June 23, 1936. F. M. PIERCE 2,044,995

AMUSEMENT DEVICE

Filed Oct. 18, 1935

Fig. 2.

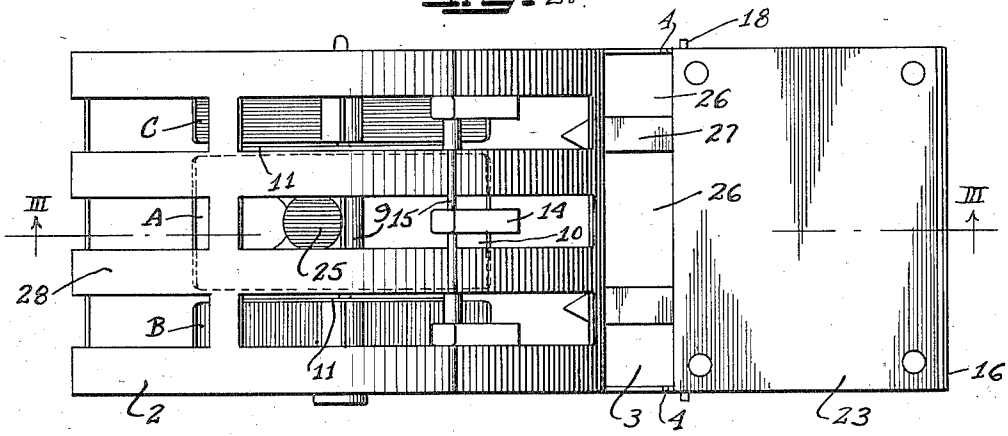


Fig. 3.

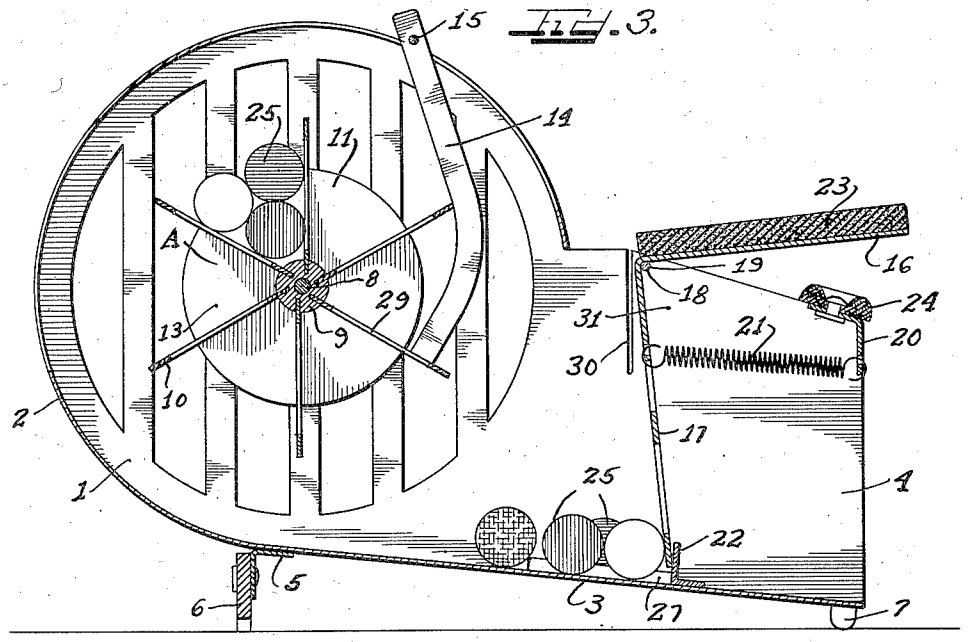
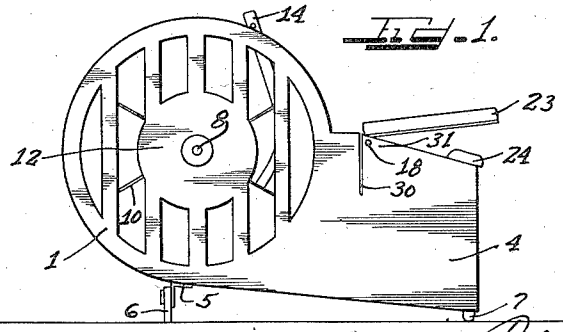


Fig. 1.



Inventor

Frank M. Pierce.

by Charles O. Fiddler Atty.

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2,044,995

AMUSEMENT DEVICE

Frank M. Pierce, Miami, Fla.

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7 Claims. (Cl. 273—138)

This invention relates to amusement devices and in particular to a device in which balls are projected along a playing course or runway for landing in receptacles so arranged and operable that more or less skill is required in the projection of the balls and distribution thereof in the receptacles in order to make high scores.

An important object of the invention is to provide an amusement device comprising a cylindrical housing or cage having a tangential runway thereto along which balls may be projected for travel around the cage circumferential wall for reception in independently rotatable receptacles coaxial with the cage.

Another object is to provide receptacles in the form of vane or paddle wheels arranged in a row coaxial with the cage for independent rotation and having side walls associated therewith so that they provide V-shaped pockets for receiving projected balls.

Another object is to provide balls of various colors and paddle wheel structures colored to match the ball colors.

Another object is to provide individual stop and dumping members for the paddle wheel structures for normally holding said paddle wheel structures in receiving position and being operable to release the paddle wheel structures for rotation thereof to dump collected balls therefrom after a playing operation.

A further object is to provide a structure in which the cage, the runway portion, the projector, and the paddle wheel structure may be readily formed of sheet metal and easily and economically assembled.

The above enumerated and other features of the invention are shown incorporated in the structure disclosed on the drawing, in which drawing:

Figure 1 is a side elevation;

Figure 2 is an enlarged plan view, and

Figure 3 is a section on the plane III—III of Figure 2.

The body of the structure is in the form of a cylindrical cage with its axis extending horizontally and is preferably constructed of sheet metal. As shown, it comprises end walls 1 and a circumferential wall 2 which extends approximately 270 degrees around the end walls, the circumferential wall at its lower end continuing forwardly and slightly downwardly to provide a ramp or runway 3 through the forward portion of the space which receives the projector mechanism which will be described later. The cage end walls 1 are extended forwardly in alignment with the ramp edges to form the sides 4 of the projector mechanism receiving space, these sides extending upwardly to the upper end of the circumferential wall 2.

A sheet metal flange 5 may be riveted or soldered to the bottom wall of the cage structure for supporting a foot plate 6 for giving the necessary elevation or inclination to the ramp, and the front end of the ramp may have rubber buttons 7 secured thereto forming friction supporting feet. The plate 6 may be of fiber or rubber or other friction providing material so that the device will have a secure footing during operation thereof.

Supported by the end walls 1 and extending axially through the cage structure is a shaft 8 which may be a length of wire having its ends bent over so as to hold it in place between the end walls 1. A number of paddle or vane wheel structures are mounted on the shaft 8 for independent rotation thereon. As shown, three such paddle wheel structures A, B and C are shown, although a different number may be used. Each paddle wheel structure comprises a bearing hub 9 with sheet metal vanes 10 extending therefrom radially. As shown, the middle paddle wheel structure A may be wider than the end paddle wheel structures B and C, and between the middle structure and each of the end structures a sheet metal disc 11 is mounted on the shaft, these discs forming side walls for the paddle wheel structures. The sheet metal end walls of the cage structure have the circular center portions 12 of the same diameter as the partition discs 11 and these circular parts 12 form the outer side walls for the outer paddle wheel structures B and C, the paddle wheel structures thus providing V-shaped pockets 13 for receiving projected balls and preferably the radius of the partition discs and the portions 12 of the end walls is less than the radial extent of the paddle wheel vanes.

For normally holding the vane wheel structures in ball receiving position and for releasing the wheel structures for dumping of accumulated balls therefrom, levers 14 are provided, one for each wheel structure. These levers are hinged at their upper ends on a support 15 which may be a length of wire extending across the top of the cage structure and secured thereto as by soldering. The levers at their lower ends are normally abutted by one of the vanes of the respective wheels and tend to prevent rotation of these wheels in clockwise direction while the balls drop into the paddle wheel pockets. The levers are curved so as to clear the vanes above those which abut the

lower ends of the levers and so that the levers may be held by gravity in normal stop position.

The ball projector structure is of angular shape and may be stamped from a single piece of sheet metal. It comprises a seat portion 16 and a depending portion 17, a shaft 18 being secured in the bend of the structure and journaled in holes 19 near the top of the side walls 4. At their front upper corners the walls 4 are secured by a cross brace 20 and a tension spring 21 extends between this cross brace and the depending portion 17 of the projector structure and tends to hold the projector structure with the depending portion in substantially vertical position against a stop 22 in which position the seat portion 16 extends forwardly a distance above the brace 20 whereby when said seat portion is struck downwardly the depending portion 17 will be violently swung inwardly. A cushioning pad 23, which may be of sponge rubber, is secured on the seat portion 16 and the brace 20 has a cushioning abutment 24 thereon which may also be of sponge rubber so as to soften the impact of the seat portion against the brace when the projector structure is struck.

The depending wall 17 of the projector structure, when in its normal position, forms a stop for the balls 25 which are to be projected along the ramp 3 and the circumferential wall 2 of the cage when the projector frame is struck. The distance of travel of the balls depends upon the force of the blow on the projector structure. In playing the game the striking force should be just sufficient to cause as many of the balls as possible to drop into the paddle wheel pockets while the paddle wheels are held in normal receiving position by the levers 14. By rearward pressure against the upper ends of the levers, the paddle wheels will be released and the weight of the accumulated balls will rotate the paddle wheel structures for discharge of the balls therefrom, the paddle wheels then coming back into abutting engagement with the levers 14 in ball receiving position.

Any number of balls may be used and they may be variously colored, and the paddle wheel structures may be correspondingly colored, one part of the game being to deposit the colored balls in correspondingly colored wheel structures. In the device shown there are seven balls, two being of a color, as for example, red, two being colored, for example, white, and two being colored, for example, blue, and the odd or seventh ball is of a different color as, for example, yellow. The middle paddle wheel structure A is colored white, and the outside paddle structures B and C are respectively red and blue.

In playing the game, the procedure is to strike the projector structure with just sufficient force so that the projected balls will roll along the circumferential wall 2 up to near the top thereof and then drop into the V-shaped pockets of the paddle wheels. If a colored ball drops into its own colored wheel, it would count, say ten. If two balls of the same color land on the same colored wheel, the total count would double or be forty. The odd or yellow ball may constitute a wild rover and if it drops, say in the white wheel, the total score made by the other balls would be doubled. The highest score would then result if each of the paddle wheel structures received the two correspondingly colored balls and the white paddle wheel structure received the yellow ball.

Another operation would be to see who, of a number of players, can get all of the balls into the white wheel with the least number of operations of the projector mechanism or in the least time. Many other ways may be devised for utilizing the device to afford contest and amusement.

To enable a player to exercise skill in lining up the balls for a desired score prior to the operation of the projector mechanism, the forward end of the ramp may be divided off into stalls or compartments 26 by plates 27 secured to the ramp and these stalls could be in alignment with the paddle wheels. By slightly tapping the projector frame, or by tilting the device, or by means of a pencil or stick, the balls could then be lined up as desired in the various stalls before the projector frame would be struck. The inner ends of the plates 27 are preferably pointed so that the balls may readily be guided into the desired stall.

In order that the interior of the cage structure may be clearly visible, the walls 1 and 2 are cut out as much as possible to leave just sufficient metal for the necessary rigidity and strength. The openings in the circumferential wall 2 preferably extend circumferentially so that the remaining bars 28 will be sufficiently close together to prevent escape of the balls and to form guide rails for these balls which may or may not be in accurate alignment with the paddle wheels. In order that an opponent may readily observe and check up on the balls put into the wheel pockets by the player, the vanes may have windows or openings 29 therein of sufficient size so that the color of the deposited balls may be discernible from any side of the device.

In order that the projector structure 16—17 may be readily applied or withdrawn, the sides 4 may be provided with vertical slots 30 adjacent to and rearwardly of the bearing holes 19 so that the wall sections 31 in front of the slots may be deflected outwardly sufficient for release from the holes of the ends of the shaft 18 of the projector structure. With this arrangement the balls can be placed in the device before the projector structure is applied, and the projector structure can be readily withdrawn whenever the number of balls is to be increased or decreased, depending upon the game it is desired to play. After the projector mechanism is in place the balls will be confined in the cage structure and cannot become lost.

It will be noted that the dumping levers 14, when in their normal position of abutment against their lower ends by vanes of the wheels, are in engagement with and in the path of the vanes above those which abut the levers. Such engagement exerts a brake drag against counterclockwise rotation of the wheels when the projector mechanism has been struck hard enough for the projected balls to strike the upstanding vanes or the forward vanes of the wheels, and if the projection force is strong enough the balls, instead of being deflected by the levers back into the V pockets, will tilt the levers forwardly and fall back to the ramp to the starting position without being received in any of the wheels.

It will also be noted that the vanes which normally abut against the lower ends of the levers 14 incline downwardly and forwardly so that when balls strike the rearwardly extending vanes of the wheels with abnormal force the levers will be cammed outwardly for release of the wheels to drop any received balls. All this adds to the interest and excitement of the operation of the device as it will require more or less

skill to properly arrange and project the balls for obtaining the highest scores.

I have shown an efficient and practical embodiment of the various features of my invention but I do not desire to be limited to the exact construction, arrangement and operation shown and described as changes and modifications may be made without departing from the scope and spirit of the invention.

I claim as follows:

1. In a device of the class described, a cylindrical cage having its axis extending horizontally and having a ramp extending tangentially thereinto for guiding projected balls, a row of independently rotatable paddle wheels within said cylinder concentric therewith and providing pockets for receiving the balls.

2. In a device of the class described, a cylindrical cage having its axis extending horizontally and having a ramp extending thereto for guiding projected balls tangentially thereinto, a row of independently rotatable paddle wheels within said cylinder concentric therewith and providing pockets for intercepting balls, and means normally tending to hold said paddle wheels against rotation and operable to release said wheels for the dumping therefrom of accumulated balls.

3. In a device of the class described, a cylindrical body having an inlet, a ramp in front of said inlet for tangentially guiding projected balls into said body, a row of independently rotatable receptacle structures within said body for intercepting balls, and individual means for said receptacle structures yieldably holding said structures against rotation and being operable to release said receptacle structures for rotation thereof to dump collected balls.

4. In a device of the class described, a cage having an upwardly inclined ramp leading thereto for receiving projected balls to guide them into said cage, a plurality of receptacles extending axially in said cage for receiving projected balls, and means defining stalls on said ramp in which balls may be positioned before being projected.

5. In a device of the class described, a cage structure having an upwardly inclined ramp leading thereto along the bottom thereof for guiding projected balls thereinto, a plurality of receptacles extending axially in said cage structure, means defining a plurality of stalls at the outer end of said ramp in alignment with said receptacles for receiving balls to be projected.

6. In a device of the class described, a cage structure having a ramp leading thereto along the bottom thereof for guiding projected balls thereinto, a plurality of receptacles extending axially in said case structure, walls extending longitudinally at the outer end of said ramp for providing a plurality of stalls in which balls may be selectively arranged relative to said receptacles before projection thereof, the inner ends of said walls being pointed to facilitate arrangement of balls in said stalls.

7. In a device of the class described, a cylindrical cage having its axis extending horizontally and having a tangential inlet at its bottom for projected balls, a row of independently rotatable paddle wheels within said cylinder concentric therewith and providing pockets for receiving balls, stop levers for said paddle wheels suspended from the top of said cage for yieldably holding said paddle wheels against rotation by said balls, said levers being arranged to be operable from the exterior of said cage to release the paddle wheels for dumping therefrom of accumulated balls.

FRANK M. PIERCE.