April 29, 1941. H. E. WILLIAMS ET AL 2,240,276

NOVELTY SCORE INDICATOR

Filed April 8, 1940 2 Sheets-Sheet 1

Fig. 1.

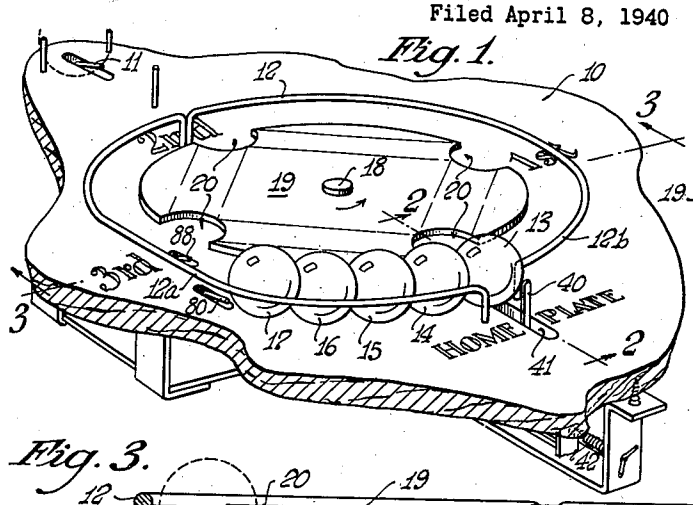


Fig. 2.

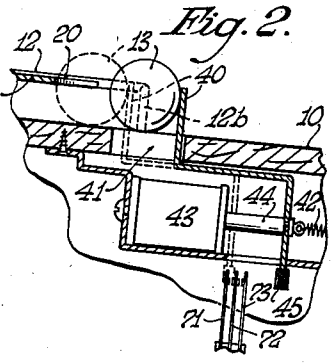


Fig. 3.

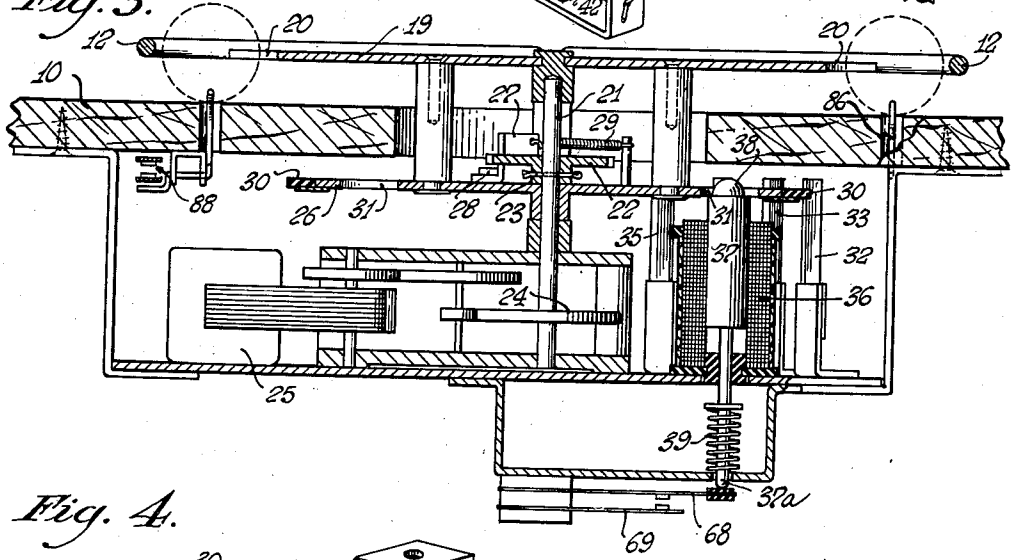
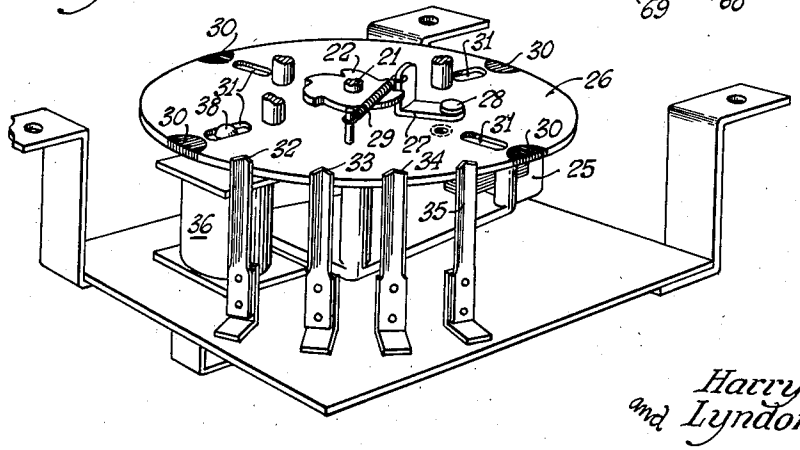


Fig. 4.



Harry E. Williams
and Lyndon A. Durant
INVENTORS

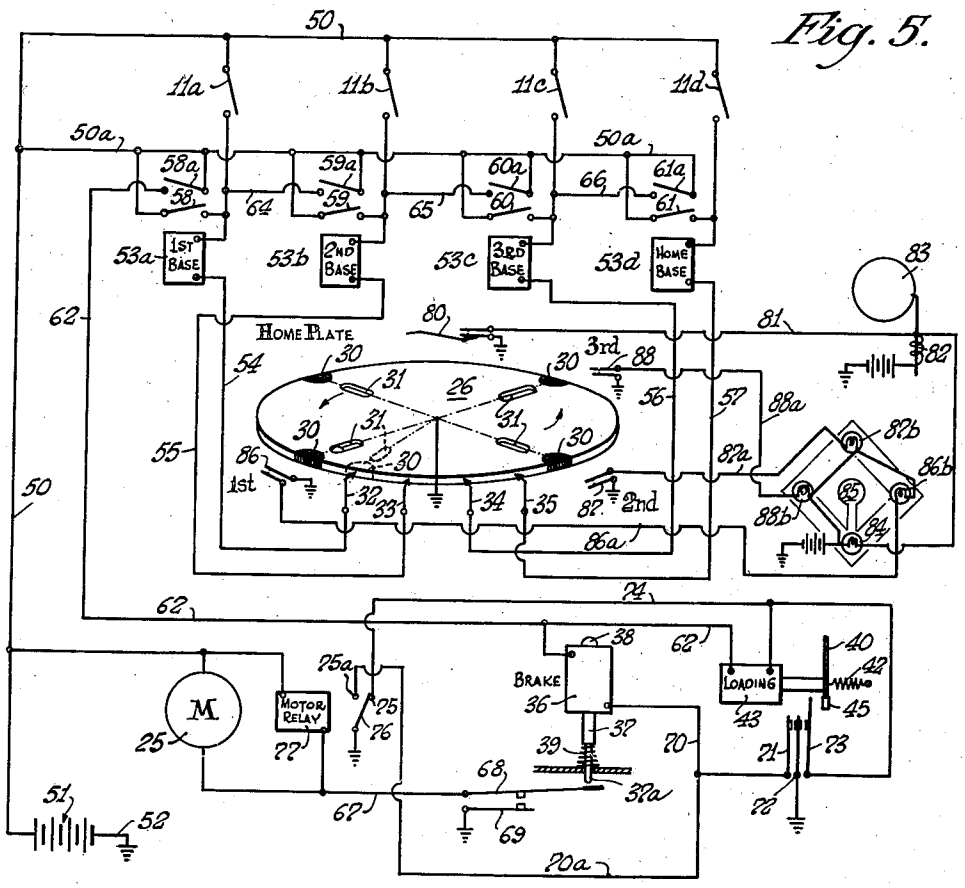
BY Clarence E. Threedy
THEIR ATTORNEY.

April 29, 1941. H. E. WILLIAMS ET AL 2,240,276

NOVELTY SCORE INDICATOR

Filed April 8, 1940 2 Sheets-Sheet 2

Fig. 5.



Harry E. Williams
and Lyndon A. Durant
INVENTORS

BY Clarence E. Breedy
THEIR ATTORNEY.

Patented Apr. 29, 1941 2,240,276

UNITED STATES PATENT OFFICE

2,240,276

NOVELTY SCORE INDICATOR

Harry E. Williams and Lyndon A. Durant,
Chicago, Ill.

Application April 8, 1940, Serial No. 328,476

15 Claims. (Cl. 116—120)

This invention relates to amusement apparatus, particularly ball rolling games, and has as its principal object the provision of a novelty score indicator in which one or more confined balls are moved from a starting position into various advanced positions as a result of the player's achieving predetermined scores in playing the game.

Viewed from another aspect, it is an object to provide a novelty indicator in which one or more confined balls are advanced from a starting position corresponding to the home plate position on a baseball diamond, into advanced positions corresponding to the bases on the diamond, depending upon the success of the player in projecting other balls, which are not captive in the sense of the indicating balls, at certain ball objectives on a playing board.

Another specific object is the provision of indicating means including a circular receptacle or pen in which are disposed one or more indicating balls, a revoluble ball moving member within the receptacle and including annularly arranged ball pockets and means for moving one of the balls into a pocket opposite a starting position in the receptacle and causing the ball moving member to move in a certain direction and carry the pocketed ball into successively advanced positions and back toward the starting position, together with means for causing the pocketed balls to be discharged from the pockets as they approach the starting position.

Other objects relate to the provision of a novel braking mechanism for the ball moving member, whereby the same is accurately stopped at the required positions, together with novel circuit control means and connections for causing the ball moving member to move different amounts in response to the different scores achieved by the player.

Other objects, advantages and novel aspects of the invention reside in certain details of construction as well as the cooperative relationship of the component parts of the illustrative embodiment described hereinafter in view of the annexed drawings, in which:

Fig. 1 is a fragmentary perspective of a ball playing board and the novelty indicating means thereon;

Fig. 2 is a fragmentary vertical section along lines 2—2 of Fig. 1, detailing the loading means for the indicating balls;

Fig. 3 is a vertical section along lines 3—3 of Fig. 1 through the entire indicator unit;

Fig. 4 is a perspective of the switching or control disc of the indicator;

Fig. 5 is a circuit diagram.

Referring to Fig. 1, the indicating means of our invention has been shown as part of a ball rolling game of a familiar type including a ball rolling board 10 over which balls are projected by a plunger or any other suitable means with an object of causing the ball to engage one of several game or ball switches including an operating lever 11 disposed on the board to be engaged by the ball for the purpose of actuating some score or signal means, there being a number of these ball switches situated strategically around the playing surface so that the player must exercise his skill in causing the ball to engage the same, with the object of achieving a high score. In Fig. 1, only one of these switches is shown because of the fragmentary nature of the view, it being understood that there will preferably be a plurality of these switches, at least four, as shown in the circuit diagram of Fig. 5 hereinafter described.

The score indicating means is preferably situated at the lower end of the board 10 and includes means in the form of an annularly arranged rail or guard 12 defining a circular receptacle, track or pen within which one or more indicating balls 13, 14 . . . 17 are confined, it being understood that the board 10 is customarily tilted downwardly toward the right as viewed in Figs. 1 and 2, with the result that the balls 13 . . . 17 seek the lower levels in the pen, which, cooperably with a rotatable ball moving member or disc, causes the same to be lined up in the manner illustrated in Fig. 1.

Mounted for rotation about an axis 18 centrally of the ball confining receptacle or pen is a ball moving member or disc 19 provided with circumferentially spaced or annularly arranged notches 20 constituting ball receiving formations or pockets of which, in the illustrative device, there are four, equally spaced about the periphery of the disc. The spacing of the guard rails 12, which confine the balls, is not uniform with respect to the periphery of disc 19, there being a quadrant 12a of the rail extending between the position indicated as Third and the position indicated as Home plate on board 10, which quadrant is spaced from the periphery a distance sufficient to permit the several balls to rest and move between the portion 12a of the rail and the corresponding peripheral quadrant of the disc so that the balls will normally be disposed in what is termed the starting position

shown in Fig. 1, the portion 12b of the next adjacent section of the rail being spaced closer to the periphery of disc 19 so that the leading ball 13 cannot pass between the rail and disc, but is stopped in a position opposite the designation Home plate.

The ball moving member or disc 19 is fixed at the upper end of a vertical spindle 21 (Fig. 3) which extends downwardly through a star gear 22 to which it is keyed as at 23, and thence into engagement with gear means 24 constituting part of a train of gears driven by a small motor 25, operation of which will cause relatively slow rotation in an anti-clockwise direction (Fig. 1) of the disc 19.

One of the objects of the invention is to have the disc 19 advance one or more indicating balls from the starting position to positions opposite the First, Second and Third base positions indicated in Fig. 1 on the playboard, to simulate the movement of a base runner in a baseball game. The distance that the balls move from the Home plate is determined by which of the score switch controls 11 the player succeeds in operating by rolling over the playboard other balls, which may be termed playing balls to distinguish from the captive indicating balls 13 . . . 17.

Such controlled advancing of the ball moving disc is effected by a conductive control disc 26 mounted to float on the spindle 21 (see Fig. 4 also) and provided with a pawl 27 pivoted as at 28 thereon and urged by spring means 29 into engagement with the teeth of the star gear 22, whereby to provide a yieldable carry-over driving connection between the motor-driven spindle and the control disc.

Spaced about the periphery of the metal control disc in positions corresponding to the positions of the notches or pockets 20 in the ball moving disc, are insulated areas 30, in radial alignment with each of which is a brake slot 31. Spaced appropriately along the outer periphery of the metal disc are a plurality of contact wipers or fingers 32, 33, 34 and 35, each yieldably bearing against the peripheral edge of the disc for contacting engagement therewith and adapted for connection in a control circuit hereinafter to be described.

Means for braking or stopping the control disc and hence the ball moving disc, includes the provision of a solenoid 36 (Fig. 3) provided with a plunger 37 at the upper end of which is a reduced nose portion 38 adapted to project into the brake slots 31, the plunger 37 being urged by a relatively light spring 39 to bear against the underside of the control disc for projection of the nose portion into any brake slot which moves into alignment therewith. This brake means is controlled through certain circuit connections hereinafter to be described, so that the ball moving disc will be stopped with the ball pockets thereof properly aligned opposite the base positions of the simulated baseball diamond.

The lead ball 13 is normally held by gravity out of the pocket 20 at Home plate position, and means are provided for loading this ball into the pocket at the time of or prior to the movement of the disc 19 in advancing operation, this means including a kicker arm 40 (Fig. 2) movable in a slot 41 radially of axis 18 of the disc in a direction to push the lead ball 13 into the pocket, the arm being normally retracted by action of a spring 42, but being pulled forward in ball loading action by a solenoid 43, the plunger 44 of which is connected with the loading arm, the latter having a depending insulated portion 45 disposed to operate a control switch later to be described.

Thus, by way of general description, the ball indicating means is set into operation by actuation of the switch associated with the switch operating arm 11 on the playboard, which ultimately results in an operation of the ball loading means to push the lead ball into the pocket of disc 19 opposite the Home plate, whereupon the disc 19 rotates to move the ball (now held in the pocket by the the portions 12b, etc., of the guard intervening between Home plate and rail portion 12a), and brake means 31—38 operates automatically to arrest the disc 19 to dispose the ball 13 opposite the First, Second or Third base position, depending upon which of the score switches the player has operated.

The circuit connections for controlling the operation of the novelty indicator are shown in Fig. 5 wherein there are four ball-operated switches 11a, 11b, 11c, and 11d, each connected to a common power conductor 50 leading to one terminal of a battery 51 whose opposite terminal 52 is grounded. Associated with each of ball switches 11a . . . 11d is an electrically operated circuit controlling device or relay 53a, 53b, 53c, and 53d having one terminal connected with a contact of the corresponding ball switch 11a . . . 11d, the remaining terminal of relay 53a being connected by conductor 54 to the first wiper contact 32, while relay 53b is connected by conductor 55 to the second wiper 33, the remaining relays being connected respectively by conductors 56 and 57 to the wiper contacts 34 and 35.

The metal control disc 26 is grounded so that if either of the ball switches 11a . . . 11d is closed, power from battery 51 will be connected thereby to the relay winding through the corresponding wiper contact 32 . . . 35, each of which is normally engaged with a conductive portion of the periphery of disc 26 between the insulations 30, such energization of the relay causing the relay switches thereof to be closed to set up a locking circuit which will hold the relay in energized condition after the playing ball has disengaged the ball switch.

There is one relay 53a . . . 53d for each of the scoring or base positions shown in Fig. 1, relay 53a corresponding to the First base position and being provided with a locking switch 58 connected to the common power conductor 50 to connect power to the relay winding around the corresponding ball switch 11a when the relay is pulled up. Similarly, relays 53b, 53c and 53d are each respectively associated with the Second, Third and Home base positions, and each of these relays is likewise provided with a locking switch 59, 60, or 61 operable to hold the relay in energized condition once the same has been initially energized by action of the corresponding ball switch.

Each of the score relays is also provided with a score switch 58a, 59a, 60a, and 61a, respectively, each having one terminal connected to a common power lead 50a, the remaining terminal of the First base score switch being connected by a conductor 62 to one terminal of the loading solenoid 43 and the brake solenoid 36, while the remaining terminal of the score switch 59a of the Second base relay is connected by conductor 64 with the First base relay to energize the latter in the event that Second base score switch 59a should be closed, score switches 60a and 61a of the Third and Home base relays each respectively

being connected by conductors 65 and 66 to energize the preceding relays, that is to say, the Second base relay or the Third base relay respectively, responsive to closing of said switches 60*a* or 61*a*.

Thus, it will be apparent that if the switch 61*a* of the Home plate relay 53*d* were to be closed, the Third base relay 53*c* would be energized via conductor 66, which in turn would result in energization of the Second base relay 53*b* via conductor 65, and this in turn would result in energization of the First base relay via conductor 64. In this sense, the relays are connected to control each other serially so that each higher relay controls all of the lower relays, the Home base relay being considered at the top of the series, and the First base relay at the bottom thereof.

The motor 25 has one of its terminals connected to the common power lead 50 and the remaining terminal connected via conductor 67 to one contact 68 of a brake switch whose companion contact 69 is grounded. Contact 68 is moved from normally open circuit condition to engage contact 69 by pressure thereagainst of the lower end portion 37*a* of the brake solenoid plunger when brake solenoid 36 is energized, with the result that power is connected across the terminals of motor 25.

Since the brake solenoid 36 is initially energized via conductor 62 and switch 58*a* of the First base relay, and since the latter is locked as soon as it pulls up (following momentary operation of the corresponding ball switch), it is desirable to deenergize solenoid 36 shortly after the motor starts for the purpose of causing the nose portion 38 of the brake solenoid plunger to ride against the underside of the control disc in readiness to drop into the next brake slot in the event that the movement of the disc is to be equivalent only to a single base hit.

Such action of the brake solenoid is accomplished by having one of its terminals connected as heretofore described to the conductor 62, and the remaining terminal connected via conductor 70 to one terminal 71 of the loading switch, which has a companion or central contact 72 connected to ground. As soon as the First base relay pulls up, power is connected to the loading solenoid 43, causing the arm 40 thereof to be advanced so that the depending switch operating portion 45 thereof will engage the loading switch and cause contact 72 to close circuit with contact 71, thus connecting ground to the brake solenoid 36, energizing the same, and consequently closing the brake switch 68—69 to start motor 25.

The loading solenoid 43 must remain energized long enough to cause the ball loading arm 40 to hold ball in pocket 20 until the disc has displaced the ball sufficiently from starting position to assure its remaining in the pocket. In the first instance, the necessary ground connection for operating the loading solenoid 43 is procured via a conductor 74 connected with a contact 75 and through a movable contact 76 of a motor relay 77 to ground. As soon as the motor is energized as aforesaid, relay 77 pulls up, breaking the ground circuit to the loading solenoid; however, the initial impulse to the latter is sufficient to operate the loading switch and cause contacts 72—73 thereof to close, thus connecting ground to the solenoid 43 to lock the same in operated condition so long as the associated scoring relay 53*a* is pulled up.

As soon as the loading solenoid 43 is initially energized, brake solenoid 36 is also energized via loading switch contacts 71—72, and the brake switch contacts 69 are held in closed condition because the nose 38 of the brake plunger is bearing against the underside of the control disc 26. The brake solenoid will, however, remain energized via the conductor 70*a*, connecting with motor relay contact 75*a*, which receives ground via armature contact 76 as soon as the motor relay pulls up.

The control disc 26 moves only a short distance from its starting position until the nearest insulated portion 30 thereon engages the wiping contact 32 and thus releases the First base score relay 53*a*, breaking circuit via conductor 62 to both the brake solenoid and loading solenoid. The ball moving arm 40 of the loading solenoid and the switch operating part 45 thereof drop back, but the brake plunger 37—37*a*—38 remains depressed by virtue of its engagement with the underside of the control disc until the next succeeding brake slot moves into alignment with nose 38, which opens the brake switch 68—69, dropping the motor relay 77 and deenergizing motor 25.

As a result of the foregoing train of events, the lead ball 13 will have been advanced from the Home plate position shown in Fig. 1, to the next adjacent or First base position, thus indicating to the player a Single.

Considering next the case where the player succeeds in operating the ball switch 11*d* to make a Home run, the Home run relay 53*d* will be the first to pull up, with the remaining base relays 53*c*—53*b*—53*a* pulling up in succession as the score switches 61*a*—60*a*—59*a* are closed. As a result of the energization of the First base relay 53*a*, the brake solenoid 36, the kicker solenoid 43, and the motor 25 will all be energized in the manner heretofore described, so that the control disc 26 begins its anti-clockwise movement, the difference, in this instance, however, residing in the fact that as the first insulated portion 30 passes over the First base relay wiper 32, relay 53*a* will be dropped, and the brake solenoid 36 and kicker solenoid 43 will likewise be deenergized. However, as soon as the insulated portion passes wiper 32, relay 53*a* will again pull up, since its energizing circuit is primarily controlled by the next succeeding or Second base relay 53*b*, in consequence of which the brake solenoid and the loading solenoid will again be energized. Similarly, as the insulated portion 30 next passes over the wiper 33, the Second base relay 53*b* will be momentarily dropped and restored, as will the Third base relay when the insulation passes over wiper 34.

When the insulation passes over wiper 35, however, the Home run relay 53*d* will be dropped, but the motor will continue to drive disc 26, since the brake solenoid remains energized through the other relays of the series. As the next succeeding insulated area 30 passes successively over wipers 32 and 33, the associated first and second base relays will again be momentarily dropped and pulled up, but when this insulation passes over wiper 34, the Third base relay will be permanently dropped. By this time both the control disc and the ball moving disc will have moved a distance of a half revolution, thus carrying the ball from Home plate, past First base, into position opposite Second base, the disc continuing to carry the ball to Third base and back toward starting position adjacent Home plate by virtue of the fact that the First and Second base relays are still pulled up, with the result that the disc 26 will continue to move

through the remaining half revolution until relay 53b is dropped by action of the next succeeding insulated area passing over wiper 33, and finally the First base relay 53a is dropped by action of the next succeeding insulated area in passing over wiper 32.

It should be observed that the ball gravitates out of its pocket as the latter rotates into position opposite the quadrant or section 12a of the ball enclosing guard.

It will be appreciated that if the player makes a Two or Three base hit by operating either switch 11b or 11c, the operation of the machine will be similar to that described in conjunction with the Home run, except that in the case of the Three base hit, only the first three relays 53a, 53b, and 53c will be pulled up, the same being dropped in inverse order beginning with relay 53c in the case of the Three base hit, or with relay 53b if the play is only a Double. The player may make a succession of Single hits which will results in loading all of the pockets of the carrier, and it is therefore necessary to confine an appropriate number of balls in the receptacle.

It is contemplated that the novelty indicating device may also be employed in conjunction with a signal or visual indicating device electrically controlled by means of a ball-operated signal switch 80 (Fig. 1) connected via a conductor 81 with a signal solenoid 82 arranged to actuate a visual indicating disc 83, switch 80 being situated in the ball pen or receptacle at a point opposite the widened portion 12a of the guard rail to be operated by a ball as the same drops out of pocket 20 upon restoration to starting position. In addition to the foregoing Home run indicator, switch 80 controls a lamp 84 at Home plate position on an electrically illuminated panel which is arranged to represent a baseball diamond. Opposite each of the intervening base positions in the ball pen is a base switch 86 at First base, 87 at Second base, and 88 at Third base, the latter switch being seen in sectional view of Fig. 3. The First base switch 86 is connected via conductor 86a to illuminate the lamp 86b at First base position, Second base switch 87 being connected via conductor 87a to energize the Second base lamp 87b, and the Third base switch 88 being connected via conductor 88a to energize the Third base lamp 88b.

The various advantages and objects of the invention may be accomplished by modifications of the particular embodiment specifically described herein, and it is intended that the appended claims shall include all equivalent arrangements fairly coming within their call.

Having thus described our invention, what we claim as new and desire to protect by Letters Patent is:

1. In a ball rolling game of the type including switch means situated with respect to a ball rolling field for operation by a ball thereon, novelty indicating means including a ball pen on said field and having a ball confined therein, a ball moving device arranged in said ball pen for rotative movement with respect to the latter to transport said ball from a starting position in said pen into a succession of intermediate positions, and back toward said starting position, and means operably controlled by said switch means for starting and stopping the movement of said ball moving device responsive to the operation of said switch means by a ball rolled on said ball rolling field.

2. In a ball rolling game of the type including a ball rolling field and a plurality of ball-operated score switches thereon, the combination of novelty score indicating means comprising an annular ball pen on said field and a ball confined therein, a rotatable ball moving member in said pen, electrically actuated means for rotating said ball moving member, selectively operable switching mechanism connected for actuation by said ball-operated switch to effect movements of said ball moving member different amounts from a starting position depending upon which of said ball-operated switches is actuated, means for mounting said pen in a tilted position to effect gravitation of said ball into said starting position for transport by the ball moving member as aforesaid, means operably controlled by said selectively operable switching mechanism for moving said ball into operative engagement with said ball moving member at starting position, means for maintaining said ball in operative engagement to be carried by said moving member after leaving starting position, and means for effecting disengagement of said ball from carrying relationship with the moving member as the ball approaches starting position.

3. In a device of the class described, a novelty indicator including a substantially annular pen and an annular ball carrying disc within the pen, said disc being provided with a ball pocket in an edge thereof, said pen being spaced from said disc an amount sufficient to maintain a ball in said pocket during three-quarters of a revolution of the disc from a starting position and being spaced from said disc in the region opposite the transit of the pocket during the remaining quarter revolution such that the ball may move freely between the disc and pen, said pen being inclined so that said ball will gravitate from the pocket during said remaining quarter revolution and gravitate into said starting position for the disc at the lowermost part of the pen, means for effecting rotative displacement of said disc, and means operable to engage a ball and move the same into said pocket at said starting position.

4. A novelty indicator including an annular ball pen and a ball moving member concentrically arranged within said pen so as to effect movement of a ball from a starting or Home plate position successively into First, Second and Third base positions back toward said starting position in similitude of a base runner in a game of baseball, said ball moving member having a plurality of ball receiving pockets therein, said pen being inclined to cause a ball therein to gravitate into said starting position opposite Home plate, means for rotatively moving said ball moving member and stopping the same with one of said pockets opposite said starting position, means for loading a ball into said pocket at starting position, and control means for actuating said loading means and thereafter said rotating means to move the latter different distances from starting position to dispose a ball in said pocket at any of said Base positions and ultimately carry said ball beyond said Third base position for gravitation back to starting position as aforesaid.

5. In an amusement device, a circular pen with a ball therein, means for mounting said pen in a tilted position so that said ball will gravitate from a certain position at a higher level therein into a starting position at a lower level therein, and a rotary ball carrier in said pen for moving said ball from starting position around the pen toward starting position aforesaid to

free said ball for gravitating movement the remainder of the distance to starting position, and means for rotating said ball carrier.

6. In an amusement device, a circular ball pen having a floor tilted so that one part of the pen is lower than the remainder thereof, said lower part constituting a starting position for a ball, said pen representing in similitude a baseball field with said starting position constituting Home plate and three positions spaced around the remaining portions of the pen constituting respectively First, Second and Third base, a ball normally positioned by gravity at said starting position in the pen, a rotatable ball moving device in the pen for moving the ball from starting position successively into said Base positions in a direction back toward Home plate as far as the Third base, said ball gravitating out of operative engagement with said carrier after being moved out of Third base position and gravitating to starting position at Home plate as aforesaid, together with driving mechanism and control means therefor selectively operable to move said ball moving device relative to the Bases in the manner aforesaid, whereby to effect movement of a ball from Home plate relative to the Bases in similitude of the movement of a base runner in a baseball game.

7. A simulated baseball amusement device including a substantially annular ball pen having a Home plate, together with First, Second and Third base positions designated therearound in simulation of a baseball field, a ball confined in the pen, a rotatable ball moving device arranged concentrically within the pen for moving said ball therearound from one Base to another, and means for controlling movement of said ball moving device and comprising a rotatable control member having circumferentially arranged conductive portions with insulated portions thereon situated in spaced relation in correspondence to the spacing of the several Base positions, motor means for moving said ball moving device and control member in step, means actuated by a player for starting said motor means, and circuit control means connected to control said motor means and including a plurality of contact means cooperable with said conductive parts of the rotatable control member to maintain an energizing circuit for said motor means to drive said ball moving device different amounts to move said ball relative to said Base positions.

8. In an amusement device, a ball pen having a series of stations situated therein and into which a ball is moved in succession in a certain direction from a starting position, rotatable means for moving a ball as aforesaid, motor means for driving said rotatable means, and means selectively controlling said motor means to effect movement of a ball relative to one or more of said stations in the manner aforesaid and comprising a control disc rotatable in step with said ball moving means, spaced conductive and insulated parts on said disc and wiping contact means cooperable therewith and connected with switching mechanism to control an energizing circuit for said motor means to move said ball moving means.

9. In an amusement device, in combination, an annular pen defining a baseball field with a Home plate and First, Second and Third base positions designated thereon, a rotatable ball moving member arranged concentrically with respect to said pen on said field, ball receiving apertures formed in said last named member to move a ball successively around said field relative to said Base positions from Home plate, motor means for moving said ball moving member as aforesaid, together with control means for effecting movement of the ball moving member to move said ball into one or more of said Base positions, said control means including a switch for starting said motor, and selectively operable switch means under the control of the player cooperating with switch means coacting with said ball moving member to maintain said motor in energized condition for different periods, and means controlled cooperably with said selectively operable switch means for moving a ball into operative engagement with said ball moving member at said Home plate prior to the ball moving operation of said member.

10. In a device of the class described, a ball pen having a substantially circular inner wall and a tilted floor with base positions spaced therearound and including a Home plate position at the lowermost portion of said floor with additional base positions spaced therefrom in a direction around the pen in simulation of a baseball field, a ball moving disc mounted in the pen rotatable about an axis substantially normal to said floor and having ball receiving pockets spaced around its periphery, each opposite one of said Base positions, electric motor means for rotating said disc in a direction from Home plate toward First base around the field, electrically operated brake means normally stopping said disc with said pockets each opposite a base position, and switching mechanism connected for operation to energize and release said brake means and energize said motor means for selected periods of operation to rotate the disc and move a pocket therein relative to one or more Base positions, the inner wall portion of said pen between Home plate and First, Second and Third base being spaced close enough to the edge of the disc to maintain a ball in a pocket thereof during transit from Home plate into Third base position, the remaining inner side of the pen from Third base to Home plate being spaced far enough from said disc to permit a ball to gravitate from a pocket after leaving Third base position and to pass between the disc and pen to a starting position back opposite Home plate, and means operably controlled by said switching mechanism for loading a ball at starting position into a pocket, releasing said brake means and moving the disc relative to one or more base positions as aforesaid, said brake means acting automatically to stop the disc following deenergization of the motor means.

11. In a ball moving device, a ball pen, a ball carrying disc mounted for rotation in the pen to move a ball therein from one position to another, a control disc rotated coaxially with said carrying disc and provided with stopping means spaced thereabout to correspond to each of the aforesaid positions, a brake member yieldably urged against said control disc for stopping engagement with said stopping means responsive to the movement of the disc to bring the stopping means into alignment with the brake member, electromagnetic means for withdrawing said brake member from stopping engagement with said stopping means, said brake member riding against said control disc following withdrawal as aforesaid until the next succeeding means is aligned therewith by movement of the control disc, a driving motor rotating said disc, and selectively operable switch means connected for

operation to effect withdrawal of said brake member and energization of said motor, together with additional switch means operably controlled by movements of said control disc for stopping said motor after the control disc and carrying disc have been rotated together different distances predetermined by the selective operation of said selectively operable switch means.

12. In a device of the class described including a rotatable member, control means comprising a control disc mounted to rotate in step with said rotatable member, stopping means spaced about the axis of rotation of said disc, conductive portions extending on said disc about the rotative axis thereof and interrupted at positions opposite each stopping means, brake means including a brake member yieldably bearing against said disc for stopping engagement with any of said stopping means disposed in juxtaposition therewith, said brake means further including electrically operated means to move said brake member from stopping engagement as aforesaid, electric motor means driving the rotatable member and disc as aforesaid, contact means engaging the conductive portions on the disc, switching means connected with said contact means for selective operation to energize said brake moving means for operation as aforesaid during periods corresponding to different rotative displacements of the control disc, and switch means coacting with said brake means for energizing said motor means while said brake member is out of stopping engagement with the stopping means and further to deenergize said motor means when the brake member is in stopping engagement with the stopping member.

13. In a device of the class described, control means for a rotatable ball moving disc, said control means comprising a control disc interconnected with the ball disc to revolve in step therewith, said control disc having brake slots spaced about the rotating axis in a face thereof, a brake plunger yieldably urged against said face for movement into any of said slots aligned therewith to stop the disc, non-conductive portions on said control disc opposite each brake slot, conductive portions extending concentrically of said control disc between said non-conductive portions, a plurality of wiper contacts bearing against said conductive and non-conductive portions during rotative movement of the control disc, electromagnetic means energized to withdraw said brake plunger from stopping engagement in a brake slot, a motor driving said discs in step as aforesaid, a switch operated by said brake plunger in withdrawn condition to energize said motor, said plunger being held in withdrawn condition by engagement with the disc following withdrawal and rotative movement of the disc and engaging in the next succeeding brake slot provided the plunger is not held in withdrawn condition by said electromagnetic means, and selectively operable switch means connected to energize said electromagnetic withdrawing means and operably controlled by circuit connections through said wiper contacts to permit said motor to run for different periods dependent upon which of the wiper contacts are connected by selective operation of said selectively operable switch means.

14. In a device of the class described including a revoluble member, means for controlling the movements of said member comprising, in combination, a control disc revolving in step with said revoluble member and having brake slots formed in a face thereof concentrically of the rotating axis of the disc, a brake plunger yieldably urged against said face to project into any of said slots aligned therewith, said plunger being held in withdrawn position by riding against portions of said face intervening between any succeeding slots, electromagnetic means energizable to withdraw said plunger from a slot, a motor driving said discs, a motor energizing switch closed by said plunger in withdrawn condition, and means adapted to be controlled by a player for effecting withdrawal of the plunger as aforesaid.

15. In a novelty device of the class described, a circular ball pen, a ball moving member revoluble in the pen and having a ball pocket opening toward the inner wall of the pen, said inner wall of the pen being spaced close enough with respect to said ball moving member throughout a portion of the latter's travel less than the distance around the pen to maintain a ball in said pocket during said travel, the inner side portions of the pen for the remaining distance therearound being spaced far enough from the ball moving member to permit a ball to move out of the pocket and pass between the ball moving member and pen toward a starting position at the beginning of that portion of the pen which is closer to the ball moving member, means for rotating said ball moving member, means for positioning a ball disposed at said starting position in said pocket when the latter is opposite said starting position whereby the ball may be carried in said pocket around to the more widely spaced portion of the pen, and means for effecting movement of said ball from said pocket following movement thereof into position opposite the beginning of the more widely spaced wall portion, said means further effecting movement of the ball into starting position.

HARRY E. WILLIAMS.
LYNDON A. DURANT.