

May 8, 1945.

R. E. KENNEDY

2,375,663

BOWLING ALLEY

Filed March 22, 1943

2 Sheets-Sheet 1

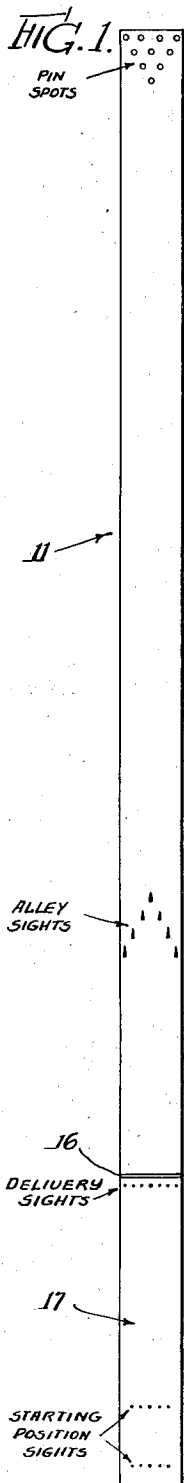
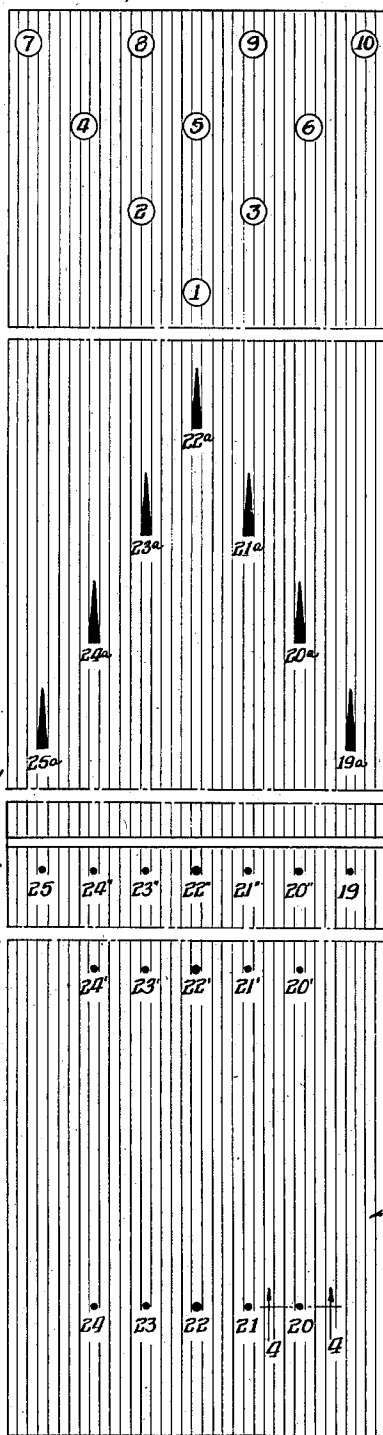


FIG. 2.

FIG. 3.

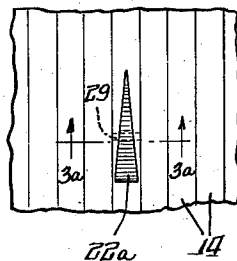


FIG. 3a

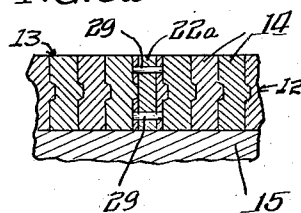
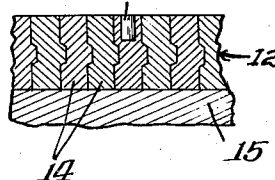


FIG. 4.



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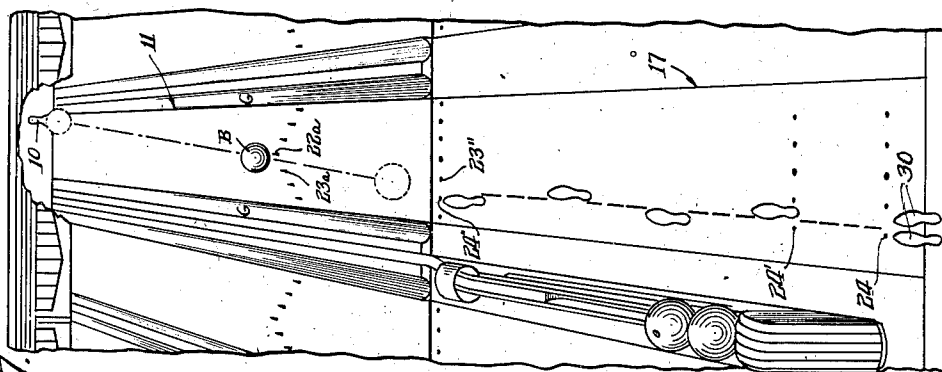
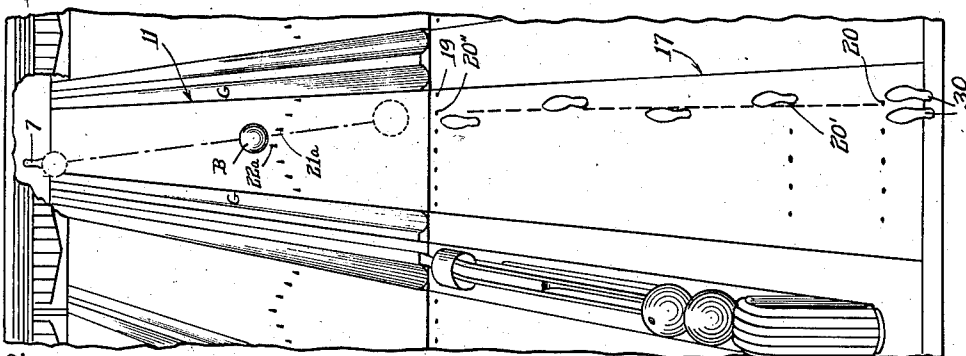
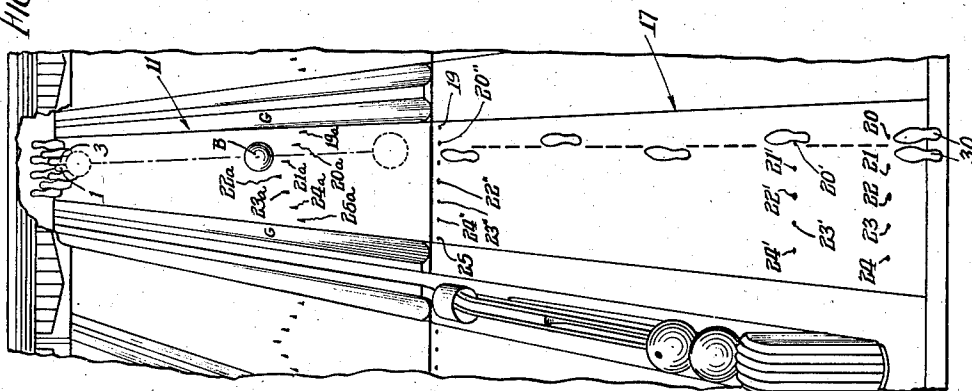
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BOWLING ALLEY

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

2,375,663

BOWLING ALLEY

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Application March 22, 1943, Serial No. 479,996

6 Claims. (Cl. 273—51)

This invention relates to a bowling alley and has as a general object to provide a new and improved bowling alley and one of enhanced appearance.

A more particular object of the invention is to provide a bowling alley having new and improved guide markings or sights thereon for aiding a bowler in the proper and accurate delivery of the bowling ball.

A further object of the invention is to provide a bowling alley having guide means or sights at the bowler's starting position on the approach of the alley and guide means or sights at the foul line or delivery position for aiding a bowler in the determination of his position at those points, and additional guide means or sights located beyond the foul line forming sighting marks or spots indicating laterally and longitudinally spaced points over or near which a ball is to pass in executing a particular shot.

Other objects and advantages will become apparent from the following detailed description, taken in connection with the accompanying drawings, in which:

Fig. 1 is a plan view of a bowling alley embodying the features of this invention.

Fig. 2 is a plan view on a greatly enlarged scale of portions of the alley of Fig. 1, better to illustrate the invention.

Fig. 3 is an enlarged fragmentary plan view of a portion of the alley, showing an alley sight inserted therein.

Fig. 3a is an enlarged fragmentary vertical section along the line 3a—3a of Fig. 3.

Fig. 4 is an enlarged fragmentary vertical section along the line 4—4 of Fig. 2.

Figs. 5, 6 and 7 are fragmentary perspective views of bowling alleys illustrating different shots.

While the invention is susceptible of numerous modifications and alternative constructions, it is here shown and will hereinafter be described in a preferred embodiment. It is not intended, however, that the invention is to be limited thereby to the specific construction disclosed, but, on the contrary, it is intended to cover all modifications and alternative constructions falling within the spirit and scope of the invention as defined in the appended claims.

Shown in the drawings for purposes of disclosure is a bowling alley, generally designated 11. The alley basically is of conventional construction being composed of a foundation 15, the construction of which forms no part of this invention, and a bed 12 providing the playing surface

13 of the alley. The bed 12 is in conventional manner built up of a plurality of boards 14 tightly secured together on edge and in a face to face relationship. As herein shown, the bed 12 is composed of thirty-seven such boards which have interfitting tongues and grooves to aid in retaining them rigidly in position. At its pit end, herein the upper end as viewed in Figs. 1 and 2, the bed has embedded therein the conventional pin spots for locating the pins numbered 1 to 10, while extending transversely of the alley and embedded in the bed an appropriate distance away from the number 1 pin spot is a strip 16 forming the foul line. The portion 17 of the alley below the foul line, as viewed in Figs. 1 and 2, herein, is generally referred to as the "approach." The portion 18 of the alley immediately above the foul line, that is, the portion where the ball is dropped onto the alley, is sometimes referred to as the delivery zone. It will be appreciated that when installed the alley will be flanked on either side by the gutters, as shown in Figs. 5 to 7.

In executing a shot, a bowler takes a starting position somewhere near the end of the approach 17 (for example, at the lower end of Fig. 5, where the pair of footprints is indicated) and then advances or walks toward the foul line while swinging the ball, delivering the ball onto the alley just beyond the foul line. Inasmuch as the distance from the foul line to the number 1 pin is sixty feet, it requires a great deal of accuracy in the correct initial placing of the ball on the alley and in accurately directing the ball toward the pins, to obtain a large score. Such correct and accurate delivery of the bowling ball, moreover, involves the determination by each bowler of his best starting position, his best position at the time of delivery of the ball, and delivery of the ball in the proper direction.

Some bowlers direct the ball toward the desired pins by continuously keeping their eyes on the pins, the "straight" ball bowlers of this type delivering the ball in a direction straight toward the desired pins, and the curved or "hook" ball bowlers making the necessary allowance for the curved path which their ball takes.

It is the primary purpose of this invention to provide a bowling alley having guide means or sights on the fore part of the alley for aiding a bowler, whether novice or expert, in directing the balls toward the pins, and having additional sights at the starting position on the approach and at the foul line for aiding the bowler in properly approaching the alley and in delivering

the ball from the proper point. The sights are such that by the use thereof the novice may be quickly yet properly instructed, and informed of the correct positions and the correct direction of delivery of the ball for each of the various shots, and will enable the experienced bowler who has already determined the best positions to be taken for the various shots to repeatedly and accurately assume those same positions, as well as to deliver the ball repeatedly in the desired direction. Since the guide means or sights are on the fore part of the alley, it enables the bowler, after first lining up the proper sights, to keep his eye on the point relatively close to the foul line rather than on the distant pins.

In the preferred form of the invention illustrated in the drawings there is provided a first guide means indicative of and aiding in the determination of the starting position of a bowler. This guide means, which may be referred to as the starting position sight, is composed of a plurality of spot-like marks 20, 21, 22, 23 and 24, located in a line extending transversely of the alley near the beginning of the approach position thereof, as viewed in Fig. 1. Five such spot-like marks or areas are here shown, with the middle one, 22, somewhat larger than the others and located on the longitudinal center line of the bowling alley. The marks 20, 21, 23 and 24 are spaced equal distances to either side of the central mark 22, and herein this spacing is such that there is a mark on each fifth board 14 outwardly from the central mark 22. The marks should preferably be readily visible and are usually of a color differing from the coloring of the boards 14. While these marks may be applied in a variety of ways, and while they may take a plurality of configurations, they are preferably circular and in the form of cylindrical inserts or dowels, and may be of fiber or wood, or any other suitable material. As best seen in Fig. 4, each is inserted in a recess drilled part way into one of the boards 14.

Spaced approximately one stride closer to the foul line 16 is an alternative starting position guide means comprising sights 20', 21', 22', 23' and 24'. This is herein shown as of identical construction with the guide means 20, and is optionally available for bowlers who prefer a shorter approach.

Adjacent the foul line, and on the approach side thereof, is a delivery guide means comprising a plurality of spot-like marks or sights 19, 20'', 21'', 22'', 23'', 24'' and 25, located in a line extending transversely of the alley. It has been found that an approach walk parallel with the longitudinal center line of the alley produces best results, and hence the delivery sights 20'', 21'', 22'', 23'' and 24'' are arranged in the same boards 14 as the correspondingly numbered starting sights to aid a bowler in making such a parallel, straight line approach from the starting to the delivery position. To that end, the central delivery sight 22'' is located on the longitudinal center line of the alley and is again slightly enlarged over the remainder of the delivery sights to indicate that it is the middle mark. Seven delivery sights are shown (including the outer sights 19 and 25, which are five boards outside of the sights 20'' and 24'', respectively), and, while they may be given any configuration or applied in any manner, they preferably are circular and composed of cylindrical fiber or wood inserts, the same as the starting position sights.

It has been found that most, if not all, shots

are made, or at least preferably should be made with the ball traveling at an angle to and not parallel with the longitudinal center line of the bowling alley. Therefore, to aid the bowler in giving proper initial direction to the ball, there has been provided herein a direction guide means comprising direction or alley sights, 19a, 20a, 21a, 22a, 23a, 24a and 25a, located on the alley beyond the foul line, and providing laterally and longitudinally located points visible to the bowler when in his starting position. The alley sights enable the bowler to direct the ball by starting it from a pre-selected delivery sight and by directing the ball to roll over or adjacent to an appropriate and pre-selected alley sight. The alley sights are intended to locate definite points or areas on the alley bed, and hence they consist of spot-like marks or areas. Herein the sights are seven in number, are wedge-shaped, and are arranged in the form of an inverted V, as viewed by the bowler, with the apex or central wedge in the central board 14 and the remaining wedges in each fifth board therefrom. While the alley sights might be applied in a variety of ways, they preferably are produced by the employment of actual inserts 28, as best seen in Figs. 3 and 3a. Herein the inserts are of a dark wood, such as black walnut (to contrast with the lighter maple of the alley bed), and each is preferably secured to a board 14 by dowels 29 extending laterally therethrough. Although the shape and location of the spots as shown in the drawings are preferable, it is to be understood that neither the shape of the spots, nor their arrangement, nor their manner of formation are of the essence of the invention, and that the spots may have any configuration and may be given any arrangement other than that herein shown so long as the arrangement is such that the spots may be employed in aiding the bowler in imparting the correct initial direction to the ball.

The invention in the form herein disclosed may be used in the following manner: If, for example, the bowler wishes to deliver a "strike" ball, he first assumes his position at the starting sight 20 (or 20') as shown by the foot marks 30 in Fig. 5. The bowler will then advance, preferably by taking four strides forwardly to the delivery position, as indicated by the foot marks in Fig. 5, this advance being parallel with the alley so that the delivery will be made with the left foot just slightly to the left of the delivery sight 20''. The ball B (which has been swung during this approach walking) is delivered onto the alley from two to eighteen inches beyond the foul line and directed to pass intermediate the direction or alley sights 20a and 21a, along the dot-dash line indicated in Fig. 5, so as to crash the strike pocket between the 1 and 3 pins.

If the bowler wishes to deliver a ball to pick up the number 7 pin, as illustrated in Fig. 6, he first sights between the 20'' delivery sight and the number 7 pin so as to determine the location of the path of the ball relatively to the nearest alley sight. He finds that his ball should pass slightly to the left of alley sight 21a. Thus, after starting at the starting position sight 20, and walking toward the delivery sight 20'', the bowler delivers the ball along the dot-dash line, as shown in Fig. 6.

If, by way of further example, the bowler wishes to deliver a ball to pick up the number 10 pin (see Fig. 7) the bowler takes a starting position, with his left foot behind the starting position sight 24, and again advances in a straight line

parallel with the alley, terminating his approach with his left foot opposite the delivery sight 24". At this time, the ball is delivered in a direction to pass just to the left of the center alley sight 22a and headed in a straight line for the 10 pin. Thus, for all of the more common shots, even the novice will quickly memorize the preferred starting and delivery positions and the path of delivery of the ball.

For the less common shots to be made, he can, by means of the guide means here disclosed, quickly line up the shot. This is done by imagining a straight line from the delivery point where the ball will be laid down on the alley to the point at which the ball is to strike the pins, and note taken of the position of that imaginary line relative to the nearest alley sight. Having then selected or determined the sight over or near which the ball is to be delivered, the bowler then takes the position straight back from the position that he would assume for delivery of the ball at the point on the alley previously assumed.

The exemplary shots described have been described as made by the straight ball bowler. The curve or hook ball bowler will use all of the guide means in the same manner, but will, of course, due to the curved path taken by his ball, select a somewhat different sighting mark for each particular shot from that employed by the straight ball bowler. The guide means are, however, just as helpful to the curve ball bowler as the straight ball bowler, and just as helpful to the expert and professional as to the novice.

The form of the invention disclosed herein has proven extremely effective with the various sights spaced laterally as hereinbefore set forth, and with the alley sights located in an area extending from 12 feet 5 inches to 15 feet 11 inches from the foul line. The alley sights were six inches long and six inches apart (in a direction longitudinally of the alley).

I claim as my invention:

1. A bowling alley comprising a continuous flat surface having an approach at one end, a foul line marking the end of the approach, and the beginning of the playing surface, a location for pins at the opposite end of the playing surface, and means for guiding a bowler in the delivery of the ball comprising spot-like markings on the approach near the starting position end of the approach and also adjacent the foul line, spaced laterally of the alley to aid a bowler in determining his correct position laterally of the alley at the start of the approach and at the time of delivery of the ball, and a plurality of spot-like markings of contrasting appearance with respect to the remainder of the alley located beyond the foul line and part way down the playing surface toward the pin locations to form sights to aid the bowler in the delivery of a ball in a correct direction toward the pins on the far end of the alley.

2. A bowling alley comprising a continuous flat surface having an approach at one end, a foul line marking the end of the approach and the beginning of the playing surface, a location for pins at the far end of the playing surface and directly opposite the approach, and means for guiding a bowler in the delivery of the ball comprising markings on the approach near the starting position end of the approach and also adjacent the foul line, spaced laterally of the alley to aid a bowler in determining his correct position laterally of the alley at the start of the

approach and at the time of delivery of the ball, and a plurality of wedge-shaped inserts of contrasting appearance with respect to the remainder of the alley located at a substantial distance beyond the foul line to form sights to aid the bowler in the delivery of a ball in a correct direction toward the pins on the alley, said inserts being arranged in the form of an inverted V as viewed by the bowler with the apex wedge on the longitudinal center line of the alley.

3. In a bowling alley, a playing surface-providing top layer comprising a plurality of wood, bed-stock boards disposed on edge and rigidly and tightly secured face to face, a strip embedded in the top surface of said layer transversely thereof to form a foul line, said strip being spaced a suitable distance from one end of the alley to separate the approach from the bed, a first plurality of cylindrical inserts disposed in a line extending transversely of the alley at the starting position end of the approach, one of said inserts being located in the middle one of the boards forming said top layer and the remainder of said inserts being spaced like distances on either side of the middle insert to serve as guide means aiding a bowler in determining his position laterally of the alley at the starting position of the approach, a second plurality of cylindrical inserts disposed in a line extending transversely of the alley immediately adjacent the foul line, one of said last named inserts likewise being located in the central board and the remainder of said inserts being spaced equal distances on either side of the central board with the spacing equal to the spacing of said first plurality of inserts, and a plurality of inserts in the boards to the other side of the foul line forming spot-like alley sights for aiding the bowler in delivering the ball in a desired direction.

4. A bowling alley having an approach, a bed, a foul line marking the end of the approach adjoining the bed, and means for guiding a bowler in the delivery of the ball comprising an odd number of spot-like marks located in a line extending transversely of the approach at the starting position end of the alley, the middle one of said marks being distinguishable from the remainder and being located on the longitudinal center line of the alley with equal numbers of the remaining marks spaced uniform distances to either side of the middle mark, a second group of an odd number of spot-like marks located in a line extending transversely of the alley adjacent the foul line, the central one of said second group of marks being distinguishable from the remainder and located on the longitudinal center line of the alley with equal numbers of the remaining marks of that group spaced uniform distances to either side of the central mark, the spacing of the two groups of marks being the same, and a plurality of spot-like sighting marks on the alley bed beyond the foul line but within sight of the bowler when at the starting position marks.

5. A bowling alley having, in combination, an approach, a bed, a foul line marking the end of the approach adjacent the bed, and means for guiding a bowler in the delivery of the ball comprising a first plurality of laterally spaced sights on the approach for aiding the bowler in determining his starting position, a second plurality of laterally spaced sights adjacent the foul line for aiding the bowler in determining his delivery position, corresponding ones of said delivery sights having the same lateral spacing as said

starting position sights, and a plurality of individual sights on the bed of the alley beyond the foul line and approximately twelve to sixteen feet therefrom.

6. A bowling alley having, in combination, an approach, a bed extending continuously in one direction, a foul line marking the end of the approach at the bed, means for guiding a bowler in the delivery of a ball comprising markings

5 formed on the approach of the alley for aiding a bowler in determining his position transversely of the alley at the starting position on the approach and in making an approach from that position to the foul line and parallel with the side of the alley, and a plurality of spot-like sighting marks on the alley located at a substantial distance beyond the foul line.

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