May 15, 1951 J. L. HAUFLAIRE 2,552,675

COIN CONTROL APPARATUS

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Fig. 1.

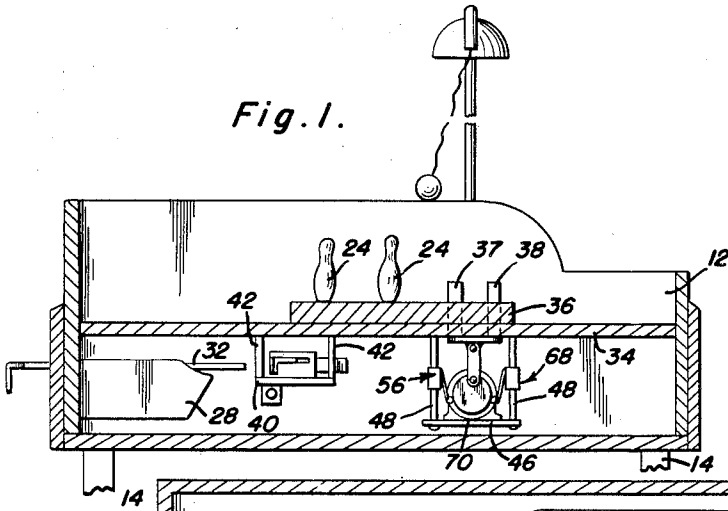


Fig. 2.

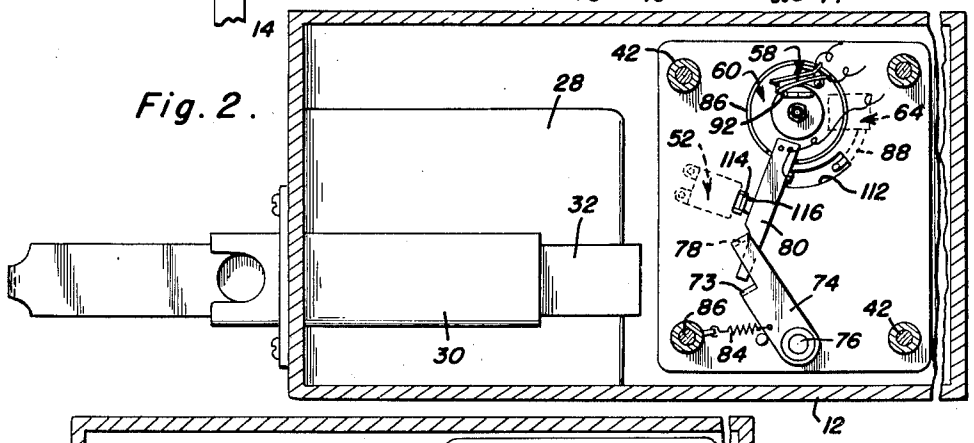
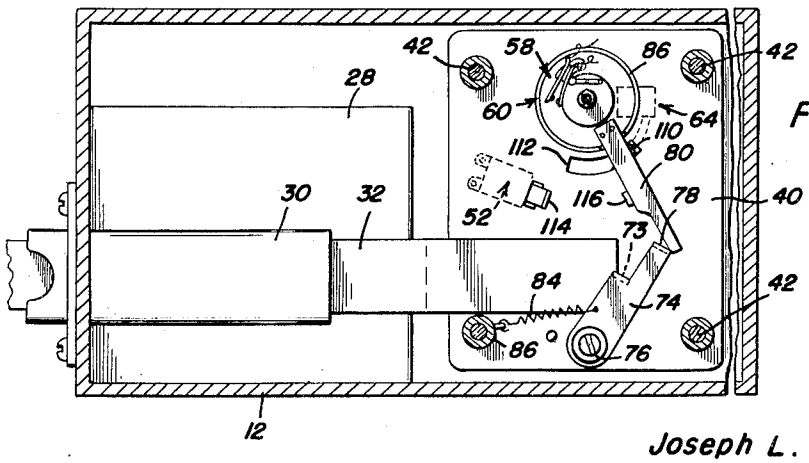


Fig. 3.



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Fig. 4.

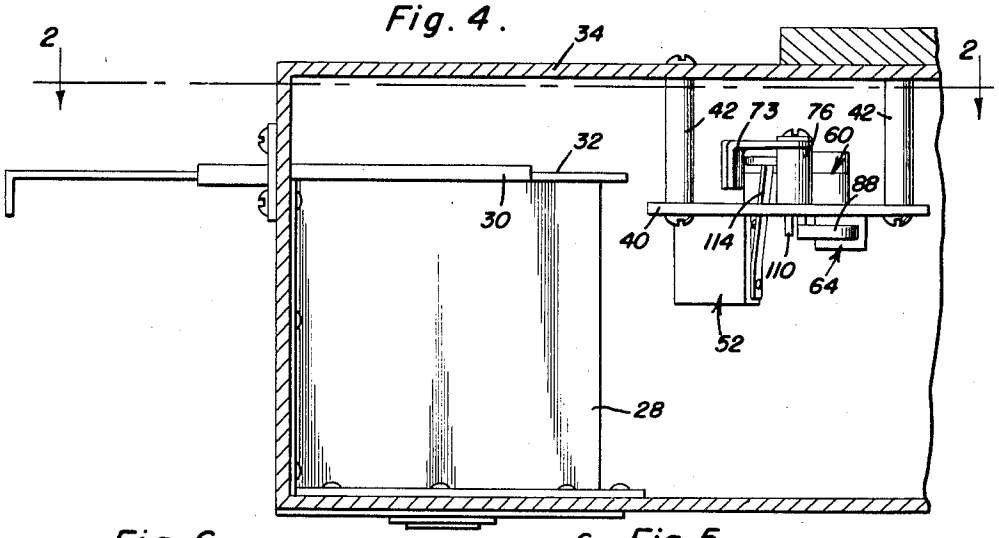


Fig. 6.

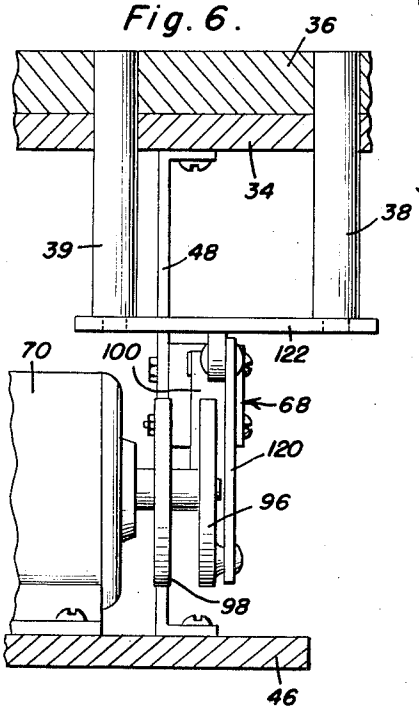
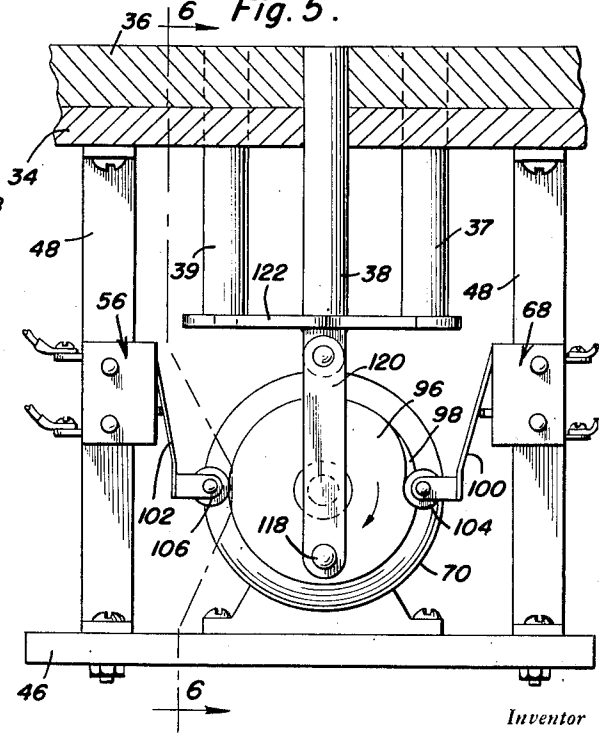


Fig. 5.



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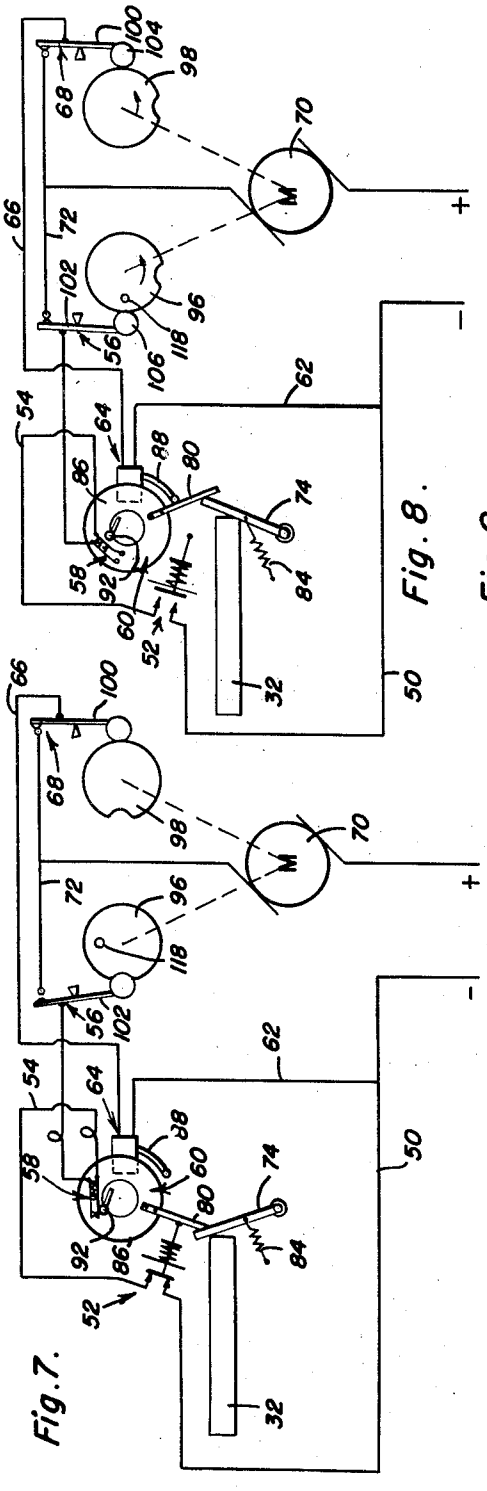


Fig. 7.

Fig. 8.

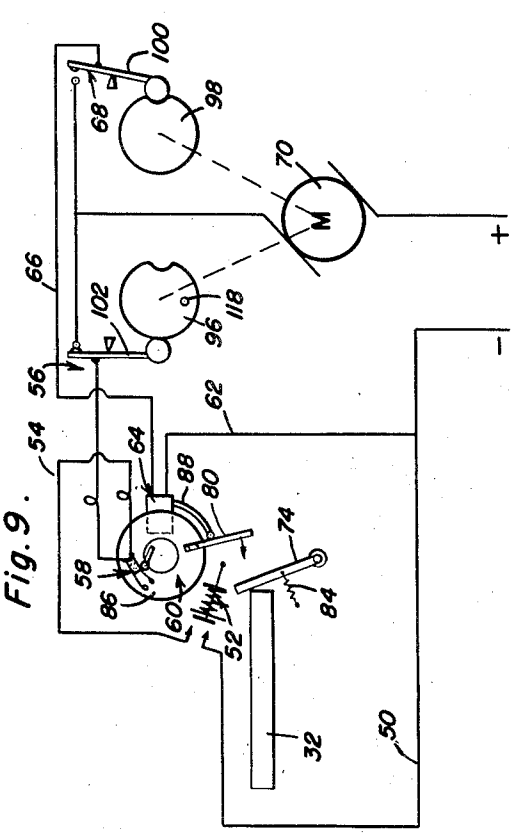


Fig. 9.

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COIN CONTROL APPARATUS

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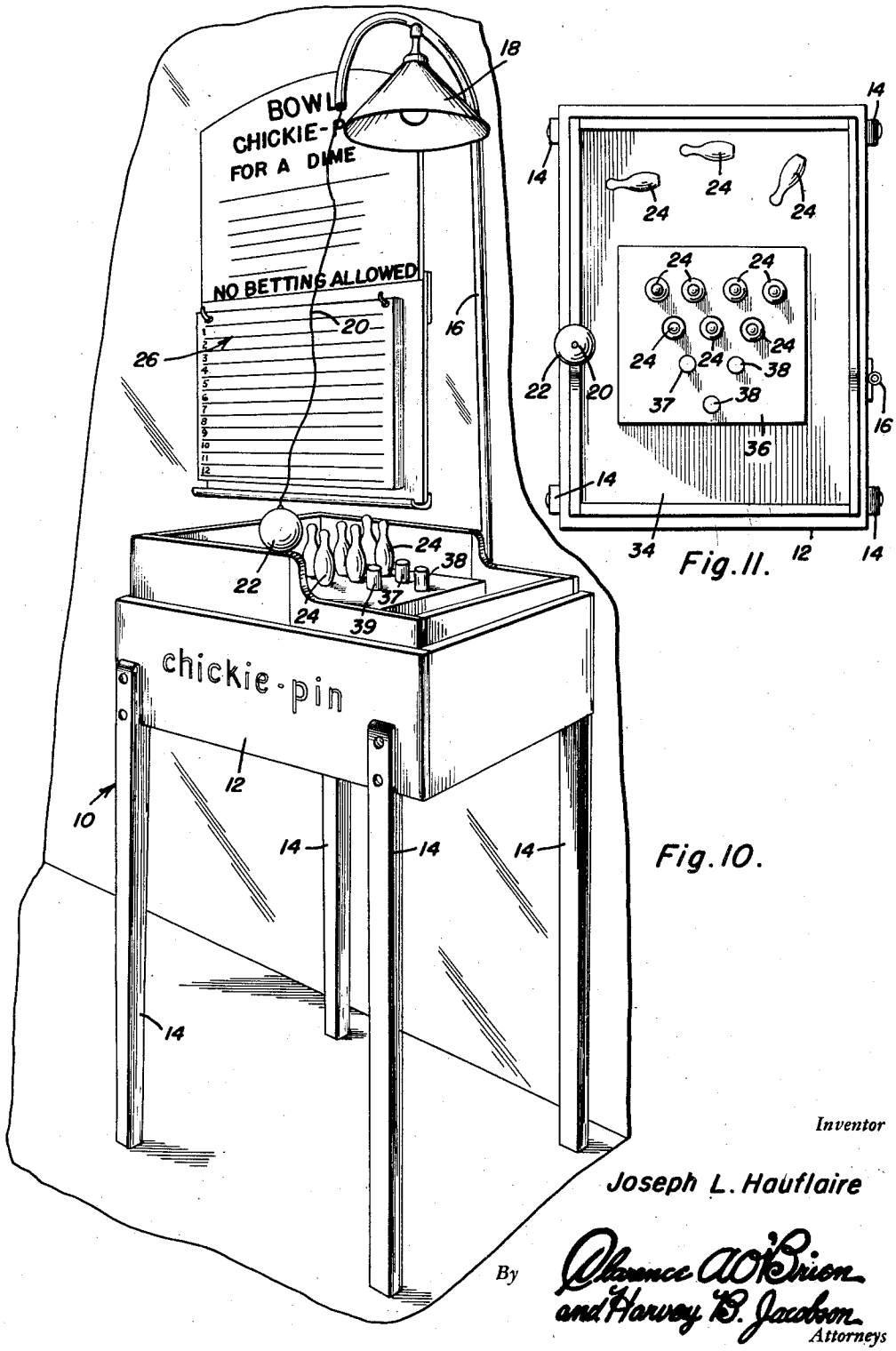


Fig. 10.

Fig. 11.

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UNITED STATES PATENT OFFICE

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COIN CONTROL APPARATUS

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Application January 11, 1950, Serial No. 138,054

2 Claims. (Cl. 161—1)

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This invention relates to novel and useful improvements in coin control apparatus adapted to be used in connection with games.

An object of this invention is to urge obstructions or a single obstruction as a number of pins or a single pin in the path of travel of a game playing ball so that the pins or "object" to be struck by the ball will be protected until such time that the operator of the device inserts a coin or coins in an appropriate coin receiving mechanism whereby through a combination electrical and mechanical function the obstruction is removed for a duration and the apparatus is rendered inoperative, thence, the electrical-mechanical operation again takes place to operate the obstruction so as to place it in the path of travel of the game ball.

Ancillary objects and features of novelty will become apparent in following the description of the illustrated form of the invention, wherein:

Figure 1 is a longitudinal sectional view of a typical game employing the invention;

Figure 2 is a sectional view taken substantially on the line 2—2 and in the direction of the arrows;

Figure 3 is a sectional view taken on a horizontal plane through the device;

Figure 4 is an enlarged fragmentary sectional view showing a part of the apparatus;

Figure 5 is a sectional view illustrating particularly the cam microswitch operators together with the means of raising and lowering the obstruction;

Figure 6 is a sectional view taken substantially on the line 6—6 of Figure 5 and in the direction of the arrows;

Figure 7 is a wiring diagram and a schematic mechanical diagram showing positions of elements when a coin is to be inserted into the coin receiving mechanism;

Figure 8 is a wiring diagram similar to that of Figure 7, however, the motor is now in motion as illustrated and parts appropriately positioned are shown as such;

Figure 9 is a wiring diagram of the same mechanism but illustrative of the conditions of the elements when the device is in the playing position;

Figure 10 is a perspective view of a typical game device employing the invention and forming a part of the invention; and

Figure 11 is a horizontal sectional view of the structure of Figure 10 to illustrate the relative positions of various elements of the device.

The instant invention deals with a coin control apparatus and control mechanism for a plurality

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of obstructions which are adapted to be used in connection with a game. The game is played with a game apparatus generally indicated at 10 and consisting of a housing 12 with legs 14 to support the housing at an appropriate elevation. A vertically extending standard 16 is secured to the housing and may support a lamp 18 to illuminate the playing surface, the lamp 18 being optional. The main purpose of the support 16 is to accommodate the cord 20 which has a ball 22 at the lower end thereof, the ball being of such length to allow an arc or swing to contact the playing pins 24 which simulates bowling pins. It is recommended that a score board, generally indicated at 26 be conveniently located as on a wall.

Referring now to Figure 4, a purely conventional coin box 28 is disposed in the housing supporting the track-way 30 having an equally conventional coin receiving apparatus including the sliding plate or member 32. Through the medium of this apparatus, the coin is received and deposited in the coin box 28 allowing inward movement of the plate 32 beyond a predetermined point, the coin being employed as a key. Appropriate means of access to the coin box is provided in the housing, as a door, removable panel or the like.

Reference is now made to Figure 1 which shows a structurally assembled view of the apparatus. A horizontal partition 34 forms a part of the housing 12 and has a platform 36 disposed thereon. This platform accommodates the pins 24 which are spaced from each other and arranged in rows. Obstructions in the form of the pins 37, 38 and 39 are passed through openings formed in the partition 34 and the platform 36. These pins serve a dual function, the first being to obstruct the ball 22 in its travel in the absence of coin operation and the second is to form "spots" for the disposition of three pins 24 after a coin has been inserted to set in motion other mechanism.

A shelf 40 is suspended by means of bolts having sleeves 42 therearound, the bolts being fastened to the partition 34 (see Figure 4).

Juxtaposed but spaced from the shelf 40 is a motor mount plate 46 which is suspended by means of support brackets 48, secured to the undersurface of the horizontal partition 34. The motor mount plate 46 and the shelf 40 could be supported by the bottom of the housing 12, if found desirable. However, with the described structure it is only necessary to remove the partition 34 thereby carrying with it most of the necessary structure, in event that repair or adjustment is necessary.

With the above basic mechanical elements involved, together with others to be described subsequently, the combination electrical and mechanical operation takes place in order to raise and lower the obstructions or pins 37, 38 and 39. Reference will now be made to Figures 7–9 for a discussion of this electrical and structural apparatus together with a description of the operation of the invention.

Generally speaking, the person playing the game inserts a coin for deposit in the coin box allowing inward movement of the coin control plate 32 beyond a predetermined point. Then, a motor is set into motion causing the obstruction pins 37, 38 and 39 to be lowered. While the pins are being lowered the participant places the playing pins 24 in the proper position on the platform 36. Then, the motor is rendered inoperative. The participant plays the game by causing the ball 22 to be operated in an arcuate travel. The attempt is obviously to knock the pins 24 to a down position. After a duration the motor is again rendered operative causing the obstruction pins to be elevated thereby preventing further efficient operation of the playing ball 22. At this time, the electrical and structural apparatus is in condition for a second play by insertion of another coin. Figure 7 shows schematically the disposition of various mechanical elements and electrical elements when the assembly is in condition to receive a coin. An electrical conductor 50 extends from one side of a source and terminates in a contact of a normally open circuit breaker 52. Then, the conductor continues as at 54 for connection with a micro switch 56. However, interposed in this portion of the conductor is a timer switch 58 movable with a part of a purely conventional timer 60 which is preferably of the mechanical type, as a spring loaded member operating against a dash pot.

A line 62 extends from the conductor adjacent the source and terminates in a control switch 64 of conventional description. The line then continues as at 66 until it terminates at and in connection with the second motor micro switch 68.

The motor 70 is electrically connected with a shunt line 72, also connected with the other side of the source of current.

With this wiring and in the system described, the following is the operation. A coin is inserted, causing inward movement of the member 32. This member strikes the downturned leg 73 of a pivoted arm 74 (see Figure 3) which is carried by the pivot pin 76. Said pivot pin is disposed on the shelf 40. The arm 74 has a downturned ear 78 secured at the end thereof which engages the timer operator arm 80, rigidly fixed to the movable part of the timer 86, the stationary part being firmly secured to the shelf 40. Thus, when the coin control member 32 is urged inwardly, the arm 74 is operated by engagement of the downturned flange 73 with the inner end of the member 32 causing the timer 60 to be set. Operation of the arm 74 is opposed by the spring 84 which is secured at one end to said arm 74 and at the other end to a post 86 carried by the shelf 40.

While the timer is being set, the circuit breaker 52 is permitted to remain open since the timer operating arm 80 also operates the circuit breaker 52. Also, the control switch 64 which has its operating arm 88, is closed. Another condition existing is the movement of the timer switch 58 from the stationary post 92 whereby the inherent resiliency of the two contacts which are held together forming the timer switch 58 causes them to be spread, obviously opening the switch.

Now, the condition of the elements is that condition depicted in Figure 8. The motor 70 is rendered operative through the motor control switches 56 and 68, as in Figure 8 by the cams 96 and 98.

These cams are secured to the motor shaft so that operation of the motor causes operation of each cam. Resilient switch operating arms 100 and 102 are secured to the switches 56 and 68 and cam followers 104 and 106 are carried by the arms.

Current being fed to the motor 70 through the first and second motor switches 56 and 68 respectively cause motor operation to appropriate parts of the wiring obviously traceable in Figures 7–9. The motor is caused to operate due to the rotation of the cams 96 and 98 an amount sufficient to lower the pins 37, 38 and 39. At that moment, the motor 70 ceases operation for a time, dependent upon the adjustment of the conventional timer 60. When this duration lapses, the movable part 86 of the timer will have returned from the position of Figure 9 which shows the timer in such condition that the timer movable element 86 is slowly moving to a position for closing the normally open circuit breaker 52 and for closing the timer switch 58. When said circuit breaker and said timer switch arrive at the closed condition, the apparatus is again "re-set" or in the condition shown in Figure 7, awaiting another coin to be inserted for ultimate deposit in the coin box and for repetition of the described cycle.

In order that the above described operation be realized, certain of the switches must be properly disposed. It is obvious that the mechanical linkage has to be properly connected. As described, the arms 74 and 80 are carried by the shelf 40 and the arm 74 has its depending flanges 73 and 73 in such position that they will be struck by the coin controlled operating member 32 and by the arm 80. A depending lug 110 is disposed on the arm 80 for contact with the control switch operator 68, this control switch being carried also by the platform 40 and in the path of the arcuate travel of the timer control arm 80. The control switch 64 being disposed on the undersurface of the shelf 40, requires the slot 112 therein, through which the lug 110 passes. The same provision is made for the circuit breaker 52, so that its operator 114 may be engaged by the depending flange 116 of said arm 80.

As to the motor 70, it is so disposed with respect to the support bracket 48 that the micro switches or first and second motor control switches are carried by the support brackets whereby the cam followers 104 and 106 are operatively connected with the cams on the motor shaft. An eccentric pin 118 is secured to one of the cams and a pitman 120 is attached at one end thereto. The other end is attached to a plate 122 having the obstruction pins 37, 38 and 39 fixed thereto. Hence, operation of the motor causes raising and lowering of the obstruction pins.

Having described the invention, what is claimed as new is:

1. In a game which includes an obstruction preventing operation of the game, means for displacing said obstruction for a predetermined time so that the game may be played, said means comprising a motor with means drivingly con-

necting said motor and said obstruction, a timer, an arm secured to said timer to set said timer, a coin controlled operator for actuating said arm, a circuit breaker operated by said timer, a cam operated by said motor, a first motor switch connected with said cam, an electrical conductor extending from a source and secured to said first motor switch and having said timer switch interposed therein so that when said timer is operated said motor is operated and said timer switch is opened, a second cam operated by said motor and a second motor switch operated thereby, a control switch arranged for operation by said coin controlled operator, and a line extending from said conductor and secured to said second motor switch so that when said coin controlled operator is actuated the timer is set, the control switch is closed energizing said motor through said second motor switch, said circuit breaker is opened, and said timer switch is opened.

2. In a game which includes an obstruction preventing operation of the game, means for displacing said obstruction for a predetermined time so that the game may be played, said means comprising a motor with means drivingly connecting said motor and said obstruction, a timer, an arm secured to said timer to set said timer, a coin controlled operator for actuating said arm, a circuit breaker operated by said timer, a cam operated by said motor, a first motor switch connected with said cam, an electrical conductor extending from a source and secured to said first motor switch and having said timer switch interposed therein so that when said timer is operated said motor is operated and said timer switch is opened, a second cam operated by said motor and a second motor switch operated thereby, a control switch arranged for operation by said coin controlled operator, and a line extending from said conductor and secured to said second motor switch so that when said coin controlled operator is actuated the timer is set, the control switch is closed energizing said motor through said second motor switch, said circuit breaker is opened, and said timer switch is opened, whereby when said motor operates both of said cams are actuated so that said first and second switches becomes closed and whereby further upon operation of said motor said second motor switch is opened while said first motor switch remains closed, and then when the timer has returned to the initial position, said second motor switch is again in the closed condition, said first motor switch is again in the open condition, the circuit breaker is closed and said timer switch is closed.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,909,131	Shonnard	May 16, 1933
2,015,607	Shinn	Sept. 24, 1935
2,290,626	Bosomworth	July 21, 1942