May 16, 1967 P. J. REGAN 3,319,600

BOWLING LANE SURFACE COATING DEVICE

Filed April 8, 1964 2 Sheets-Sheet 1

FIG. 1

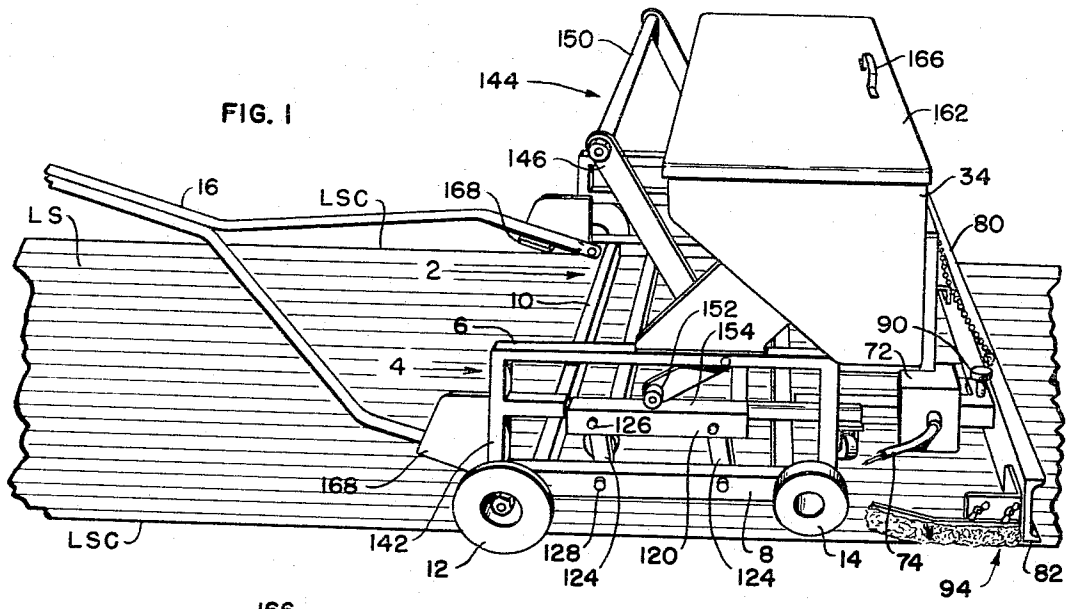
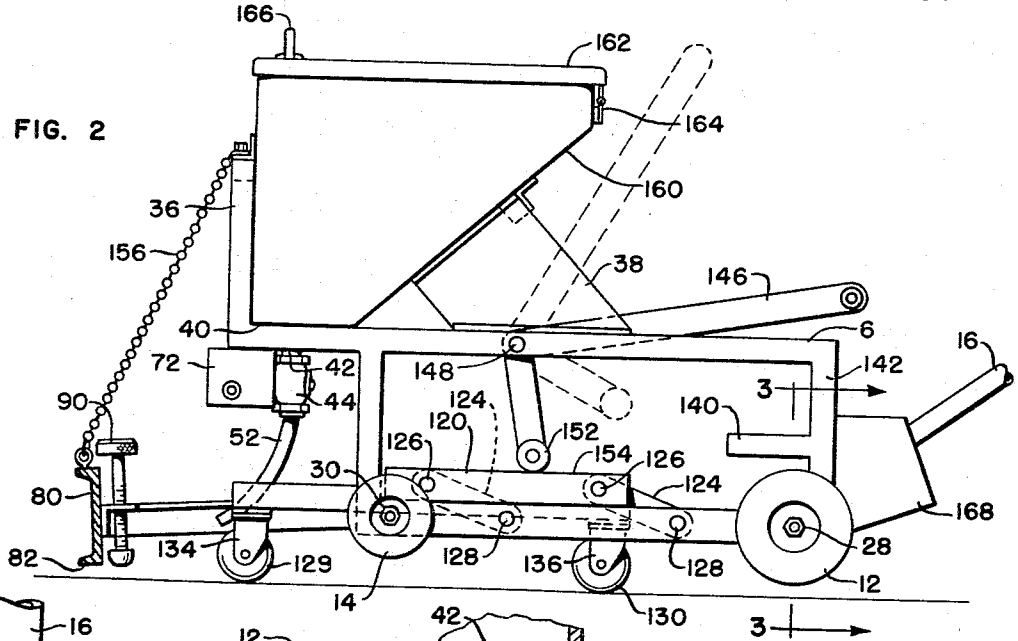


FIG. 2



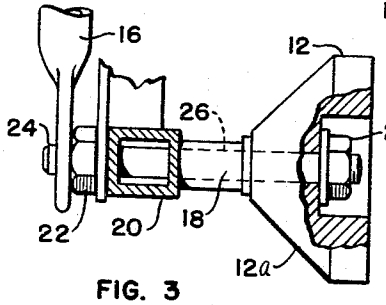


FIG. 3

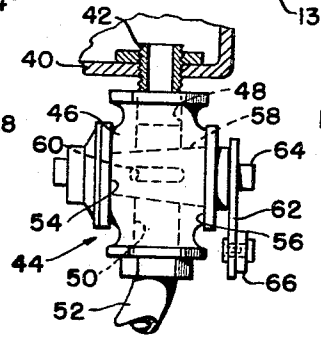


FIG. 9

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BOWLING LANE SURFACE COATING DEVICE

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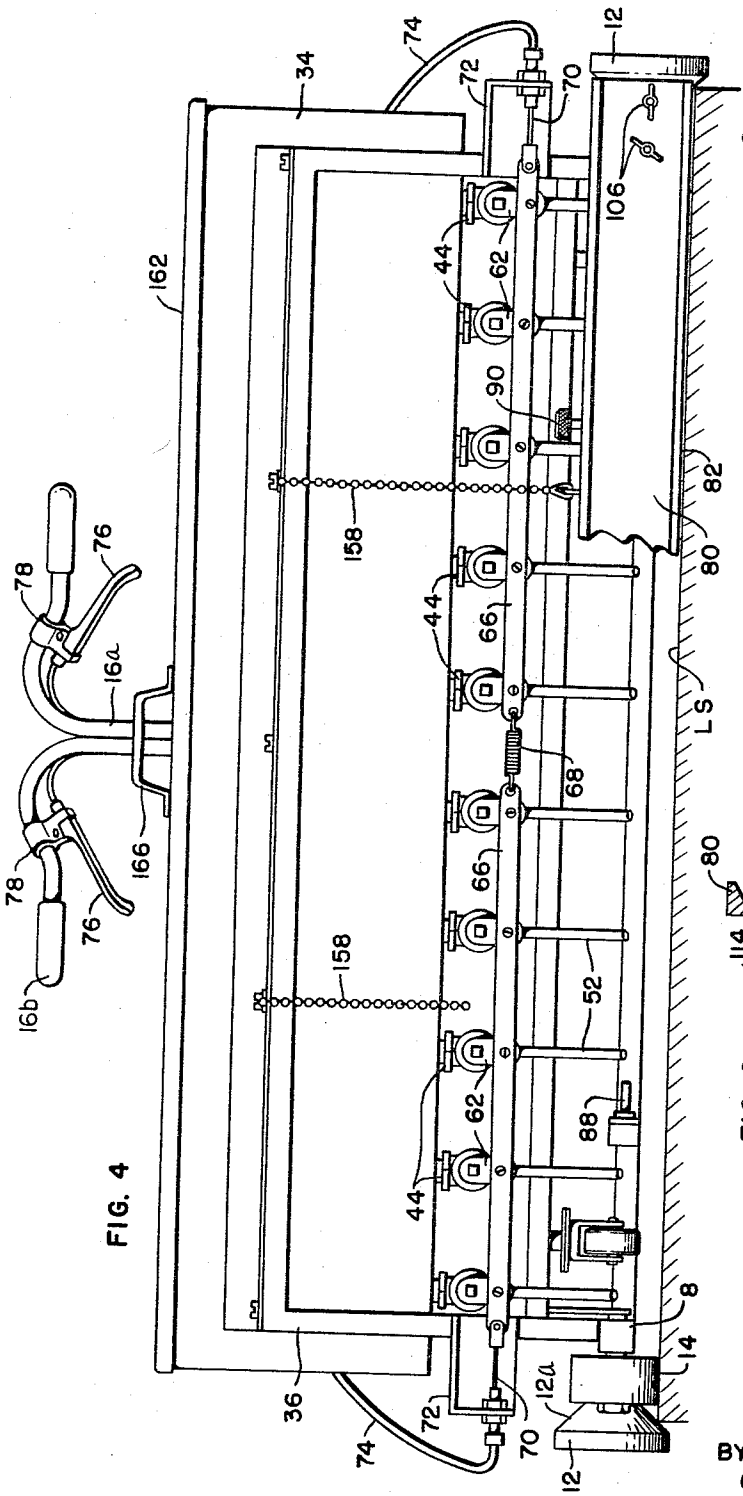


FIG. 4

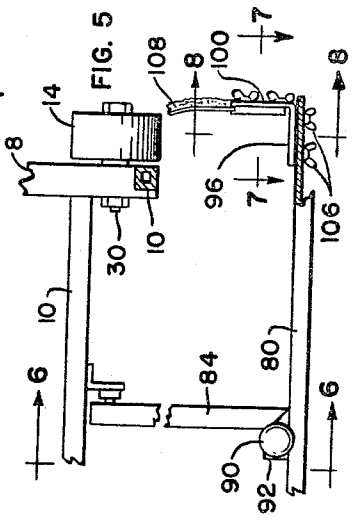


FIG. 5

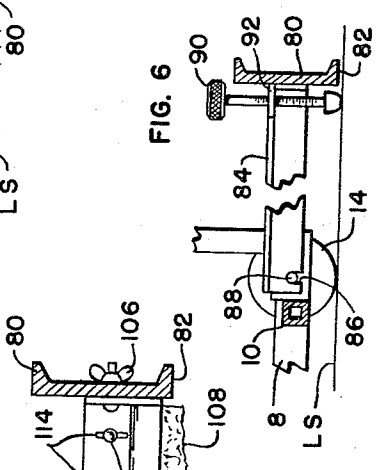


FIG. 6

FIG. 8

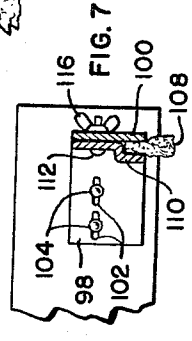


FIG. 7

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3,319,600

BOWLING LANE SURFACE COATING DEVICE

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Filed Apr. 8, 1964, Ser. No. 358,160
4 Claims. (Cl. 118—108)

This invention relates to a device for coating the surface of bowling lanes with a uniform thickness of lacquer, shellac, varnish, or other finishing material.

In order to meet American Bowling Congress requirements, the playing surface of bowling lanes must be regularly refinished, at least once every twenty-four months. Where play is heavy, they are customarily finished more often. The operation involves resurfacing the lane, as by sanding, to remove the old lacquer or other finish and to smooth the surface of depressions, grooves and high spots in excess of .040 inch. Thereafter a uniform thickness of an appropriate lacquer, shellac or similar transparent material is applied over the lane surface between the foul line and the tail plank. It has been found most satisfactory to apply the finish coating by using an applicator which extends across the full width of the lane surface. A puddle of the coating lacquer material is deposited onto the lane surface in front of the applicator and the applicator slowly pulled forwardly as to distribute the lacquer across the width of the lane surface. As the puddle of lacquer diminishes more is added. Conveniently, the lacquer is confined within a tank having an appropriate discharge nozzle, the tank being mounted on a frame which also supports the applicator and guide means comprising wheels on the ends of arms affixed to either side of the frame which engage the outside shoulder of the two channels or divisions on each side of the lane surface to keep the applicator on the lane and in line as the apparatus is pulled lengthwise thereof.

A general object of the present invention is to provide improved coating apparatus having the aforedescribed general utility.

More specifically, the invention contemplates structure which is guided on the edges of the lane surface itself and has none of the attendant problems of set-up and adjustment of the prior art devices.

It is well known that the width of bowling lane surfaces vary in accordance with the quality of the materials employed and workmanship utilized in the construction of the lanes. Also there is a problem of changes through warpage and with age. Recognizing this, the American Bowling Council standards state that the lane width may vary between 41 and 42 inches and that including the gutters the total width should be kept between 60 and 60¼ inches. No standards are set for the dimensions and/or spacing of the dividers between lanes.

In accordance therewith, the present invention provides an applicator or lane surface coating device which is guided by the rollers on which the frame moves lengthwise of the bowling lane and so that there are no problems of set up or adjustment of the guide means to the variations of spacing between the divisions or channels when changing lanes. Neither is there any problem of binding or loss of guide contact because of variations in the spacing between said divisions or channel walls at different points lengthwise of a lane.

Rather it is a feature of the present invention that not only are the cumbersome and unwieldy, although considered necessary, guide arms of the prior art omitted but that the coating device automatically compensates for variations in the width of the lane surface. At the same time the device holds true when moved lengthwise of the lane.

More specifically, it is a feature of the present invention that the frame which supports the coating material for discharge onto the lane surface moves on rollers which turn on fixed parallel spaced axles at least one pair of which are conically shaped and spaced apart to ride on the corners of the two edges of the lane surface. The conical wall of these guide rollers accurately align the coating device with respect to the lane surface without marring the lane surface. At the same time they readily and automatically accommodate to variations in the width of the lane as the device is moved lengthwise thereof.

A further feature of the invention is that the applicator for distributing the puddle of lacquer uniformly across the width of the lane comprises a rigid spreader bar which is pivotally connected to the frame behind the coating discharge means and is free to swing about a horizontal axis coinciding with the axis about which the rear pair of rollers turn. This provides, one, the advantage that the spreader bar can be accurately adjusted to a required height above the lane surface and which height it can maintain independently of any rise and fall of the main frame as its conical guide rollers adjust to variations in lane width. Conversely, it will be apparent also that the height adjustment of the spreader bar being independent of the longitudinally guided frame can be set at a small angle rather than exactly horizontal if it should be desired to provide a thicker coating on one of the lane surfaces, for example.

Still another feature of the invention is the provision of an applicator in the form of a spreader bar which uniformly distributes the deposited coating material across the width of the lane surface to a predetermined height or thickness but which also is adapted to inhibit the spilling and/or dripping of the coating material into the channels along either side of the lane surface.

Still another feature of the invention is the provision of a bowling lane surface coating device such as described above, having auxiliary rollers or which may be optionally brought into operation to permit convenient and steerable movement of the device between lanes and/or to and from storage.

In accordance with the invention such rollers are provided on a second or auxiliary frame which is pivotally linked to the main frame of the coating device so that the auxiliary rollers may be located at a height so as to be out of contact with the bowling lane surface in the normal use of the coating machine. Operating means are, however, associated with said auxiliary frame which may be utilized when the auxiliary rollers are brought into contact with the surface beneath to pivot the main frame and the supported tank and spreader bar about said pivotally limited connection to elevate or jack the main frame off said surface. As previously mentioned, in accordance with the invention, the rollers mounted on the main frame turn about fixed parallel horizontal axes whereas the rollers on the auxiliary frame swivel about vertical axes which permit convenient manipulation and steering of the device when it is desired to move it from one location to another, as between lanes and to or from the storage area.

Many other objects, advantages and/or features of the invention will be apparent or will become so from the description of a preferred embodiment of the invention which is hereinafter described and illustrated in the accompanying drawings. In said description of a preferred embodiment of the invention it will be understood, of course, that many changes, modifications and/or rearrangements of the mentioned parts of the described device may be had within the spirit of the invention and as defined by the appended claims wherefore said description is to be taken not in a limiting sense, but as illustrative of the invention.

Therefore, now referring to the drawings and the several views wherein like parts are identified by like reference numerals:

FIGURE 1 is a perspective view taken from one side of the illustrated embodiment of the invention showing the same in position of use on a bowling lane, its handle being fragmented for lack of space to illustrate the same, but is shown in other views;

FIGURE 2 is a side elevational view of the device illustrated in FIGURE 1 and shows the auxiliary frame in down position and ready to be locked so that the device may be moved from one lane to the other and to or from the storage area;

FIGURE 3 is a sectional view taken along lines 3—3 of FIGURE 2 looking in the direction of the arrows and illustrates the shape of, and means of mounting, the forwardly located conical-shaped guide rollers on which the forward end of the main frame is supported;

FIGURE 4 is a front elevational view of the device with a portion of the spreader bar cut away for convenience in illustration of details of structure comprising the device, however also showing details in the handle omitted from FIGURE 1;

FIGURE 5 is a fragmented top plan view showing the connection of the spreader bar to the main frame of the device;

FIGURE 6 is a vertical sectional view taken along lines 6—6 of FIGURE 5 looking in the direction indicated by the arrows to show further details in the construction of the spreader bar and means of adjusting its height off the lane surface;

FIGURE 7 is a vertical sectional view taken along lines 7—7 of FIGURE 5 looking in the direction indicated by the arrows showing details of the adjustable dam portions provided the ends of the spreader bar which wipe the edges of the bowling lane surface to remove accumulation of lacquer and prevent spill or dropping of the lacquer into the lane channels;

FIGURE 8 is a vertical sectional view taken along lines 8—8, also in FIGURE 5, and looking in the direction indicated by the arrows to show further details in the construction of said dam portions; and

FIGURE 9 is an enlarged view showing details in construction of the coating discharge control valves which are manually operable to discharge coating material from the tank carried by the main frame onto the lane surface in front of the spreader bar.

Referring now more specifically to the several views generally referred to above, and first to FIGURE 1, the illustrated embodiment of the invention comprises a main frame indicated at 2 embodying a pair of generally rectangular shaped side frame portions 4 each including an upper horizontal piece 6 and a lower horizontal piece 8, the two side frame portions being united by spaced connection pieces 10 which extend between and are end-joined to lower horizonal pieces 8. Preferably said frame pieces are of squared tubular metal stock or other light weight rigid construction. At 12 are a pair of conical shaped wheels of guide rollers and at 14 are a pair of cylindrically shaped wheels or rollers on which the machine is moved lengthwise of a bowling lane surface LS by an operator pushing or pulling on handle 16. As illustrated in FIGURE 3, conical rollers 12 are each rotatably mounted on separate but axially aligned axles 18 which are disposed in bearings 20 provided on the two lower horizontal pieces 8 of the main frame 2 adjacent the forward ends thereof. Threadedly connected to the inner end of the axles 18 are nuts 22 which engage the inner side of bearing portion 20 and are threaded inwardly a sufficient distance to leave portions over which one end of handle 16 is releasably received. On the other side of bearing 20 is a sleeve 26 enclosing the axle 18 and against which conical roller 12 engages. At 28 is a second nut threadedly connected to the outer end of axle 18 so as to retain the roller in place. The two axles 18 are thus held in fixed aligned relation permitting rollers 12 to turn about a horizontally disposed common axis. Referring now to FIGURES 4 and 5, rearwardly-located cylindrical rollers 14 are similarly detachably mounted to rotate on spaced concentrically aligned axles 30 mounted in bearings provided in the horizontally disposed lower pieces 8 of the main frame 2 adjacent their rear end and so that rollers 14 are free to turn about a fixed horizonal axis spaced from and parallel to the axis about which the forwardly disposed conical rollers 12 turn. Cylindrical rollers 14 are mounted on their axles so as to be spaced apart a distance less than the width of a bowling lane surface but so as to be adjacent the edges thereof as the device is moved lengthwise of the bowling lane. Conical rollers 12 on the other hand, are spaced apart so that their conical surfaces 12*a* ride on the corners LSC constituting the opposed side edges of the bowling lane surface. For this reason, it will be appreciated that said conical surfaces 12*a* are arranged with their smallest diameter disposed inwardly toward each other and the axial width of said conical surfaces 12*a* is sufficient to accommodate variations in the lane surface width without running off. Thus to comply with ABC requirements, the inner limits of conical surfaces 12*a* of rollers 12 will be spaced apart less than 41 inches and their outer limits will be more than 42 inches apart. Consequently as the device is moved lengthwise of the lane surface LS on rollers 12 and 14, the forward end of frame 2 which supports rollers 12 will rise and fall as the contact of the conical surfaces 12*a* of rollers 12 with corners LSC move in and out with variations in the lane surface width, said rise and fall effectively being about the axis on which the rearwardly disposed wheels 14 turn.

At 34 is a tank appropriately supported on the upper horizontal pieces 6 of the two side portions 4 of frame 2 as by angled extension 36 thereof (FIGURE 2) and inclined braces 38 to which the tank 34 may be appropriately welded or otherwise secured. Communicating with the bottom wall 40 of tank 34 through suitable pipe fittings 42 are valve members indicated generally at 44. Valves 44 are appropriately located at spaced intervals along its longer dimension of tank 34 which extends tranversely of the lane surface in the normal use of the device in order to accommodate discharge of lacquer or other appropriate coating material from tank 34 in a puddle across most if not the entire width of the bowling lane surface LS. Discharge valves 44 may be of any appropriate construction and in FIGURE 9 are illustrated as comprising a housing 46 having an entrance 48 connected by the aforementioned pipe fitting 42 to the bottom wall of tank 34, and an exit 50 connecting with a discharge tube 52 preferably of a rigid material and which is angled rearwardly and is of a length to discharge the coating material on opening of valve 44 inmmediately adjacent the lane surface and behind rollers 14. Between said entrance 48 and exit 50, in the front and rear walls of valve housing 46 are a pair of openings 54 and 56 which constitute bearings in which is rotatably supported a tapered valve plug 58 having an opening 60 therethrough. As illustrated in FIGURE 9, valve plug 58 extends transversely of the axes of the entrance 48 and exit 50 of the valve housing and so that in the indicated position of plug 58, its opening 60 is at right angles to said entrance 48 and exit 50. In this position, plug 58 bars the passage of coating material from the tank through the valve into discharge tube 52. However, by rotating plug 60 on its axis through 90 degrees its opening 60 may be aligned with entrance 48 and exit 50 in the valve housing to allow the passage of the coating fluid therethrough and its discharge tube 52. Suitable seals may be located in openings 54 and 56 about the ends of the valve plug 58 to prevent leakage therethrough.

Considering now FIGURE 4 in connection with FIGURE 9, the aforesaid rotation of valve plug 60 is effected

by the operator through a plurality of links 62 each of which has its upper end fixedly seating about the squared end 64 of a respective valve plug 58 of valves 44. The lower end of one half said links 62 is pivotally connected to one of a pair of aligned horizontally extending actuator arms 66 (FIGURE 4) and the other half of said links 62 being piovtally connected to the other of said actuator arms 66. At 68 is an intermediately disposed spring connected to the inner adjacent ends of said actuator arms 66, the outer ends of said actuator arms being operably connected to respective cables 70. At 72 are mountings to which one end of a flexible sheath 74 is secured, said sheaths 74 enclosing cables 70 and which, respectively, extend along the length of the two portions 16*a* comprising handle 16 and connected to spring tensioned operating levers 76 pivotally mounted by members 78 to the outwardly turned ends 16*b* which constitute the gripping portions of handle 16. Levers 76 by reason of their location provide convenient means for opening and closing valves 44 to permit discharge of lacquer or other coating liquid from tank 34 onto the lane surface for leveling and distribution by spreader bar 80. Levers 76 may be individually or both squeezed so as to pivot about their connection to means 78 to cause either or both cables 70 to draw the associated actuator arm 66 against the tension of spring 68 whereby to effectively rotate links 62 pivotally connected thereto and thereby the valve plugs 58 in the associated valve housing 46, to permit discharge of the lacquer or other coating stored in tank 34, as long as pressure is exerted on lever or levers 76. As soon as pressure thereon is relieved, the spring tension in said levers 76 will return them to their normal position and as illustrated in FIGURE 4, relieving their pull on cable or cables 70 and allowing spring 68 to return said actuator arm or arms 66 to their normal position and which closes the valves 44. It will be understood that any number of such associated valves and associated discharge tubes 52 may be employed in accordance with the invention. Preferably, however, they should be in sufficient number and so spaced as to permit discharge of a puddle of the coating material onto the lane surface which will extend substantially across the full width of the lane. Also, if preferred, actuator arms 66 can be combined as one arm to which all the valves are operably connected through links 62; in which event a single control cable 70 and actuating lever 76 would be sufficient to operate the valves. Also the number of valves operably connected to each actuator arm 66 may be unequal fractions of the total number. The illustrated arrangement, however, permits the operator to optionally discharge the fluid in a puddle either completely across the width of the lane and/or to increase the size of the puddle either at the left or right hand side only of the lane surface to meet specific requirements.

Referring now to FIGURE 1, spreader bar 80 is illustrated as channel shape in cross section and having a lower rigid leveling face 82 which extends across the width of the lane surface behind the discharge end of tubes 52 and which serves to spread the puddle of coating material uniformly across the width of the lane surface LS and to a required thickness as determined by the height thereof off the lane surface LS.

Referring to FIGURES 4, 5 and 6, secured immediate the ends of spreader bar 80 are a pair of forwardly extending arms 84 each having a notch 86 in the underside of their forward end which removably hooks over a respective one of a pair of aligned horizontally extending pivot pins 88 projecting rearwardly from the rearmost one of connecting struts 10 of the main frame 2, said pivot pins 88 defining an axis coinciding with the axis of axles 30 on which rollers 14 turn. At 90 are a pair of vertically adjustable pins threadedly connected into portion 92 affixed to spreader bar 80 adjacent its connections with pivot connection arms 84. Adjustable pins 90 serve to locate the lower face 82 of the spreader bar 80 off the lane surface LS and which height or spacing may be adjusted by threading pins 90 in and out of their threaded connections. Preferably the lower end of said height adjustable pin members 90 is ball shaped so as to have a minimum contact with the lane surface. It will be further understood that by reason of their location forwardly with respect to leveling surface 82 of the spreader bar 80 that they move through the puddle of coating material in advance of the contact of the surface 82 of spreader bar with said puddle so that the spreader bar nevertheless performs its function to uniformly distribute the puddle lacquer and produce a continuous coating thereof across the width of the lane surface which is of a thickness determined by the spacing of its said surface 82 from the lane surface.

As illustrated in FIGURE 1, spreader bar 80 carries at its opposite ends dam means 94 which effectively wipe the outermost edge and/or shoulder of the bowling lane surface LS so as to prevent the puddle spilling over or dripping of the lacquer off the lane surface into the adjacent channel. Such means are illustrated most clearly in FIGURES 5, 7 and 8, wherein it will be seen that each comprises an angled member 96 having a transverse section 98 and a forwardly disposed section 100. Transverse section 98 is provided with a pair of horizontally elongated slots 102 through which mounting bolts 104 extend for adjustable connection thereof to spreader bar 82, wing nuts 106 (FIGURE 5) being threadedly connected to the ends of said bolts. Forwardly extending section 100 serves as a support to which a piece of resilient plastic or lamb's wool 108 (FIGURE 7) is clamped between said section 100 and member 110 as by bolts 112 which extend through aligned openings 114 provided in said members 110 and section 100 and have wing nuts 116 threadedly connected to the ends thereof. As illustrated in FIGURE 8, the openings 114 in member 110 are vertically elongated so as to accommodate vertical sliding adjustment of clamp member 110 relative to forward section 100 of dams 94 in order to locate lamb's wool or plastic piece 108 higher or lower with respect to leveling surface 82 of spreader bar 80. Such need may occur, for example, with wear of piece 108 or when the spreader bar 80 is to be supported in a tilted position, that is other than parallel to the lane surface LS.

The operation of the coating device should be at once apparent from the above description of its construction. However, to briefly review, after the bowling surface LS has been properly sanded or cleaned, and is otherwise ready to be finished by coating with an appropriate lacquer or other finishing liquid, the coating device is moved into aligned position at the foul line and so that the conical surfaces 12*a* of wheels 12 engage the corners LSC of the lane surface. By means of its handle 16 the operator then pushes the device lengthwise of the bowling lane to the tail plank. Assuming tank 34 to be sufficiently filled with the required finishing lacquer or other liquid and means 90 adjusted to set the leveling surface 82 of the spreader bar at a height off the lane surface which will produce the thickness of coating desired to be applied, the operator will squeeze both control levers 76 so as to open all the valves 44 in order to deposit a puddle of the coating lacquer across the width of the lane surface. As soon as a sufficiently large puddle has formed, he will close the valves by releasing his grip on levers 76 and start to pull the machine back slowly. As the device is pulled back to the foul line the surface 82 of spreader bar 80 strikes off the top of the puddle of coating lacquer, causing it to flow uniformly laterally of the lane surface and so as to leave behind a continuous uniform thickness of the lacquer across the full width of the lane surface and to a height or thickness determined by the setting of the spreader bar's lower surface 82. As the puddle diminishes in size, the operator adds to the puddle by squeezing either or both levers 76 to replenish the same.

Simultaneously pieces 108 of dams 94 on the two ends of the spreader bar 80 effectively dam the puddle and also wipe the outermost two edges or shoulders of the lane surface so that the coating lacquer does not drip or spill over into the two channels. As the device is being pulled up the lane toward the foul line, the conical surface 12*a* of its guide rollers 12 ride the corners LSC of the lane surface automatically adjusting to the varying width of the lane surface, guiding the device so that the spreader bar 80 does not move off the lane surface but remains exactly aligned therewith. The pivotal connection of the spreader bar 80 about pins 88 assures that its set height is not interrupted or changed as the forward end of the main frame 10 rises and falls in response to the axial shift of the contact of the lane surface corners with the conical surfaces 12*a* of the guide rollers 12 with variations in the lane surface width. Neither is the adjusted height of pieces 108 on bar 80 shifted thereby. It is therefore apparent that the invention provides a device which is simple to operate and at the same time provides an exceedingly accurate control over the forming continuous coating of lacquer and with none of the problems attendant prior art devices growing out of the varying width of the channels and diverse spacing of the channel walls and dividers along the outside of the channels which were previously relied upon to guide the coating devices.

As previously indicated, guide rollers 12 and cylindrical rollers 14 are mounted on frame 2 to turn about fixed parallel horizontally disposed axes which assist the guiding function of the conical surfaces 12*a* of guide rollers 12 by preventing weaving of the machine during its lengthwise traverse of the bowling lane surface either down toward the tail plank and most importantly, on its return to the foul line during the actual coating operation. However, the mounting of rollers 12 and 14 on fixedly located axles is not conducive to steering of the device as when it is desired to move the device from one lane to another or to bring it from or return it to a storage area. For this purpose, the invention also provides an auxiliary frame which may be operated to optionally jack rollers 12 and 14 out of contact with the surface on which the device is to move and to substitute therefor rollers which swivel about vertically disposed axes. Referring therefore to FIGURES 1 and 2 an auxiliary frame is illustrated at 120 located below tank 34 and above the horizontal struts 10 which unite the rectangular side frame portions 4 of the main frame 2. Identified at 124 are two pairs of links pivotally connected at one end by connection means 126 to the opposed sides of said auxiliary frame 120 and pivotally at their opposite end to lower horizontal pieces 8 of the two side portions 4 of the main frame 2 by connection members 128. On the underside of said auxiliary frame and inwardly of their two sides so as to clear side portions 4 of the main frame 2 are forward and rearwardly located pairs of caster wheels 129, 130 which are supported by appropriate mounting means 134, 136 so as to turn freely about vertically disposed axes. When the device is in use as illustrated in FIGURE 1, auxiliary frame 120 is spaced above horizontal pieces 8 of the main frame 2 with its pivotal connections 126 to link 124 disposed forwardly of vertical planes containing the pivotal connections 128 of the respective links 124 with horizontal pieces 8 and engaging support elements or stops 140 on uprights 142 of frame portions 4. In this position caster wheels 129, 130 are effectively locked in position above and out of contact with the lane surface LS. When it is necessary to move the device from one lane to another or to bring the device from or return it to the storage area, auxiliary frame 120 is manually moved rearwardly away from stops 140 and about the pivotal connections of links 124 therewith and frame 2 until its caster roller wheels 129, 130 engage the surface beneath.

Indicated generally at 144 is a bell-crank lever comprising two angled arms 146 pivotally connected intermediate their ends as by pivot connections 148 (FIGURE 2) to the upper horizontal pieces 6 of the main side frame portions 4. The upper ends of said angled arms 146 are joined by cross bar 150 and their opposite ends have rollers 152 mounted thereon which engage the upper surface of portions 154 of the auxiliary frame 120 which functions as the support element for rollers 152 and frame 142. As illustrated in FIGURE 1 and shown by dotted lines in FIGURE 2, rollers 152 rest midway of the ends of surfaces 154 of auxiliary frame when it is in its "up" position and against stop 140. When frame 120 is moved rearwardly and downwardly so as to bring its caster wheels 129, 130 into engagement with the surface beneath, bell-crank lever is then useful by exerting downward pressure on cross bar 150 to pivot its angled side arms 146 about pivot connection 148 with the pieces 6 of the main frame 2 to cause rollers 152 to move rearwardly along surfaces 154 of the auxiliary frame 120 past a vertical plane including pivotal connection 148. This effectively jacks the main frame 2 to raise its guide rollers 12 and cylindrical rollers 14 off said surface and lock the main frame in this jacked position and so that the device may be then moved about on the surface and readily steered by reason of swivelly connected pairs of caster wheels 129, 130. Limit means such as chains 156 (FIGURE 2) connected between the spreader bar 80 and the upper edge of angled extensions 36 may be provided to cause the spreader bar to be raised with the frame 2 when it is jacked off the surface by operation of bell-crank means 144.

Conveniently, tank 34 may be provided with a cover 162 hingedly connected thereto as at 164 and which cover may also have a handle 166. Also, if desired, ledges may be provided at 168 to support handle 16 in its low position.

From the aforedescription of one embodiment of the invention it will be apparent that all of the recited objects, inventions and features thereof have been demonstrated as obtainable in a structure that is entirely practical and highly economical to manufacture, and which device at the same time is also exceedingly useful and efficient in its operation.

Having described the invention, I claim:

1. A bowling lane surface coating device comprising a frame having a first pair of cylindrical rollers spaced to run along the two opposed edges of a bowling lane when the device is propelled lengthwise of the lane and a second pair of rollers spaced forwardly of said first pair, said second pair of rollers being conical-shaped and spaced to ride on the corner of the two edges of the lane surface to prevent the device from running off the lane surface, a tank for coating material supported by said frame, discharge means communicating with said tank and adapted to discharge coating material across the width of the lane surface behind said pairs of rollers, leveling bar means extending across the width of the lane surface and pivotally connected to said frame to swing about an axis coincident with the axis about which said first pair of cylindrical rollers turn in propulsion of the device, and means for adjusting the height of said leveling bar means from the lane surface.

2. A bowling lane surface coating device comprising a frame having a first pair of cylindrical rollers spaced to run along the two opposed edges of a bowling lane when the device is propelled lengthwise of the lane and a second pair of rollers spaced forwardly of said first pair, said second pair of rollers being conically-shaped and spaced to ride on the corner of the two edges of the lane surface to prevent the device from running off the lane surface, a tank for coating material supported by said frame, selectively operable discharge means located behind said first pair of rollers, said discharge means communicating with said tank and adapted to discharge coating material onto the lane surface, a leveling bar extending across the width of the lane surface to spread the coating material uniform-

ly across the width of the lane surface, said leveling bar being removably connected to said frame to swing about an axis coincident with the axis about which said first pair of cylindrical rollers turn, and means carried by said leveling bar for adjusting the height thereof from the lane surface, said leveling bar further having means adjacent its two ends which engage the two edges of the lane for inhibiting flow of coating material off the lane surface.

3. A bowling lane surface coating device comprising a first frame having forwardly and rearwardly located rollers rotatably mounted on said first frame to turn about spaced parallel horizontally disposed fixed axes, the forward rollers being conically shaped and spaced to ride on the corner of the two edges of a lane surface to guide the device lengthwise of the bowling lane, means carried by said first frame adapted for discharging coating material onto the lane surface behind its said rollers, an adjustable spreader bar extending across the width of the lane surface behind the discharge means pivotally connected to said first frame to swing about a horizontal axis parallel to that about which the rear rollers turn, and an auxiliary second frame having spaced swivelly connected rollers for supporting the second frame from the lane surface, means pivotally connecting said second frame to said first frame for alternately moving said first and second frames between high and low positions relative to each other, and a support element on each of said frames for supporting the other frame with the other frame in high position with its rollers above the lane surface.

4. A bowling lane surface coating device comprising a first frame having supporting rollers for riding on the lane surface and a pair of guide rollers spaced from each other and extending below the bowling lane surface for rolling on the lane edge to guide the device lengthwise of the bowling lane, means carried by said first frame adapted for discharging coating material onto the lane surface behind its said rollers, a spreader bar extending across the width of the lane surface, means mounting said spreader bar to said first frame transverse to the direction of guided travel of the device to overhang the frame in a poition behind the discharge means, an auxiliary second frame having spaced rollers for supporting the second frame from the lane surface, means pivotally connecting said second frame to said first frame for alternate movement of said first and second frames between high and low positions relative to each other, a support element on each of said frames for supporting the other frame with the other frame in high position with its rollers above the lane surface, crank means, and means pivotally mounting said crank means on said first frame to enable the crank means to engage the support element on said second frame for moving said first frame to its high position.

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