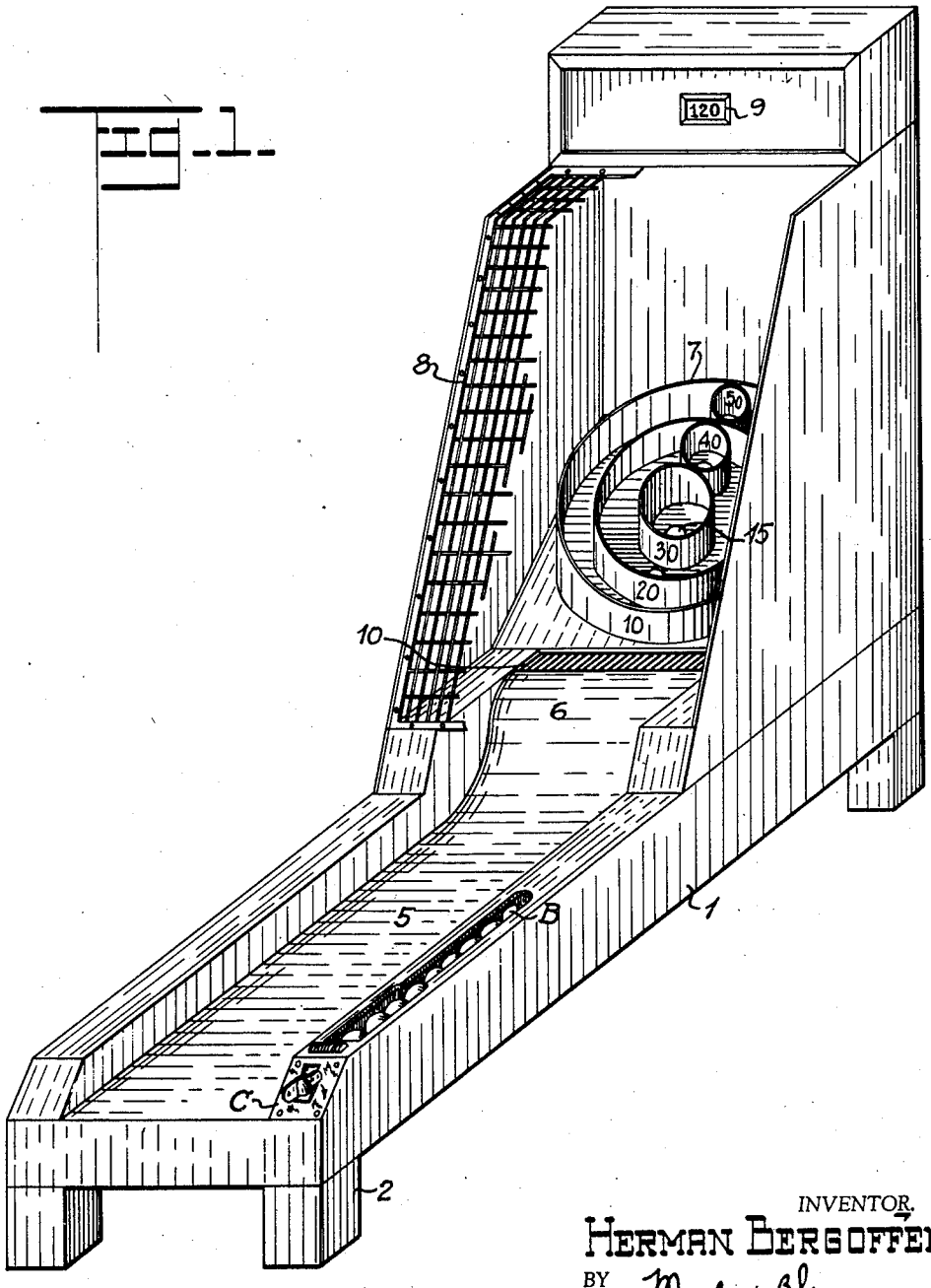
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Fig. 1.



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Fig. 2.

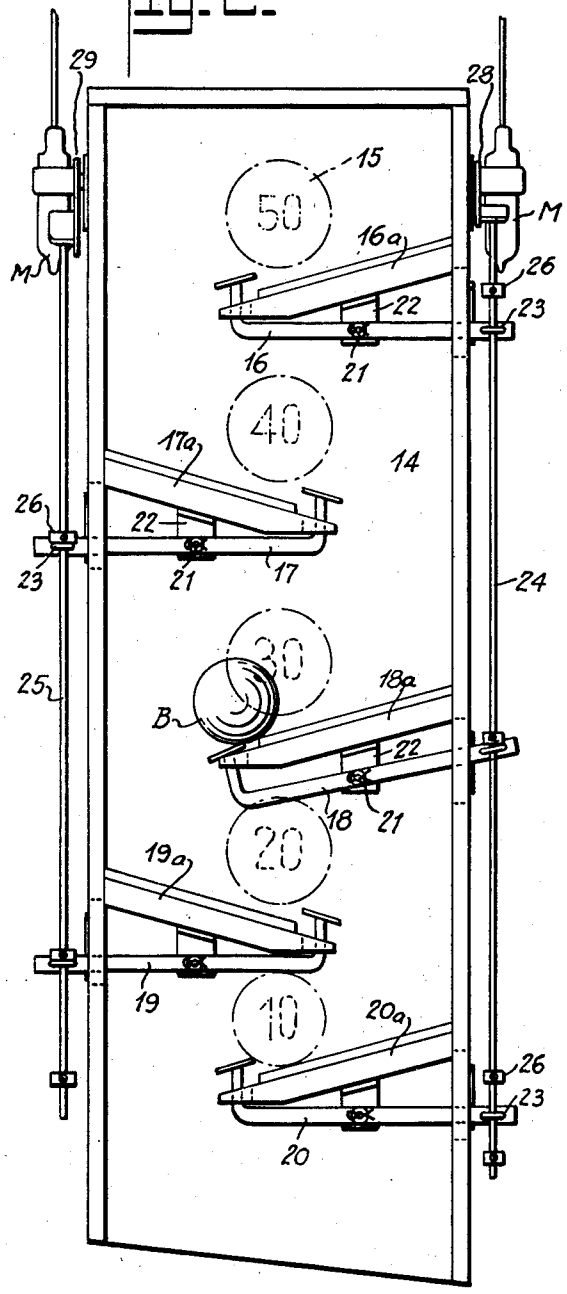


Fig. 3.

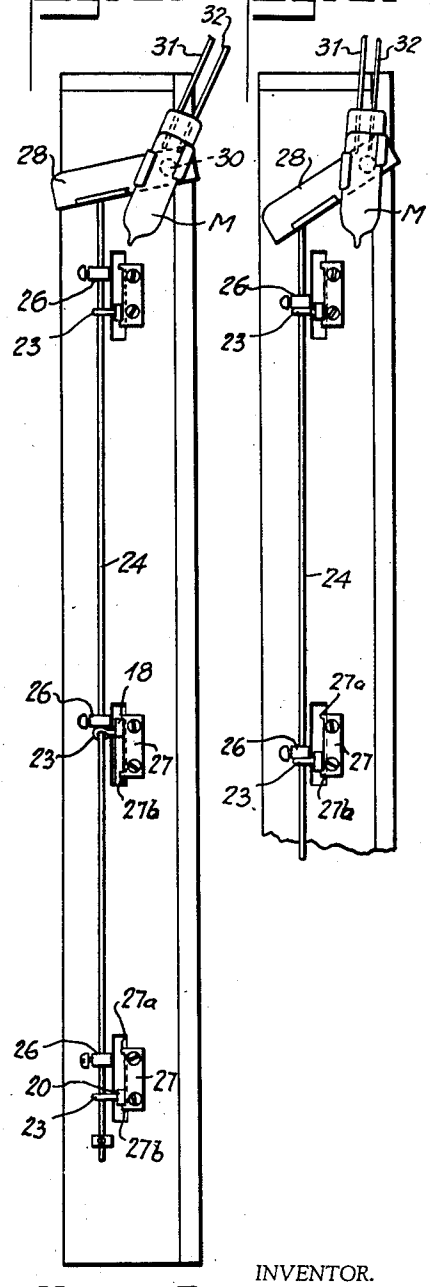


Fig. 4.

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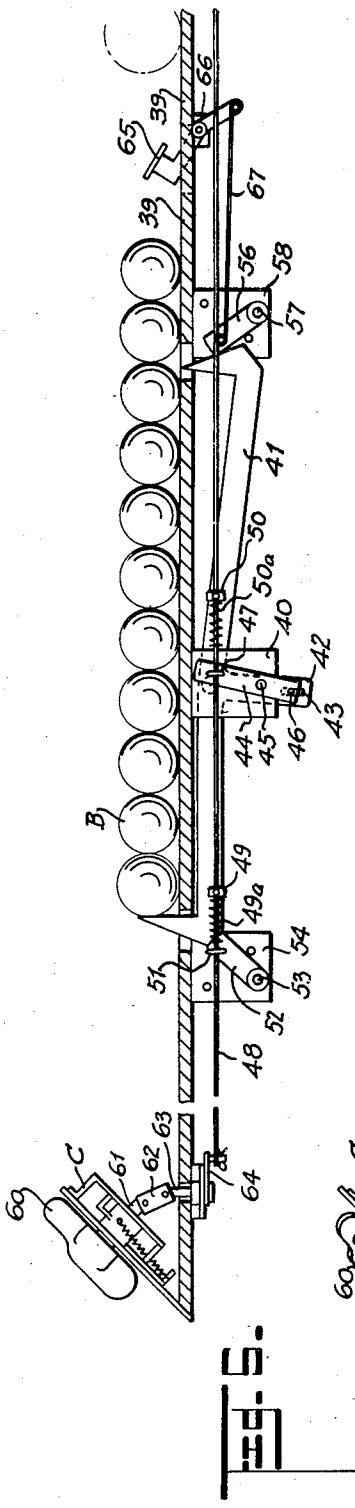


Fig. 5.

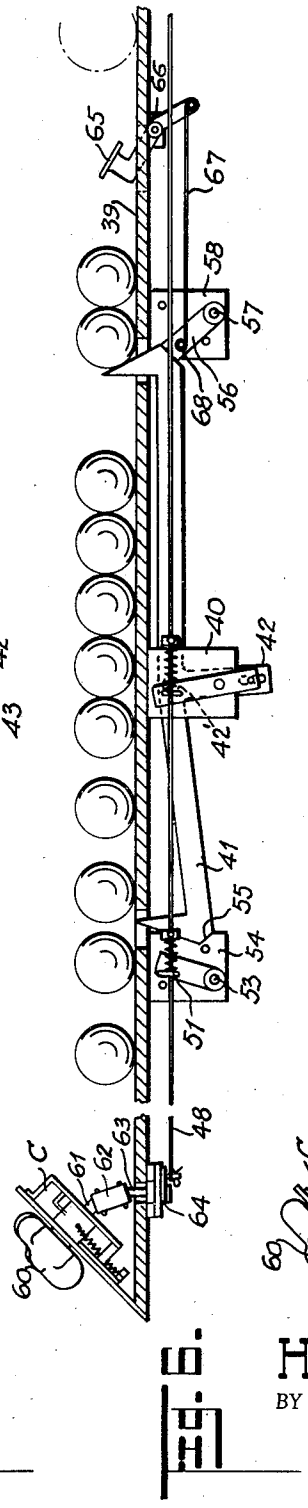


Fig. 6.

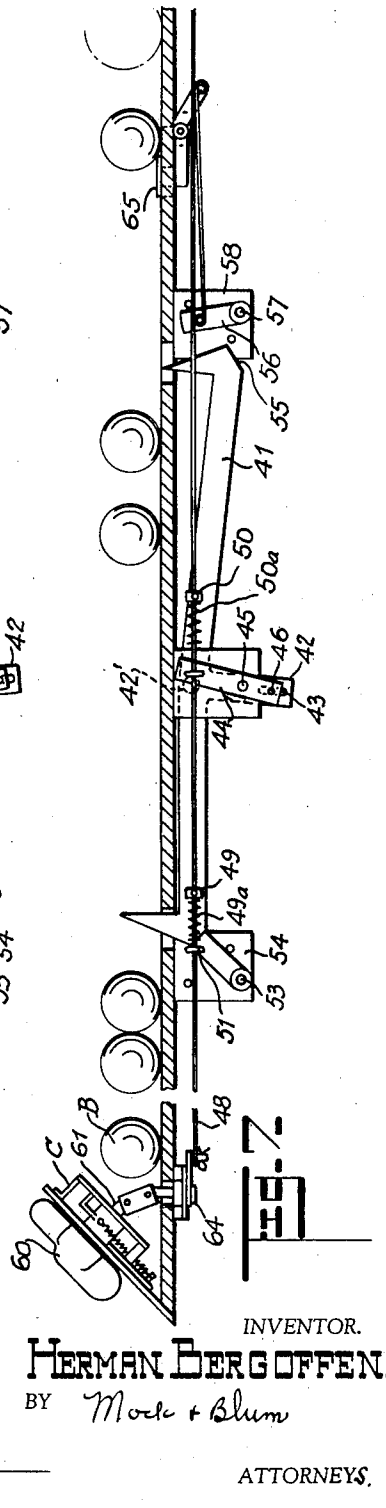


Fig. 7.

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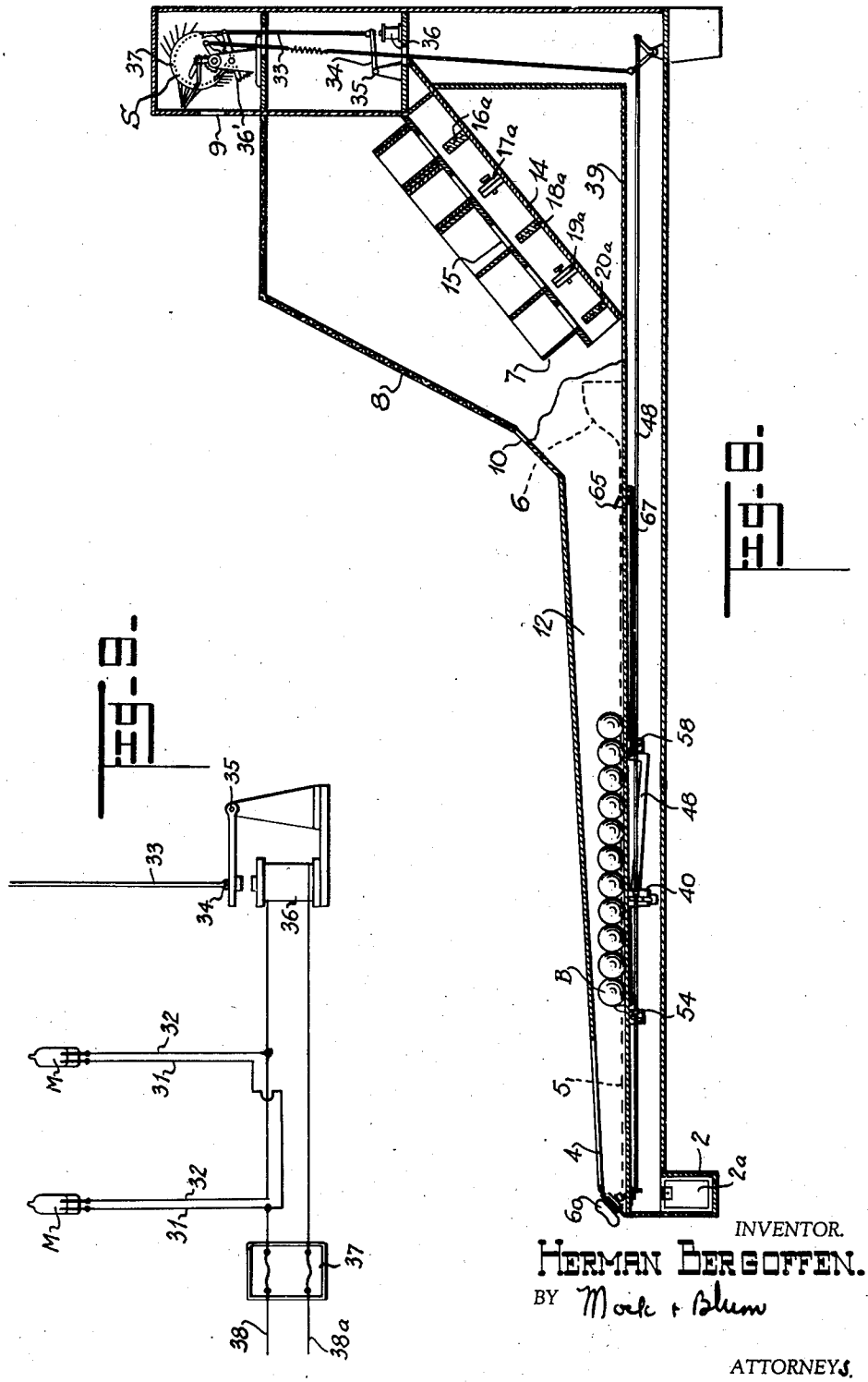
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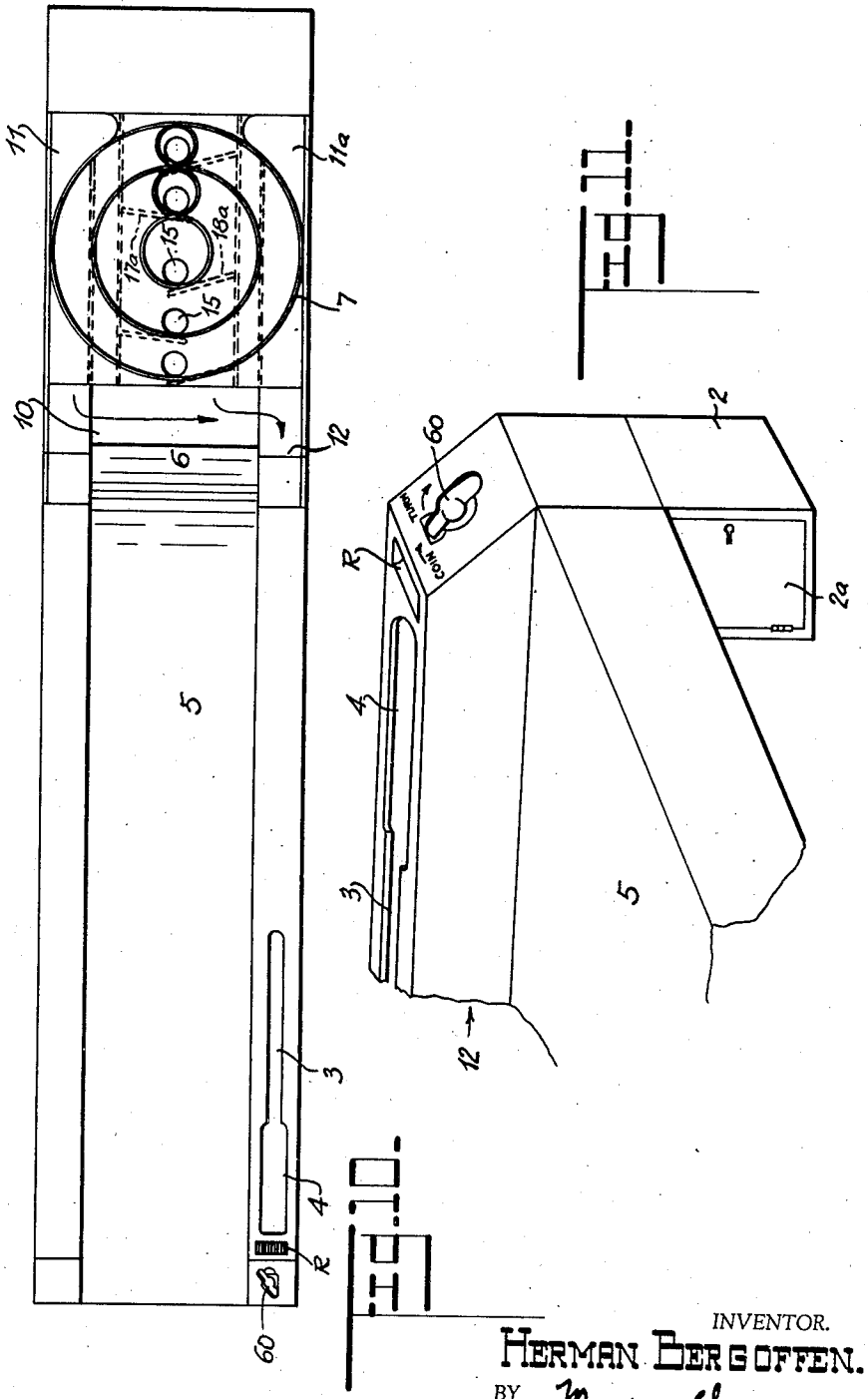


FIG. 11

FIG. 10

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UNITED STATES PATENT OFFICE

2,010,213

GAME

Herman Bergoffen, Brooklyn, N. Y., assignor to National Skee Ball Company, Inc., Brooklyn, N. Y., a corporation of New York

Application October 4, 1932, Serial No. 636,111

5 Claims. (Cl. 273—95)

This invention relates to a new and improved game.

One of the objects of my invention is to provide a game of the type in which a ball is rolled by the player, and in which the accuracy of the roll is determined by a suitable scoring apparatus.

Another object of my invention is to provide an improved game of this type, in which the scoring register is operated in a succession of steps or impulses so that if an accurate throw or roll causes a high number to be scored upon the register, said number will be scored in a succession of steps, thereby increasing the interest in the game.

Another object of my invention is to provide a game of this type having a simple and accurate control (which may be coin operated) for returning a fixed number of balls to the player.

Another object of my invention is to provide a device of this type, in which a returning ball sets the ball-control device into operative position.

Another object of my invention is to provide a device of this type having an electrical control for the register.

Another object of my invention is to provide an electrical control having a series of switches which are successively operated by the ball, the number of said switches which are operated being determined by the accuracy with which the ball is rolled or thrown.

Another object of my invention is to provide an electrical switch control whereby a number of switch arms are suitably combined with a smaller number of electrical switches which are preferably of the mercury type.

Fig. 1 is a general perspective view of the apparatus, the guard screen being shown partially broken away.

Fig. 2 is a plan view showing the electrical switch control.

Fig. 3 is a side elevation of Fig. 2, the mercury switch being shown in the operative position.

Fig. 4 is a partial view similar to Fig. 3 the mercury switch being shown in the inoperative or normal position.

Fig. 5 is a side elevation of the ball control showing the same ready for operation, so as to release a predetermined number of balls to the player.

Fig. 6 is a view similar to Fig. 5 showing how the ball control has been operated so as to release a predetermined number of balls to the player.

Fig. 7 is a view similar to Figs. 5 and 6 showing how a returning ball automatically sets the ball-control apparatus into the position shown in Fig. 5.

Fig. 8 is a side sectional view, the left hand side of Fig. 8 corresponding to the right hand side of the apparatus, and the right hand side of Fig. 8 corresponding to a central section through the central longitudinal plane of the apparatus shown in Fig. 1.

Fig. 9 is a diagrammatic view showing the electro-mechanical means for operating the register.

Fig. 10 is a detail plan view showing how the ball is returned.

Fig. 11 is a detail perspective view showing the front right hand corner of the apparatus shown in Fig. 1.

Referring to Fig. 1, the apparatus has a casing 1 and legs 2. The casing 1 is made of wood or any other suitable material and it comprises suitable detachable parts or panels which can be detached.

Referring to Fig. 10, the casing is provided with an opening having a relatively narrow portion 3 and a relatively wide portion 4. The balls B can be lifted through the relatively wide portion 4 of this opening, and they are visible through the relatively narrow portion 3 of this opening. The diameter of the balls B exceeds the width of the relatively narrow opening 3, so that the balls can be taken out only through the opening or slot 4.

The casing is also provided with a platform 5 having an inclined portion 6 along which the balls are rolled by the player. The casing is also provided with a number of annular enclosures 7 into one of which the ball falls, after it has been upwardly directed by the inclined platform portion 6. These annular enclosures 7 are suitably marked so as to indicate the value of the roll or throw, it being noted that the highest numbers are given to the narrower enclosures 7.

The device is also provided with a suitable guard screen 8.

At its top, the casing 1 is provided with a window 9 through which the scoring register can be observed. At its front, the device is provided (if desired) with a suitable coin control C which controls the release of a fresh supply of balls. This coin control C is not illustrated in detail as any conventional type of coin control can be utilized and such devices have been widely used for many years.

After a ball has entered one of the enclosures 7, it is caused to roll back to the front of the apparatus to a suitable chute and to actuate the register. If a ball does not enter one of the en-

closures 7, it can pass to this chute through an opening 10 which is directly behind the inclined platform portion 6. If the ball does not enter one of the enclosures 7 and the ball lands behind the outermost enclosure 7, it falls through one of the openings 11 and 11a. The floor of the casing 1 which is beneath the platform 5, is suitably inclined so that the balls which land upon said floor roll forwardly and also to one side of the apparatus, as indicated by the arrows in Fig. 10, so that the balls enter a return chute 12. The top wall of this return chute 12 is provided with slots or openings 3 and 4 which have been previously mentioned.

The scoring register S is only conventionally illustrated, as this scoring register is of a well known type which has been used for many years and which is shown, for example, in U. S. Patent No. 1,185,071, issued on May 30th, 1916, for "Scoring mechanism for game apparatus".

Referring to Figs. 2, 3 and 4, the floor 14 of the apparatus, which is below the enclosures 7, is provided with a series of switch arms. As shown in Fig. 1, the platform portion on which the enclosures 7 are mounted is provided with suitable openings 15, so that if a ball enters one of said enclosures, it drops through the respective opening 15 and falls upon the floor 14.

In the embodiment illustrated herein, there are five switch arms 16, 17, 18, 19 and 20. However, the number of switch arms may be varied as desired. Each of these switch arms 16—20 is connected by means of a pivot member 21 to a bracket 22. The brackets 22 are connected to inclined baffles 16a, 17a, 18a, 19a and 20a.

When a ball falls upon the floor 14, the baffles deflect the ball from one side of the floor 14 to the other side thereof, as the ball rolls downwardly in a zig-zag path, before the ball finally enters the return chute 12. As a ball rolls down one of said baffles, it operates the switch arm which is associated with said baffle and said ball also successively operates the switch arms which are below the baffle upon which said ball has initially fallen. Hence, if the player throws or rolls the ball accurately so that it enters the enclosure marked "50" and which has the highest value, the ball will successively operate the five switch arms 16–20 inclusive. If the ball enters the space between the enclosures which are marked "10" and "20", the ball falls upon the lowest baffle 20a, so that said ball only operates the switch arm 20.

The respective switch arms 16—20 are provided with loops 23 through which pass rods 24 and 25. These rods 24 and 25 have collars 26 fixed thereto. As shown in Fig. 3, the respective switch arms project through slots in a suitable side panel. This side panel is provided with metal guide members 27 along which the respective switch arms slide and said guide members 27 are provided with lugs 27a and 27b, which limit the turning movement of the switch arms. The rods 24 and 25 are slidably mounted in the eyes or loops 23. The upper ends of the rods 24 and 25 abut the flanges of levers 28 and 29, which are pivotally connected at 30 to suitable panels of the casing. Mercury switches M are connected to the levers 28 and 29. These mercury switches comprise glass casings which contain suitable quantities of mercury and the control wires 31 and 32 enter said casings. When the mercury switch is in the position shown in Fig. 4, the mercury therein does not close the circuit between the wires 31 and 32. When the mercury switch is in the position shown in Fig. 3, the mercury rolls towards the inner ends of the wires 31 and 32, thus closing the circuit between them. It is to be understood that the rods 24 and 25 are not perpendicular in the apparatus, and the inclination of said rods 24 and 25 to the horizontal plane is sufficiently small so that a relatively small turning movement of the mercury switches is sufficient to cause the mercury to roll to the inner ends of the wires 31 and 32 and thereby close the circuit between the same.

When one of the switch arms 16—20 is actuated, this causes a corresponding actuation of one of the rods 24 and 25, by means of the corresponding pair of cooperating members 23 and 26, so that the mercury switches are successively operated by the successive actuations of the switch arms 16—20.

The weight of the parts brings them back to the inoperative position shown in Fig. 4, and the baffles 16a—20a are suitably spaced and the floor 14 is given a suitable small inclination to the horizontal plane, so that there is enough time for the mercury switches to return to their inoperative position shown in Fig. 4, between the successive actuations of the switch arms 16—20. The baffles 16a—20a are also suitably spaced so as to produce this effect.

It will be noted that this arrangement of the parts is extremly compact and that it is necessary to have only two mercury switches for cooperating with a larger number of switch arms. The device could also be constructed with only a single mercury switch but the use of two mercury switches is preferred. Likewise, the invention is not limited to the use of mercury switches.

Referring to Figs. 8 and 9, the scoring register S is actuated by means of a rod 33 whose lower end is pivotally connected to an armature 34 which is pivotally connected to a suitable mount at 35. Intermediate the ends thereof, the arm 33 is pivotally connected to a lever 36' which prevents the overrunning of the score register, this member 36' being fully shown in said U. S. Patent No. 1,185,071.

The armature 35 is actuated by means of an electro-magnet 36. The upper end of the arm 33 operates in conjunction with a series of pins 37, so that the scoring register is intermittently turned in the counter-clockwise direction.

Referring to Fig. 9, the electro-magnet 36 is suitably connected through a fuse box 37 to wires 38 and 38a, which are connected to any suitable source of current. As shown in Fig. 9, when one of the mercury switches M is closed, the magnet 36 is energized so as to downwardly move the arm 33. When the supply of current to the magnet 36 is discontinued, the armature 34 turns upwardly (a suitable spring being provided) in order to cause the register S to be operated.

The electro-mechanical means which are thus provided cause the register to be intermittently operated. I do not wish to be limited to the use of an electrical control apparatus for the register, but the type of apparatus shown herein is preferred as it is very simple and compact.

Referring to Figs. 5–7, the return chute 12 is provided with a floor 39. This floor 39 is provided with a depending bracket 40 to which a gate arm 41 is pivotally connected at 42'. As shown in Figs. 5–7, the gate arm comprises two branches which are located on opposite sides of the pivot 42' and said branches are inclined to each other, so that when one of said branches is parallel to the floor 39, the other branch is inclined thereto.

The arm 41 is provided with a depending projection 42 which is provided with a slot 43. A lever 44 is pivotally connected at 45 to the bracket 40, and the lower end of the lever 44 has a pin 46 which enters and which moves within the slot 43. The lever 44 is provided with a loop or eye 47, through which passes a rod or wire 48, having collars 49 and 50 connected thereto.

This rod or wire 48 also passes through a loop 51 which is connected to an arm 52, which is pivotally connected at 53 to a bracket 54 which depends from the floor 39 of the return chute 12.

Coil springs 49a and 50a are loosely mounted upon the rod or wire 48.

When the rod or wire 48 is pulled from the position shown in Fig. 5 to the position shown in Fig. 6, the coil spring 49a first abuts the loop 51, so that the arm 52 is moved into the position shown in Fig. 6. When the arm 52 is in the position shown in Fig. 5, it abuts the bevelled surface 55 of the gate arm 41 so that the gate arm 41 is held in the position shown in Fig. 5. When the arm or latch 52 is moved away from the position shown in Fig. 5, the gate arm 41 is free to turn in the counter-clockwise direction. This counter-clockwise turning is caused by the spring 50a which is pushed against the loop or eye 47 of the arm 44. The right hand branch of the gate arm 41 is longer than the left hand branch thereof, so that the weight of the gate arm 41 normally keeps it in the operative position shown in Fig. 5.

When the gate arm 41 is moved to the release position shown in Fig. 6, a predetermined number of balls are free to roll down the inclined floor 39 towards the front of the apparatus as shown in Fig. 1. The right hand end of the gate arm 41 now projects through a suitable opening in the floor 39 so as to prevent the downward rolling of more balls, and the gate arm 41 is held in this position by means of the latch 56 which is pivotally connected at 57 to a depending bracket 58. The weight of the latch 56 causes it to fall into the operative position shown in Fig. 6. The brackets 54 and 58 are provided with suitable stop pins for limiting the movements of the respective latches.

When the game is used, the player pulls upon the wire or cord 48, and the operating mechanism for said member 48 is controlled by means of the coin operated device C. In order to manipulate the member 48, the player turns the handle 60. As shown in Figs. 5 and 6, the handle 60 is provided with a shaft 61 and this is connected by means of a universal joint 62 to another shaft 63 having an arm 64, to which the adjacent end of the wire 48 is connected.

The universal joint connection which is thus provided enables the parts to be arranged in a very compact manner and it also facilitates the operation of the device.

Referring to Figs. 5–7, a release trigger 65 is pivotally connected at 66 to a bracket which depends from the floor 39 of the return chute. A wire or rod 67 is connected to the lower end of the trigger 65 and this wire 67 is also connected at 68 to the latch 56.

When the player operates the wire 48 in this embodiment of the invention, nine balls are released. When the gate arm 41 is actuated, there may be one or more balls between the slot 69 and the trigger 65, and such extra balls are prevented from rolling towards the player by the right hand end of the gate arm 41.

When the player throws one of the balls which has been released, the return movement of this ball turns the trigger 65 in the counter-clockwise direction, and to the position shown in Fig. 7. The latch 56 is thereby pulled to its inoperative position shown in Fig. 7, and the gate lever 41 is thereupon released so that its weight can cause it to turn back to the position shown in Fig. 5.

The apparatus is also provided with a suitable receptacle R in which the coins can be conveniently kept. The coins drop into the adjacent hollow leg 2 and said hollow leg is provided on the inside thereof with a door 2a, so that a battery of such machines can be mounted side by side. Since the doors 2a are on the insides of the legs, said doors can be conveniently opened even though a number of such machines are located close to each other.

The invention relates generally to any game of the type in which a ball or other article is thrown or projected in any manner. Whenever I refer in the claims to a game of the type described, it is to be understood that I am not limited to the details of construction which are shown in the preferred embodiment, and that the claims generally relate to a game in which a ball or other article is projected.

I have shown a preferred embodiment of my invention, but it is clear that numerous changes and omissions can be made without departing from its spirit.

I claim:—

1. In a game of the type described, an alley having openings therein, a return-way for a ball located underneath said openings, spaced baffles located in said return-way and adapted to direct the ball in a zig-zag path along and between said baffles, switch arms connected to said baffles so that the movement of a ball along the baffles operates the switch arms associated with a plurality of said baffles, a register, and electro-mechanical means adapted to operate said register, the circuit of said electro-mechanical means being controlled by said switch arms.

2. In a game of the type described, an alley having openings therein, a return-way for a ball, said return-way being located underneath said openings, baffles located in said return-way and adapted to return the ball in a zig-zag path along and between them, movable arms connected to said baffles so that the movement of the ball along the baffles actuates the arms associated with a plurality of said baffles, and a register which is caused to be operated by the movement of said arms.

3. In a game of the type described and which has a register, an alley, a return-way for a ball which is initially moved along said alley, and means located in said return-way whereby the ball which moves in said return-way operates said register, and a return chute into which the balls are directed after having operated said register, a turnable gate arm associated with said chute, said gate arm having ends which are adapted to project into said chute through openings which are provided in a wall of said chute, said gate arm normally occupying a position in which its front end projects into said chute and its rear end leaves said chute unobstructed, manually operated means adapted to turn said gate arm so that its front end is moved out of said chute and its rear end is moved into said chute so as to release a predetermined number of balls, and a latch adapted to automatically retain said gate arm in the last mentioned position, and ball-operated

means adapted to release said latch from said gate-arm.

4. In a game of the type described and which has a register, an alley, a return-way for a ball which is moved along said alley, and means located in said return-way whereby the ball which moves in said return-way operates said register, and a return chute into which the balls are directed after having operated said register, a turnable gate arm associated with said chute, said gate arm having ends which are adapted to project into said chute through openings which are provided in a wall of said chute, said gate arm normally occupying a position in which its front end projects into said chute and its rear end leaves said chute unobstructed, manually operated means adapted to turn said gate arm so that its front end is moved out of said chute and its rear end is moved into said chute so as to release a predetermined number of balls, and a latch adapted to automatically retain said gate arm in the last mentioned position, and a trip-member for said latch, said trip-member being located in said chute and being adapted to be operated by a ball so that the gate arm is then free to turn to a position in which its front end obstructs the chute.

5. In a game of the type described and which has a register, an alley, a return-way for a ball which is moved along said alley, and means located in said return-way whereby the ball which moves in said return-way operates said register, and a return chute into which the balls are directed after having operated said register, a turnable gate arm associated with said chute, said gate arm having ends which are adapted to project into said chute through openings which are provided in a wall of said chute, said gate arm normally occupying a position in which its front end projects into said chute and its rear end leaves said chute unobstructed, manually operated means adapted to turn said gate arm so that its front end is moved out of said chute and its rear end is moved into said chute so as to release a predetermined number of balls, and a latch adapted to automatically retain said gate arm in the last mentioned position, and a trip-member for said latch, said trip-member being located in said chute and being adapted to be operated by a ball so that the gate arm is then free to turn to a position in which its front end obstructs the chute, said trip-member being spaced from the opening through which the rear end of the gate arm projects into the chute.

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