No. 809,715. PATENTED JAN. 9, 1906.

D. MILLER.

BOWLING ALLEY.

APPLICATION FILED MAY 3, 1904.

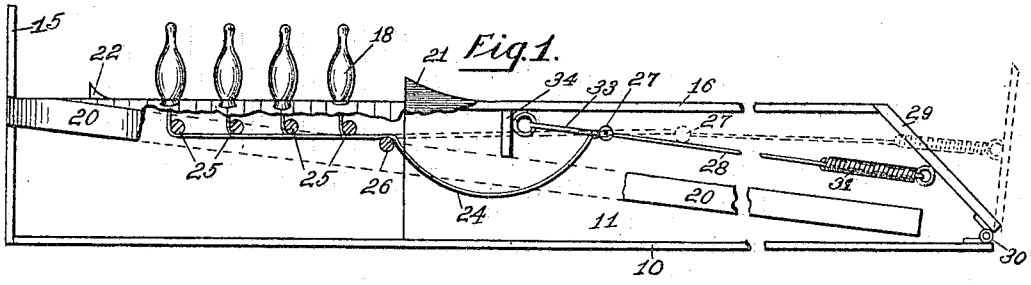


Fig. 1.

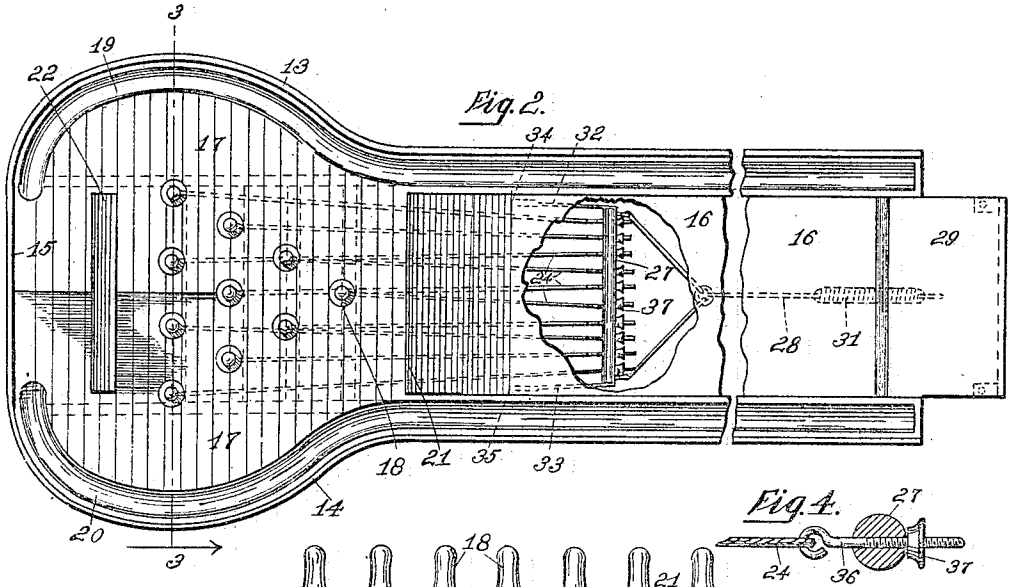


Fig. 2.

Fig. 4.

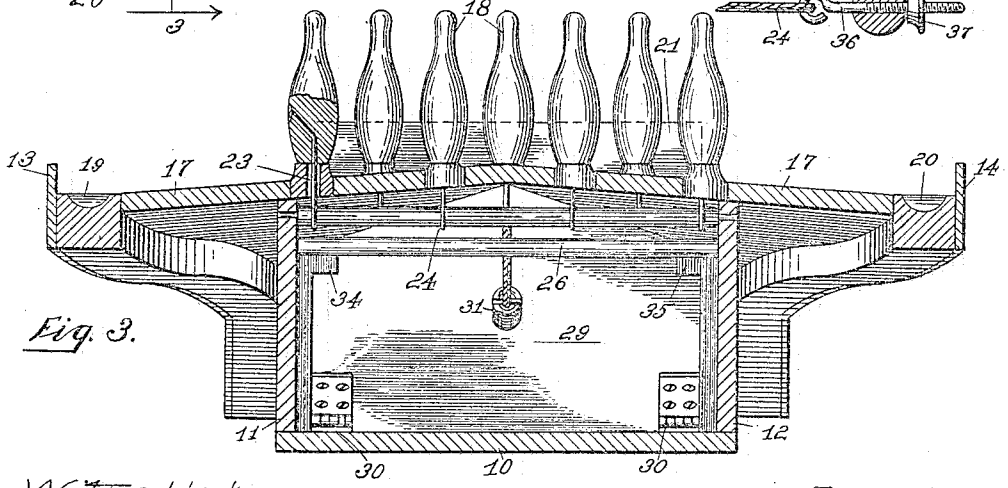


Fig. 3.

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BOWLING-ALLEY.

No. 809,715. Specification of Letters Patent. Patented Jan. 9, 1906.

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To all whom it may concern:

Be it known that I, DAVID MILLER, a citizen of the United States, and a resident of Evanston, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Bowling-Alleys, of which the following is a specification and which are illustrated in the accompanying drawings, forming a part thereof.

The invention relates to bowling-alleys either of the full or standard size or adapted to be used as a parlor game, and more particularly to that type of bowling-alleys in which means are provided for raising the pins from the head of the alley.

The object of the invention is to provide in alleys of this type for the upshoot of the ball as it approaches the pins, so that it may not be obstructed by any "dead-wood" or fallen pins which may be lying upon the table, to provide a stop to prevent the balls from rolling back upon the table, and to provide for the automatic return of the balls to the player. These objects are attained by means of the structure hereinafter described and which is illustrated in the accompanying drawings, in which—

Figure 1 is a detail side elevation of the alley, some of the parts being broken away to show the internal construction. Fig. 2 is a detail plan of the same. Fig. 3 is a transverse vertical section on the line 3 3 of Fig. 2 drawn to a larger scale, and Fig. 4 is a detail of certain parts drawn to a larger scale.

The alley as illustrated is particularly designed for parlor use—that is to say, it is of comparatively small size and is portable. The base of the alley is shown at 10, and from this there rise side boards 11 and 12, which carry the ball-track 16 and pin-table 17. The ball-track 16 is located centrally between the side walls 11 and 12 and spaced apart therefrom for the accommodation of the return-ways, and this track leads from the head of the alley to that portion 17, which may be called the "table," supporting the pins 18. The table 17 is inclined laterally from the central longitudinal line thereof in each direction, so that any balls which may come to rest thereon will roll down into the return-troughs 19 20 at the sides. This is the more important, for the reason that the pins 18 are controlled by the player, and hence it is necessary that the balls shall find their way to the return-troughs without assistance. The pin-table is preferably wider than the ball-track and is bowed outwardly, as shown in Fig. 2. At its extreme end there rises a back board 15 and from the ends thereof lead the return-troughs 19 20, which follow the margins of the pin-table and of the alley and are supported at their rearward ends from the pin-table and at their forward ends from the side boards 11 and 12. To insure the balls following the troughs, side boards 13 14 are secured to the outer faces of and rise above the level of the troughs.

Inasmuch as the pins overturned by the first ball are not removed by an attendant before the delivery of the second ball, it follows that they would interfere with the play unless the ball be guided over them. This is provided for by means of the incline 21, placed transversely across the ball-track at its juncture with the pin-table and leading upwardly in the direction of movement of the ball, so that the latter while having a level track throughout all of its course until just as it approaches the pins is deflected upwardly, so that it will pass over any pins which may be down, providing it is given sufficient velocity.

A stop 22 is placed across the rearward end of the pin-table immediately back of the pins, so that the balls rebounding from the end board 15 will be prevented from rolling back upon the pins. The front face of the stop 22 is given an upward incline, so that an advancing ball striking it will not be stopped. This stop 22 enables me to continue the center of the pin-table at the same elevation to the end board 15, so as to get the benefit of the lateral inclines leading to the troughs 19 20 back of the stop.

The pin-table 17 is perforated, as shown at 23, at the point where the several pins are intended to stand. Each pin has attached to it a cord 24, which leads from its base and extends downwardly through the aperture 23. These several cords are guided forwardly by means of rollers 25, located below and transversely to the pin-table, and are preferably supported below the forward end of the pin-table by a similar roller 26.

At a short distance in front of the line of the incline 21 the several cords 24 are attached to a cross-bar 27, which in turn is connected by a cable 28 with a swing board or lever 29 at the front end of the latter and which is shown as being hinged at 30 to the base 10, the attachment of the cable to the board 29 being by means of a helical spring

31. The length of the several cords 24 and of the cable 28 is such that a backward swing of the board or lever 29 will bring the pins to an upward position. The lever then being returned to its former position, all of the slack is thrown onto the cords 24 by means of springs 32 33, which may take the form of rubber bands, leading from the cross-bar 27 backwardly to brackets 34 35, secured to the sides of the alley. In order that the cords 24 may all be of exactly the right length to bring the pins simultaneously to an upright position, they are adjustably attached to the cross-bar 27 by means of the screw-eyes 36, set through the bar 27 and carrying at their inner ends adjusting-nuts 37.

In using the alley the player first brings the pins to an upright position by swinging the end board or lever 29 backwardly. The ball being then delivered on the track 16 is deflected upwardly by the incline 21 and strikes the upper portion of the pins, and whether it passes beyond the stop 22 or not it rolls laterally into one of the troughs 19 20 and is returned to the player. The cords 24 are preferably very light and flexible and are of sufficient length so that the pins when struck by the ball will be thrown with almost as much freedom as when not provided with raising-cords. Preparatory to the next play all of the pins may be raised by another action of the board or lever 29, and the cords 24 having been properly adjusted as to length the pins simultaneously assume and retain an upright position. The board 29 being returned to its normal position, as shown in Figs. 1 and 2, and this return is automatic by reason of the action of the springs 32 33, the cords 24 are slackened, as shown in Fig. 1.

I claim as my invention—

1. In a bowling-alley, in combination, a pin-table, a horizontal ball-track leading thereto and on substantially the same plane therewith, and an upwardly-inclined rigid ball-deflector interposed between the track and the table.

2. In a bowling-alley, in combination, a pin-table having a downward lateral incline and pin-seats of uniform height on the table.

3. In a bowling-alley, in combination, a pin-table having a downward lateral incline from the center in each direction and pin-seats of uniform height on the table.

4. In a bowling-alley, in combination, a pin-table having lateral inclines, pin-seats of uniform height on the table, a ball-track leading to the table, and an upwardly-inclined ball-deflector located between the track and the table.

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