Aug. 16, 1960 E. G. BAY 2,949,301

BALL TERMINAL FOR BOWLING ALLEYS

Filed Feb. 3, 1958

Fig. 1.

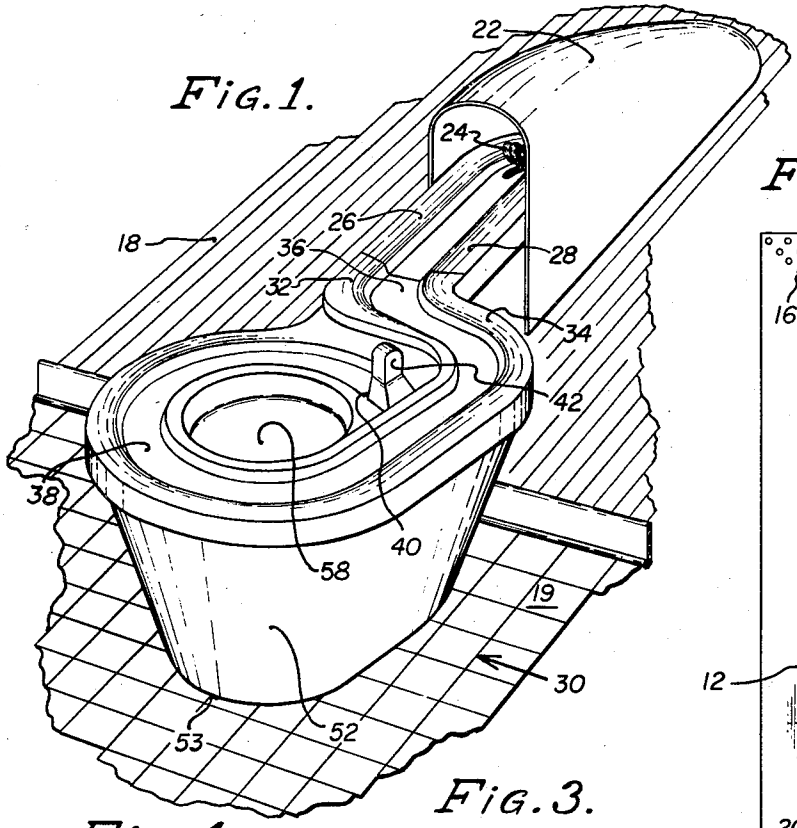



Fig. 2

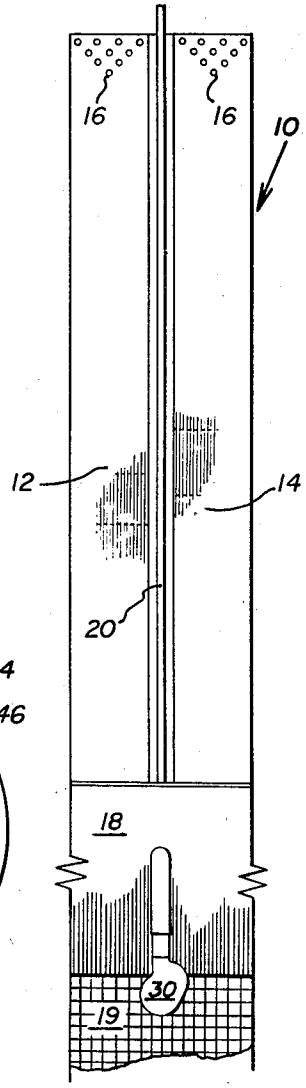



Fig. 3.

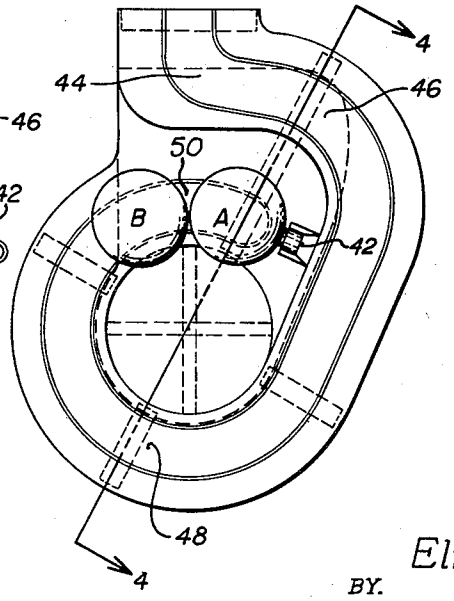
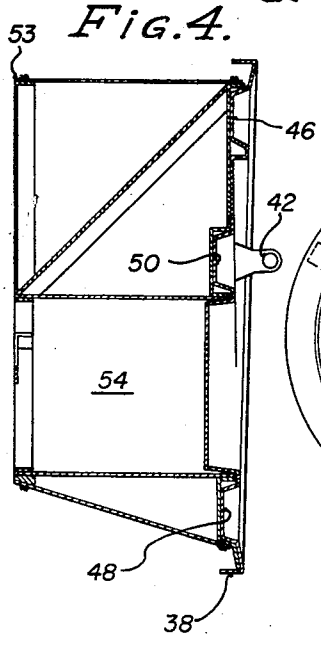



Fig. 4.




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# BALL TERMINAL FOR BOWLING ALLEYS

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8 Claims. (Cl. 273—47)

This invention relates to improvements in a ball terminal for bowling alleys. In general, the invention is concerned with a terminal structure used in conjunction with a ball return-way for receiving and maintaining a number of bowling balls in a compact, orderly condition, in which the balls are used by a number of successive players using the same alley or adjacent alleys. More particularly, the invention is concerned with a spiral track that receives the balls from the return-way, said track sloping inwardly and downwardly toward an end point that is equally spaced between two adjacent bowling alleys so as to maintain the balls in a consecutive playing order and equally accessible to both alleys in which they are used.

In the past, several different forms of bowling alley return-ways have been used, and many have been found objectionable because of the space that they occupy on the playing floor, or because they confuse the balls of the different players, thereby causing confusion on the playing floor. One popular form of prior ball returns was identified as a "loop the loop" return, which was objectionable because of the space occupied on the playing floor, as well as the distraction created by returning balls. Another form of a prior return-way embodies a structure that is enclosed beneath a surface between adjacent alleys so as to conceal the returning balls from players about to bowl. This form of return-way projects above the playing floor surface in rear of the players and terminates in an inverted T-shaped structure. The opposite horizontal extensions of this structure extend in back of each alley for a distance sufficient to hold at least five balls on each of the lateral extensions. The returning balls are not guided with respect to either of the extensions, and this arrangement creates a certain amount of confusion between prospective players in retrieving the returned balls. This structure also occupies sufficient space that it tends to obstruct the line of sight of non-players in the rear of the bowling alley.

In the present invention, I have provided an improved ball terminal in the form of a horizontal spiral track that connects with the ball return-way. By virtue of its spiral disposition, the terminal occupies only a minimum of space, and yet it is capable of receiving and maintaining in an orderly manner ten bowling balls, representing the entire number of balls used by two teams playing on adjacent alleys. This arrangement of balls always brings the ball of the next player to the end, or adjacent the end of the spiral track, and makes such ball available to a player on either of the adjacent alleys.

An object of the invention is to provide a bowling ball terminal in the form of a compact inwardly turned spiral track that extends in a horizontal direction from a ball return-way and terminates adjacent the center of the spiral.

Another object is to provide a bowling ball terminal that extends as a continuation of a ball return-way and which is formed as an inwardly turned spiral that terminates in substantial alignment with the return-way.



A further object is to provide a compact inwardly turned spiral track capable of holding all of the balls used by the players forming the teams of two adjacent bowling alleys, said track extending from the end of a return-way and inclining downwardly towards its terminal end so as to bring the balls to the inner end of the track in the order in which they are used by successive players, and in a manner such that each ball is accessible to a player behind either alley, or behind the playing floor.

Other and further objects may become apparent from the following specification and claims, and in the appended drawing in which:

Fig. 1 is a perspective view of a bowling ball terminal mounted with relation to a ball return-way, and in rear of the playing floor;

Fig. 2 is a plan view of two adjacent bowling alleys showing the relation of the ball terminal;

Fig. 3 is a plan view of a portion of the structure shown in Fig. 1 with a pair of bowling balls mounted thereon; and,

Fig. 4 is a sectional view taken on the lines 4—4 of Fig. 3.

Referring now to the several views of the drawing, the invention will be described in detail.

Referring first to Fig. 2, general reference numeral **10** indicates a portion of a bowling alley structure embodying a pair of alleys designated at **12** and **14**, each having a multipliciay of bowling pins mounted at one end thereof, designated by the single reference character **16**. At the front end of the alley is a playing area designated by reference character **18**, which as shown in Fig. 1 is generally elevated above the floor structure **19** of the building within which the alleys are located. Extending centrally between the alleys **12** and **14** is a return-way **20** serving both the alleys **12** and **14**. The return-way **20** may be open on its upper surface, if desired, but as here disclosed, it forms a closed hidden channel between the respective alleys passing under a portion of the playing floor **18** to an upwardly extending tube **22** that protrudes through the playing floor **18** generally in rear of the area from which the players dispense the bowling balls to the alleys. Within tube **22** is disposed a retarding clutch **24**. Disposed within the tube **22** and forming a part of the return-way **20** are a pair of tracks **26, 28**, for properly supporting and guiding a returning bowling ball. The structure described thus far constitutes more or less conventional bowling structure and forms no part of the present invention.

Referring now to Figs. 1, 3 and 4, general reference numeral **30** indicates in its entirety an improved form of bowling ball terminal that is adapted to coact with the return-way **20** for receiving bowling balls returning therethrough on the tracks **26, 28**. This structure consists essentially of a pair of tracks **32, 34**, which are laterally spaced to engage the lower portion of a ball, and they may be formed as separate elements, separated by a center piece **36**, or as disclosed in Fig. 4 the portions **32, 34**, and **36** may be formed of a single strip of metal indicated at **38**. An essential feature of the invention is that the tracks **32, 34**, extend in an inwardly turned generally horizontal spiral that inclines downwardly at a very slight angle towards a terminal end **40** in front of an abutment **42** that forms a stop for the bowling balls, two of which are designated in the drawings and represented by reference characters A and B.

While an inwardly turned spiral may be formed in different manners, it is my desire to make the structure as compact as possible, and to that extent, the track structure designated by reference character **38** makes an abrupt turn at the point indicated by reference character **44** from the path of tracks **26, 28**, and thence turns inwardly as abruptly as possible to the terminal end **40**

in front of the abutment **42**, but the curve of the track must not be so great that balls might be derailed. Having reference to Fig. 4, it will be seen that the track **38** progressively inclines downwardly from the points **46**, **48**, and **50** so that there is sufficient inclined surface that balls will always move to the terminal end **40**. The track **38** may be supported in any suitable manner, and as here disclosed, a metal casing designated by reference character **52** forms a general support above a base structure **53**. A circular well **54** forms a central support on base **53** within the inner curved terminal end of the track **38**. The area of well **54** may, if desired, contain an electric heater and fan, not shown, to be used by players to remove moisture or perspiration from their hands before bowling. As a practical aspect, an ornate cover designated by reference character **58** encloses the upper surface of well **54**.

In a preferred form, structure **30** is mounted on the floor surface **19** in rear of the elevated playing floor **18**, where structure **30** is centrally disposed between the two alleys **12** and **14**, and is easily accessible to players using alleys **12** and **14**, as well as non-playing members of the team, who may gain access to the balls from the main floor surface **19**. The track **38** is of sufficient length to support 10 bowling balls on its upper surface, representing the number of balls used by two different teams using the alleys **12** and **14**. Each player may withdraw his ball from the track adjacent the terminal end, and the remaining balls will travel on the inclined slope to the terminal end. Where it is necessary for a particular bowler to bowl twice in succession, he will have access to his return ball adjacent point **44** on the track **38**, but the next succeeding player of either team will always find his ball located in the positions occupied by balls A or B. Thus, the bowling balls are always maintained in an orderly fashion, and the structure **30** being located well in rear of the bowling alleys, and preferably on the main floor surface, provides such a low profile that it does not extend into the path of vision of persons that are observing the games in play.

My invention is defined in the terms of the appended claims.

I claim:

1. In a bowling ball storage rack the combination of a generally horizontal storage member including a track for conducting and storing balls in said member, a ball return track having a discharge end connected to at least a portion of said storage member, said track of said storage member forming a substantially uninterrupted continuation of said return track and constructed and arranged to conduct balls delivered to said member from said ball return track in a generally arcuate path of travel to a point of rest with the terminal end thereof disposed relatively close to the infeed portion of said ball storage member, the outer lateral dimensions of the resulting configuration of said storage member being only a relatively small portion of the width of the approach area of a bowling alley.



2. The invention as defined in claim 1 wherein said arcuate path of travel is substantially convolute.

3. In a bowling ball storage rack the combination of a storage member provided with guide means for conducting and storing bowling balls therein in a generally horizontally circuitous configuration, a ball return track having a discharge end connected to said storage member, said guide means formed as a substantially uninterrupted continuation of said ball return track and constructed and arranged to conduct balls delivered to said member from said ball return track in a generally curvilinear path of travel to a terminal point of rest, said terminal point disposed relatively close to the infeed portion of said ball storage member, the overall outer dimensions of the resulting configuration of said storage member being relatively small with respect to the width of the approach area of a bowling alley.

4. The invention as defined in claim 3 wherein said arcute path of travel is generally convolute and including means mounting said guide means on said storage member for effecting gravitational movement of balls toward said terminal point of rest.

5. The invention as defined in claim 3 including stop means at said terminal point of rest, said stop means being positioned on said storage member at an elevation lower than the ball entry portion of said storage member.

6. In a pair of adjacent bowling alleys having a common ball return track therebetween, a ball storage rack for said alleys comprising a generally horizontal storage member, channel tracks on said storage member, said channel tracks formed as a substantially uninterrupted continuation of said return track and constructed and arranged to conduct balls delivered to said member from either of said alleys in a generally arcuate path of travel to a point of rest with the terminal end thereof disposed relatively close to the infeed portion of said ball storage members, said arcuate path of travel being generally symmetrically disposed relative to said common ball return track, the outer lateral extremities of said resulting configuration of said storage member extending across only a relatively small portion of the widths of the approach areas of said associated alleys.

7. The invention as defined in claim 6 wherein said arcuate path of travel is generally convolute and including means mounting said channel tracks on said storage member for effecting the gravitational movement of balls on said storage member toward said terminal point of rest.

8. The invention as defined in claim 6 wherein said arcuate path of travel includes a plurality of curved sections connected by an intermediate straight section.

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