

Sept. 18, 1956

F. HUBER

2,763,019

FLOOR TREATING APPARATUS

Filed Aug. 11, 1953

2 Sheets-Sheet 1

Fig. 1.

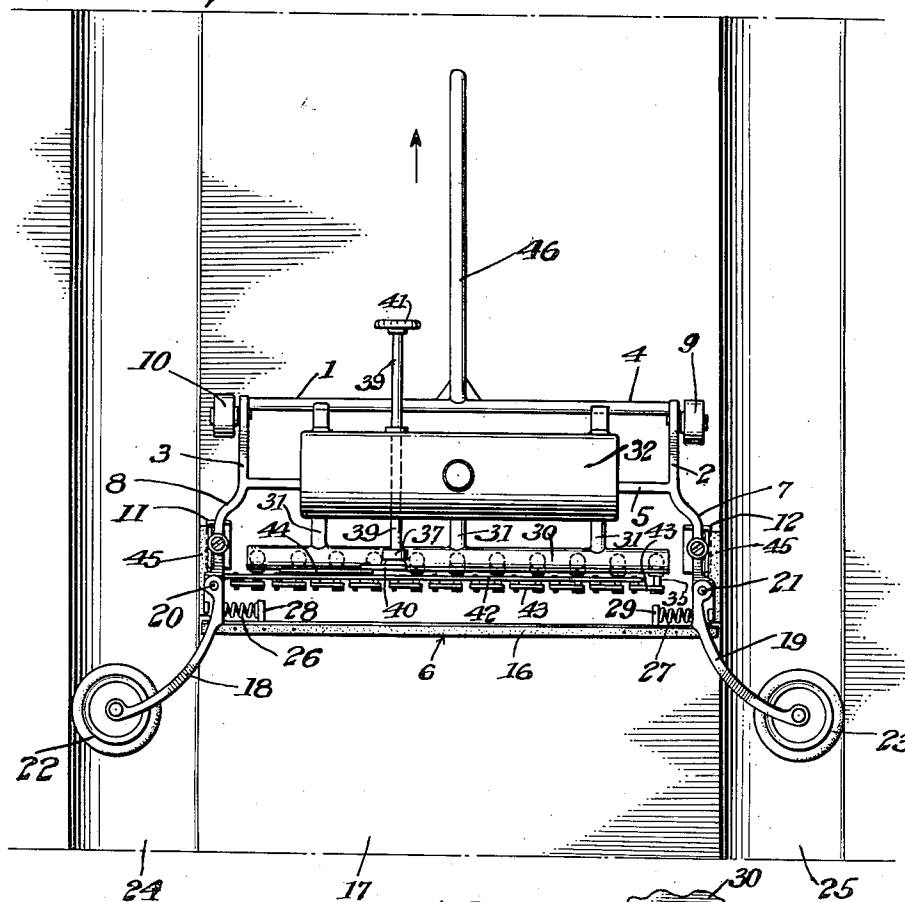


Fig. 3.

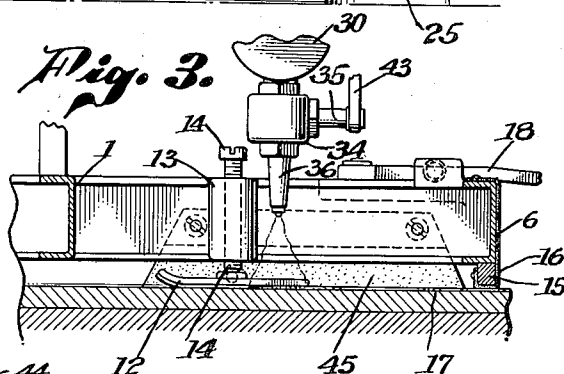
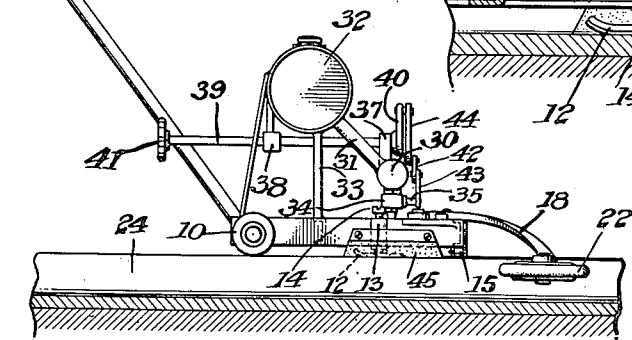


Fig. 2.



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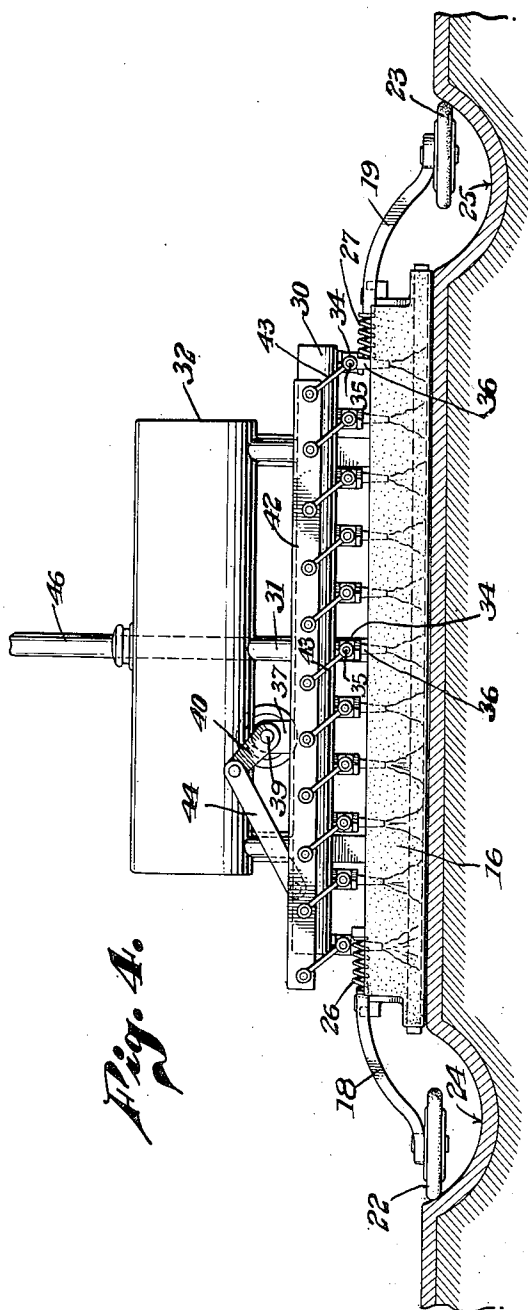
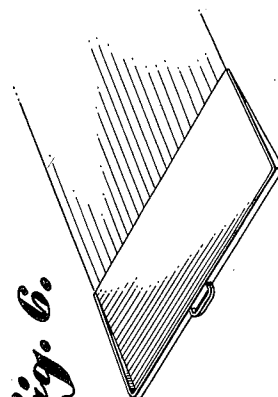
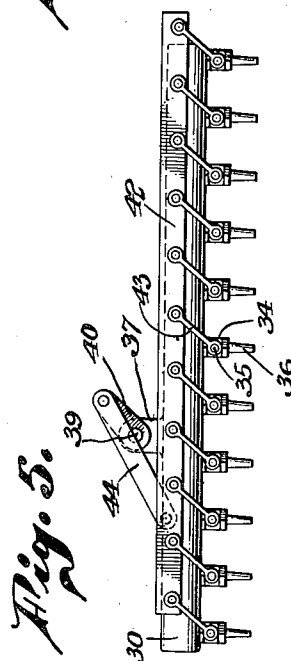
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FLOOR TREATING APPARATUS

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3 Claims. (Cl. 15—131.05)

The present invention relates to an applicator for applying a prepared liquid material to a bowling alley.

It is essential that a bowling alley be maintained in a finished condition, without scratches or high and low spots; otherwise, the bowling ball may be diverted and not run true upon the playing surface.

The present invention is adapted to refinish the alley by applying a prepared liquid material, such as lacquer, varnish, shellac, et cetera, to the playing surface in even or in varying amounts at different areas of the alley, all under the control of an operator.

An object of the invention is to provide an applicator of the character stated, which will maintain its position upon the alley during movement of the applicator. With reference to the foregoing object, it is essential that the prepared liquid material for refinishing the alley, should remain upon the alley and not flow into the gutters, and the present invention is so constructed and arranged as to assure that the gutters are maintained free of liquid material.

A further object is the provision of an applicator for applying lacquer, varnish and other liquid refinishing material to a bowling alley, and wherein the flow of said material onto the alley is automatic.

A further object is the provision of an applicator wherein the parts may be quickly assembled or: disassembled, economical of construction, easy to use, and generally superior to applicators now known to the inventor.

With the above mentioned and other objects in view, the invention consists in the novel and useful provision, formation, construction, association, and relative arrangement of parts, members and features, all as shown in a certain embodiment in the accompanying drawings, described generally, and more particularly pointed out in the claims.

In the drawings:

Figure 1 is a plan view of the applicator in position upon a bowling alley,

Figure 2 is a side elevation of the applicator shown in Figure 1, resting upon an alley, the alley being shown partly in fragment and in section,

Figure 3 is a fragmentary side elevation, partly in section, and on an enlarged scale, showing certain elements of the applicator,

Figure 4 is a trailing end elevation, partly in fragment, of the applicator shown in Figure 1, with the bowling alley shown in fragment and in section,

Figure 5 is a trailing end elevation of valve controlled nozzles for directing liquid material onto the alley, and,

Figure 6 is a fragmentary perspective view of a portion of the alley and a pan adapted to be placed at the foul line of the alley to catch liquid material as the applicator passes over the foul line.

Referring now with particularity to the drawings, the applicator includes a frame 1 of channel form, as best shown in Figure 3, and which frame is of open type, in that it is provided with two side members 2 and 3, and with transverse members 4, 5 and 6, interconnecting the side members. I have found it expedient, in the practice

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of my invention, to offset the side members in the manner shown in Figure 1, which is accomplished by providing reverse curved portions at 7 and 8. The construction is such that the side members at what may be termed the forward or leading end of the frame, carries wheels or rollers 9 and 10, which track with shoes 11 and 12 carried adjacent the rear of said frame. The wheels or rollers are mounted on the usual axles secured to the frame in any appropriate manner, while the shoes 11 and 12 are, in each instance, adjustably secured to the frame, and specifically the side members thereof.

Referring to Figure 3, each side member 2 and 3 is provided with an enlargement 13, provided with a screw-threaded bore adapted to receive a bolt 14, one end of which is rockably secured to a shoe, such as 12 and 13. The rockable connection between the shoe and bolt is not detailed, but it is of conventional practice, such as by providing a ball-like end for the bolt received within a socket of the shoe, or a pin connection between the end of the bolt and top of the shoe. In this manner, both the front and the rear of the frame is supported, the rear portion of the frame being adjustable as to height of support by adjusting the position of the bolt or bolts within the enlargements 13. The rear cross member 6 of the frame carries a depending bar 15 covered with a light felt or similar material 16, and which felt may likewise extend over the base and one of the legs of the member 6, as best shown in Figure 3. The bar 15 is termed the "coat" or liquid leveling bar, and adjustment of the bolts 14 will raise or lower the bar relative to the alley playing surface 17.

It is imperative, in a device of the character of this invention, that the frame should move along an alley and be guided in its movement and, accordingly, I have provided a pair of arms, one for each side of the frame, at 18 and 19, one end of each arm being pivoted at 20 and 21 to the frame, specifically to the side members 2 and 3, while the opposite ends of each arm rotatably carry wheels 22 and 23, which wheels may be rubber-tired. As shown in Figure 4, the arms are given a structural bend so as to position the wheels below the playing surface of the alley, and whereby said wheels are received within the gutters 24 and 25 on either side of the alley playing surface 17. The wheels 22 and 23 function as guides for the applicator and engage a portion of the wall bounding each gutter, as shown in Figures 1 and 4. The arms 18 and 19 are urged outwardly by providing springs 26 and 27. Each spring 26 and 27 has one end thereof positioned against a lug 28 and 29, carried by the frame, while the opposite end of each spring bears against an arm and specifically a flat area on said arm.

The present device is adapted to spread a prepared liquid material upon the playing surface 17 of the alley and, accordingly, I provide a transverse distributing pipe or manifold 30, which has connection, by means of spaced feed pipes, each designated as 31, with a supply tank 32. The supply tank is held in an elevated position above the frame 1 by means of posts, designated as 33, secured to the frame, so that any liquid within the supply tank will be fed through the feed pipes under gravity to the manifold 30. In the present instance, the manifold 30 is supported by the feed pipes 31, although it is evident that the said manifold may be directly attached to the frame 1.

The manifold 30 is closed at its ends, and depending from the manifold are a plurality of equidistantly spaced apart valves 34, which valves include a valve casing with a valve stem 35 extending through said casing and carrying a valve to be actuated to open or close the same, together with a nozzle or spout 36 depending from the casing. Mounted on top of the manifold is a lug 37 and secured to the tank 32 is a bearing type collar 38. An elongated stem 39 extends through the collar 38 and the lug 37. The outermost end of said stem has secured thereto,

lever 40, while the opposite end of the stem is provided with a hand wheel 41. In order to open or close the valves 34 simultaneously, I provide a control bar 42 which extends substantially the length of the manifold, with links 43 secured at one end to said control bar, while the opposite end of each link is secured to a valve 34. A link 44 extends between the outer end of the lever 40 and the control bar 42. Thus, depending upon the direction of rotation of the stem 39, the control bar is moved from the position of Figure 4 to that of Figure 5 to open or close the valves simultaneously. I provide for each side of the frame, and extending substantially from the leveling bar 15 beyond each shoe 11 and 12, a felt pad 45. The lower edge of each felt pad engages the surface 17 of the bowling alley, and prevents spread of liquid into the ball gutters. The felt pads are detachably secured to the side members 2 and 3, so as to be readily cleaned or replaced.

To complete the device, a handle 46 is secured to the frame.

The operation, uses and advantages of the invention just described are as follows:

The tank 32 is filled with prepared liquid material, such as lacquer, varnish, shellac, or other finishing material to be applied to the playing surface of the bowling alley. The valves 34 are in closed position, and the applicator is moved onto the bowling alley to the pin deck portion thereof. The guide wheels 22 and 23 are engaging the side walls of the gutters, as shown in Figures 1 and 4, whereupon the operator adjusts the leveling bar 15 to the desired height above the alley playing surface by turning bolts 14, and then turns the handle 41 to open the valves 34 a desired amount. Liquid from the tank will flow through the feed pipes 31 into the manifold and outwardly of the nozzles 36. The liquid does not spray upon the playing surface 17 under pressure other than that due to gravity, but is allowed to flow smoothly onto the surface 17. The operator pulls on the handle 46 in the direction of the arrow of Figure 1, the leveling bar smoothing the liquid to the desired coat thickness for the surface 17. The operator moves the applicator at a speed sufficient to assure a proper application of the liquid upon the surface 17. During such movement, the felt pads 45 at the sides of the frame prevent the liquid being applied to the alley from flowing or spreading into the ball gutters 24 and 25. It is desirable to place a pan, such as shown in Figure 6, at the foul line of the alley, so that as the applicator reaches this line and passes thereover, said pan will catch all of the liquid material.

It sometimes occurs that one side of the playing surface of the bowling alley requires a thicker refinishing coat than some other portion thereof, and the operator can adjust for this condition by raising or lowering the shoes 11 or 12 so as to tilt the leveling bar 15, which will assure that the liquid being applied will be thicker for a certain portion than for another portion.

The device is simple of structure and performs the function intended for it in a satisfactory and efficient manner, and one which assures a proper guidance of the applicator during its movement on the playing surface of the bowling alley. Furthermore, the device is easily dismantled for cleaning purposes, storage, or otherwise. The leveling bar at no time touches the playing surface of the bowling alley, but is adjusted for varying distances

thereabove to regulate the thickness of coat of liquid material. The felt which encases the leveling bar may be renewed, as desired, as is self-evident.

I claim:

1. A liquid material applicator for bowling alleys of the type which have a playing surface and ball gutters on each side of the playing surface, including: a frame adapted to extend transversely of the playing surface of the bowling alley; swing arms pivoted to sides of said frame and wheels mounted at the ends of said arms for reception within the ball gutters, for guiding movement of the frame as it traverses the length of the playing surface, means carried by the frame for supplying a liquid material to the playing surface during movement of said frame, and means at all times spaced above the playing surface for spreading said liquid material to a desired thickness into said playing surfaces.

2. A liquid material application for bowling alleys of the type which have a playing surface and ball gutters on each side of the playing surface, including: a frame having a leading portion and a trailing portion, said leading portion provided with a wheeled support and the sides of said frame at the trailing portion provided with supporting shoes, means to regulate the height of said shoes relative to the frame to adjust the height of each side of the frame above the playing surface, swing arms pivoted to sides of said frame and wheels mounted at ends of said arms for reception within the ball gutters to guide movement of the trailing portion when the frame is moved, means for supplying a liquid finishing material to the playing surface adjacent the trailing portion of the frame, and means in non-contracting relationship with the playing surface for spreading and regulating the thickness of the liquid supplied to said surface.

3. A device for refinishing the playing surface of a bowling alley which has ball gutters on either side of said playing surface, including a frame having a leading portion and a trailing portion, wheeled supports for the leading portion of said frame, means for the trailing portion of the frame for regulating the height of this portion above the playing surface of the bowling alley, a spreader bar at the trailing portion of the frame, regulated as to height by the first named means, means for supplying refinishing liquid to the playing surface forwardly of the means for spreading the liquid, means for the trailing portion of said frame for preventing spread of the liquid into the ball gutters, and swing arms pivoted to sides of said frame and wheels mounted at ends of said arms for reception within the ball gutters to guide movement of the trailing portion of the frame as the frame moves in one direction over the playing surface.

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