April 4, 1944. E. W. DISCHER 2,345,964

BOWLING BALL RETURN RUNWAY

Filed Dec. 1, 1941

Fig. 1.

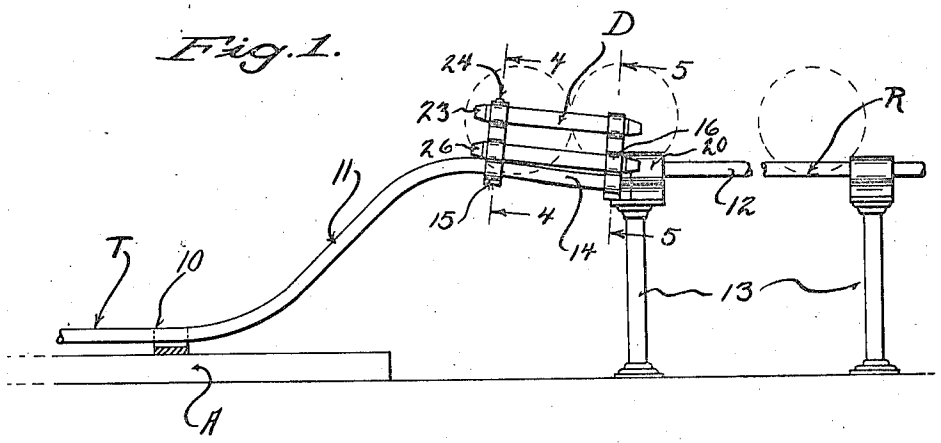


Fig. 2.

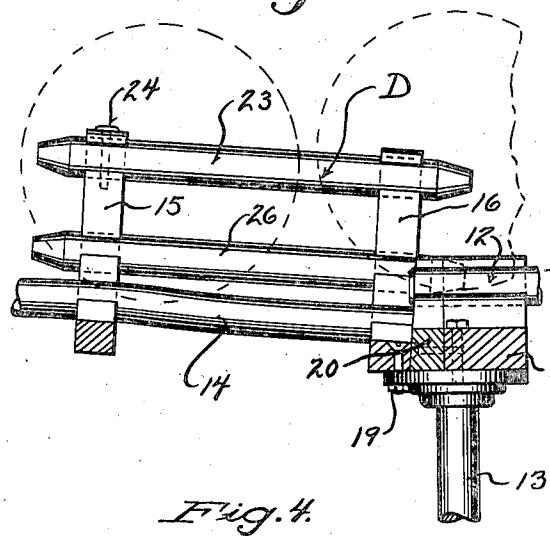


Fig. 3.

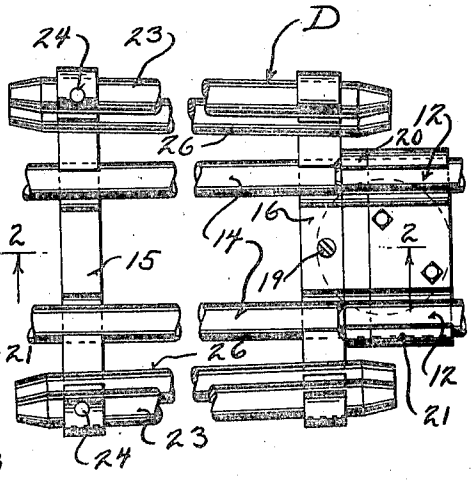


Fig. 4.

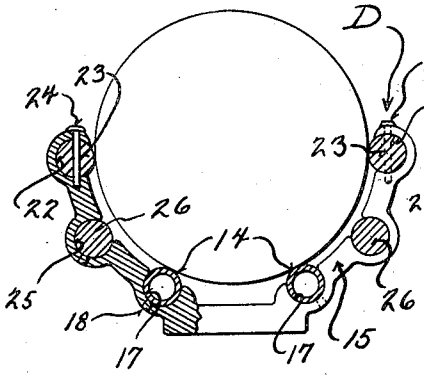
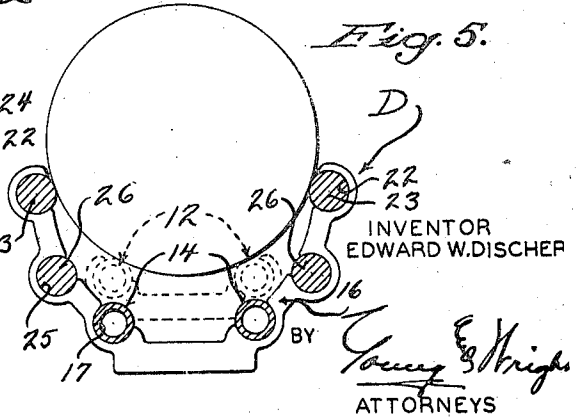


Fig. 5.



INVENTOR
EDWARD W. DISCHER

Young & Wright
ATTORNEYS

Patented Apr. 4, 1944 2,345,964

UNITED STATES PATENT OFFICE

2,345,964

BOWLING BALL RETURN RUNWAY

Edward W. Discher, Milwaukee, Wis.

Application December 1, 1941, Serial No. 421,118

5 Claims. (Cl. 273—47)

This invention pertains generally to bowling ball return runways or troughs, and more particularly to means for retarding travel of the balls as they enter the receiving rack at the return end of the trough.

At the present time, there are a number of devices in use designed to retard the speed of return balls as they enter the receiving rack from the return runway or trough. However, the most practical devices now in use are costly, and result in slowing up progress of the ball to such an extent that considerable time is required for the ball to reach a position for removal, which retards the game and is, therefore, objectionable to the players, and also to the proprietor in that it reduces the revenue from the alley, inasmuch as the same is based upon the number of games played.

The present invention has primarily for its object to overcome the foregoing objections by the provision of an exceedingly novel structure of receiving rack capable of quickly and effectively retarding the speed of a returned ball as it enters the rack.

Another salient object of my invention is to provide novel means for retarding or slowing up the speed of a returned ball, irrespective of its weight, without the use of any moving parts.

A further important object of my invention is to provide a device at the front of the rack for effectively slowing up a retarded ball, which device is open to view and does not include any enclosed parts, whereby a player can pick up a ball as the same enters the rack, if he so desires.

A still further and more specific object of my invention is to provide a return rack for bowling balls having a retarding device at its receiving end embodying short elevated converging rails disposed above the rails of the rack for creating a frictional bind on the ball, whereby to slow up and lift the ball on the rails of the rack.

With these and other objects in view, the invention consists in the novel construction, arrangement, and formation of parts, as will be hereinafter more specifically described, claimed, and illustrated in the accompanying drawing, in which drawing:

Figure 1 is a fragmentary, side, elevational view showing my novel retarding device incorporated with the return runway and receiving rack of a bowling alley.

Figure 2 is an enlarged, fragmentary, longitudinal, sectional view through my ball retarding device, taken on the line 2—2 of Figure 3, looking in the direction of the arrows.

Figure 3 is a top plan view of the ball retarding device.

Figure 4 is a transverse sectional view through the ball retarding device, taken on the line 4—4 of Figure 1, looking in the direction of the arrows.

Figure 5 is a view similar to Figure 4, taken on the line 5—5 of Figure 1, looking in the direction of the arrows.

Referring to the drawing in detail, wherein similar reference characters designate corresponding parts throughout the several views, the letter T generally indicates the return trough or runway of a bowling alley A, and this runway or trough is adapted to deliver the bowling balls to the receiving rack R. My retarding device D is arranged directly in front of the rack R and, in fact, forms a part thereof and a part of the return runway or trough T.

The return runway or trough T can be of any preferred character, and, as shown, the same includes metal rails 10. The rails 10 are inclined upwardly and rearwardly toward the receiving rack R, as at 11.

The ball-receiving rack preferably includes spaced parallel rails 12 upon which the balls rest, and these rails are supported by spaced pedestals 13.

In accordance with my invention, the upper terminals of the inclined rail portions 11 of the runway are inclined downwardly, as at 14, and terminate directly below the rails 12 of the rack R, as can be clearly seen by referring to Figures 1, 2, and 5 of the drawing.

The downwardly inclined portions 14 of the return runway rails form a part of the retarding device D, and my retarding device D also includes spaced parallel, transversely extending brackets 15 and 16. These brackets 15 and 16 can be of a substantially semicircular shape, if desired, and the brackets adjacent their lower ends are provided with grooves 17 into which the downwardly inclined portions 14 of the runway rails are slipped. Set screws 18 can be utilized for binding contact with said inclined portions 14.

In order to firmly secure the front bracket 16 in place, the same can rest on the upper end of the front pedestal 13. Bolts 19 can be utilized for rigidly securing the bracket 16 to the pedestal. A filler plate 20 can be disposed between the bracket 16 and the bracket 21 utilized for holding the rack rails 12 in place. The inner faces

of the brackets 15 and 16 adjacent their upper ends are provided with grooves 22 into which are slipped the short friction or retarding rails 23.

Particular attention is invited to the fact that the friction or retarding rails 23 gradually converge toward the receiving rack R and are inclined down toward said rack. In order to permit the retarding rails 23 to converge toward one another, the front bracket 16 can be made of a lesser width than the bracket 15. Pins 24 or equivalent fastening devices can be utilized for securing the friction or retarding rails 23 to the bracket 15.

The rails 23 are preferably formed of solid material for strength, and the brackets 15 and 16 can be further braced by side rails 26. These rails 26 are also slipped in grooves 25 formed in the brackets 15 and 16, and the balls do not engage these brace rails. As stated, the rails 26 merely brace the structure and tend to add to the appearance of the retarding device.

As the balls are returned down the runway or trough T, the same climb up the inclined portion 11 and roll into the retarding device D into engagement with the friction rails 23 and the downwardly inclined portions 14 of the runway rails. As the balls roll toward the rack R and toward the converging ends of the friction rails 23, the balls are lifted up by said rails 23 off the runway rail portions 14. This is due to the fact that the friction rails 23 are spaced a lesser distance apart than the diameter of the balls, and, consequently, as the balls roll or spin, they climb up on said friction rails, and as the greater mass of each of the balls is above the friction rails 23, the balls continue to turn and roll toward the receiving rack. The balls leave the friction rails 23 without any objectionable click as the same are deposited upon the rails 12 of the rack R.

As the balls reach the converging ends of the rails 23, the same are effectively retarded, and the speed thereof is slowed up to the desired point.

Changes in details may be made without departing from the spirit or the scope of my invention, but what I claim as new is:

1. In a return runway for bowling balls including rails having upwardly inclined portions and a receiving rack including, space parallel rails, the rails of the runway inclining downward toward the rails of the rack and terminating in front of and below the rails of the rack, spaced parallel brackets secured to the downwardly inclined portions of the runway rails, and friction rails secured to the brackets disposed above the inclined portions of the runway rails, said friction rails also inclining downwardly toward the rails of the runway and converging toward said rails or runway.

2. The combination with a return runway for bowling balls and a receiving rack arranged in front of the runway, said runway having a portion inclining downwardly toward the rack, of a device arranged between the inclined portion and the rack for slowing up the speed of the balls as the same are delivered to the rack including a pair of rails disposed above the inclined portion and the rack for receiving and lifting the balls off of the inclined portion and depositing the same on the rack, said rails gradually converging toward the rack.

3. The combination with a return runway for bowling balls and a receiving rack arranged in front thereof, said runway having a portion inclining upwardly toward the rack, of a device arranged between the inclined portion and the rack for slowing up the speed of the balls as the same are delivered to the rack including a pair of spaced parallel rails forming a continuation of said runway leading from the inclined portion thereof to the rack and terminating slightly below the rack, and a pair of converging rails arranged directly above the parallel rails and the rack and leading toward said rack for receiving and lifting balls off of said parallel rails and for depositing said balls on the rack.

4. The combination with a return runway for bowling balls and a receiving rack arranged in front thereof, said runway having a portion inclining upwardly toward the rack, of a device arranged between the inclined portion and the rack for slowing up the speed of the balls as the same are delivered to the rack including a pair of spaced parallel rails forming a continuation of said runway leading from the inclined portion thereof to the rack and terminating slightly below the rack, and a pair of converging rails arranged directly above the parallel rails and the rack and leading toward said rack for receiving and lifting balls off of said parallel rails and for depositing said balls on the rack, said converging rails inclining downwardly toward said rack.

5. The combination with a return runway for bowling balls and a receiving rack arranged in front of the runway, said runway inclining downwardly toward the rack, of a device arranged between the inclined portion and the rack for slowing up the speed of the balls including a pair of rails disposed above the inclined portion and the rack for receiving and lifting the balls off of the inclined portion and for depositing the balls on the rack, said rails gradually converging and inclining toward said rack.

EDWARD W. DISCHER.