Jan. 31, 1961 P. A. DE VORE 2,969,983

BOWLING ALLEY CONSTRUCTION

Filed Nov. 14, 1956 4 Sheets-Sheet 1

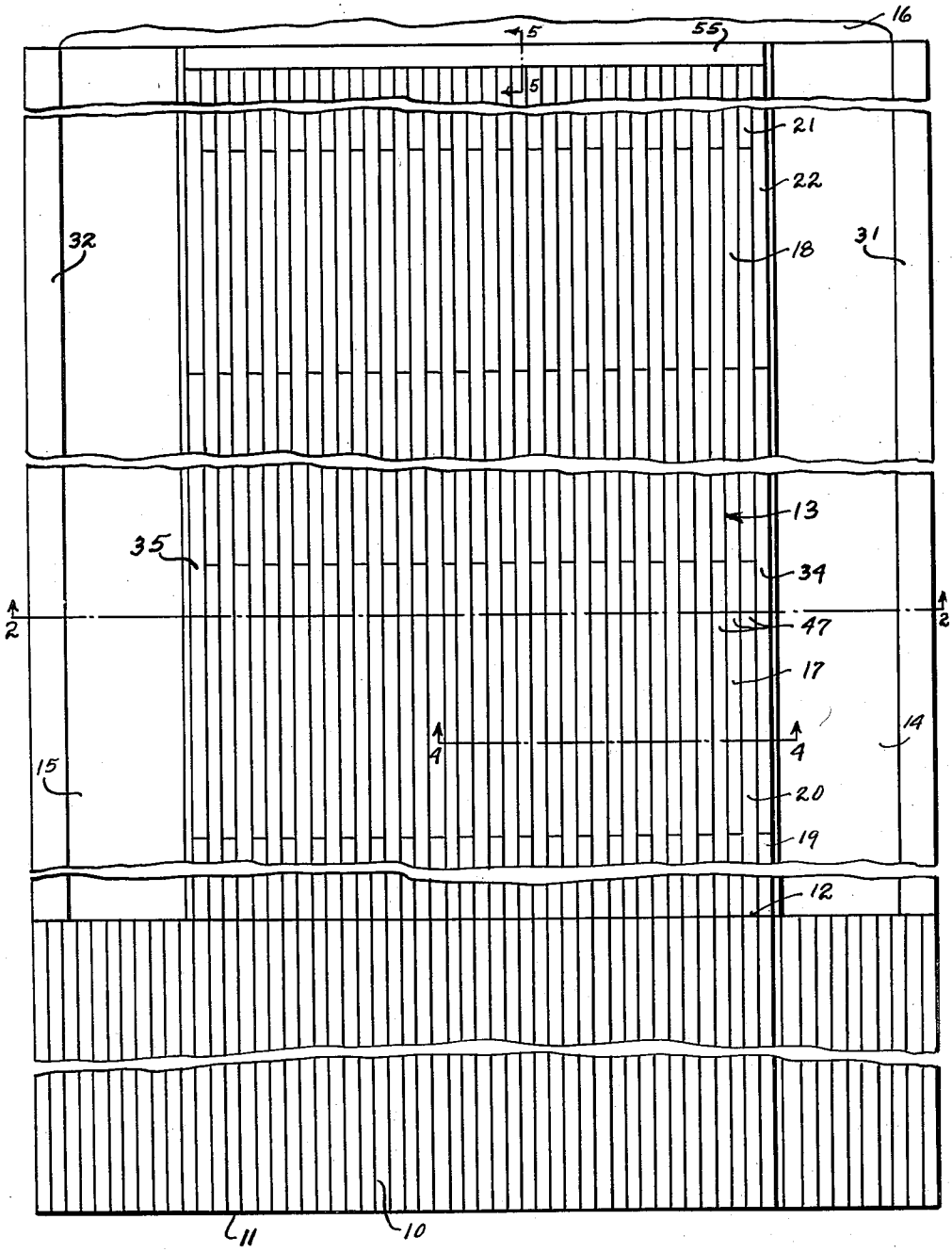


Fig. 1.

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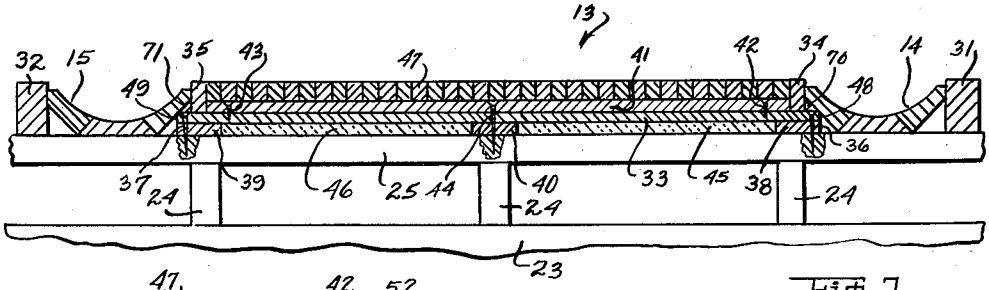


Fig. 2.

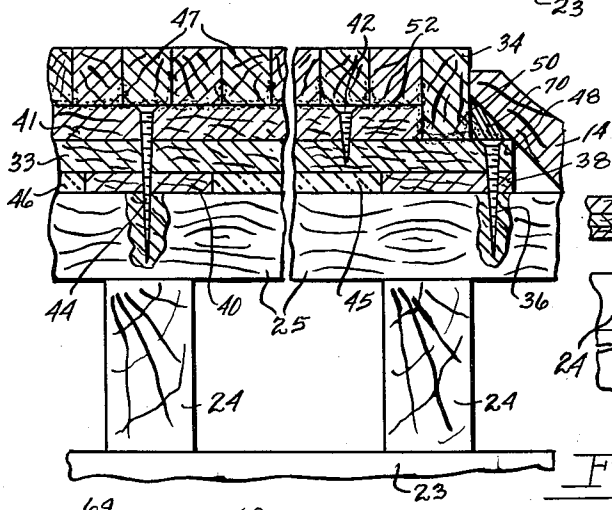


Fig. 4.

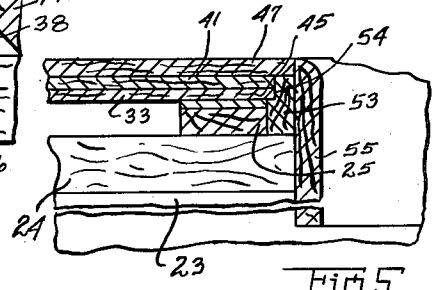


Fig. 5.

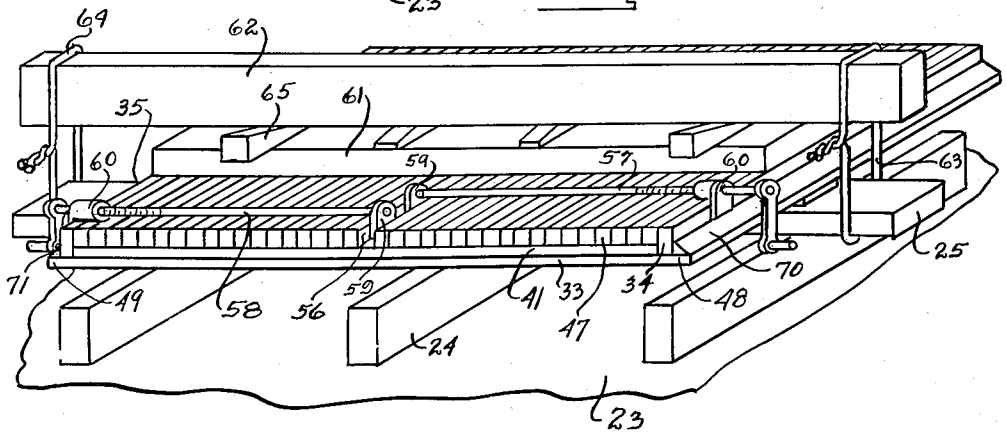


Fig. 6.

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BOWLING ALLEY CONSTRUCTION

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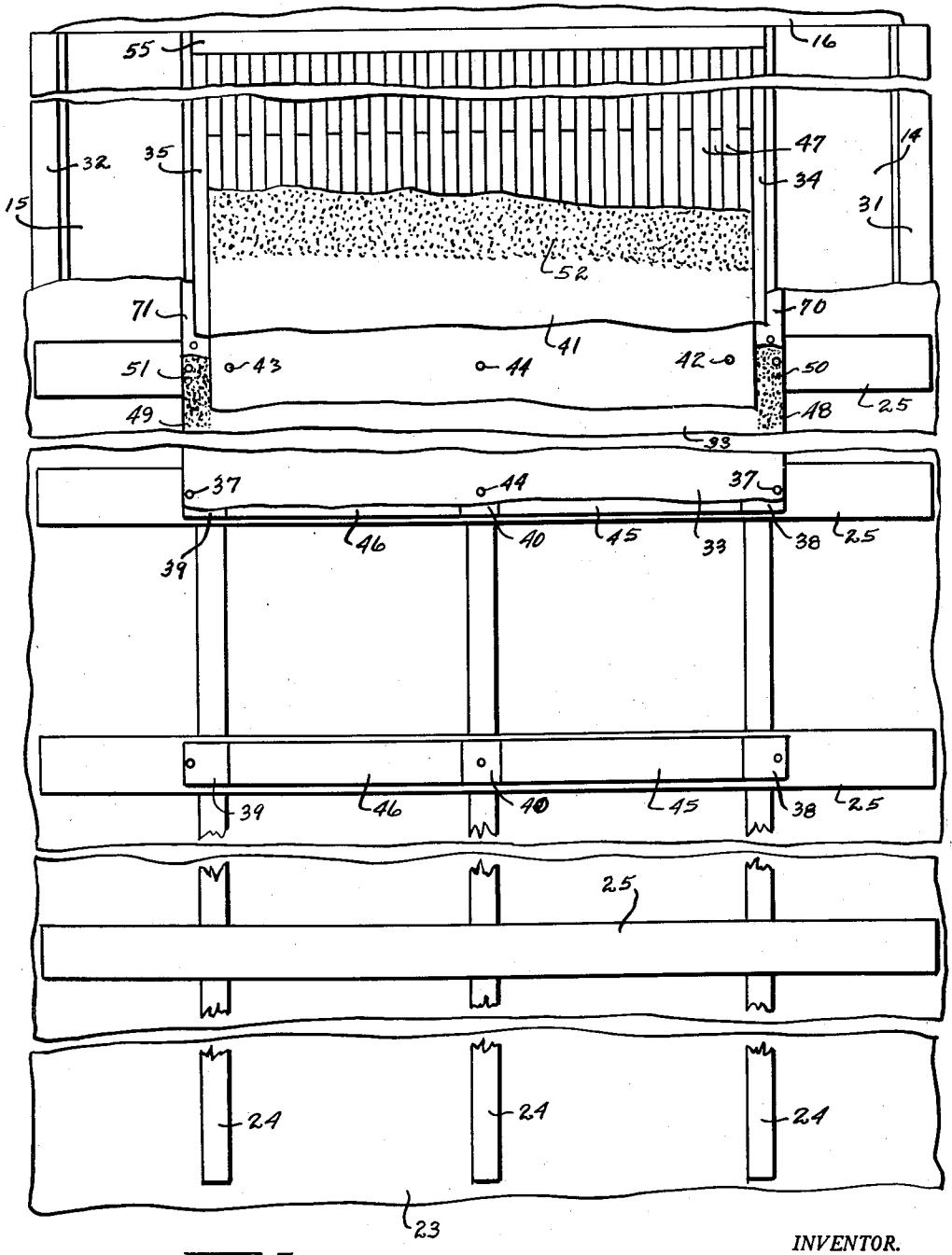


Fig. 3.

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BOWLING ALLEY CONSTRUCTION

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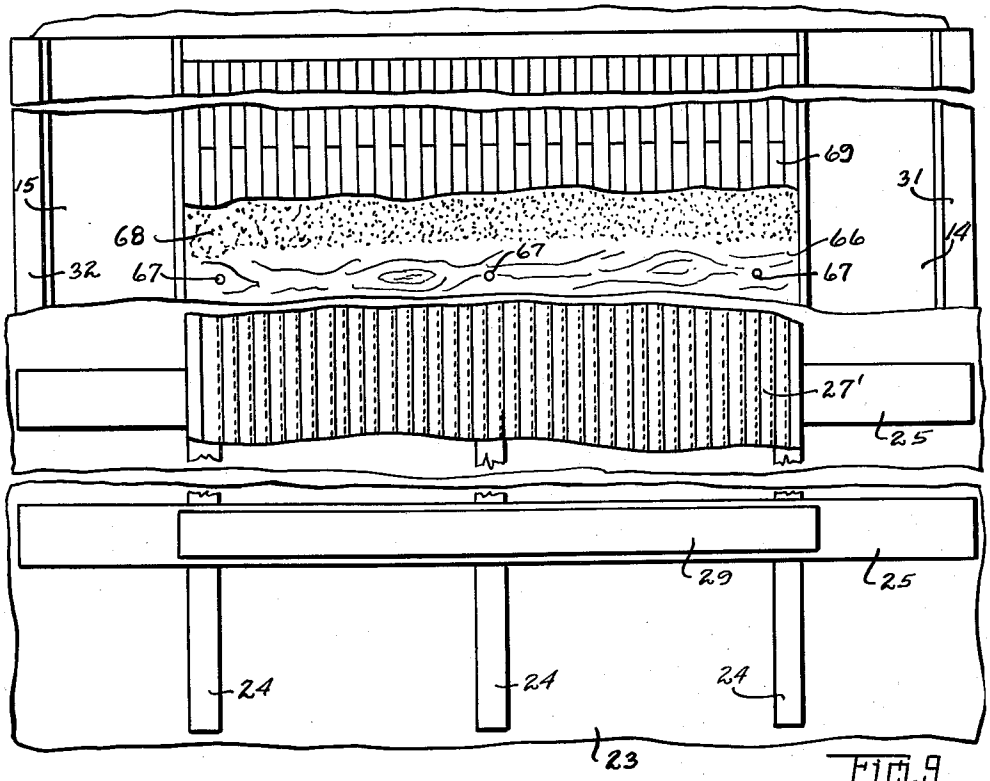


Fig. 9.

Fig. 8.

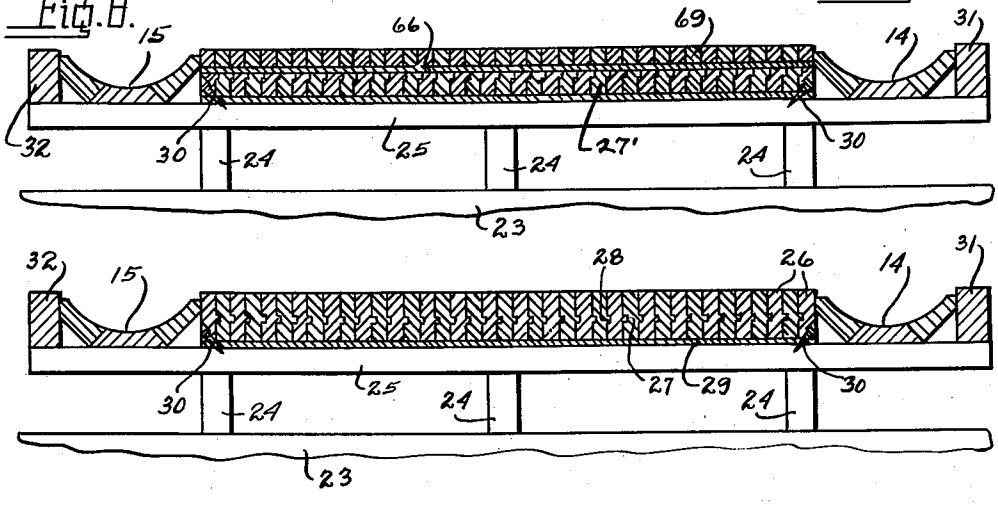


Fig. 7. Prior Art

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2,969,983

BOWLING ALLEY CONSTRUCTION

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Filed Nov. 14, 1956, Ser. No. 622,193

14 Claims. (Cl. 273—51)

This invention relates to improvements in bowling alleys and particularly to the construction thereof in the securing of the bowling alley surface boards.

As is well known bowling alleys are formed of a relatively large number of relatively narrow boards laid side by side with the edge grain upwardly. In the past the said boards were connected to one another by a tongue and groove and by means of a multiplicity of nails nailing each board in face contact with the board on one side thereof.

The surface of the alley becomes dented, grooved and otherwise marred due to the throwing and rolling thereon of a bowling ball which has considerable weight and is thrown with considerable force.

The surface of the bowling alley, therefore, requires relatively frequent removal by sanding resulting in the surface of the alley reaching to the tongue and groove of the boards as well as to the nails securing the boards to one another. This condition is reached in from 20 to 25 years and the boards are cut and worn away to approximately one-half of their height and requiring a complete replacement of the said boards, even though the remaining half of the original boards would, except for the tongues and grooves and nails, provide just as smooth and desirable surface as they initially provided.

The cost of an alley for bowling purposes is quite expensive even with a life of from 20 to 25 years.

The use of nails for the securing of the boards to one another sometimes results in an immediate splitting thereof and further results in the splitting of the boards upon repeated impact of a bowling ball on the surface of the alley.

By the present invention the boards are not secured in face contact by means of nails or the like wherefore the difficulties as heretofore encountered are eliminated.

It is, therefore, the principal object of the present invention to provide a bowling alley in which the boards are retained in operative relation to one another and to a supporting structure without the use of material damaging means such as nails, screws or the like.

Another object of this invention is the provision of a bowling alley in which the boards are of considerably less height than heretofore employed for thereby reducing the cost of material initially used in making the alley and which material is all replaceable at a considerable savings in cost over the replacement of full height boards as it was necessary heretofore.

A still further object of this invention is the provision of a bowling alley having its boards secured in operable position by means that tend to inhibit the splitting thereof whereby a more perfect surface is retained on the bowling alley for a greater period of time.

It is also an object of this invention to provide a bowling alley with a solid and relatively non-yielding bed as distinguished from the supporting foundation for the said bowling alley boards.

Other objects and advantages of the present invention will be readily apparent by reference to the following

specification considered in conjunction with the accompanying drawings forming a part thereof, and it is to be understood that any modifications may be made in the exact structural details there shown and described, within the scope of the appended claims, without departing from or exceeding the spirit of the invention.

In the drawings:

Fig. 1 is a plan view of a bowling alley having portions removed in the interest of clearness of illustration.

Fig. 2 is a transverse sectional view completely across the bowling alley as seen from line 2—2 on Fig. 1.

Fig. 3 is a plan view of a bowling alley with parts removed to show the build-up in the construction of the alley.

Fig. 4 is an enlarged fragmentary sectional view of a bowling alley of the present invention illustrating the details of construction as seen from line 4—4 on Fig. 1.

Fig. 5 is a fragmentary sectional view through the pit end of the bowling alley and illustrating details of construction therein.

Fig. 6 is a perspective view of a portion of an alley under construction and illustrating a method of constructing the alley in accordance with the present invention.

Fig. 7 is a transverse sectional view completely across a bowling alley, similar to Fig. 2, illustrating, however, the construction of an alley as presently and heretofore employed.

Fig. 8 is a cross-sectional view similar to Fig. 7 illustrating the construction of the alley of Fig. 7 as rebuilt employing the principles and means of the present invention.

Fig. 9 is a fragmentary plan view, similar to Fig. 3, illustrating the build-up of a replacement alley such as illustrated in cross-section in Fig. 8.

Throughout the several views of the drawings similar reference characters are employed to denote the same or similar parts.

A bowling alley as viewed by the user and illustrated in Fig. 1 is composed of a runway or players' section **10** extending from the end **11** of the alley to the foul line **12** which, in turn, extends entirely across the alley proper and indicated by the reference numeral **13**. The runway **10** extends across the alley proper and across the gutters **14** and **15** located respectively on each side and for the full length of the alley proper **13**.

The other end of the alley terminates in a pit **16** in which the "pin boy" is located who returns the ball to the player and arranges the ten-pins for the player. In the case of the so-called "automatic" pin spotters the mechanism therefor is located in the aforementioned pit **16**.

The alley proper, inwardly of the foul line **12**, is provided with what is known as a dovetail **17** and terminates forwardly of the pit **16** with a second dovetail **18**. The dovetails while of considerable length are of considerably less length than the alley portion located between said dovetails. The said dovetails are made up of alternate short and long boards, at the foul line end of the alley being respectively indicated by reference numerals **19** and **20** and at the pit end of the alley by reference numerals **21** and **22**. Due to the excessive wear on the runway **10** and similar wear on the foul line and pit end dovetails they are formed of hard wood such as maple while the balance of the alley, that portion between the dovetails, is made of softer wood such as pine.

The visible portion of the alley must of necessity be supported on a sound foundation and comprises, generally, a concrete slab **23** on which is disposed longitudinally extending stringers **24**, generally three in number, with one located at each longitudinal edge of the alley proper and the third substantially centrally of the alley proper. Secured to the said stringers **24** and extending transversely thereof are the transverse members or

beams 25 equally spaced on definite centers throughout the length of the alley from the outer end of the runway to the pit, with said tranverse members or beams of a length to extend entirely across the alley proper as well as beneath the gutters.

In the past, as illustrated in Fig. 7, the foundation, comprising the concrete slab 23, stringers 24, and cross-beams 25, has mounted directly thereon the boards which make up the runway or approach 10 and alley proper 13 which boards, as indicated above, are of relatively narrow width and are mounted to have the edge grain thereof forming the playing surface. The said boards are generally 39 in number and are indicated by the reference numeral 26. These boards are approximately two and three-fourths inches (2¾") in height and, as noted above, are each provided on one side thereof for its full length with a groove 27 and are provided on the opposite side, again for the full length, with a tongue 28 with the exception of the two end boards. The said boards are arranged in face contact with the tongue of one board interfitting in the groove of the adjacent board and the said boards are nailed together in succession to build up a length or section of the alley whereupon they are laid as a unit into position. The alley section may be built up from either the right or the left hand side and the nails driven through the boards either directly through their tongue and groove connection or immediately above or immediately below, the preferable method now employed being to drive the nails through the tongue and groove connection. It is understood that the nails of successive boards would be offset in the direction of the length thereof so that succeeding hails are not interfered with by the previously driven ones.

Beneath the alley proper and on the cross-beams 25 is preferably arranged an insulating layer of cork or of a manufactured product such as "Celutex." The insulating material may take the form of a full carpet, that is, of a length and breadth to fully underlie the boards 25, especially if said material is employed as a shield against moisture from beneath the alley, but if the said insulating material is used primarily as a sound deadener it may take the form of a strip such as illustrated at 29 in Fig. 9, disposed solely on the cross-beams 25.

The alley sections are secured to the cross-beams 25 by means of screws 30 which are driven at an angle to the longitudinal egdes of the alley sections, as illustrated in Fig. 7.

Outwardly of each of the side alley boards are the gutters 14 and 15 which are formed in any suitable or desirable manner, such as illustrated in the drawings, and, namely, of three separate boards joined to one another and hollowed out in the form of a gutter. The said gutters are respectively secured in place by having one side thereof nailed or otherwise suitably secured to its adjacent end board and having its other side nailed or suitably secured to longitudinally extending separator boards 31 and 32.

The alley as illustrated in Fig. 7 is subjected to wear by the bowling ball which causes indentations and grooves which must be planed or sanded from the upper surface necessitating the entire upper surface of the alley being subjected to the same treatment. In time the surface of the alley descends to the tongue and grooves therein or to the joining nails when they are located above the said tongues and grooves which determines the life of the alleys. The alley boards are also subject to damage due to the splitting of the boards along the grain thereof which was weakened due to the pounding into the boards of the connecting nails and which grain weakening further results from the pounding of the ball being resisted by the said nails and permitting a give in the boards on each side of the nails and which yielding causes a fracture in the grain and the catching thereof in the polishing and cleaning mop used periodically in removing surface dust from the alleys. The said catching of the mop causes splinters to be pulled from the edges and corners of the boards which combines with the bowling ball damage for rendering the playing surface undesirable.

The repeated resurfacing of the boards 26 to the point of exposing the joining nails and tongues and grooves necessitates the complete replacement of the alley boards even though approximately one-half of the said boards are still in usable condition and, in the main, could be finished to provide a surface equal to that originally on the alley.

The alley of the present invention is provided by utilizing boards of a width or height that are slightly greater in height than one-half of the height of those used in the past and in mounting said boards on a solid surface, base or table that is secured to the foundation.

As illustrated in Figs. 2 to 5, inclusive, the present in-invention contemplates the use of a plywood sub-table or base 33 which would extend for the full length of the alley and have a width greater than the width of the alley proper although its width may be limited to the width of the alley proper or the distance between the outer edges of the alley side boards 34 and 35. The said sub-baseboard 33 is secured along its edges to each of the transverse beams 25 by means of screws 36 and 37 with said screws passing through and securing end supporting blocks 38 and 39 simultaneously to the said beams 25. The said sub-base 33 is supported substantially mid-way of its width by a block 40 and through which sub-base 33 and block 40 securing means may be employed but which parts are preferably secured as will later be made clear.

Disposed on said sub-baseboard 33 is a second or upper baseboard 41 which, similar to the sub-baseboard 33 is for the full length of the alley but only of a width corresponding to the distance between the inner faces of the longitudinally extending side boards 34 and 35. The baseboard 41 is secured to the sub-baseboard 33 by screws 42 and 43 located near its opposite side edges and preferably directly over each cross-beam 25. The center of the said baseboard 41, sub-baseboard 33 and center supporting block 40 are secured to one another and to each cross-beam by means of a center screw 44.

It should be noted that the said composite base 33—41 has insulation, cork, "Celutex," or other approved material, in the form of strips 45 and 46 on each cross-beam and respectively between supporting blocks 38 and 40 and 39 and 40. It is to be understood that this insulating material may be in the form of a full length carpet with cut-outs to accommodate the said blocks 38, 39 and 40.

The alley boards, indicated in the drawings by the reference numeral 47, and located between the side boards 34 and 35, and said side boards 34 and 35 are secured to the baseboard by adhesive of a suitable and desirable character of which various forms are on the market. As illustrated in Fig. 3 the portions of the sub-baseboard 33 which project laterally of the upper base board 41, said portions being indicated by the reference numerals 48 and 49, have applied thereto, respectively, adhesive 50 and 51. The upper surface of the upper base-board 41 has likewise applied thereto adhesive 52 and which adhesive 50, 51 and 52 securely holds the alley boards 47 as well as the side boards 34 and 35 in operative relation to one another and to the supporting base.

Outwardly of each alley side board 34 and 35, and in order to hold said side boards in position, the projecting portion 48 of the lower base board 33 has secured thereto a side board retaining strip 70 which is glued and nailed in operative position against alley side board 35, while the projecting portion 49, at the other side of the alley, has glued and nailed thereto a side board retaining strip 71. The said retaining strips 70 and 71 are illustrated in the drawings as triangular in cross sec-

tion simply because the particular alley construction illustrated in the drawings requires this form; it is understood that strips of any other cross-section may be employed with other types of gutter construction.

As illustrated in Fig. 4, the adhesive 50 as well as the adhesive 51 and 52 penetrates the adjacent surfaces of the boards in establishing a bond between them; the full significance of this will be apparent from the subsequent description of the method of laying or building the alley.

An improved method of finishing the pit end of the alley is required and results from the present construction and which is illustrated in Fig. 5 and comprises a transverse end member or plank 53 having an offset or rabbet 54 formed in one corner thereof which acts as a chair for supporting the ends of the base boards 33 and 41 and which transverse member or plank 53 is utilized for securing thereto the pit board 55.

The mounting of the alley boards 47 as well as the alley side boards 34 and 35 is accomplished as illustrated in Fig. 6. After the base boards 33 and 41 are secured by the screws 36, 37 and 40 the glue or adhesive 50 and 51 is applied for the distance corresponding to the section of the alley to be laid whereupon the side boards 34 and 35 are mounted and respectively retained in place by their respective retaining strips 70 and 71. The adhesive 52 is then applied to the upper surface of the upper base board 41, again for the distance corresponding to the section of the alley to be laid, whereupon one-half, less one board, of the alley boards 47 are then arranged in face contact inwardly from each of said side boards thereby leaving a space 56 longitudinally of the alley and substantially at the center of the alley between the boards. A bar clamp 57 and 58 is then applied to said mounted boards for clamping each half of the alley boards to one another and to its side board with said bar clamps each having its fixed end or shoe 59 located in the center space 56 and with its movable end or jaw 60 against the outer surface of its side board.

Disposed entirely across the alley boards and side boards is a plank 61 having disposed thereabove a second plank 62. The plank 62 has its ends projecting beyond the plank 61 and beyond the alley side boards 34 and 35. Said ends of the plank 62 are in alignment with a transverse beam 25 and the said plank 62 and beam 25 are connected through wires 63 and 64, there being one of such wires at each end of the plank 62. A plurality of wedges 65 are then driven between the planks 61 and 62 which, since the plank 62 has its upward movement stopped by the wires 63 and 64 causes the plank 61 to forcefully press the alley boards 47 and the side boards 34 and 35 against the adhesive on the base boards 33 and 41. The parts are retained in this position until the adhesive has thoroughly hardened for permanently and completely securing the alley boards, side boards and base boards to one another.

As illustrated in Fig. 4 the adhesive disposed on the base boards 33 and 41 is to a certain extent forced between the contacting surfaces of said boards upon the placement thereof for thereby not only securing the contacting lower surfaces of the alley boards and side boards to the upper surfaces of the base boards but likewise and simultaneously securing the said boards to one another, all as illustrated by stippling in Fig. 4 between said boards and which stippling is indicated by the reference characters 50 and 52.

It should be noted that the pressing down planks 61 and 62 are employed at each cross-beam 25 and that one or more of each of the bar clamps 57 and 58 is employed between each pressing down mechanism so that the entire surface of the alley is properly and adequately secured to the base which in turn was adequately secured to the supporting foundation.

After the parts just described have been secured in position and the adhesive has hardened or dried the central opening 56, between the alley halves, has fitted thereinto the central alley board which is adequately glued or adhesively secured in place by methods well known.

The base supporting blocks 38, 39 and 40 afford a support for the alley that could advantageously be used with the heretofore method of mounting alleys such as illustrated in Fig. 7. With the construction of Fig. 7 extreme care must be exercised in planing and sanding the alley surface since such operations require considerable downward force or pressure on the planing and sanding tools and which are frequently, particularly the sander, of considerable weight even to the extent of causdeflection in the alley due to compression of the insulating carpet or strips 29 at the sides of the alley and at the center thereof and which deflection is fully and completely resisted by the blocks 38, 39 and 40.

While the surface of the alley of the present invention as specifically illustrated in Figs. 2 to 5, inclusive, is subjected to the same wear and tear of the bowling ball as described above in connection with the alley of Fig. 7, the absence of nails in the present construction materially minimizes and in some instances completely eliminates the tendency of the alley boards to split or splinter. The surface of the alley of the present invention nevertheless needs frequent replaning and resanding to eliminate imperfections therein, caused, as noted above, by the bowling balls in normal use. It should however be noted that after the alley surface has been cut back to the upper baseboard 41 it is only necessary to replace the said alley boards 47 and the side boards 34 and 35 without in any wise touching the supporting base or foundation except to insure a smooth surface on the said upper base board 41.

From this it follows that the life of a major portion of the alley is materially extended beyond that of the construction and practice heretofore employed. It should also be noted that the plywood base boards 33 and 41 while providing just as sturdy and solid a construction below the bowling alley surface as supplied by the full height boards 26 of Fig. 7, the cost of such base boards is materially less than the difference in cost of the full height alley boards 26 of Fig. 7 and the substantially one-half height alley boards 47 and the side boards 34 and 35 of Fig. 2 thereby resulting in an alley initial cost considerably lower. It likewise follows that the cost of replacing the worn-out portion of an alley as allustrated in Fig. 2 is considerably less than replacing, completely, an alley such as illustrated in Fig. 7 even though the foundation thereof is re-usable.

This invention contemplates the rebuilding of the alley of prior constructions, and as illustrated in Fig. 7, after its iniital life has been spent and such a construction is illustrated in Figs. 8 and 9 wherein the portion of the original alley boards 26 upon being resurfaced to the tongue and grooves thereof or the securing nails constitutes or forms the base of the rebuilt alley, said remaining boards or base being indicated in the drawings by the reference character 27'. The said base or alley boards 27' are provided with a flat smooth surface over which is then laid a single ply of wood 66, which is in the nature of one-eighth inch (⅛") thick and of standard width. The said ply or base surface 66 is laid with its grain running transversely of the alley and the same is secured by suitable fastening means such as screws 67.

The upper surface of the said ply 66 is properly planed and sanded to provide a smooth surface whereupon it has applied thereto glue or adhesive 68 which serves the same purpose as the glue or adhesive 52 applied to the upper surface of the upper base board 41. The new alley boards 69 are then mounted on the base surface or ply 66 in the same manner as above set forth, namely, by securing half of the alley inwardly of each side thereof through bar clamps 57 and 58 and the hold down wedges 65 and the hold down planks that cooperate

therewith. It being understood that the central space, the space between the alley halves, being suitably closed by a final alley board glued and secured in position as above pointed out.

From the foregoing it will be noted that the improved bowling alley of the present invention, whether a new installation or a rebuilt alley, comprises a suitable and solid foundation to which is secured the alley base and on which is glued the alley surface. In each installation, an original alley or a rebuilt alley, the foundation comprises the concrete slab **23** on which is disposed the runners **24** having secured thereto the transverse beams **25**. The beams **25** in the rebuilt alleys having disposed thereon the insulating carpet or strips **29** while the said beams **25** in an original alley installation have tacked thereto the blocks **38, 39** and **40** with the insulating carpet or strips **45—46** between said blocks. Disposed on the foundation in the original alley construction is the base comprising the plywood base boards **33** and **41** which are each of the size designated as three-fourths inch (¾") plywood while on the foundation of a rebuilt alley would be the remaining portion of the original alley boards **27'** together with the surface ply **66** and which boards **27'** and surface ply **66** constitutes or forms the base of the rebuilt alley. In an original alley the said base would have glued thereto the surface alley boards **47** along with the alley side boards **34** and **35** while in the rebuilt alley the base would have glued thereto the alley boards **68**.

In each instance the said alleys would then have applied along their sides the gutters **14** and **15** of a form such as illustrated in the drawings or any other desirable or acceptable form.

In view of the foregoing it is believed now evident that there has been provided a bowling alley construction which meets the objects initially set forth.

What is claimed is:

1. In a bowling alley construction the combination of a longitudinally extending supporting foundation including a plurality of substantially equally spaced transversely extending cross members, a longitudinally extending substantially smooth surfaced base secured on said foundation cross members, a plurality of supporting blocks secured between each transversely extending cross member and said base with one block at each side edge of the base and one block located substantially centrally of said base, and a plurality of longitudinally extending alley boards secured to said base smooth surface.

2. In a bowling alley construction the combination of a longitudinally extending supporting foundation including a plurality of longitudinally extending stringers, a plurality of equally spaced transversely extending cross members secured to and upwardly of said stringers, a smooth surfaced base on said transversely extending cross members and secured thereto, a plurality of longitudinally extending alley boards on said base smooth surface, and adhesive securing said alley boards to said base surface.

3. In a bowling alley construction the combination of a longitudinally extending supporting foundation including a plurality of longitudinally extending stringers, a plurality of equally spaced transversely extending cross members secured to and upwardly of said stringers, a smooth surfaced base supplied by the surface of a ply of wood on said transversely extending cross members and secured thereto, a plurality of longitudinally extending alley boards on said base smooth surface, and adhesive securing said alley boards to said base surface.

4. In a bowling alley construction the combination of a longitudinally extending supporting foundation including a plurality of equally spaced transversely extending cross members, a smooth surfaced base on said transversely extending cross members and secured thereto comprising an upper and a lower base board, said lower base board being of a width equal, at least, to the width of the alley and said upper base board being of a width equal to the width of the alley less the width of the alley side boards, and alley boards running the full length of the alley and including the aforementioned alley side boards with said alley boards secured to one another and to the base boards.

5. In a bowling alley construction the combination of a longitudinally extending supporting foundation including a plurality of equally spaced transversely extending cross members, a smooth surfaced base on said transversely extending cross members and secured thereto comprising an upper and a lower base board, said lower base board being of a width equal, at least, to the width of the alley and said upper base board being of a width equal to the width of the alley less the width of the alley side boards, alley boards running the full length of the alley and including the aforementioned alley side boards with said alley boards secured to one another and to the base boards, and blocks between said base lower base board and each transversely extending cross member, one block at each side of the base and a block substantially centrally thereof and thereby providing a space below the base and above the transversely extending cross members between said blocks.

6. In a bowling alley construction the combination of a longitudinally extending supporting foundation including a plurality of equally spaced transversely extending cross members, a smooth surfaced base on said transversely extending cross members and secured thereto comprising an upper and a lower base board, said lower base board being of a width equal, at least, to the width of the alley and said upper base board being of a width equal to the width of the alley less the width of the alley side boards, wherefore said lower base board projects outwardly of said upper base board at each side thereof a distance equal to the width, at least, of an alley side board, alley boards running the full length of the alley and including the aforementioned alley side boards, adhesive between the projecting portions of the lower base board and the alley side boards for securing same to one another, and additional adhesive between the alley boards intermediate the side boards and the upper surface of the upper base board for securing the same to one another.

7. In a bowling alley construction the combination of a longitudinally extending supporting foundation including a plurality of equally spaced transversely extending cross members, a smooth surfaced base on said transversely extending cross members and secured thereto comprising an upper and a lower base board, said lower base board being of a width equal, at least, to the width of the alley and said upper base board being of a width equal to the width of the alley less the width of the alley side boards, wherefore said lower base board projects outwardly of said upper base board at each side thereof a distance equal, at least, to the width of an alley side board, blocks between said base lower base board and each transversely extending cross member, one block at each side of the base and a block substantially centrally thereof and thereby providing a space below the base and above the transversely extending cross members between said blocks, alley boards running the full length of the alley and including the aforementioned alley side boards, adhesive between the projecting portions of the lower base board and the alley side boards for securing same to one another, and additional adhesive between the alley boards intermediate the side boards and the upper surface of the upper base board for securing the same to one another.

8. In a bowling alley construction the combination of a longitudinally extending supporting foundation including a plurality of equally spaced transversely extending cross members, a smooth surfaced base on said transversely extending cross members and secured thereto comprising an upper and a lower base board, said lower base board being of a width equal, at least, to the width of the alley and said upper base board being of a width equal to the width of the alley less the width of the alley side

boards, wherefore said lower base board projects outwardly of said upper base board at each side thereof a distance equal, at least, to the width of an alley side board, blocks between said base lower base board and each transversely extending cross member, one block at each side of the base and a block substantially centrally thereof, insulation between the transversely extending cross members and the under surface of the base and between the aforementioned blocks, alley boards running the full length of the alley and including the aforementioned alley side boards, adhesive between the projecting portions of the lower base board and the alley side boards for securing same to one another, and additional adhesive between the alley boards intermediate the side boards and the upper surface of the upper base board for securing the same to one another.

9. In a bowling alley construction a foundation comprising a supporting surface, longitudinally extending stringers on said supporting surface substantially defining the width of the bowling alley and the center thereof, transversely extending cross members equally spaced from one another throughout the length of the bowling alley, and supplementary supporting blocks on each transversely extending cross member one located above each longitudinally extending stringer, an insulation strip on each transversely extending cross member between the blocks thereon, and a bowling alley secured to the transversely extending cross members and including a base secured through the supporting blocks to each cross member, longitudinally extending alley boards on the base, and adhesive for securing the alley boards to the base and to one another in face contact.

10. In a bowling alley construction a foundation comprising a supporting surface, longitudinally extending stringers on said supporting surface defining the width of the bowling alley and the center thereof, transversely extending cross members equally spaced from one another throughout the length of the bowling alley, and supplementary supporting blocks on each transversely extending cross member one located above each longitudinally extending stringer, an insulation strip on each transversely extending cross member between the blocks thereon, and a bowling alley secured to the transversely extending cross members and including a base secured through the supporting blocks to each cross member, said base including a lower base board of a width equal, at least, to the width of the bowling alley as measured across the said bowling alley and including side boards thereof, an upper base board secured to the lower base board of a width equal to the width of the bowling alley as measured between the said alley side boards whereby said lower base board has an exposed portion longitudinally and outwardly of the side edges of the upper base board, alley boards including the alley side boards on and longitudinally of the supporting base boards with said alley side boards on the projecting and exposed portions of the lower base board and the intermediate alley boards on the upper base board, and means securing said alley boards to their respective base boards.

11. In a bowling alley construction a foundation comprising a supporting surface, longitudinally extending stringers on said supporting surface defining, in general, the width of the bowling alley and the center thereof, transversely extending cross members equally spaced from one another throughout the length of the bowling alley, and supplementary supporting blocks on each transversely extending cross member one located above each longitudinally extending stringer, an insulation strip on each transversely extending cross member between the blocks thereon, and a bowling alley secured to the transversely extending cross members and including a base secured through the supporting blocks to each cross member, said base including a lower base board of a width equal, at least, to the width of the bowling alley as measured across the said bowling alley and including side boards thereof, an upper base board secured to the lower base board of a width equal to the width of the bowling alley as measured between the said alley side boards whereby said lower base board has an exposed portion longitudinally and outwardly of the side edges of the upper base board, alley boards including the alley side boards on and longitudinally of the supporting base boards with said alley side boards on the projecting and exposed portions of the lower base board and the intermediate alley boards on the upper base board, and adhesive on the exposed longitudinal portions of the lower base board and the upper surface and longitudinal edges of the upper base board securing the said alley side boards to the exposed surfaces of the lower base board and respectively to the adjacent edges of the upper base board and securing the alley boards between the alley side boards to the upper base board.

12. In a bowling alley construction the combination with a foundation including a plurality of equally spaced transversely extending cross members, alley boards on said transversely extending cross members for the full length of the alley and of a combined width equal to the width of the alley, said alley boards each having a connection with the adjacent alley board on each side thereof and said alley boards together having a surface just above the said connection of said alley boards to one another, of a wood ply secured to the upper surface of said alley boards and with said wood ply having a smooth upper surface, additional alley boards on said wood ply smooth upper surface, and adhesive between said additional alley boards and wood ply smooth upper surface and between the faces of said additional alley boards securing the same to one another and to the wood ply upper surface.

13. The method of securing alley boards in operative position consisting in providing a smooth faced base of a width equal, at least, to the width of the alley including alley side boards and which base is rabbeted at its sides to receive said alley side boards, covering said base including its rabbeted sides with adhesive disposing an alley side board in each base rabbet, disposing alley boards in face contact with one another with adhesive therebetween in a group inwardly from each alley side board and with said groups each in face contact with its side board and having adhesive therebetween, said groups extending inwardly from its side of the alley base to a point short of the longitudinal center of the alley with said groups of alley boards spaced from one another at the said longitudinal center of the alley a distance equal to the width of an alley board, pressing said alley boards to one another in said groups each including its side board, applying downward pressure simultaneously to said groups through mechanism associated with each transversely extending cross member of a foundation located beneath the base, maintaining said pressure on the alley boards until the adhesive sets, and fitting and adhesively securing the final alley boards in the space between the groups.

14. The method of securing alley boards in operative position consisting in providing a smooth faced base of a width equal, at least, to the width of the alley including alley side boards and which base is rabbeted at its sides to receive said alley side boards, covering said base including its rabbeted sides with adhesive disposing an alley side board in each base rabbet, disposing alley boards in face contact with one another with adhesive therebetween in a group inwardly from each alley side board and with said groups each in face contact with its side board and having adhesive therebetween, said groups extending inwardly from its side of the alley base to a point short of the longitudinal center of the alley with said groups of alley boards spaced from one another at the said longitudinal center of the alley a distance equal to the width of an alley board, pressing said alley boards to one another in said groups each including its side board, applying downward pressure simultaneously to said groups through mechanism associated with each

transversely extending cross member of a foundation located beneath the base, maintaining said pressure on the alley boards until the adhesive sets, and fitting and adhesively securing the final alley boards in the space between the groups, said mechanism for pressing the alley boards against the base including a pressure transverse member upwardly of the alley boards and in vertical alignment with each foundation transversely extending cross member, tying each said transversely extending cross member to its pressure transverse member at points outwardly of each side of the alley, a pressure reacting transverse member on the alley boards beneath each pressure transverse member, and wedges between each

of said pressure reacting transverse members and its pressure transverse member for downwardly pressing the alley boards.

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