common coin path portion **36**, quarters travel either along a branch path portion **38** or a branch path portion **40**. A diverter **42** having the configuration of an equilateral triangle is pivotally supported on a pin **44** for movement between an initial position illustrated in full lines in FIG. **2** and another position shown in broken lines. The first quarter entering upon the common coin path portion **36** falls downwardly and strikes the diverter **42** which directs the coin into the branch path portion **38**. In so doing, the diverter is moved from the full line position to the broken line position illustrated in FIG. **2**. The next quarter deposited in the slot **12** travels along path portion **36** and is directed by the diverter **42** to the branch path portion **40** from which it travels out of the assembly **34** to strike the actuator **46** of a coin switch CS. Thus, every first quarter deposited in the assembly **34** is merely collected while every second quarter actuates the coin switch CS. In this manner switch CS is actuated once for each 50 cents deposited in the coin slot **12**.

Each of the 50 cent and $2.50 units of our merchandiser **10** includes a ticket dispenser of any suitable type known to the art adapted to deliver tickets one at a time in response to actuation thereof. Referring now to FIG. **3**, one of the units such for example as the 50 cents unit may include a drive motor **48** adapted to be energized for one revolution of the shaft **50** thereof in a manner to be described. Shaft **50** carries for rotation therewith a toothed wheel **52** adapted to engage holes

adjacent to the periphery of a strip of tickets **54** in a manner known to the art. As the shaft **50** rotates, the tickets are advanced along the space between guides **56** and **58** and past a guillotine comprising a moveable cutter blade **60** and a stationary cutter blade **62.** Tickets from the guides **56** and **58** emerge for example through the slot **22** in the front of the cabinet **10.**

Shaft **50** also carries for rotation therewith a cam **64** provided with a cam track **66** adapted to receive a follower **68** carried by one end of a lever **70** pivotally supported on a pin **72** carried by a bracket **74** on the machine frame. The end of lever **70** remote from the follower **68** carries a pin **76** which rides in a slot **78** formed in the member carrying blade **60.** From the shape of the cam track **66** shown in FIG. **3,** it will readily be apparent that upon rotation of the shaft **50** in the direction of the arrow in FIG. 3 the lever **70** will be oscillated toward the end of a complete revolution of the shaft so as to move cutter blade **60** downwardly into cooperative relationship with the blade **62** to cut a ticket from the length **54.** It will readily be appreciated that the length of a ticket is related to the size of the other parts of the mechanism so that a complete ticket has passed the guillotine by the time the blade **60** descends to cut off the ticket.

Referring now to FIG. **4** the electrical circuit for our lottery ticket merchandiser includes a totalizer switch indicated generally by the reference character **80** including a shaft **82** carrying a brush assembly **84** which supports spaced brushes **86***a*, **86***b*, **86***c*, **86***d*, **86***e*, **86***f*, and **86***g*. In the embodiment illustrated in the drawings, we electrically connect brushes **86***a* and **86***b*. We also interconnect brushes **86***c* through **86***g*. The brush assembly **84** is adapted to be stepped from a home or no credit position to be described more fully hereinafter through 10° steps until a maximum credit has been established. The switch **80** includes a plurality of commutator rings, the outer ring of which includes segments **88, 90, 92, 94** and **96** corresponding to the no credit and the first four credit steps of the switch **80.** We connect segments **90, 92, 94** and **96** to a common terminal **98.** A segment **100** completes the outer ring and is connected to a terminal **102.** Brush **86**a is associated with the outer ring.

The second commutator ring associated with brush **86**b has a single segment **104** connected to a terminal **106.** The commutator ring associated with brush **86***c* includes a segment **108** adapted to be engaged by the brush **86***c* in the no credit position, a segment **110** adapted to be engaged by the brush in the one unit credit position, a segment **112** adapted to be engaged by the brush in the second, third and fourth credit positions, a segment **114** adapted to be engaged by the brush in the fifth to seventh credit positions and a segment **116** adapted to be engaged by the brush in all other credit positions of the brush assembly. The next inward commutator ring includes a segment **118** adapted to be engaged by brush **86***d* in the second to seventh credit positions and is completed by a segment **120** adapted to be engaged by the brush in all other credit positions and connected to a terminal **122.** The ring associated with brush **86**e includes a segment **124,** adapted to be engaged by the brush in the first to sixth credit positions and a ring **126** adapted to be engaged by the brush in all other credit positions. The next inward ring includes a segment **128** engaged by brush **86**f in the no credit to fifth credit positions and a ring **130** engaged by the brush in all other credit positions and connected to a terminal **132.** The inner commutator ring includes a segment **134** extending to the fifth credit position and a segment **136** extending through all other credit positions and connected to a terminal **138.**

In addition to the connections thus far described, we connect segments **112** and **118** over the second to fourth positions of credit. Segment **114** is connected to segment **120**; segment **118** is connected to segment **126**; segment **124** is connected to segment **130**; and segment **128** is connected to segment **136.**

The switch **80** and its associated actuating mechanism is more fully shown and described in U.S. Pat. No. 3,337,018 issued Aug. 22, 1967 to C. J. Boorsma for "Check Controlled Adjustable Credit Unit." As is more fully pointed out in the Boorsma patent, shaft **80** is adapted to be stepped through one unit of credit in response to the concomitant energization of a credit solenoid CR and a credit stop solenoid CRS. Energization of credit solenoid CR alone steps the brush arm **84** through two units of credit. Concomitant energization of the credit cancel winding CA and the cancel stop solenoid produces a rotation of shaft **82** in such a direction as to subtract one unit of credit. In the particular embodiment we have illustrated and in accordance with the teaching of the Boorsma patent, we so set the credit unit that energization of the cancel winding alone produces a movement of brush arm **24** amounting to a cancellation of five units of credit or $2.50.

The circuit of our lottery ticket merchandiser includes a bill acceptor control center indicated generally by the reference character **140.** The bill acceptor unit **140** is supplied with power from the terminals **142** and **144** of a suitable source of power by means of conductors **146** and **148.** The control unit **140** includes a bill acceptor of the type shown in Hooker U.S. Pat. No. 3,485,358. As is disclosed therein, the acceptor puts out a signal on a line **152** in response to passage of a valid dollar bill therethrough. In addition, the control unit puts out a control circuit potential on line **150,** credit lamp and empty flasher lamp voltages on lines **156** and **158** and provides a common ground line **154** and a low voltage return line **159,** in any suitable manner known to the art. A switch **165** is adapted to be closed to reverse the bill acceptor motor to return a bill to the customer before credit is established. Line **163** is adapted to be connected to ground in a manner to be described to disable the bill acceptor motor.

In establishing credit in response to the deposit of coins such as quarters in the coin slot **12,** it will be remembered that every second quarter passes through the mechanical flip-flop shown in FIG. **2** to strike the actuator **46** to close the coin switch CS. When that occurs, a circuit for the credit winding CR and for the credit stop winding CS is established from the 30 volt line **150** to ground **154** through a diode **D1.** As is pointed out more fully in the Boorsma patent referred to hereinabove, concomitant energization of CR and CRS steps the brush assembly **84** in a clockwise direction through one step of credit. In the arrangement we have shown each step of credit corresponds to 50 cents and the assembly **84** is stepped through one step for each two quarters deposited in the slot **12.**

In establishing credit in response to the insertion of bills into the unit **140,** as is pointed out more fully in the Hooker patent referred to hereinabove, each time a valid bill passes through the acceptor of unit **140** an

output pulse is produced on line **152.** This signal is applied to a voltage divider including resistors R1 and R2 by means of a diode D2. The voltage across resistor R2 is applied to an amplifier **164** the output collector circuit of which includes a relay winding 1R. Thus, in response to the passage of a valid dollar bill through the acceptor **140** winding 1R is energized to close two normally open switches 1R1 and 1R2. Switch 1R1 connects the lock-out line **163** to ground **154** through a diode D3 to prevent another bill from being inserted in the acceptor **140** while credit is being established. Switch 1R2 closes to complete the circuit to ground line **154** of the credit winding CR through a diode D4. It will be seen that under these conditions, only winding CR is energized and the credit stop winding CRS is not energized. When this occurs, the winding CR steps the brush assembly **84** through two steps of credit to stablish $1.00 worth of credit. In addition, closure of the switch 1R2 also completes the circuit of the bill counter solenoid BC which actuates a counter of any suitable type known to the art to count the total number of bills which have been inserted in the merchandiser.

A resistor R3 normally applies the potential on line **150** to an amplifier **166** to energize a coin lockout winding CL. Winding CL normally disables a lockout mechanism (not shown) of any suitable type known to the art. De-energization of winding CL enables the lockout mechanism to block the coin slot **12** to prevent further coins from being inserted in the machine as the dollar credit is being established. When switch 1R1 closes in the manner described above it grounds the input to amplifier **166** to turn the amplifier off to de-energize winding CL. As a result the coin lockout mechanism prevents coins from being inserted in the machine. Owing to this arrangement a loss of power also results in activation of the coin lockout so that the customer is not cheated.

From the foregoing, it will be seen that for each two quarters inserted in the slot **12** the brush assembly is stepped to establish 50 cents worth of credit and the quarter counter winding is energized to count each 50 cents inserted in the machine. Similarly, each dollar passing through the acceptor **140** steps the brush assembly through two steps of credit indicating that 1 dollar's worth of credit has been established. Bill counter winding BC is energized in response to the passage of each dollar through the acceptor **140** so that the total number of dollar bills inserted in the merchandiser is counted.

Our machine includes a selector switch having ganged contact arms 1S, 2S and 3S adapted to engage respective contacts 1S1, 1S2 and 1S3 in a first position and to engage respective contacts 2S1, 2S2 and 2S3 in a second position. As will be apparent from the description hereinbelow in the first position of the selector switch both units sell tickets at the same price while in the second position of the selector switch the left unit sells tickets at a lower price while the right unit sells tickets at a higher price. By way of example, the units may sell tickets at respective prices of 50 cents and $2.50. For purposes of clarity we have illustrated and will describe our machine in the second position of the selector switch.

We connect contacts 1S1 and 1S2 respectively to the lower terminal of the cancel stop solenoid CAS and to the common terminal of solenoids CA and CAS. Terminal 2S1 is connected to terminal **98** while terminal 2S2 is inactive. We connect terminals 3S1 and 3S2 respectively to terminals **132** and **122.** When the first 50 cents worth of credit has been established, so that the brush assembly **84** is in the one credit unit position, brushes **86***a* and **86***b* connect terminal **98** and thus terminal 2S1 to terminal **106** owing to the engagement of brush **86***a* with segment **90** and the engagement of brush 86b with segment **104.**

Our merchandiser includes respective empty switches associated with the lefthand or low-priced unit and with the righthand or higher-priced unit for indicating when the supply of tickets for the particular unit is exhausted. The left hand empty switch includes contact arms 1LE and 2LE which normally engage respective contacts 1LE1 and 2LE1 and which are adapted to engage respective contacts 1LE2 and 2LE2. Similarly, the higher-priced empty switch includes respective arms 1RE and 2RE which engage contacts 1RE1 and 2RE1 when a supply of tickets is available and which are adapted to engage respective contacts 1RE2 and 2RE2. We arrange the switches of each pair so as to be operated consecutively a few tickets apart.

Respective diodes D6 and D7 connect terminals **98** and **102** to one terminal of a 50 cent credit lamp L1 the other terminal of which is connected to contact 1LE1. A diode D8 connects terminal **102** to a $2.50 credit lamp L2 the other terminal of which is connected to contact 1RE1. As has been pointed out hereinabove, when 50 cents worth of credit is established terminal **106** is connected to terminal **98** through brushes **86***a* and **86***b* in contact with segments **90** and **104.** A circuit is then complete from line **156** through terminal **106** through the switch **80** to terminal **98** and through diode D6 to lamp L1 and from the lamp through contact 1LE1, arm 1LE to return line **159.** Lamp L1 lights to indicate that **50** cents worth of credit has been established and a **50** cent ticket may, if desired, be purchased. This operation continues for the first eight quarters deposited in the machine until **$2.00** of credit has been established. Similarly, two one dollar bills inserted in the machine actuate the switch **80** to light lamp L1 in the manner described above to indicate that a 50 cent ticket can be purchased.

As the tenth quarter is deposited in the slot **12** the arm **84** steps to a position at which terminal **106** is connected to terminal **102** through brush **86***b* in engagement with segment **104** and through brush **86***a* in engagement with segment **100** leading to terminal **102.** Under these conditions diode D7 connects terminal **102** to lamp L1 so that the 50 cents purchase lamp remains energized. Another diode D8 connects terminal **102** to lamp L2 to complete the circuit of the lamp from line **156** to terminal **106** through the switch to terminal **102** through D8 and lamp L2 to contact 1RE1 and through arm 1RE to line **159.** Thus, the $2.50 purchase lamp L2 is illuminated. These conditions continue until the total amount of credit has been established.

Establishment of credit in the manner described above also conditions the machine for purchase of either a 50 cent ticket or a $2.50 ticket if sufficient credit has been established. As soon as the first 50 cents of credit has been established in the manner described above, brush **86***e* in engagement with segment **124** and brush **86***f* in engagement with segment **128** connect terminal **138** to terminal **132.** As a result of this connec-

tion, a potential is coupled to the upper terminal of a left hand unit selecting relay winding 2R in the following manner. From the 30 volt line 150 a connection is made through a normally closed relay switch 6R1 to the terminal 138. Terminal 132 is connected by a normally closed switch 3R1 associated with the right hand selecting unit relay winding 3R and by a diode D16 to the upper terminal of winding 2R. A normally closed push button switch 2PB2 associated with the right hand selecting button 2PB and a normally open push button switch 1PB2 associated with the left hand unit selecting switch 1PB are adapted to connect the lower terminal of winding 2R to contact 1LE1 which is connected by arm 1LE to the return line 159. In this manner, the selecting relay winding 2R associated with the left hand unit is conditioned for energization upon actuation of push button switch 1PB. These conditions are maintained during all of the remaining credit positions of the totalizer switch 80.

As soon as the brush assembly 84 moves to the fifth credit position at which $2.50 worth of credit is established, a conditioning potential also is applied to the upper terminal of the right hand unit selecting relay winding 3R. In that position of the brush assembly 84 and in all higher credit positions terminal 138 is connected to terminal 122. This is achieved by the coupling between brush 86*c* in engagement with segment 114 and brush 86*f* in engagement with segment 128. For higher credit positions, these two terminals 138 and 122 remain interconnected through variuos brushes and segments of the switch 80. Switch arm 3S in engagement with contact 3S2 couples this potential through a normally closed switch 2R1 associated with winding 2R to a diode D9 which applies the potential to the upper terminal of winding 3R. A normally open push button switch 2PB1 associated with the right hand selecting push button switch 2PB and a normally closed push button switch 1PB1 associated with the left hand selecting switch 1PB are adapted to connect the lower terminal of winding 3R to contact 1RE1 which is connected by arm 1RE to the return line 159.

From the foregoing it will be seen that in the position of the selector switch illustrated in the drawings relay winding 2R is conditioned for energization in all credit positions of the brush assembly 84. Relay winding 3R is conditioned for energization at all credit positions of the assembly 84 above $2.00 worth of credit. We provide our merchandiser with a left hand motor control relay including a winding 4R adapted to be energized to close a switch 4R1 to energize the motor M1 and to close a second normally open switch 4R2 to complete the holding circuit for winding 4R through a one revolution limit switch 1LS. A cam 168 driven by motor M1 is adapted to open limit switch 1LS as the motor shaft completes a single revolution to interrupt the holding circuit of relay winding 4R.

Our merchandiser further includes a second drive motor M2 which may be associated with the right hand unit adapted to deliver for example $2.50 lottery tickets. A motor-control relay winding 5R associated with motor M2 is adapted to be energized in a manner to be described to close a normally open switch 5R1 to energize motor M2 from the source terminals 142 and 144. When energized, winding 5R also closes a switch 5R2 to complete the holding circuit for winding 5R through a limit switch 2LS. We provide a cam 170 associated with motor M2 for opening switch 2LS as the motor completes a revolution to interrupt the holding circuit for winding 5R.

A common relay winding 6R is adapted to be energized through either of two diodes D19 and D20 when either of the windings 4R or 5R is energized. When energized, winding 6R opens a normally closed switch 6R1 to remove power from the credit switch terminal 138. In addition, it closes a normally open switch 6R2 to connect the lockout line of acceptor 140 to ground through diode D3 thus to disable the acceptor and to connect R3 to ground to disable coin lockour coil C2.

Assuming that sufficient credit has been established to permit the selection of either a 50 cent ticket or a $2.50 ticket, and that the customer desires to purchase a 50 cent ticket, he operates push button switch 1PB to open the normally closed switch 1PB1 to disable to $2.50 relazy winding 3R. At the same time, switch 1PB2 closes to complete the circuit of winding 2R in the manner described above. Energization of winding 2R opens normally closed switch 2R1 to disconnect the upper terminal of winding 3R from the switch arm 3S. At the same time, normally open switch 2R2 closes to complete the circuit to ground line 154 of both the cancel winding CA and the cancel stop winding CAS. As is more fully pointed out in the Boorsma patent referred to hereinabove, concomitant energization of windings CA and CAS steps the brush assembly 84 one step backward to control 50 cents worth of credit which has previously been established. Energization of winding 2R further closes normally open switch 2R3 to connect the upper terminal of control winding 4R to terminal 142 to energize the winding. This winding, when energized, closes swith 4R1 to energize motor M1 and closes switch 4R2 to complete the holding circuit of the winding through switch 1LS which is opened at the end of a revolution of the motor shaft by cam 168. The closing of the switch 1PB2 in addition to energizing winding 2R, also grounds resistor R3 through diode D10 to de-energize the coin lockout coil CL and it grounds the lockout line 163 through a diode D13 to prevent the bill acceptor from running when the button is pushed.

As has been pointed out hereinabove, when at least $2.50 of credit has been established, a potential is applied to the upper terminal of winding 3R to condition that relay for energization. With sufficient credit in the machine and in order to select a $2.50 ticket, the customer pushes button 2PB to open normally closed switch 2PB2 to disable the 50 cents select relay 2R and to close normally open switch 2PB1 to energize winding 3R. When energized, winding 3R opens the switch 3R1 to disable winding 2R. It further closes switch 3R2 to energize only the cancel coil CA through arm 1S and contact 1S2. The switch 80 has been so set pursuant to the showing of the Boorsma patent so that energization of winding CA alone steps the switch assembly 84 backward through five steps to cancel $2.50 worth of credit. Energization of winding 3R also closes switch 3R3 to energize winding 5R. Winding 5R when energized closes switch 5R1 to energize motor M2 and closes switch 5R2 to complete the holding circuit for winding 5R which remains complete until the motor completes a revolution at which time cam 170 opens switch 2LS to interrupt the circuit of winding 5R. Switch 2PB when closed also grounds resistor R3 through diode D11 to energize the coin lockout coil

and it grounds the bill lockout line 163 through diode D14 to disable the bill acceptor.

When either of the windings 4R or 5R is energized, winding 6R also is energized through either diode D19 or diode D20. When energized, winding 6R opens switch 6R1 to remove potential from terminal 138 of the switch 80. In addition, it closes switch 6R2 to ensure that the coin lockout winding CL is disabled and that the bill transport is deactivated through diodes D3 and D5 all during the time over which either motor is in operation. This results from the fact that the holding circuits for the respective windings 4R and 5R also provide a holding circuit for winding 6R.

As the supply of tickets in the left hand unit is depleted switch 2LE first moves into engagement with contact 2LE2 and then switch 1LE moves into engagement with contact 1LE2. Depletion of the supply in the right hand unit sequentially actuates 2RE and 1RE. As soon as both switches 2LE and 2RE are actuated a circuit is complete from resistor R3 and from lockout line 63 to ground through respective diodes D12 and D15 so that money will no longer be accepted. When both switches 2LE and 2RE are actuated both empty lamps L3 and L4 are energized. When either 1LE or 1RE is actuated the corresponding lamp L3 or L4 is energized and tickets from the corresponding section can no longer be sold. This arrangement permits a customer to use all the credit he has established.

In the full line positions of arms 1S, 2S and 3S shown in the drawings, the left hand unit is adapted to dispense relatively less expensive lottery tickets such for example as 50 cent tickets while the right hand unit is adapted to dispense relatively more expensive tickets such for example as tickets selling for $2.50. If, for any reason, it should be desired to have both the left and right hand units sell tickets for the lower price of 50 cents, the operator merely moves the switch arms from the positions shown to the positions at which they engage respective contacts 1S1, 2S1 and 3S1. With the switches in that position, each of the units will dispense 50 cents tickets in the manner described above.

The operation of our merchandiser in dispensing lottery tickets selling at two different prices will readily be apparent from the description hereinabove. Every second quarter deposited in the machine closes coin switch CS to step brush assembly 84 through one step of credit and to energize the quarter count coil QC to register 50 cents on the totalizing counter. Alternatively, bills fed into the bill acceptor 40 through slot 14 result in a signal on line 152 which energizes credit winding CR to step the assembly 84 through two steps to indicate a dollor of credit. At the same time, the bill counter winding BC is energized to count the bill. Whenever a bill is deposited and as the bill acceptor runs, both the coin lockout winding CL is deenergized and the lockout line 163 is grounded to disable the bill acceptor.

With the machine set to deliver tickets at two different prices whenever at lest 50 cents but not more than $2.00 worth of credit has been registered winding 2R is conditioned for energization upon operation of push button 1PB. When push button 1PB is operated it energizes motor M1 for one revolution to cause the associated ticket dispenser to deliver one ticket. At the same time, both the cancel windings A and CAS are energized to step switch 80 backward through one step of credit. Repeated purchases of tickets in the manner described can be made so long as sufficient credit remains in the switch 80 to permit a purchase to be made.

When at least $2.50 worth of credit has been registered both windings 2R and 3R are conditioned for energization so that the customer may selectively buty either a 50 cent ticket or a $2.50 ticket. If he selects a $2.50 ticket, motor M2 is energized for one revolution to deliver a $2.50 ticket. At the same time, winding CA but not winding CAS is energized, so that switch assembly 84 is stepped back through five steps to subtract $2.50 worth of credit. Repeated purchases of $2.50 tickets can be made until the amount of credit falls below $2.50. From there on only 50 cent tickets can be purchased. It is possible also with greater than $2.50 of credit on the machine to purchase 50 cent tickets if desired.

It is to be remembered that at any time when the totalizer is registering money which already has been deposited, the bill and coil lockouts are active. Moreover these lockouts are activated whenever either of the motors M1 and M2 is operating to deliver a ticket. As the supply of tickets in a section is depleted the empty switches such as 2LE and 1LE are operated in sequence a few tickets apart. If both switches 2LE and 2RE are actuated money will no longer be accepted and both lamps L3 and L4 are energized. If either switch 1LE or 1RE is actuated the corresponding lamp L3 or L4 is energized and tickets can no longer be sold from the corresponding unit.

It will be seen that we have accomplished the objects of our invention. We have provided a lottery ticket merchandiser which permits repeated purchases to be made after establishment of a credit which is a multiple of the purchase price of a ticket selected. Our merchandiser permits selective purchase of tickets at two different prices so long as credit aggregating at least the purchase price of the higher priced ticket has been deposited in the machine. Our ticket merchandiser is relatively simple in construction and in operation for the result achieved thereby.

It will be understood that certain features and subcombinations are of utility and may be employed without reference to other features and subcombinations. This is contemplated by and is within the scope of our claims. It is further obvious that various changes may be made in details within the scope of our claims without departing from the spirit of our invention. It is, therefore, to be understood that our invention is not to be limited to the specific details shown and described.

Having thus described our invention, what we claim is:

1. A merchandiser for selling tickets at a certain price including in combination, manually operable means adapted to be enabled to deliver a ticket upon operation thereof, means adapted to be actuated to register and to store a credit equal to an integral multiple of said purchase price, means responsive to the deposit of money therein for actuating said credit registering means to register and to store a credit aggregating an integral multiple of said purchase price, means including said credit registering and storing means for enabling said ticket delivery means upon the registration of a credit equalling said certain price, and means responsive to operation of said ticket delivery means for actuating said credit registering and storing means to subtract an amount equal to said certain price from the credit stored in said credit registering and storage

means to leave a credit therein at least equal to said certain price.

2. A merchandiser as in claim 1 in which said money responsive means comprises means responsive to the deposit of coins for actuating said credit registering means and means responsive to the deposit of bills for actuating said credit registering means.

3. A merchandiser as in claim 2 in which said coin responsive means actuates said credit registering means in response to the deposit of every second coin therein.

4. A merchandiser as in claim 1 in which said credit registering means is adapted to be actuated in steps in registering credit, said money responsive means comprising means responsive to deposit every second coin for stepping said credit registering means through one step and means responsive to deposit of a bill for stepping said credit registering means through two steps.

5. A merchandiser for selling first tickets at a lower price and second tickets at a higher price which is at least n times said lower price where n is an integer greater than 1 including in combination, first manually operable means adapted to be enabled to deliver said first tickets upon operation thereof, second manually operable means adapted to be enabled to deliver said second tickets upon operation thereof, means adapted to be actuated to register and to store a credit at least equal to said higher price, means responsive to the deposit of money therein for actuating said credit registering means to register and to store a credit at least equal to said higher price, means including said credit registering and storing means for enabling said first ticket delivering means upon the establishment and storage of any credit at least equal to said lower price, means including said credit registering and storage for enabling said second ticket delivering means upon the establishment and storage of a credit equalling at least said higher price, means responsive to operation of said first ticket delivering means for actuating said credit registering and storing means to subtract a credit equal to the price of said first ticket from the credit stored in said credit registering and storage means to leave a credit therein at least equal to said lower price, and means responsive to operation of said second ticket delivering means for actuating said credit registering and storage means to subtract a credit equal to the purchase price of a second ticket from the credit stored in the credit registering and storage means.

6. A merchandiser as in claim 5 in which said means responsive to the deposit of money comprises first means responsive to the deposit of coins for actuating said credit registering means and second means responsive to the deposit of dollar bills for actuating said credit registering means.

7. A merchandiser as in claim 6 including means responsive to operation of said second actuating means for disabling said coin responsive means.

8. A merchandiser as in claim 5 including first means responsive to operation of said registering means for indicating the establishment of a credit aggregating the purchase price of a first ticket and second means responsive to operation of said registering means for indicating that a credit aggregating the purchase price of a second ticket has been established.

9. A merchandiser as in claim 5 including means responsive to operation of one of said delivery means for preventing actuation of the other delivery means during said operation.

10. A merchandiser as in claim 5 including means for disabling said second delivery means when the credit in said credit registering means falls below the purchase price of a second ticket.

11. A merchandiser as in claim 5 including first and second empty switches associated with said first ticket delivery means, said first and second switches being sequentially actuated in response to a predetermined operation of said first delivery means, third and fourth empty switches associated with said second ticket delivery means, said third and fourth switches being sequentially actuated in response to a predetermined operation of the second ticket delivery means, means responsive to the concomitant actuation of said first and third switches for inhibiting said means responsive to the deposit of money and respective means responsive to the actuation of said second and fourth switches for disabling the corresponding delivery means.

12. A merchandiser as in claim 11 including respective empty signal lamps associated with said first and second delivery means and means responsive to concomitant actuation of said first and third switches for energizing said lamps.

13. A merchandiser as in claim 11 in which said first and second switches and said third and fourth switches are spaced by the length of at least one ticket.

14. A merchandiser as in claim 1 including first and second empty switches associated with said delivery means, said switches being actuated in sequence in response to a predetermined operation of said delivery means, means responsive to operation of said first switch for disabling said money responsive means, and means responsive to actuation of said second switch for disabling said delivery means.

15. A merchandiser as in claim 14 in which said switches are spaced by at least the length of a ticket.

16. A merchandiser for selling tickets including in combination, first means for delivery tickets, second means for delivering tickets, means adapted to be actuated to register a credit equal to an integral multiple of the price of a ticket, means responsive to the deposit of money therein for actuating said credit registering means to register a credit aggregating an integral multiple of said purchase price, means including said credit registering means for enabling said ticket delivery means upon the registerion of a credit equalling the price of a ticket, means responsive to operation of one of said delivering means for actuating said credit registering means to subtract from said credit an amount equal to the price of a ticket delivered by the unit, first and second empty switches associated with said first delivery means, third and fourth empty switches associated with said second delivery means, said first and second switches and said second and fourth switches being actuated sequentially in response to predetermined operations of the respective first and second delivery means, means responsive to concomitant operation of the first and third switches for disabling said means responsive to the deposit of money and means responsive to respective actuation of said second and fourth switches for disabling said delivery means.

17. A merchandiser as in claim 16 including respective empty signal indicators associated with said delivery means and means responsive to concomitant operation of said first and third switches for energizing said indicators.

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UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

Patent No. 3,770,089 Dated November 6, 1973

Inventor(s) Lee V. Verduin and William Rosenhagen

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 12, line 46, "registerion" should read

-- registration --.

Signed and sealed this 12th day of March 1974.

(SEAL)
Attest:

EDWARD M.FLETCHER,JR.
Attesting Officer

C. MARSHALL DANN
Commissioner of Patents

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