

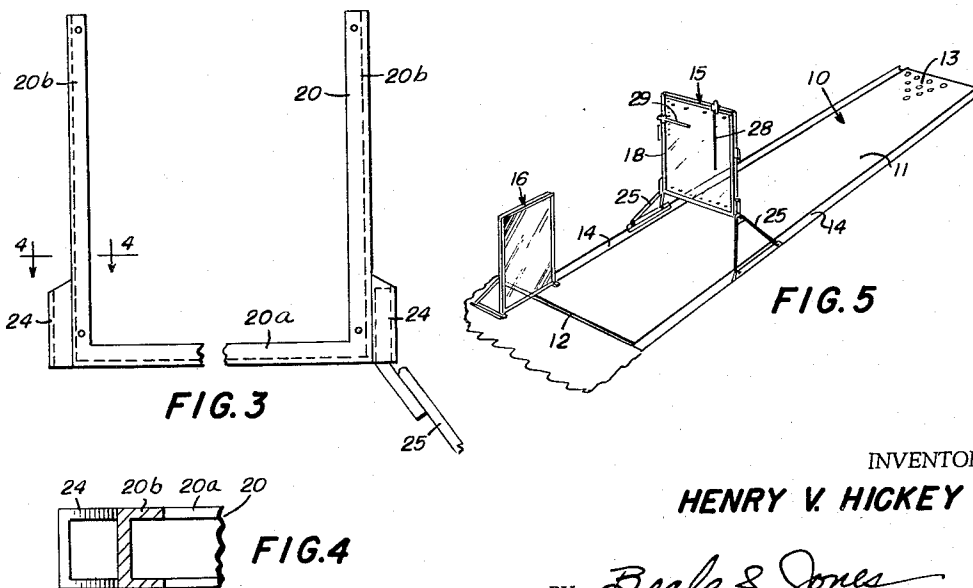
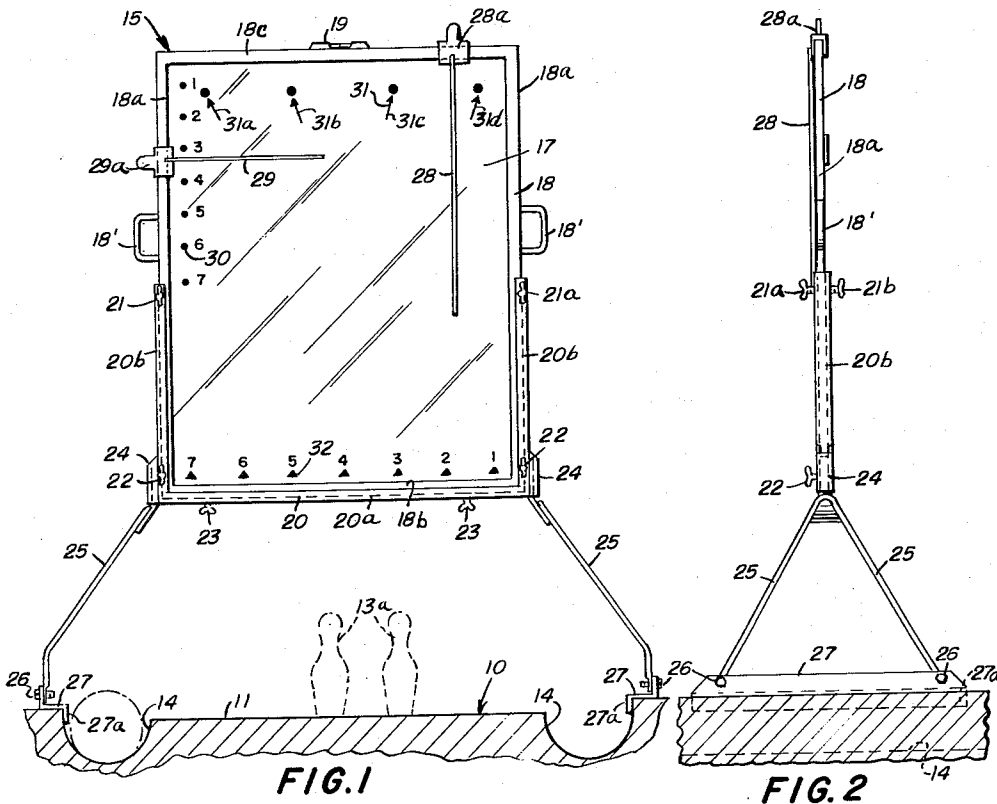
Sept. 5, 1961

H. V. HICKEY

2,998,660

BOWLING PRACTICE METHOD AND APPARATUS

Filed Sept. 8, 1960



INVENTOR

HENRY V. HICKEY

BY Beale & Jones

ATTORNEYS

1

2,998,660

BOWLING PRACTICE METHOD AND APPARATUS

Henry V. Hickey, 327 Southside Road,
Virginia Beach, Va.

Filed Sept. 8, 1960, Ser. No. 54,772
7 Claims. (Cl. 35-29)

This invention is directed to an improvement in bowling teaching apparatus and to the method of teaching proper ball delivery and body attitude when bowling.

An object of the invention is to provide a visual aid to the bowler to show him proper positioning of his arm, shoulders and body in bowling.

Another object of the invention is teaching methods of bowling to indicate proper plane of arm swing for ball delivery, shoulder position at time of ball delivery and body attitude at time of ball delivery.

A further object is to provide an indication of spot of ball delivery at the leading end of the alley.

A still further object of the invention is to provide an indication of line of ball travel across the alley to effectively knock down certain pin set-ups.

Still further objects and the entire scope of applicability of the present invention will become apparent from the detailed description given hereinafter. It should be understood, however, that the detailed description and specific example is given by way of illustration only and, while indicating a preferred embodiment of the invention, is not given by way of limitation, since various changes and modifications within the spirit and scope of the invention will become apparent to those skilled in the art from this detailed description.

For a more complete understanding of the structure and the method reference is had to the accompanying drawings in which—

FIG. 1 is a front elevational view of the apparatus shown positioned over an alley as viewed from alley foul line position;

FIG. 2 is a right hand side view of the apparatus in FIG. 1;

FIG. 3 is a fragmentary view of the support frame for the mirror on an enlarged scale;

FIG. 4 is a cross sectional view of the support frame showing the channel configuration along line 4-4 of FIG. 3; and

FIG. 5 is a fragmentary perspective view of a bowling alley showing the positioning of the mirror of FIG. 1 and a secondary mirror adjacent the foul line position.

Throughout the description like reference numbers refer to similar parts.

A bowling alley is generally indicated at 10 having a ball receiving surface of the alley at 11, a foul line portion at 12 from adjacent which balls are delivered by the bowler down the alley toward the pits where the ten-pins or the like are indicated at 13. As is customary in the alley construction there are return ball troughs or gutters at 14-14 positioned at each side of the alley.

A first plano mirror is generally indicated at 15 and is supported in spaced relation to the surface of the alley and transversely thereacross at a position about 21 feet from the foul line 12 and facing the foul line end of the alley.

A second plano mirror is generally indicated at 16 and it is positioned adjacent one end of the foul line and extends to the floor and is used by the bowler to indicate proper delivery of the ball at a position in advance of the foul line.

The first plano mirror apparatus generally indicated at 15 has a rectangular mirror 17, about 36 inches wide by 44 inches tall, mounted in an enclosing frame 18 having handles 18' oppositely positioned at each side.

2

The frame 18 is made up of channel side members comprising vertical side members 18a-18a and bottom and top horizontal members 18b and 18c. A spirit level 19 is attached to the top member 18c. The mirror 17 within its frame 18 is mounted in a framework in spaced relation about 22 inches above the alley 11.

The framework supporting the mirror 17 and its frame 18 comprises a U-shaped channel member frame 20, see FIG. 3, having a bottom member 20a and two up-standing legs 20b-20b to receive the frame 18. Suitably positioned adjusting thumb screws provide for adjustably securing the frame 18 in the frame 20 so as to be perpendicular to the alley surface 11. About a one-inch swing is permitted by the side adjusting thumb screws 21a and 21b, see FIG. 2 received in tapped apertures in the opposite faces of the upper ends of channel member legs 20a-20a and in the front thereof are thumb screws 22-22. Bottom thumb screws 23-23 are received in tapped apertures in the lower channel member 20a toward each end thereof so as to provide for proper leveling of the mirror whose level is indicated by the spirit level 19.

At the bottoms and outer opposite portions of the framework legs 20b-20b are welded short socket members 24 which receive the upper ends of inverted Y-shaped side legs 25-25, see FIG. 2, whose bottom ends are bolted or welded at 26 to Z-shaped channel members 27. The bottom protruding edge portion 27a of the channel members 27 is received along the outer edges of the gutters 14, see FIG. 1.

Referring to FIGURES 1 and 5, the mirror 17 has mounted on the horizontal top edge 18c a vertical marker 28 having a spring finger clip 28a slidably securing it to the top edge 18c in an adjustable position. The position of the vertical marker 28 is a reference for a vertical plane which contains the marker 28 and is perpendicular to the edge 18c and the alley 11 and represents the plane within which the ball delivering pendulum swinging arm of the bowler is to lie for a proper delivery. The vertical marker 28 would be positioned to indicate the selected location of ball delivery and gives the bowler a proper reference for correct delivery for a particular set of pins.

A horizontal marker is indicated at 29 and it is supported by a spring finger clip 29a for movement vertically along the vertical side member 18a of the frame 18 holding the mirror. The instructor will initially position the horizontal member 29 to indicate the proper shoulder line position of the bowler at the time of ball delivery while delivering a ball in the plane defined as containing the vertical marker 28. Lying under the horizontal marker 29 are vertically spaced apart marks generally indicated at 30 and numbered as 1-7 inclusive reading from top to bottom. These indicia 30 are position indicators for horizontal marker 29.

On the mirror 17 there is also located indicia 31 consisting of angularly disposed lines spaced apart adjacent the top edge 18c to indicate line of position of ball delivery for certain cross alley ball travel for proper knocking down certain pin set up. Line 31a represents line of position for ball travel for knocking down the 7-pin, 31b the line of position for the 8-pin, 31c the line of position for the 9-pin and 31d the line of position for the 10-pin.

Along the bottom of the mirror 17 there is positioned in horizontal spaced apart relationship indicia 32 consisting, for illustration, of numbers 1-7 inclusive from right to left. These numbers and their positioning indicate spot bowling indicia or marks for aligning the ball delivery for certain spot bowling. In such a spot bowling the bowler would not sight on the pin positions. The vertical mark-

er 28 may also be used in conjunction with the indicia or markings 32.

In FIG. 5 there is also shown the second plano mirror 16 positioned at an end of the foul line 12 and in a vertical attitude parallel to the alley 11. The bowler utilizes this mirror 16 to observe his attitude at proper ball delivery in advance of the foul line while he has oriented his bowling arm and shoulders as viewed in the mirror 17 which reflects and shows his attitude with respect to the vertical marker 28 and the horizontal marker 29.

In use of the apparatus and particularly the mirrors 15 and 16, proper body attitude for not only time of ball delivery may be observed but also for approach, slide, and follow through may be observed, noted and corrected.

This apparatus and the method of proper ball delivery which may be checked by the apparatus teaches the proper rudiments and refinements of bowling. It will show up faults and defects and by proper use with an instructor will greatly improve the bowler's skill and performance.

I claim as my invention:

1. A bowling instruction device comprising in combination a plano mirror having a vertical edge and a top horizontal edge, support means movably positionable along a bowling alley intermediate the foul line and the pits of the alley for supporting said mirror in a generally vertical attitude transverse to the length of the alley and in spaced relation above the alley with the face of the mirror facing a bowler, said support means including adjusting devices to orient said vertical edge perpendicular and said top horizontal edge parallel to the surface of said alley, an adjustably positionable horizontal marker member supported from and adjustably positionable along said vertical edge of the mirror to extend over a portion of the face of the mirror, and an adjustably positionable vertical marker member supported from and adjustably positionable along said horizontal edge of the mirror to extend over a portion of said face, said vertical marker positionable to indicate in the mirror and to the bowler the plane of swing of the ball delivering arm of the bowler and said horizontal marker positionable to indicate in the mirror and to the bowler the shoulder line position of the bowler as the bowling ball is delivered down the alley.

2. A bowling instruction apparatus for use in conjunction with a bowling alley having a foul line portion, an alley and a pin pit, said apparatus comprising in combination a first plano mirror device positionable on support means spaced above the bowling alley and intermediate the foul line portion and the pit portion of the alley and having a vertical edge and a horizontal edge, said vertical edge being perpendicular to and said horizontal edge being parallel to said bowling alley, said mirror having a face positioned toward a bowler at the foul line portion and giving an image of the bowler therein, a horizontal marker member supported adjustably along the vertical edge and extending over the face of the mirror, a vertical marker member supported adjustably along the horizontal edge of the mirror, said vertical marker positionable to indicate in the mirror and to the bowler the plane of swing of the ball delivering arm of the bowler and said horizontal marker positionable to indicate in the mirror and to the bowler the shoulder line position of the bowler as a bowling ball is delivered down the alley, and a second plano mirror device positionable adjacent an end of the foul line portion of the alley so as to permit the bowler to view himself in the second mirror when oriented

by the first plano mirror as he delivers the ball in advance of the foul line.

3. A bowling instruction apparatus comprising in combination a plano mirror mounted in a frame having a vertical edge and a horizontal edge, a support frame for the mirror movably positionable along a bowling alley intermediate the foul line and the pits of the alley for supporting the said mirror and its frame in a generally vertical attitude transverse to the length of the alley and in spaced relation thereabove with the face of the mirror directed toward a bowler as he approaches the foul line to deliver a bowling ball, said support frame having leg means for engagement adjacent each ball return trough along the sides of the alley, said support frame having a receiving portion for the frame holding the mirror and having leveling means for positioning the mirror so that its horizontal edge is parallel to the alley, said support frame receiving means also having adjustable means for positioning the vertical edge of the mirror in a perpendicular attitude to the surface of said alley, said mirror having an adjustably positionable vertical marker member supported from and adjustably positionable along said horizontal edge of the mirror to extend over a portion of the mirror face and an adjustably positionable horizontal marker member supported from and adjustably positionable along said vertical edge of the mirror to extend over a portion of the face of the mirror, said vertical marker positionable to indicate in the mirror and to the bowler the plane of swing of the ball delivering arm of the bowler and said horizontal marker positionable to indicate in the mirror and to the bowler the shoulder line position of the bowler as the bowling ball is delivered down the alley.

4. A bowling instruction apparatus according to claim 3 wherein said mirror has spaced apart mark means associated therewith and arranged vertically and adjacent said horizontal marker as an indicator of the horizontal marker positioning.

5. A bowling instruction apparatus according to claim 3 wherein said mirror has permanent mark means spaced apart along and adjacent the bottom edge thereof indicating alignment positions for bowling ball delivery for spot bowling.

6. A bowling instruction apparatus according to claim 3 wherein said mirror has permanent marking means associated therewith and spaced apart along the upper portion of said marking means including lines inclined to the vertical and indicating various alignments for cross alley ball delivery and ball travel.

7. A bowling instruction apparatus according to claim 3 wherein said mirror has spaced apart mark means thereon arranged vertically and adjacent said horizontal marker as an indicator of horizontal marker positioning, permanent mark means spaced apart along and adjacent the bottom edge of the mirror indicating alignment positions for bowling ball delivery for spot bowling, and marking means on the mirror spaced apart along the upper portion thereof, said last mentioned marking means including lines inclined to the vertical and indicating various alignments for cross alley ball delivery and ball travel.

References Cited in the file of this patent

UNITED STATES PATENTS

2,283,114	Wesley	May 12, 1942
2,336,997	Mobley	Dec. 14, 1943