

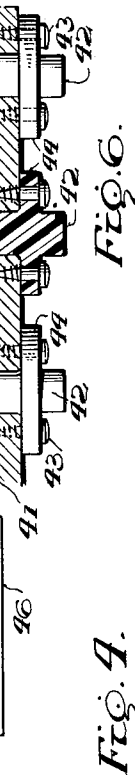
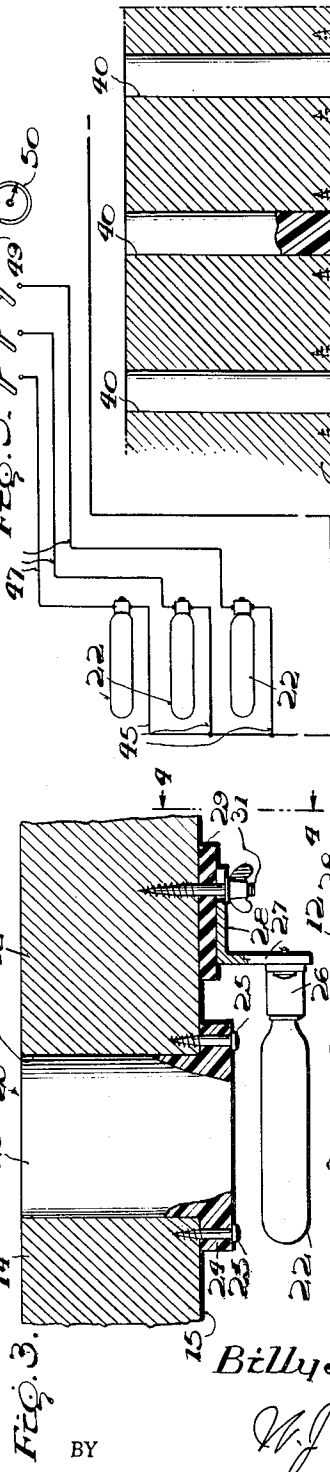
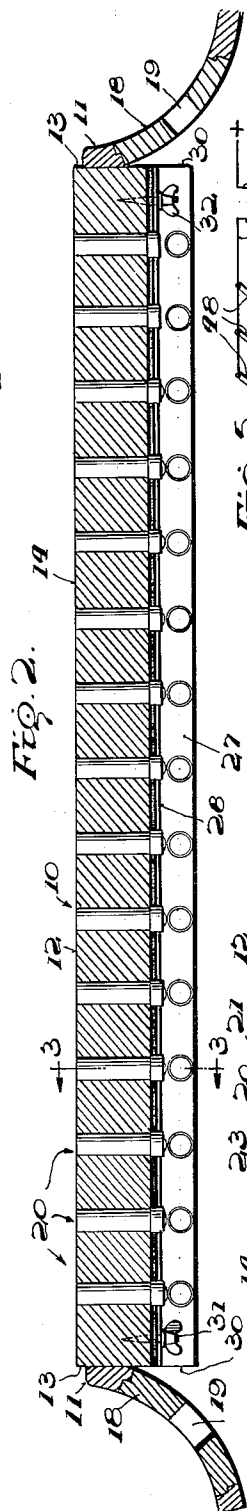
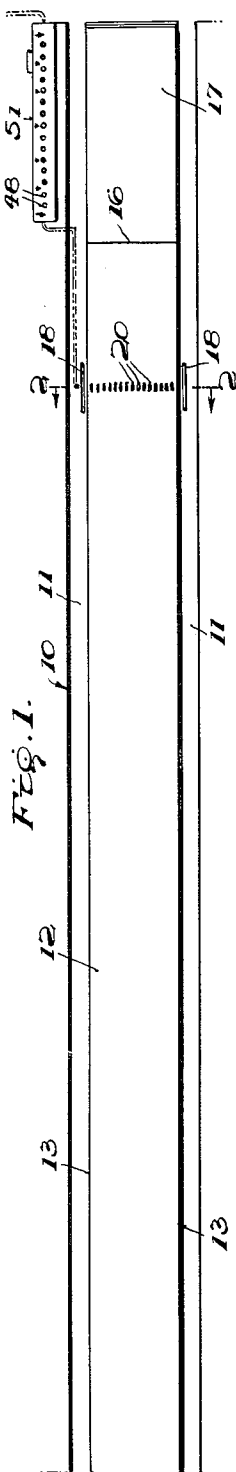
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ILLUMINATED INSERTS FOR SPOT BOWLING

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ILLUMINATED INSERTS FOR SPOT BOWLING

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The invention described herein, if patented, may be manufactured and used by or for the Government for governmental purposes, without the payment to me of any royalty thereon.

The invention relates to bowling alleys and more particularly to such alleys as include built in aiming points or spots which are usually inlaid in the alley bed in forwardly spaced relation to the foul line. In the so-called "spot" bowling, the bowler locates a spot which is favorable to his style of bowling and rolls his ball across such spot rather than aiming directly at a pin or pins. In this way he bowls more consistently whereby to increase his enjoyment in the game.

However, previous devices for accomplishing this desired result are mere inlays in the bed surface, are not numbered, are at times difficult to see and it is difficult for the unskilled bowler to be sure he is using the same spot at all times.

With the foregoing in view, it is an object of the invention to provide an improved means for spot bowling.

A further object is to provide improved illuminated and numbered aiming points for spot bowling, which points or spots can be illuminated individually as desired.

Other objects and advantages reside in the particular structure of the device, the structure of the several elements of the same, combinations and subcombinations of such elements with each other and/or the bed of a bowling alley, all of which will be readily apparent to those skilled in the art upon reference to the attached drawing and to the following specification wherein the invention is shown, described and claimed.

In the drawing:

FIGURE 1 is a plan view of a bowling alley having one species of the invention applied thereto;

FIGURE 2 is an enlarged, transverse, sectional view taken substantially on the plane of the line 2-2 of FIGURE 1;

FIGURE 3 is a further enlarged and longitudinal fragmentary sectional view taken substantially on the plane of the line 3-3 of FIGURE 2;

FIGURE 4 is a fragmentary sectional view taken substantially on the plane of the line 4-4 of FIGURE 3;

FIGURE 5 is a diagrammatic fragmentary wiring diagram of the invention; and

FIGURE 6 is a view like FIGURE 3, parts being omitted, and showing a modification of the invention.

Referring specifically to the drawing wherein like reference characters designate like parts in all views, and referring at first to the species of invention of FIGURES 1 to 5 inclusive, 10 designates generally a bowling alley which includes the usual gutters 11, 11 on opposite sides of the usual bed 12 having side edges 13, 13, an upper surface 14 and a lower surface 15. A foul line 16 separates the bowling portion of the bed 12 from the approach area 17. The bed 12 is of any suitable and usual construction and is supported by any suitable or usual supports, not shown, so as to provide a space below the bed at least in the region of the foul line 16. Access to such space is provided at either side of the bed by means of suitable removable doors 18, 18 which are provided in the gutters 11, 11. Doors 18 may be held in place by gravity and removed by means of any suitable finger grips, as the holes 19, in a readily understandable

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way. As so far described, the alley 10 is conventional and forms no part of the invention apart from any combination or subcombination with the novel features now to be described.

The novel aiming points or spots according to this form of the invention are generally designated by 20 and basically comprise a plurality of spaced recesses or holes 21 formed in the bed 12 and extending transversely thereacross between the access doors 18, there being a separate source of illumination, as an electric light 22, for each hole or recess together with means for lighting each source 22 individually. As illustrated, the holes or recesses 21 extend entirely through the bed 12 and are preferably plugged with bodies or plugs 23 of translucent plastic material. Plugs 23 may include bottom flanges 24 which underlie the lower surface 15 of the bed 12 and are secured in place by any suitable fasteners such as the screws 25. The plugs 23 have upper surfaces which are flush with the upper surface 14 of the bed 12.

The light sources 22 may comprise suitable electric light bulbs which are mounted in sockets 26 which in turn are mounted on and insulated from the vertical flange 27 of a metallic angle member. Such angle member includes a horizontal flange 28 which is spaced from lower surface 15 by a resilient, anti-vibration gasket 29. The angle member extends transversely across the bed below the same and has opposite ends 30 which terminate in the region of the side edges 13, 13 of the bed 12 beneath the doors 18. Such opposite ends 30 are readily detachably secured to the undersurface 15 of the bed 12 by any suitable fastener means such as the screws 31 and wing nuts 32. Thus, with the doors 18 removed, access is provided to the wing nuts 32 and upon their removal the angle bar and the lights may be removed to permit repairs and the replacement of bulbs 22. In this connection, it is understood that the several wires for operatively connecting the bulbs 22 to a source of electric current have sufficient slack to permit this removal of the angle bar.

In the species of FIGURE 6, each aiming point or spot comprises a group of holes 40 through the bed 41, each hole being preferably plugged by a translucent plug 42 which is secured in place by screws or the like 43 extending into the under-surface of the bed 41 through flanges 44 on the plugs. Preferably the holes 40 are arranged in short rows which extend longitudinally of the bed 41. With this arrangement the holes of each entire row, which may comprise three holes, are sufficiently close together to be illuminated by a single electric light source 22, not shown, extending longitudinally of the row as in the first-described form of the invention.

Thus, except for the structure of the aiming points or spots, this species of the invention may be the same as the first-described form.

In both species of the invention and as diagrammatically illustrated in FIGURE 5, all of the lights 22 are connected by individual leads 45 to a common ground or negative wire 46. Also, they are connected by individual leads 47 through individual preselector switches 48 to a positive wire 49. A rheostat 50 is interposed in the wire 49 between the power source and the switches 48 to provide means for regulating the intensity of bulbs 22. The switches 48 are mounted on any suitable switchboard 51, FIGURE 1, which is conveniently located alongside of the approach area 17 of the bed. The switches 48 are preferably numbered or otherwise identified to permit the user to remember which spot he is using.

In use, a bowler picks out a spot which appears to be properly located to suit his game and throws the appropriate switch 48 to light the bulb 22 below said selected spot. When he has completed his game, he turns off

such switch and the next bowler selects a spot appropriate to his game. Thus, all players may select and use the aiming spots best suited for their styles of play plus enjoying the additional and novel benefit of having it illuminated individually. Because each switch is numbered or otherwise identified, each player can readily remember which spot best suits his game. If in doubt as to which spot is best for him, the player can readily find the best aiming spot by trial and error, keeping track of the numbers which do not suit him until the best spot has been found.

Although both species of the invention are similar, it should be pointed out that the species of FIGURE 6 is particularly advantageous in that the holes 40 may be drilled in a size to fit standard rod stock of the translucent plastic selected in the event that plugs other than the flanged plugs 42 are desired.

Moreover, while there has been shown and described what are now considered to be the preferred species of the invention, it should be understood that the same is susceptible of other forms and expressions. Hence, the invention is not considered as being limited to the precise structures shown and described hereinabove except as hereinafter claimed.

I claim:

1. In a bed for a bowling alley, said bed being formed of opaque material and including opposite ends, a pin setting area at one end, a foul line at the other end, and a plurality of aiming spots extending across said bed between said ends in adjacent relation to said foul line; the improvement comprising said spots being made of translucent material, a separate source of light below each spot, and means for manually causing any selected one of said sources of light to provide an illuminated individual aiming spot.

2. In a bed for a bowling alley, said bed being formed of opaque material and including opposite ends, a pin setting area at one end, a foul line at the other end, and a plurality of aiming spots extending across said bed between said ends in adjacent relation to said foul line; the improvement comprising a plurality of recesses in said bed providing said aiming spots, an electric light disposed to shine upwardly through each recess, and manually operated switch means for lighting any selected light individually to provide an illuminated aiming spot.

3. In a bed for a bowling alley, said bed being formed of opaque material and including opposite ends, a pin setting area at one end, a foul line at the other end, and a plurality of aiming spots extending across said bed between said ends in adjacent relation to said foul line; the improvement comprising a plurality of recesses in said bed, a body of translucent material in each recess and having a flat upper surface flush with said bed, an electric light below each body of translucent material, and manually operated switch means for lighting at least one of said lights whereby to provide a selected illuminated aiming spot.

4. In a bowling alley including an opaque bed having a pin setting area; the improvement comprising a plurality of laterally spaced translucent aiming spots extending across said bed in remote relation to said pin setting area, an electric light for each spot disposed to illuminate the same from below, and manually operated means for causing any selected light to illuminate its spot to provide an illuminated individual aiming spot.

5. In a bowling alley including an opaque bed having a pin setting area; the improvement comprising a plurality of laterally spaced translucent aiming spots extending across said bed in remote relation to said pin setting area, separate electric light means for illuminating said spots individually from below, a manually operated switch for each light means, and said switches comprising means for lighting any selected light means to provide an illuminated individual aiming spot.

6. In a bowling alley including an opaque bed having

upper and lower surfaces, a pin setting area, and a foul line in longitudinally spaced relation to said area; the improvement comprising said bed being formed with at least one series of laterally spaced holes therethrough, said series extending transversely across said bed in between said foul line and said pin setting area in remote relation to the latter, a body of translucent material at least partially filling each hole and having a flat upper surface flush with said upper surface of said bed, light mounting means extending across said bed below the same and adjacent said holes, means securing said mounting means to said lower surface of said bed, laterally spaced electric lights carried by said mounting means, there being an electric light beneath each hole, and manually operated switch means for activating any selected light so as to provide an illuminated individual aiming spot.

7. In a bowling alley including an opaque bed having upper and lower surfaces, a pin setting area, and a foul line in longitudinally spaced relation to said area; the improvement comprising said bed being formed with at least one series of laterally spaced holes therethrough, said series extending transversely across said bed in between said foul line and said pin setting area in remote relation to the latter, light mounting means extending across said bed below the same and adjacent said holes, means securing said mounting means to said lower surface of said bed, laterally spaced electric lights carried by said mounting means, there being an electric light beneath each hole, and manually operated switch means for activating any selected light so as to provide an illuminated individual aiming spot.

8. In a bowling alley including an opaque bed having side edges as well as upper and lower surfaces, a pin setting area, and a foul line in longitudinally spaced relation to said area; the improvement comprising said bed being formed with at least one series of laterally spaced holes therethrough, said series extending transversely across said bed in between said foul line and said pin setting area in remote relation to the latter, light mounting means extending across said bed below the same and adjacent said holes, said mounting means having opposite ends in juxtaposed relation to said side edges of said bed, securing means readily detachably securing said ends of said mounting means to said under surface of said bed in the region of said side edges thereof, electric lights carried by said mounting means, there being an electric light beneath each hole, and manually operated switch means to activate any selected light so as to provide an illuminated individual aiming spot.

9. The improvement of claim 8, there being a translucent plug at least partially filling each hole, and each plug having a flat upper end in flush relation with said upper surface of said bed.

10. The improvement according to claim 8, wherein said mounting means comprises an L-shaped metal angle having horizontal and vertical flanges, said securing means securing said horizontal flanges flatly against said under-surface of said bed, said vertical flange depending from said horizontal flange, and said lights being mounted on said vertical flange.

11. The structure of claim 8, there being means providing access to both ends of said mounting means to permit removal of said securing means and withdrawal of said mounting means and lights as a unit from below said bed.

12. In a bowling alley including an opaque bed having a pin setting area and a foul line in longitudinally spaced relation to said area; the improvement comprising a plurality of laterally spaced aiming points extending across said bed between said foul line and said pin setting area in remote relation to the latter, each aiming point comprising a group of holes formed through said bed, at least one light source, and manually operated means for causing said light source to illuminate any selected group of

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holes from below to provide an illuminated individual aiming point.

13. In a bowling alley including an opaque bed having a pin setting area and a foul line in longitudinally spaced relation to said area; the improvement comprising a plurality of laterally spaced aiming points extending across said bed between said foul line and said pin setting area in remote relation to the latter, each aiming point comprising a short row of holes through said bed, said rows extending longitudinally of said bed, individual electric light means for illuminating each row of holes from below, and manually operated means for activating any selected light to provide an illuminated individual aiming point.

14. The improvement according to claim 13, there being a plug of translucent material at least partially filling each hole.

15. The improvement according to claim 14, wherein each plug has a flat upper end in flush relation to said bed.

16. In a bowling alley including an opaque bed having

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a pin setting area and a foul line in longitudinally spaced relation to said area; the improvement comprising a plurality of laterally spaced aiming points extending across said bed between said foul line and said pin setting area in remote relation to the latter, each aiming point comprising at least one recess in said bed, an electric light for each aiming point, means mounting said lights for illuminating said aiming points from below said bed, and manually operated switches for lighting any selected light whereby to provide an illuminated individual aiming point.

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