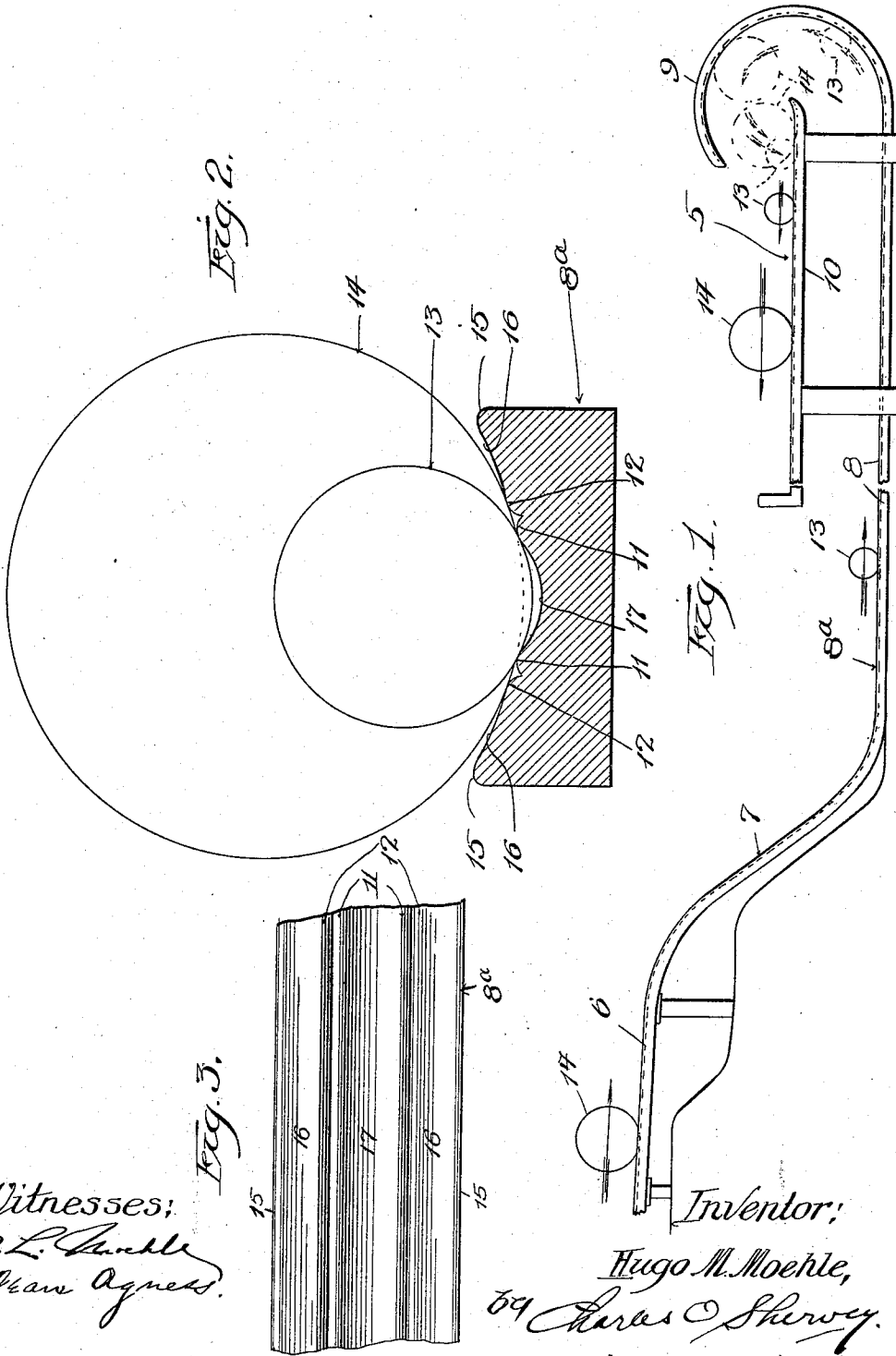


H. M. MOEHLE.
 BALL RETURNWAY FOR BOWLING ALLEYS.
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UNITED STATES PATENT OFFICE.

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BALL-RETURNWAY FOR BOWLING-ALLEYS.

1,169,855.

Specification of Letters Patent.

Patented Feb. 1, 1916.

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To all whom it may concern:

Be it known that I, HUGO M. MOEHLE, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in the Ball-Returnways for Bowling-Alleys, of which the following is a specification.

This invention relates to bowling alleys and more particularly to the track structure of the ball return-way thereof.

It is well-known that balls of different sizes are used in the various games played on bowling alleys, such balls ranging from $4\frac{1}{2}$ inches to $8\frac{3}{4}$ inches in diameter. Heretofore much difficulty has been encountered in the return-way, because of the tendency for the small balls to become wedged therein and also because of the failure of the small balls to make the turn at the terminal end at the player's station or "loop the loop" (as it is commonly called). In the standard form of track-way, the terminal end is formed with an upwardly and backwardly curved portion arranged to direct and deliver the balls to an elevated rack, and while said curved end is usually effective for delivering the larger balls to the elevated rack, still it is ineffective for handling the smaller balls, the result being that the latter frequently drop back upon the main track-way and hinder the progress of the following balls, thus making it necessary for the player or an attendant to remove the balls from the main track-way and place them upon the elevated rack portion.

The object of the present invention is to provide a novel form of track structure for the return-way, capable of successfully guiding the small as well as the large balls, whereby there may be no danger of the small balls becoming wedged in the track-way, or there may be no danger that the small balls will not be delivered to the elevated portion of the return-way at the player's station.

Another object is to provide an extremely simple form of track structure for accomplishing these results.

To such ends this invention consists in the several novel features hereinafter set forth and claimed.

The invention is clearly illustrated in the drawing furnished herewith, in which—

Figure 1 is a side elevation of a ball return-way for bowling alleys embodying the

present invention, part of the track being broken away; Fig. 2 is a detail, vertical cross-section taken through the track structure of the return-way and showing one large and one small ball supported thereon, and Fig. 3 is a plan of a fragment of said track structure.

Referring to said drawing, the reference numeral 5, designates the terminal end of the return-way at the player's station and 6, the end at the pit; said end, 6, is usually provided with a drop or down shoot, 7, to give momentum to the balls as they are sent from the pit to the player's station. Between the drop, 7, and player's station, 5, the return-way is usually straight, as 8, and at the player's station, said track is curved upward and back upon itself, as seen at 9, to form what is commonly known as a "loop the loop" structure, which terminates above a rack or elevated portion, 10. The difficulty with the ordinary track, used in connection with a "loop the loop" device, is that the small balls frequently become wedged somewhere along the return-way and more frequently fail to travel around the curved end, 9, and land upon the rack, 10, but their momentum is spent before they reach the upper end of the curved portion, and they drop back upon the main track. The smallest sized balls invariably fail to make the turn on the old forms of tracks. I have overcome these difficulties by providing the return-way with an inner track in addition to the outer track, spaced apart therefrom and so located with reference to each other, that the large balls roll upon the outer track, and the small balls roll upon the inner track, without wedging between the rails thereof and without danger of rolling off the track. The two tracks are so arranged that all sized balls used in playing games on bowling alleys roll on circumferential lines near the vertical axes of the balls, the result being that their speed is not hindered to any appreciable extent in rolling from one end to the other of the return-way.

Referring to Fig. 2, which shows a sectional view of the return-way track structure, 8, taken at any point along its length, it will be seen that the contour of its upper face is shaped to present two pairs of upwardly curved ball-supporting surfaces designated by the reference numerals, 11, 12, said surface being in the form of arcs of

circles, each having a short radius. The curved surfaces, 11, form the rails of the track for carrying the small balls, 13, and the curved surfaces, 12, form the rails of the outer track for carrying the large balls, 14. The scale of the view is about $\frac{1}{2}$ inch to 1 inch, and the smallest ball represents a $4\frac{1}{2}$ inch ball, whereas the large ball represents an $8\frac{3}{4}$ inch ball. It is to be noticed that the balls roll along lines at or near the peaks of the curved surfaces, 11, 12, and that said surfaces are located comparatively near the vertical axes of the balls and not disposed out toward the lateral sides thereof, the result being, that the balls, large or small, are free to roll upon the tracks on lines near their largest diameters and there is no tendency for any ball to become wedged between the two rails of the inner or of the outer tracks. The upper, outer corners, 15, of the track structure 8^a, are rounded off and the upper faces, 16, of the track structure between the corners, 15, and bearing faces, 12, are preferably curved downwardly, as shown, and the face of the track structure between the bearing faces, 11, is curved downwardly, as shown, 17, whereby any ball may be free to roll upon two mathematical lines at or near the tops of the bearing faces or rails, 11, 12.

Actual experiment has demonstrated the fact that with the use of return-ways, built in accordance with the one herein shown and described, both the largest and the smallest

size balls "loop the loop" at the player's station, that is, they are properly delivered to the upper or elevated rack, 10, by way of the curved portion, 9, that the possibility of the small balls falling back upon the return-way is eliminated, and the danger of wedging or jamming is entirely avoided.

I claim as new and desire to secure by Letters Patent:

1. In a ball returnway for bowling alleys, a track-structure, for balls of different diameters, having a plurality of tracks, each comprising two rails, whose respective bearing surfaces are curved convexly relative to the balls to be supported by them, the distance apart of the corresponding rails of each track, and their relative distances from the floor being a direct function of the diameter of the balls to be supported by them.

2. In a ball return-way for bowling alleys, a track structure having an outer track and an inner track therebetween, the members of each track comprising a pair of upwardly curved, short-radius, bearing faces forming the rails thereof, the outer ones being raised a trifle above the inner ones and located close thereto, whereby they support the various sizes of bowling balls at points comparatively near their greatest diameters.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."