



Oct. 24, 1967

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3,348,841

ELECTRICALLY TIMED POOL TABLE

Filed Dec. 17, 1964

4 Sheets-Sheet 2

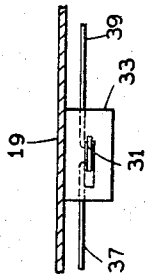
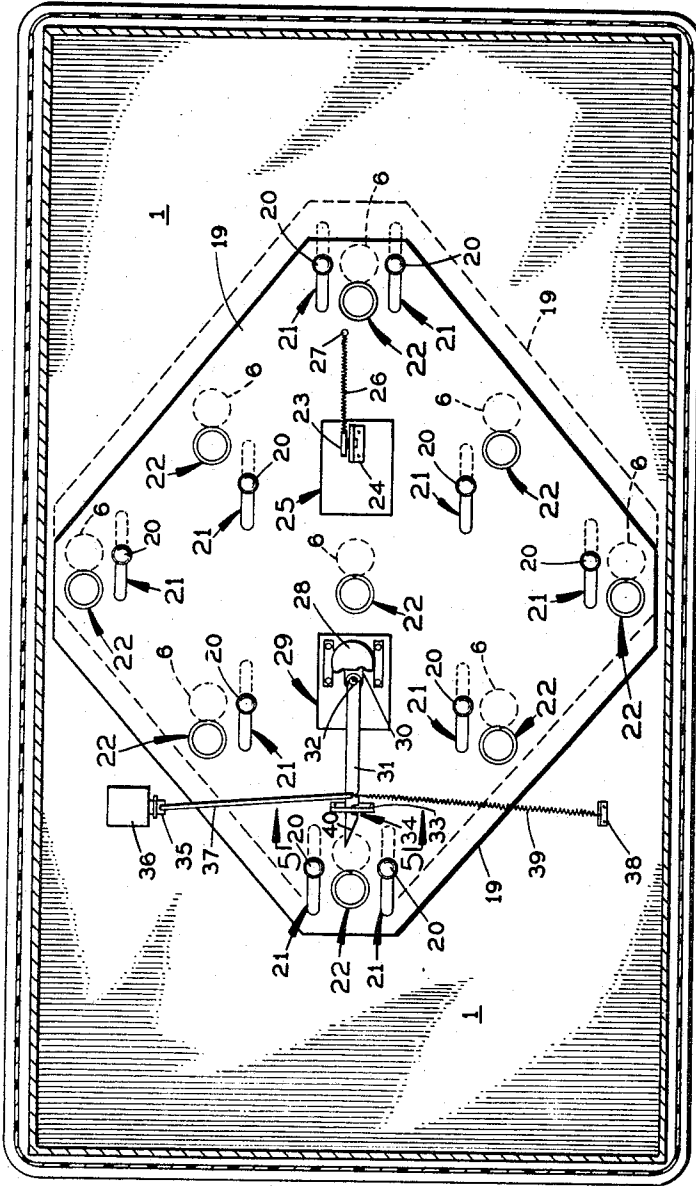


FIG. 5

FIG. 4

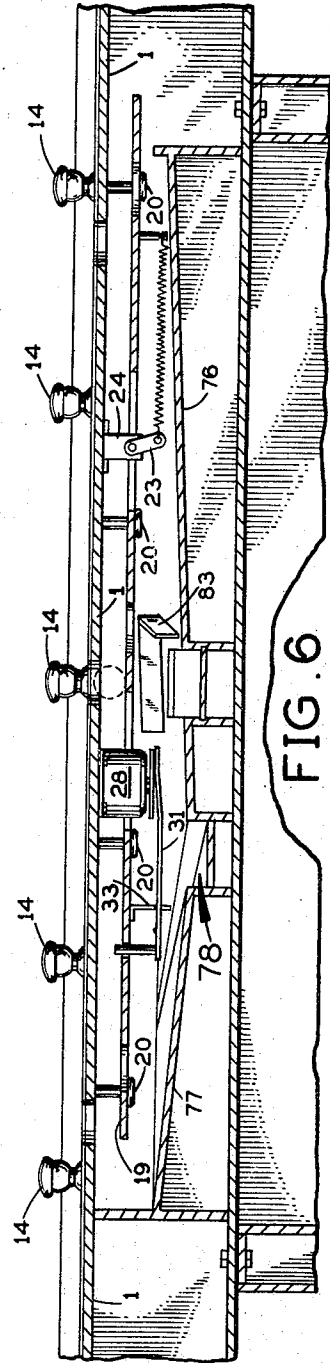


FIG. 6

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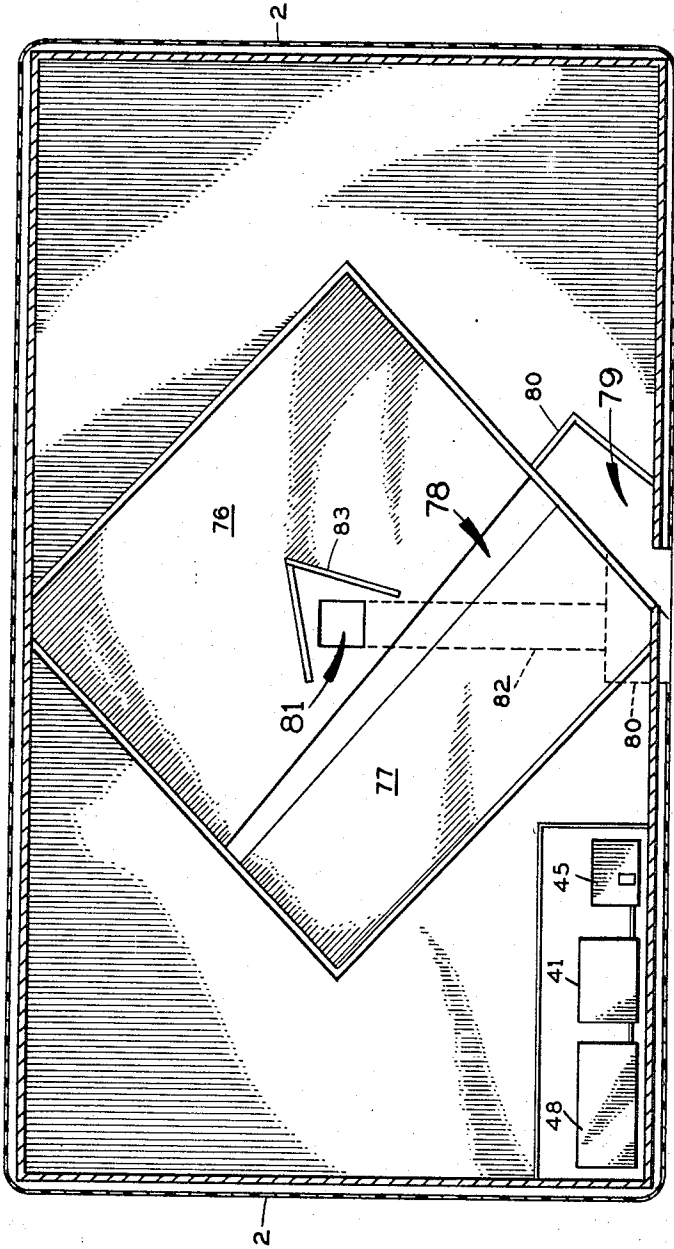


FIG. 7

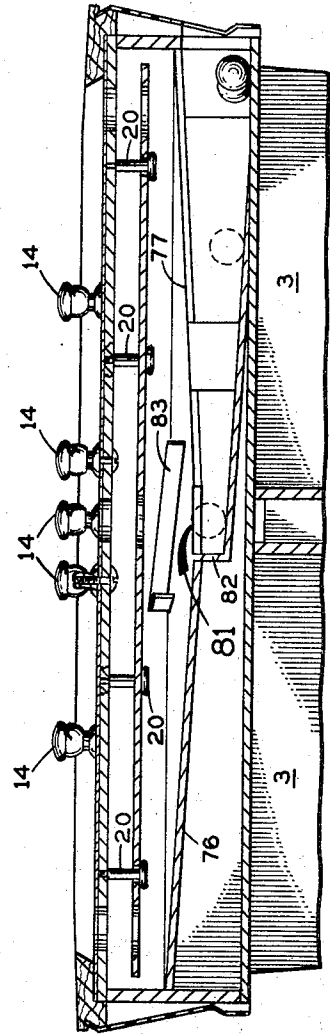


FIG. 8

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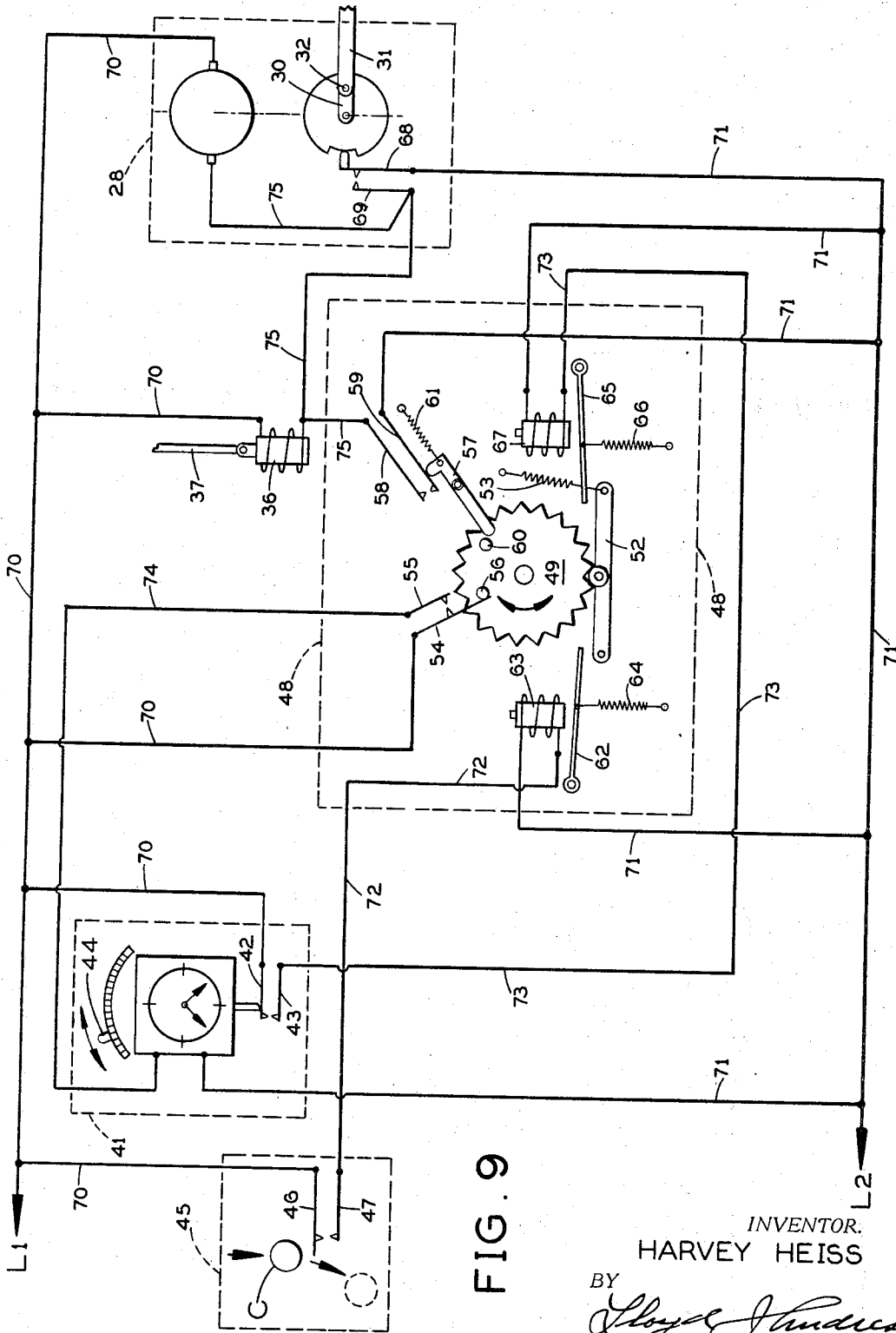


FIG. 9

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3,348,841

**ELECTRICALLY TIMED POOL TABLE**

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 Filed Dec. 17, 1964, Ser. No. 419,096  
 7 Claims. (Cl. 273-11)

This invention relates in general to pool or pocket billiard games and more particularly to a pool table adapted to play a variety of pool games including the game of tick-tack-toe using conventional billiard balls and cues.

As an example, the well known game of tick-tack-toe ordinarily played by inscribing symbols on a diagram is applied to a pool table by the provision of nine pockets in a diamond formation through the playing surface of a pool with certain impediments positioned in relation to the aforesaid pockets.

A preferred embodiment of the game hereinafter described comprehends electric coin operated means for timing the length of play thereof to adjustable predetermined time limits and also to release the balls retained therein for play of the above and other pool games upon the deposit of a predetermined coin.

A further object of the invention is the provision of an electric means for extending the normal predetermined playing time of the game upon the subsequent deposit of coins during a playing cycle.

These and other objects and advantages in one embodiment of the invention are described and shown in the following specification and drawings, in which:

FIG. 1 is a top plan view of the table in reduced scale.

FIG. 2 is a side elevation thereof.

FIG. 3 is an end elevation thereof.

FIG. 4 is a bottom cross sectional plan view taken through section line 4-4, FIG. 2.

FIG. 5 is a fragmentary cross sectional view taken through section line 5-5, FIG. 4.

FIG. 6 is a fragmentary cross sectional elevation taken through section line 6-6, FIG. 1.

FIG. 7 is a cross sectional plan view taken through section line 7-7, FIG. 3.

FIG. 8 is a fragmentary cross sectional view taken through section line 8-8, FIG. 1.

FIG. 9 is a diagrammatic and schematic wiring diagram of the game.

Referring to FIGS. 1, 2, and 3, the table top comprises a conventional felt covered planar panel 1 retained in a frame and a combination cushion and rail assembly 2 which is supported by a pair of pedestal leg members 3, as shown, resting upon well known adjustable feet 4 secured thereto. The top has nine holes or pockets 5, 6, 7, 8, 9, 10, 11, 12, and 13, which are connected to an accumulating runway in the frame 2, to be hereinafter described. A fixed impediment bumper 14 is secured in panel 1 projecting above the surface thereof adjacent the particular pockets as shown for the purpose of increasing the difficulty of sinking a ball in each pocket. The openings in the cushion surrounding the inner side of the rail provides a natural impediment adjacent the pockets 7 and 11.

Play period counter 15 and a coin entry 16 and a coin return pocket 17 are provided in the frame, as shown, and an opening 18 in the frame provides access for manually removing played balls for placement on the playing surface.

Referring to FIGS. 4, 6, and 8, a slidable shutter or platform 19 is suspended for reciprocation on the underside of panel 1 in parallel relation thereto by ten studs 20 threaded into panel 1 and projecting through slots 21 in the platform 19 which also has ten holes 22 positioned in the same relation as pockets 6 normally displaced therefrom, as shown in FIG. 4.

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It is now apparent that the holes 22 and the pockets 6 will be coaxially aligned when the platform 19 is moved to the position shown in dotted lines.

A link 23, adjustably secured to a bracket 24, is positioned through an opening 25 through platform 19, as shown in FIGS. 4 and 6. A spring 26 secured at one end to link 23 and the opposite end to platform 19 by studs 27 serves to urge the platform to the position shown in dotted lines.

An electric gear-motor assembly 28 is secured to the underside of panel 1 through an opening 29 through platform 19, as shown in FIGS. 4 and 6. A crank 30 is secured on the output shaft of gear motor 28 and is pivotally connected to a latch 31 by crank pin 24. The outer end portion of the latch 31 is retained in a slot in bracket 33 secured to platform 19, as shown in FIG. 5. A notch 34 in latch 31 normally engages an inner edge of bracket 33 for holding the platform 19 in the position shown in full lines in FIG. 4 against the restraining action of spring 26.

The movable core 35 of an electro-magnet 36 is pivotally connected to latch 31 by a connecting rod 37, as shown, and a bracket 38 fixed to panel 1 retains one end of a spring 39 with the opposite end thereof connected to link 31 for normally urging notch 34 therein into latched engagement with bracket 33 thus holding the elements shown in FIG. 4. A cam surface 40 on the end portion of latch 31 is positioned to guide latch 31 for the re-engagement of notch 34 with bracket 33 when the platform 19 is restored from the position shown in dotted lines to normal idle position shown in full lines during the operating cycle of gear-motor 28.

FIG. 9 illustrates the electric components and circuitry in the aforesaid described pool game. Although a variety of different components and circuits will produce the desired operation, the circuitry shown includes a conventional electric timer assembly 41, of the well known synchronous motor type, with internal construction thereof not shown, which timer is adapted for automatic restoration when de-energized and including an electric switch 42-43 adapted to be momentarily operated following the elapse of a predetermined time period beginning when the timer is energized. The time period is adjustably set by lever 44. The timer is also adapted and constructed to respond to further sequential operation of the coin switch 46-47 while operating to extend the elapsed time periods by the sum thereof corresponding to the number of coins deposited.

A conventional electric coin actuator assembly 45 includes a normally open switch 46-47 which switch will be momentarily closed by the deposit of each coin of predetermined value.

Referring to FIG. 9, an electro-magnetic stepping mechanism 48 is a preferred embodiment of several well known electric add-subtract mechanisms. The particular mechanism shown is provided with a toothed wheel 49 journaled for rotation and having like teeth about the periphery thereof. A detent arm 52 under the influence of spring 53 is in operative engagement with the teeth of wheel 49, as shown. A normally closed credit switch 54-55 is held in open position by a pin 56 therein when the wheel is in idle position, as illustrated. A toggle lever 57 is pivotally positioned to momentarily operate a cancel switch 58-59 when a pin 60 on wheel 49 trips the lever 57 against the restraining action of spring 61 when the disc is rotated one credit in a clockwise direction.

An armature lever 62 is positioned sequentially to engage each tooth in wheel 49 against the restraining action of spring 64 and move the wheel in an adding direction one credit each time the electro-magnet 63 is momentarily energized. A second armature lever 65 is positioned to

engage each tooth on the wheel and move same in a counter clockwise debit direction against the restraining action of spring 66 each time electro-magnet 67 is momentarily energized.

It is now apparent that the first credit movement of wheel 49 will close switch 54 and 55 and simultaneously momentarily close switch 58-59 and further credit operations of electro-magnet 63 will rotate wheel 49 a number of teeth corresponding to the number of operations of coin switch 46-47. The sequential energizing of electro-magnet 67 will move wheel 49 in a counter clockwise direction a number of teeth in a corresponding debit direction corresponding to the number of closures of timer switch 42-43. It is also apparent that when the credit wheel is returned to its normal idle position the switch 54-55 will open and remain open until coin switch 46-47 is again operated.

Again referring to FIG. 9, switch 58 and 59 is provided to momentarily and simultaneously energize electro-magnet 36 and retract rod 37 for releasing latch 31 and for energizing the gear motor 28 for one revolution of rotation of crank 30 by virtue of switch 68-69 for restoring the platform 19 to its initial position, shown in full lines in FIG. 4.

A conductor 70 connected to one side of the components runs to a source of electric energy  $L_1$ , as shown, and a conductor 71 is connected to the other side of the components and runs to the remaining side of the source of energy  $L_2$ , as shown.

A conductor 72 connects switch blade 47 to the remaining terminal of electro-magnet 63, and a conductor 73 connects switch blade 43 to the remaining terminal of electro-magnet 67. A conductor 74 connects switch blade 55 to the remaining terminal of the timer 41. A conductor 75 connects switch blade 58 to the remaining terminal of electro-magnet 36, and switch blade 69, and one terminal of the motor in gear motor 28.

When the platform 19 is reciprocated from its idle position with any of the balls in the pockets 5-13 and resting on platform 19, they will descend downward and will gravitate along the runways to a position for removal through opening 18, shown in FIG. 2, by means of the elements shown in FIGS. 6, 7, and 8.

Referring to FIG. 7, a sloping planar panel 76 is positioned under the platform 19, as shown, adjacent a second planar panel 77 sloping in opposite direction with both panels forming a divergent descending runway 78, which runway opens into a compartment 79 formed by wall 80. An opening 81 in panel 76 permits the ball in the center-most pocket to fall directly into a runway 82 for gravitation into compartment 79. A V-shaped barrier 83 is secured around opening 81, as shown, more to equalize descent of the balls in sequential order from the various pockets into compartment 79.

Referring to FIGS. 1 and 9, and under the assumption that a proper coin C is deposited in the coin entry 16 and thence through actuator 45, for a single play cycle, then the electromagnet 63 will be momentarily energized by the momentary closure of switch 46-47, which will rotate wheel 49 an angle corresponding to one tooth thereon. This movement will close switch 54-55 and energize timer 41 and simultaneously toggle 57 will momentarily close switch 58-59 and momentarily energize electro-magnet 36, which in turn will withdraw rod 37 and trip latch 31 out of engagement with bracket 33 and permit the platform 19, shown in FIG. 5, to move to the dotted position shown, by virtue of spring 26, thus releasing any balls retained in pockets 5-13 to descend by gravity to panels 76 and 77 and to roll along gutter 78 into compartment 79, where the balls are manually accessible for play through opening 18, shown in FIG. 2. The ball retained in central pocket 13 will gravitate into opening 81 when the platform is released and thence move along the sloping runway 82 into compartment 79.

The momentary closure of switch 58-59 also momentarily energizes gear motor 28 through conductor 75 for a period of sufficient duration for the closure of the momentary one revolution switch 68-69, which will maintain the circuit to the motor 28 for one revolution of crank 30 which will re-engage latch 31 with bracket 33 and move platform 19 to its initial idle position.

The balls may now be spotted on the table and played by two players into the pockets by means of conventional cues and in the fashion and in accordance with the rules of the game, with each ball intended to be sunk in a pocket and temporarily held by platform 19.

It is to be noted that the bumpers 14 in the tick-tack-toe form of game are placed as impediments near pockets in order to increase the skill required to sink balls in the pockets via direct and cushion shots.

In the event that the game is not completed before the play period, as set by lever 44 of the timer, then, referring to FIG. 9, the switch blades 42-43 are momentarily operated and any balls on the platform are dropped and the game is cancelled, whether it has been completed or not.

The predetermined normal playing period may be extended by additional like periods corresponding to the deposit of additional coins in accumulator 45, which results in the sequential rotation of wheel 49 accordingly. These additional credits are automatically debited by the sequential operation of the timer switch 42-43 at the expiration of each play period.

It is now apparent that standard and other types of pool games may be controlled by modifications of the above construction, utilizing the features described, in which pocketed balls are electrically released by shutter, or other ball holding means, and a normal play period established by an electric timer subject to extended play periods upon the deposit of corresponding additional coins for each subsequent period desired.

Having described my invention, I claim:

1. A pool table comprising means forming a substantially horizontal planar playing top including a cushion means upstanding around the margin thereof, said top having a plurality of pockets therethrough in predetermined spaced relation for receiving pool balls played therein,
- a manually accessible compartment in said table for retaining a plurality of pool balls gravitated therein,
- runway means connecting said pockets with said compartment for conducting each of said balls by gravity from each of said pockets into said compartment,
- a holding means movably retained in said table below said pockets for movement from an idle holding position intersecting said runway means to a release position withdrawn therefrom for temporarily holding and releasing said balls descended in said pockets when operated,
- electro-motive means in said table operatively connected to said holding means for moving same from said holding to said release position and return to said holding position for releasing each of said balls held in said runway means by said holding means for descent into said compartment when energized,
- an electric timer means adapted and constructed to operate an electric switch means following a predetermined time period for play when energized,
- a coin receiving device including a coin switch for operation by the deposit of each of said coins of predetermined value,
- a source of electric energy,
- electric circuit and control means connecting said electro-motive means and said electric timer means and said electric switch means and said coin switch and said source of energy whereby the deposit of one of said coins in said receiving device will operate said coin switch and simultaneously energize said timer means for one of said time periods and said electro-

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motive means for releasing each of said balls held in said runways for descent into said compartment for manual play on said table during said time period.

2. The construction recited in claim 1 with said control means comprising an electric add-subtract device connected in said circuit means whereby the successive sequential deposit of said coins in said device will operate said add-subtract device and energize said timer means to extend the said time period by the sequential addition of a number of said time periods corresponding with the number of said coin deposited and whereby the said add-subtract device will de-energize said timer means upon the sequential elapse of the said number of said time periods.

3. The construction recited in claim 1 including manual adjustment means operatively associated with said timer means for pre-adjusting the duration of said time period.

4. The construction recited in claim 1 including an indicator means visibly positioned in said table and operatively connected with said timer means for indicating the elapsed time of the sum of said play periods when said timer means is energized.

5. In a pool game of the character described, a means forming a table having a substantially horizontal planar playing top,

said top having a pocket therethrough for receiving pool balls played therein,

an accessible compartment in said table for retaining said pool balls gravitated therein for manual transfer to said top, a runway means connecting said compartment with said pocket for conducting each of said balls by gravity from said pocket into said compartment,

a shutter movably secured in said table below said pocket for movement from a holding position intersecting said runway means to a release position withdrawn therefrom for temporarily holding and for releasing each of said balls played into said pocket when operated,

electric means for operating said shutter when energized,

an electric timer including an electric timer switch operable thereby with said switch adapted to be operated at sequential predetermined time periods following the energizing of said timer,

an electric coin switch responsive to the deposit of each coin thereon,

an electric control device responsive to said coin switch for movement from an idle to an energized position corresponding with the number of times said coin switch is operated,

said control device adapted to energize said timer for time periods corresponding to the number of operations of said coin switch,

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a source of electric energy,

circuit means connecting said electric means and said timer and said coin switch and said control device whereby the play period for said pool game may be extended to the sum of said periods corresponding to the deposit of the number of said coins.

6. In a pool game of the character described, a means forming a table having a substantially horizontal planar playing top including a marginal cushion upstanding therefrom,

said top having three rows of equi-spaced pockets therethrough simulating the squares in the game of tick-tack-toe,

an accessible compartment in said table for retaining said pool balls gravitated therein for manual transfer to said top for playing,

runway means connecting said pockets with said compartment for conducting each of said balls by gravity from each of said pockets into said compartment,

a platform supported in parallel relation under said top for reciprocation from and to holding and release positions when operated,

said platform having apertures therethrough coincident with said pockets when in said release position for permitting each of said balls in each of said pockets supported by said platform to descent in said runway means into said compartment when said platform is reciprocated,

electric means in said table operatively associated with said platform for reciprocating same when energized.

7. The construction recited in claim 6 including spring means biased between said platform and said table for urging said platform into said release position,

electric gear motor means for reciprocating said platform when energized,

latch means associated with said gear motor and said platform for retaining said platform in said holding position,

electro-magnet means associated with said latch means for releasing the latter for permitting said spring means to move said platform from said holding to said release position when energized.

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