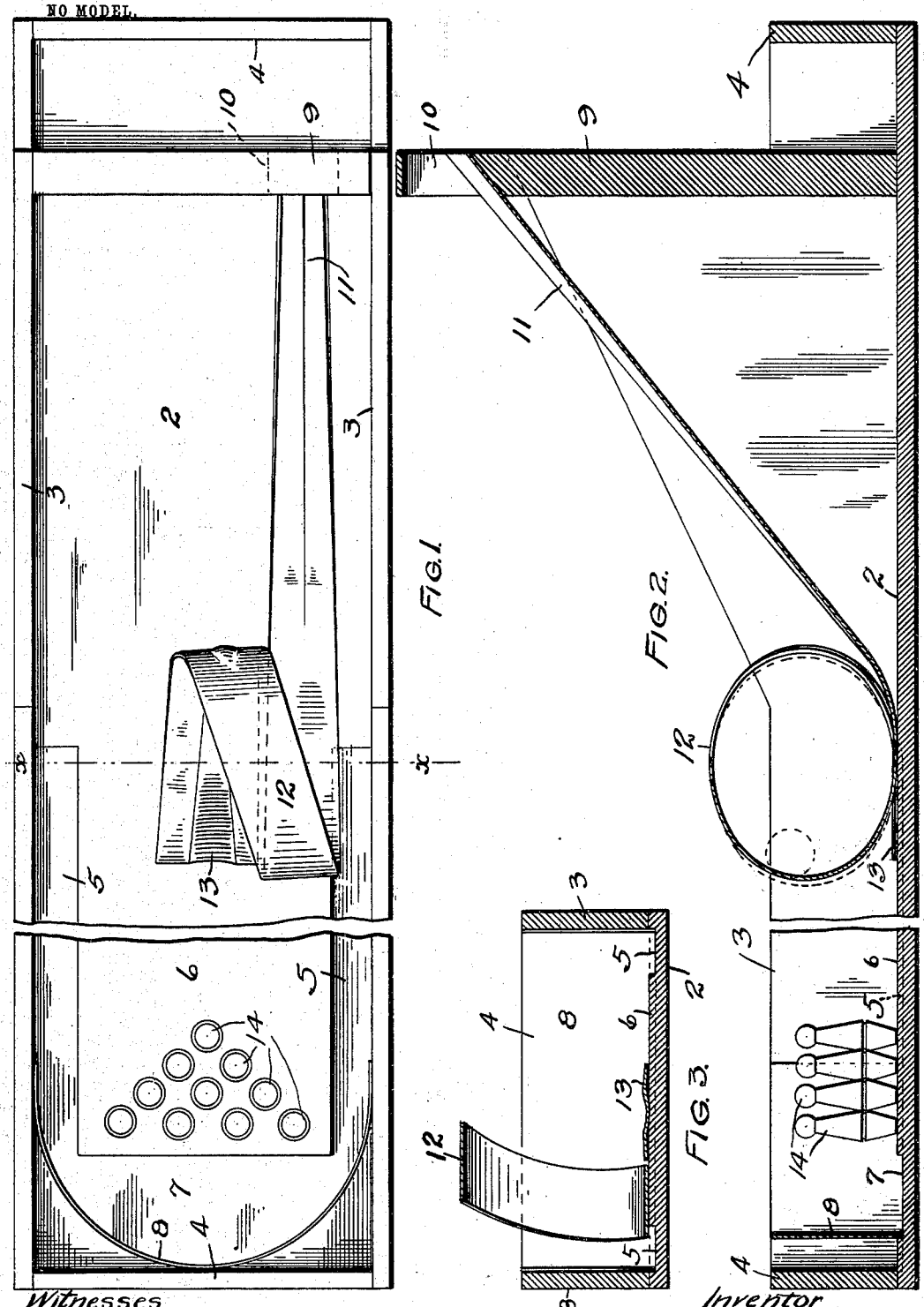
No. 738,558. PATENTED SEPT. 8, 1903.

L. W. MADDAUS.

LOOP THE LOOP BOWLING ALLEY.

APPLICATION FILED OCT. 11, 1902.

NO MODEL.



Witnesses
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No. 738,558. Patented September 8, 1903.

UNITED STATES PATENT OFFICE.

LOUIS W. MADDAUS, OF MINNEAPOLIS, MINNESOTA.

LOOP-THE-LOOP BOWLING-ALLEY.

SPECIFICATION forming part of Letters Patent No. 738,558, dated September 8, 1903.

Application filed October 11, 1902. Serial No. 126,913. (No model.)

To all whom it may concern:

Be it known that I, LOUIS W. MADDAUS, of the city of Minneapolis, in the county of Hennepin, State of Minnesota, have invented certain new and useful Improvements in Loop-the-Loop Bowling-Alleys, of which the following is a specification.

The invention relates to parlor games; and the object of the invention is to provide a toy bowling-alley which will embody on a small scale all the essential features of a full-sized alley and has in addition thereto to compensate, in a measure, for the difference in length a peculiar ball-delivering appliance, which will add materially to the uncertainty of hitting a pin.

Other objects of the invention will appear from the following detailed description.

The invention consists generally in various constructions and combinations, all as hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a plan view of a toy bowling-alley embodying my invention. Fig. 2 is a longitudinal section of the same, and Fig. 3 is a transverse section on the line *x x* of Fig. 1.

In the drawings, 2 represents a rectangular floor or plate having sides 3 and ends 4 and provided near said sides with gutters or troughs 5 and with a raised central portion 6. These gutters unite with a broader depression or trough 7 at the end of the alley, and I prefer to provide a curved plate 8 in said trough 7 to prevent the balls and pins from rolling into the corners during the progress of the game. The floor or plate, with the side and end troughs and the raised middle portion, conforms, substantially on a small scale, to the construction of an ordinary bowling-alley. The floor is made of any suitable length that can be conveniently placed on a table or other level support. Near the opposite end of the floor from the gutter 7 I provide a wall 9, having near the top a hole 10, through which the balls may be delivered to a runway 11. This runway extends down to the floor at any desired inclination, and at its lower end is connected with a loop 12, the discharge end 13 of which is arranged near the middle of the raised portion 6 and is adapted to direct the balls passing through the loop out upon the raised portion 6 toward the pins 14, provided near the opposite end of the floor.

I am aware that loops have been employed heretofore for discharging balls against a series of pins or into depressions arranged upon or in a floor; but these loops have been made of wood or metal and of unyielding construction, and I have found that when the balls pass down the runway and into the loop that the bend or turn is so abrupt on the upside and the ball is arrested so quickly as it climbs toward the top of the loop that the centrifugal force is not sufficient to overcome gravity and the ball will frequently drop to the floor without passing around the loop. I have found also from actual experience that if a loop of limited size, as is necessarily employed in a parlor game, is used that it is practically impossible to make it of unyielding material and still send the ball around the upside of the loop without checking the momentum of the ball sufficiently to cause it to drop when it reaches the top of the loop instead of following it around to the discharge end. After considerable experimenting I substituted a loop of flexible material in place of the rigid one, and I found that as the ball passed from the runway against the upside of the loop that the loop would yield and not check the speed of the ball as much as the rigid one did and that the ball would always travel over the top and around to the discharge end, which it would rarely do where a loop of unyielding material was employed. I have found paper a very satisfactory material to use for the loop, as it will yield when the ball strikes the upside and will have a certain amount of resiliency and not check or deaden the momentum of the ball or reduce its speed sufficiently to cause it to fall by gravity while passing over the top of the loop. I prefer to make the loop quite wide at its discharge end and gradually taper it toward its point of union with the runway to reduce the danger of the ball passing off the sides, and I may also provide a depression 13 in the discharge end of the loop, commencing on the downside of the same and running toward the discharge end and gradually increasing in width to guide the ball past the upside of the loop as it is being

discharged upon the floor and prevent it from going around the loop a second time.

The game may be played with wooden, glass, or porcelain balls or marbles, those of glass of a certain predetermined size being preferred.

I claim as my invention—

1. A toy bowling-alley, comprising a plate or board provided with a raised central portion and side gutters, an inclined runway provided near one end of said raised portion opposite the pins arranged at the other end, and a loop arranged vertically on said raised portion and having its receiving end opposite the discharge end of said runway and its discharge end arranged to deliver the balls upon said raised portion near the middle thereof, and said loop being of flexible material such as paper whereby the upside thereof will yield when struck by a descending ball to facilitate the passage of the ball around the loop.

2. A toy bowling-alley, comprising a plate or board provided with a raised central portion and side gutters, an inclined runway provided near one end of said raised portion, and a loop arranged vertically on said board and having its receiving end opposite the discharge end of said runway and its discharge end arranged to deliver the balls upon said raised portion, the upside of said loop being substantially flat in cross-section and the downside and the discharge end of said loop being provided with a central depression and said loop and depression gradually increasing in width from their receiving toward their discharge ends, substantially as described and for the purpose specified.

In witness whereof I have hereunto set my hand this 8th day of October, 1902.

LOUIS W. MADDAUS.

In presence of—

RICHARD PAUL,

M. C. NOONAN.