Dec. 15, 1936. M. M. MARKER 2,064,310

AMUSEMENT APPARATUS

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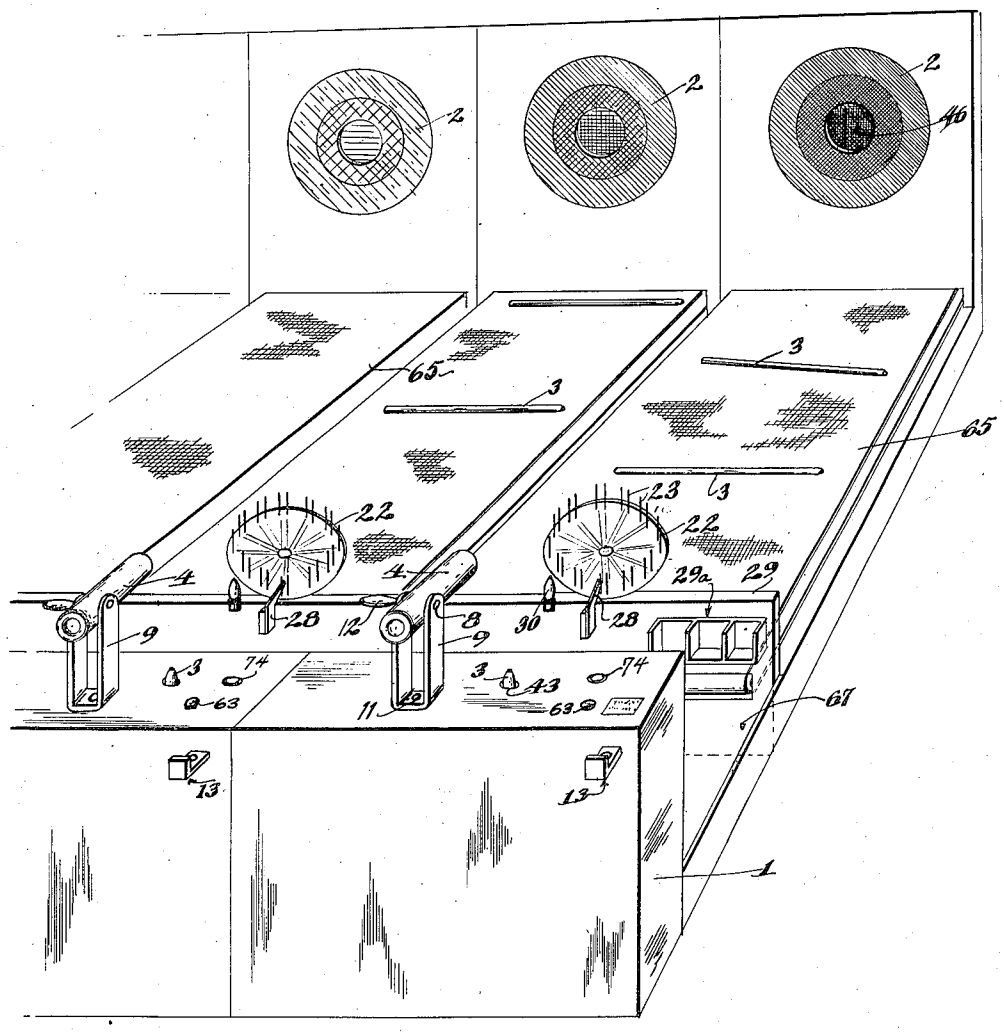


Fig. 1

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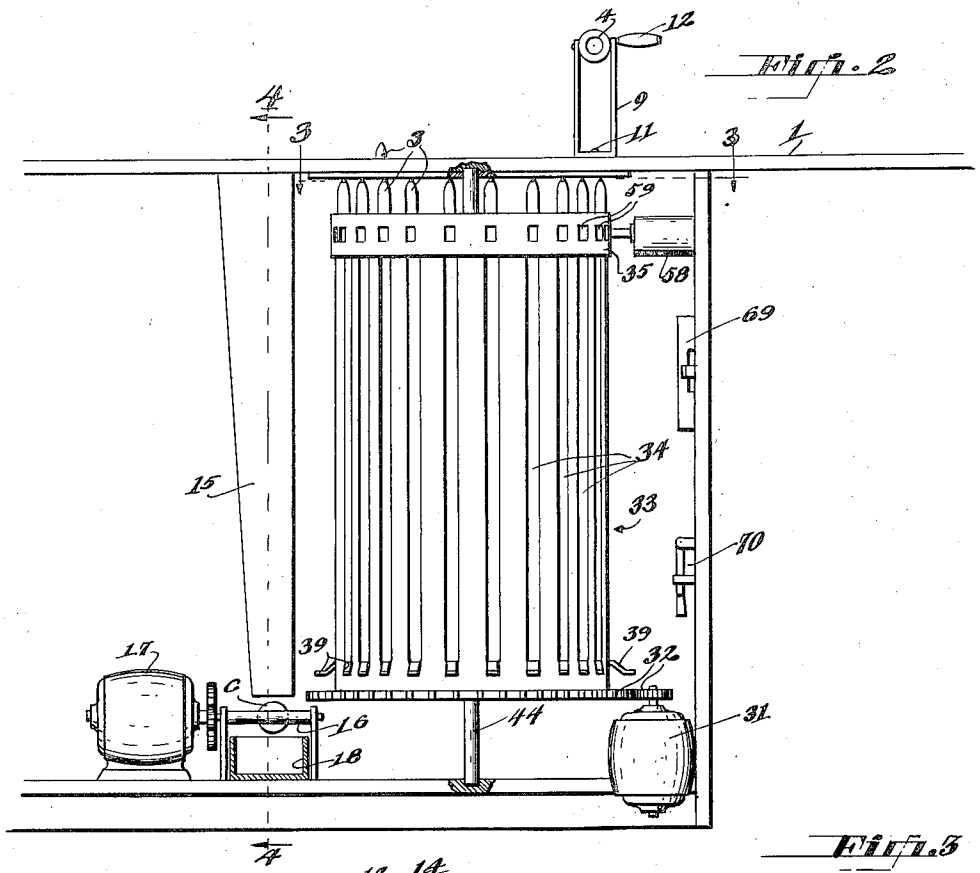


Fig. 2

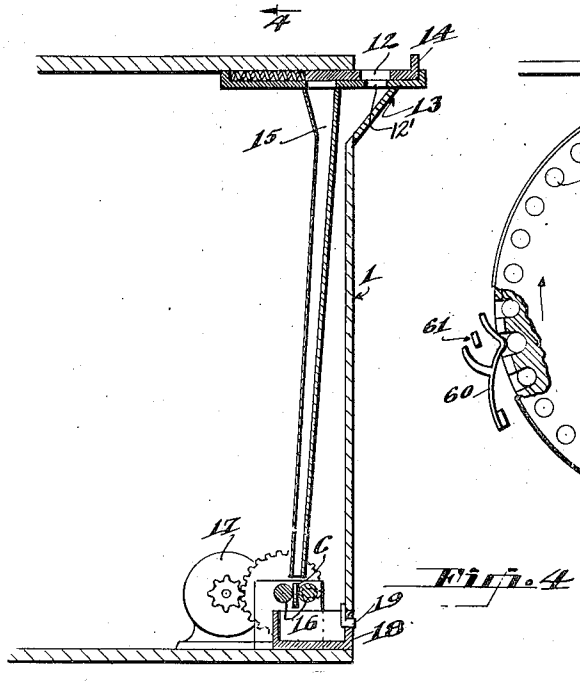


Fig. 4

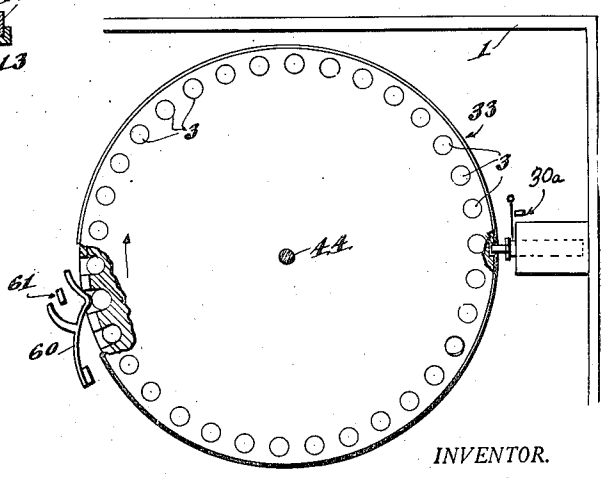


Fig. 3

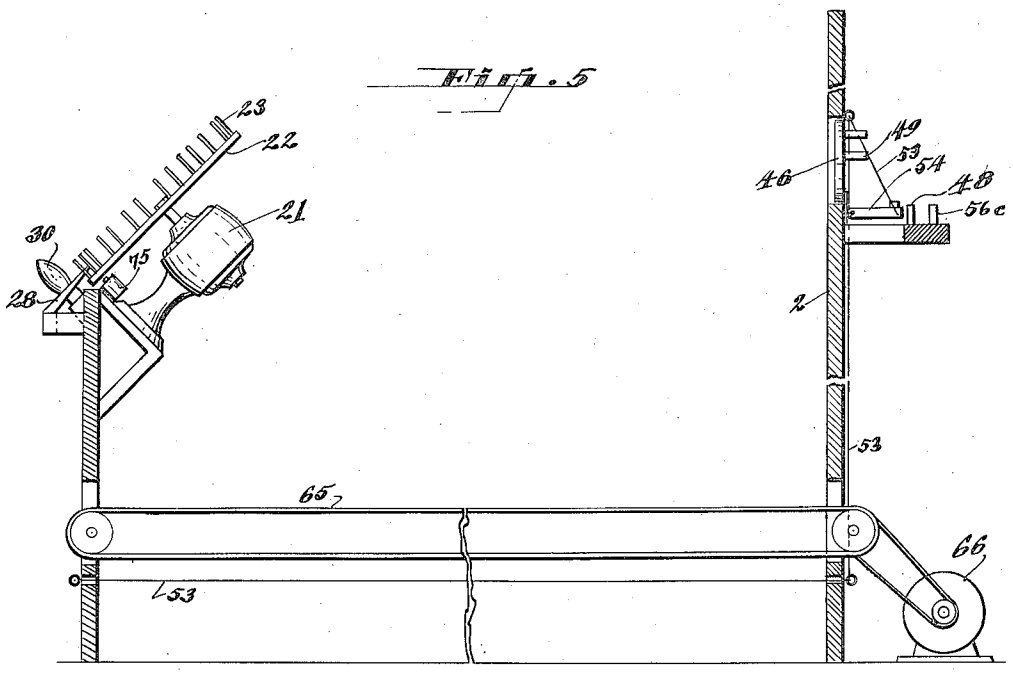
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AMUSEMENT APPARATUS

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Fig. 5



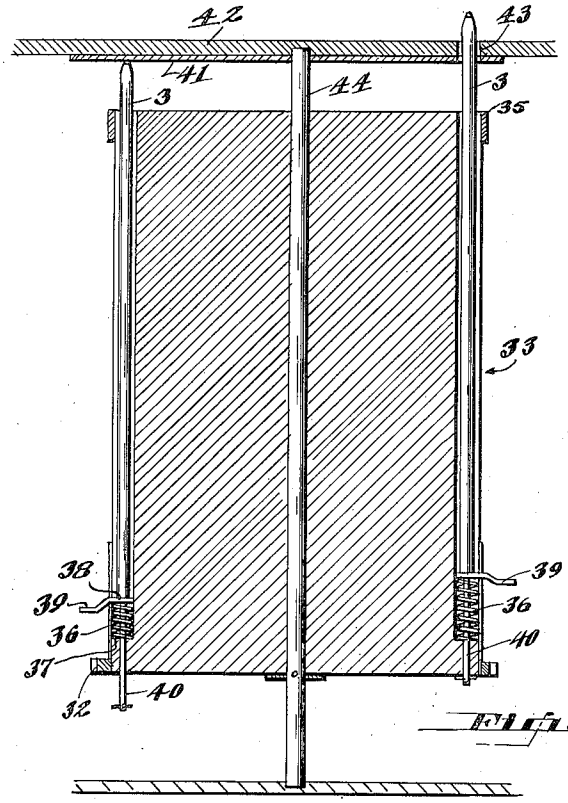


Fig. 7

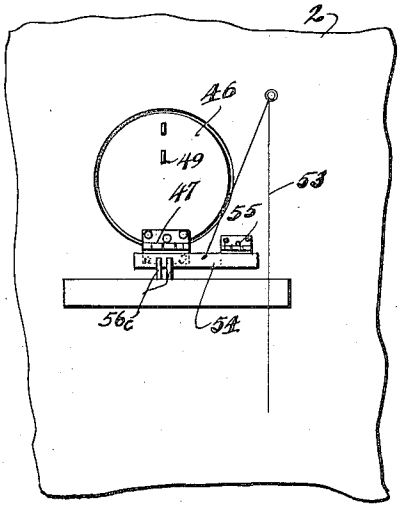


Fig. 6

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AMUSEMENT APPARATUS

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Fig. 8

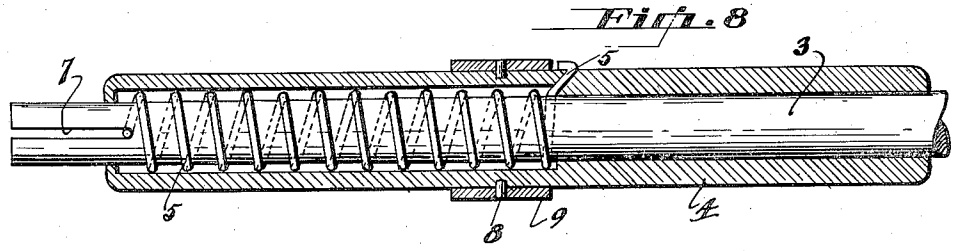


Fig. 9

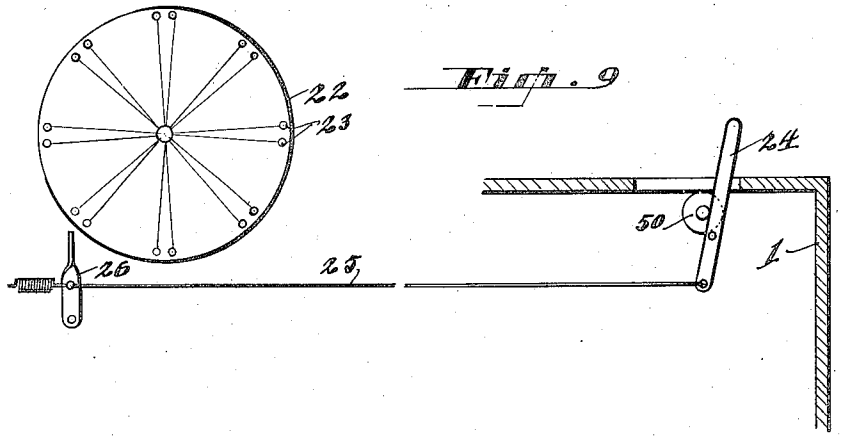
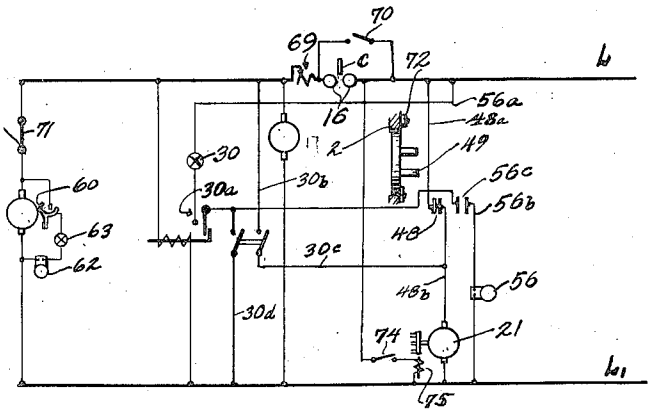


Fig. 10



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UNITED STATES PATENT OFFICE

2,064,310

AMUSEMENT APPARATUS

Mitchell M. Marker, Brooklyn, N. Y.

Application August 28, 1930, Serial No. 478,408

1 Claim. (Cl. 273—101)

This invention relates generally to amusement devices and more particularly to a game of sport involving individual skill on the part of a player such, for instance, as his ability to shoot or otherwise project any given missile at a target.

An object of my invention is to provide an improved amusement device which will require only occasional attention from an attendant thereby permitting one attendant to supervise or operate a great number of the games. A further object is to provide improved coin controlled equipment adapted upon insertion of a coin by the player to permit him to play only one or the other of two games, depending upon which game the device is previously adjusted for, it being understood that there are certain operating elements common to each game thereby causing the equipment to be economical in construction particularly when there is taken into consideration the plurality of games adapted to be played.

In one of these games the player causes a missile to be shot at a target which if hit in some predetermined place, such as the bull's eye, will cause a given instrumentality to be operated. In the specific aspect of the invention this instrumentality is in the form of a motor driven prize wheel which when it stops will indicate what prize the player has won. With this particular game a further object is to provide improved means for supplying the player with a part of the necessary shooting apparatus automatically upon deposit of a coin. Another object is to provide improved coin controlled means for determining automatically the length of time that said automatic supply mechanism operates. The portion of the shooting equipment supplied to the player is the missile itself, it being understood that the shooting portion of the apparatus is at all times freely accessible to the player as by being on the top of the counter or stand from which the player takes aim. While the missile shown herein is specifically in the form of an arrow it is, of course, to be understood that any object suitable to be projected at the target may be used. For example, the arrow may be of the form which is projected with the use of a bow, or mechanically supported and projected but manually aimed by the player. Other objects which might be suitably projected are balls, bullets, darts, etc.

To adjust the equipment for the second game, improved means are provided whereby the automatic feeding mechanism is rendered inoperative and the prize wheel is adapted to be positively driven for a predetermined time interval upon deposit of the coin. Upon expiration of this time the positive drive is automatically terminated whereby the wheel may either idle to a standstill or by an improved control the player may manually stop the wheel. If fortunate he may stop the wheel at a point which gives a prize he prefers most.

The automatic termination of the power drive of the prize wheel is effected through the same coin controlled mechanism that is employed in the first game to control the automatic missile supply device. It is also seen that the prize wheel is common to both games although in each game it is responsive to different means or operations, e. g. in the first it responds to making a bull's eye, while in the second game it is responsive to the deposit of a coin. It will also be seen that if desired both phases of this responsiveness could be obtained for the deposit of only one coin.

It is thus seen that the game has all the elements and fascination of skill which, from the player's standpoint, adds tremendous interest to playing the game, while the equipment from an operating standpoint is highly conducive to economical operation and this combined with the nicety with which the parts are constructed and coordinated insures long life of the equipment.

Other objects and advantages will be more apparent to those skilled in the art from the following description of the accompanying drawings in which:

Fig. 1 is a perspective of several of my improved devices shown side by side.

Fig. 2 is a vertical elevation looking into the back side of the cabinet containing and supporting the shooting equipment.

Fig. 3 is a partial plan view of a magazine in which a large number of arrows or other projectible objects are kept and from which they are automatically fed upon depositing a coin.

Fig. 4 is a vertical transverse section taken substantially on the line 4—4 of Fig. 2 to show the coin control mechanism.

Fig. 5 is a vertical section taken lengthwise of the range over which the arrow travels when projected.

Fig. 6 is a rear elevation of the mechanism associated with the bull's eye of the target.

Fig. 7 is a vertical section through the missile magazine showing how the missiles or projectible objects are supplied to the player while at the same time preventing him from having access to the remaining missiles in the magazine.

Fig. 8 is a longitudinal section through the

specific form of projecting mechanism herein described.

Fig. 9 is a diagrammatic view showing a modified arrangement whereby the player may control rotation of the prize wheel.

Fig. 10 is a wiring diagram of the automatic controls.

For purposes of illustration I have shown one specific aspect of the invention as comprising a counter 1 from which aim is taken at a target 2 mounted upon a vertical frame work located at any desired distance. Specifically the objects which are projected comprise arrows 3 preferably of uniform cross section substantially throughout their length. These arrows are mechanically projected, Fig. 8, by being inserted within the front end of a barrel 4, and through a spring 5 which is suitably secured therein at one end while its other end is freely movable to permit stretching of the spring. The last coil of the spring is bent at right angles as at 6 so as to slide within a groove 7 extending longitudinally and transversely of the tail end of the arrow. The player by exerting sufficient inward thrust on the front end of the arrow may stretch the spring and cause the tail end of the arrow to project rearwardly from the barrel whereupon the player will grasp this rear end while aiming the arrow at the target 2. To permit aiming, the barrel is horizontally swiveled at 8 in a U-frame 9 which is vertically swiveled as at 11 and provided with a handle 12 to assist in this swiveling action. When the player has aimed the arrow to the best of his ability he releases his hold upon the tail end thereof whereupon the spring 5 projects the arrow toward the target.

One purpose of my present invention is to provide improved means for controlling the supply of the arrows to the player and to have means which is rendered operative automatically when a predetermined mark is made on the target. These and other functions and the structure for accomplishing the same will be more readily understood by describing the sequence of operations.

The player first deposits a coin within a recess 12, Fig. 4, of a suitable type of coin receiver 13, this being of the type whereby a member 14 may be moved inwardly against a suitable spring until the opening 12 registers with a passage 15 through which the coin drops in a vertical position to fall in contact with two rollers 16, one of which is yieldingly supported. The opening 12 is adapted to receive a nickel but if a dime or penny is deposited instead it will fall through an opening 12' without passing between contact rollers 16. However, when a proper coin C is used it engages the rollers on their upper side whereby electrical contact is established across the same to close a circuit between main supply lines L, L1, Fig. 10, for a motor 17 which is suitably geared to one of the rollers to drive the same. As this roller is driven the coin is moved through the rollers to be finally discharged into a coin-box 18. This coin box may be provided with a suitable lock generally indicated at 19 and located at any suitable place so as to be readily accessible by the owner or operator of the equipment.

An arrow is automatically supplied to the player upon depositing a coin in that when the coin drops between the contact rollers 16 a circuit is closed also for a motor 31, Figs. 2 and 10, which drives through suitable reduction gears 32 a supply magazine 33 herein in the form of a drum having a large number of closely spaced vertical slots 34 formed in the drum periphery. These slots are adapted to receive the arrows the upper end of which are prevented from falling outwardly by a band 35 secured to and extending around the upper end of the drum. The arrows are urged upwardly by a spring 36 interposed between a shoulder 37 and an arrow supporting plate 38 which has a finger grasping portion 39, this plate being vertically guided by a pin 40 to which it is rigidly secured. The arrows are held in sliding contact against a plate 41 secured to the underside of the top board 42 of the counter. The counter is provided with an opening 43, Figs. 1 and 7, through which an arrow is moved by its feeding spring 36 as the drum is rotated about its shaft 44. The opening 43 is in the path of movement of the arrows. The motors and gearing are so arranged that the coin is discharged from rollers 16 just as the arrow is moved upwardly into the supply opening. If the timing of these operations does not happen to be precise no particular harm will result for the coin control motor 17 will continue to operate until the coin is discharged whereupon the torque on the magazine motor stops.

When an arrow 3 has automatically appeared at the opening 43, the player removes the arrow and loads the projecting mechanism in the manner previously described and shoots at the target 2. His object now is to shoot a bull's eye which, if performed, causes the bull's eye 46 to swing downwardly about its hinge 47, Figs. 5 and 6, thereby closing a circuit across stationary contacts 48 by contact 49 carried on the back side of the bull's eye. Closure of these contacts establishes a circuit 48a and 48b for the prize wheel motor 21 and at the same time it may establish a circuit to energize, Fig. 9, a solenoid 50 whose core will be thrust outwardly in front of a lever 24, which is a modified arrangement for controlling the prize wheel in the second game, thereby preventing the player from controlling rotation of the prize wheel in a manner to be described later. After the bull's eye is made and the circuit for the prize wheel closed the circuit is broken by the attendant who pulls a small flexible member 53 from any convenient point thereby raising a resetting member 54 which is hinged as at 55. Raising of member 54 in turn raises bull's eye 46 to its operative shooting position and during this raising operation the circuit across contacts 48 is opened. A yieldable finger 28 engaging a series of pins 23 carried upon the wheel will thereupon quickly stop rotation of the wheel at some undetermined point. The point at which the wheel stops will determine the prize to be awarded. The attendant then gives the player the prize he has won. The prizes if in the form of cigarettes may be stored in small racks 29a, Fig. 1 which may extend partially or wholly across the panel 29.

In order to warn the attendant that a bull's eye has been made and also to add to the excitement of making the same, a bell 56 is sounded and a lamp 30 is lighted as by being connected in a circuit 56a and 56b which is controlled by switch 30a and contacts 56c, the latter being closed by bull's eye contact 56d. The manner in which the switch 30a is closed will be best understood by considering that in order to prevent a player from obtaining more arrows than what he has actually paid for, the magazine drum 33 is locked against rotation by the core of a solenoid 58, the outer end of this core being successively insertable within regularly spaced open-

ings 59, formed in the upper band 35. The solenoid is connected across the same circuit with driving motor 31 so that upon actuation of this motor the core is withdrawn to release the drum but upon breaking of the motor circuit the solenoid is deenergized normally and by suitable means, such as a spring, its core is thrust into the next successive opening 59. However, upon energization of the solenoid, switch 30a, Figs. 3 and 10, is moved to closed position by engagement of the switch arm with a collar on the solenoid, the arrangement being such that the switch remains closed upon deenergization of the solenoid. Hence with switch 30a closed, the hitting of a bull's eye will complete the circuit across contacts 56c and light the lamp 30 and ring bell 56. The attendant after giving the player his prize as determined by the prize wheel in the manner previously explained, may then manually reopen switch 30a although it can, in this game, be kept closed because the circuit is opened upon resetting the bull's eye.

In case the attendant has not had time to refill the magazine, suitable means are provided for automatically warning him that this should be attended to and to also warn the player by flashing of a light. To accomplish this a leaf spring 60 is suitably supported at one end while its free bent end is adapted to slide over the surface of the arrows as shown in Fig. 3, but in case the slots are not filled with an arrow the spring 60 will fall into the empty arrow slot, thereby permitting closure of contacts 61 to ring a bell 62 and flash a light 63 which is disposed preferably on the counter where instructions to a player will advise him not to insert a coin if this light is on. It is obvious that this spring 60 may be located so as to give its warning when either only one or four or five arrows are left in the magazine.

To facilitate the gathering of the arrows after being shot at a target an endless conveyor 65 is continuously driven by a motor 66 so as to carry the arrows, which fall back on to the conveyor, into a receiving passage 67. The attendant may, from time to time, gather these arrows and insert them in the slots of the magazine drum simply by first inserting the nose of the arrows beneath the band 35 and then sliding the arrow up against the slide plate 41 and at the same time inserting the lower end of the arrow in its slot and against the depressed supporting plate 38.

To vary the speed of operation of the coin control motor 17 and driving motor 31, a suitable variable resistance 69 may be provided and if it is desired to use a demonstration switch such may be provided as at 70.

To disconnect the first game and install the second game the drum motor circuit switch 71 is opened and the bull's eye is prevented from opening by any suitable manually operated pivoted latch 72 thus eliminating possible closure of contacts 48 and 56c. A switch 73 is also closed. Thus, upon deposit of a coin, the coin motor will operate for a predetermined length of time and at the same time switch 30a will have been previously closed as by any prior energization of solenoid 58. While the coin is passing through rollers 16 prize wheel motor 21 will be actuated as by current through wires 30b, 30c and 48b. When the coin has passed through contact rollers 16 the motor circuit is broken and the prize wheel either idles to a stop or is stopped by the player. The player may personally stop the wheel, in an attempt to obtain a preferred prize, by pressing a button 74, Figs. 1 and 10, thereby energizing a solenoid 75 the core of which will engage and stop wheel 22. However, he may, if desired, permit the wheel to idle to a stop but in either case the flexible finger 28, supported on the frame 29 and engaging pins 23 on the wheel, will point to the prizes which are marked in various sections of the wheel. In the modified form shown in Fig. 9 the wheel may be mechanically stopped by a hand lever 24, adapted through a link 25 to operate a brake 26 on the rim of the wheel. It is this form which is automatically prevented from being operative, as by solenoid 50, when the first game is played.

It is also to be noted that by closing switch 71 and unlatching latch 72 both games may be played by depositing only a single coin.

It is of course to be understood that various changes and modifications may be made without departing from the spirit of the invention as set forth in the appended claim.

In operating the first game it is desired that the bull's eye shall be hit down only by a square hit and not by what is termed a "splash" shot where the arrow hits the target with a side wise movement. To accomplish this the bull's eye is set in from the front of the target, thereby necessitating a substantially fair hit in order to move the bull's eye.

I claim:

An amusement apparatus comprising, in combination, a target having a movable portion, an object adapted to be projected at said target, a prize determining device adapted to indicate any one of various prizes, a motor for operating said device, an electrical circuit adapted to be closed when said target is moved as by being hit by said object thereby to cause operation of said motor, and means for restoring said movable target portion to its normal position and for simultaneously opening said circuit so as to discontinue the actuation of said motor and device which is thereafter adapted to be brought to a stop to indicate any one of various prizes.

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