ELECTRICALLY HEATED BOWLING ALLEY SURFACE CONDITIONER

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This invention relates to a bowling alley conditioner. In order to keep bowling alleys in prime condition, it is necessary to provide and maintain a hard, dust-free surface. In maintaining the alleys, it is practically universal practice to treat the alleys with oil. Most well-kept bowling alleys are now so treated every day. When an alley is treated with oil, it has heretofore been necessary, in order to provide optimum bowling conditions, to use a heavy rotary polishing machine after the oil has been applied and to finish the job of conditioning the alleys with a duster of soft, specially treated cloth.

One of the objects of this invention is to provide a bowling alley conditioner which combines the functions of the heavy rotary polishing machine and the duster.

Another object is to provide such a conditioner which is light in weight, simple to use, rugged, efficient, and cheap to manufacture.

Other objects will become apparent to those skilled in the art in the light of the following disclosure and the accompanying drawings.

In accordance with this invention, generally stated, a bowling alley conditioner is provided which, at the same time, heats and wipes the excess oil from the alley, and cleans and polishes the alley.

In the drawing, Figure 1 is a view in perspective of a bowling alley conditioner constructed in accordance with an illustrative embodiment of this invention; Figure 2 is a fragmentary enlarged view in front elevation of the device shown in Figure 1; Figure 3 is an end view, partly cut away, of the device as shown in Figure 2, showing a ratchet drive; Figure 4 is a sectional view taken along the line 4—4 of Figure 2; Figure 5 is a top plan view of the device as shown in Figure 2; and Figure 6 is a fragmentary end view, showing another embodiment of ratchet drive arrangement.

Referring now to the drawing for an illustrative embodiment of this invention, reference numeral 1 represents the complete bowling alley conditioner. The conditioner 1, in the embodiment shown, has a trough-shaped base frame 3, and a handle 5.

The base frame 3 is made up of a sole plate 7 and end plates 9 and 11. The end plates 9 and 11 are connected to and supported by the sole plate 7 by means of bolts 13 taking into internally threaded ears 14 on the ends of the sole plate 7.

The lower end of the handle 5 is mounted on a stem 21 which, in turn, is mounted in a boss 23 in the center of the top surface of the sole plate 7.

The sole plate 7 contains an electric heating element 8 of the type commonly found in electric irons, mangles, and the like. Electric conductors 15, from a cable 17, are connected to terminals 19 of the heating element. The cable 17 extends along the underside of the handle 5, and is preferably long enough to allow the conditioner to be used through the full length of a bowling alley while the cable is connected to one outlet.

A front spindle 25 extends between the end plates 9 and 11 above and along the leading edge of the sole plate 7. The front spindle 25 is demountably and rotatably mounted at one end on a pin 26 carried by the end plate 9 near its upper forward corner, and at its other end the spindle 25 is mounted on the inner end of a square-ended shaft 30. The square-ended shaft 30 is rotatably mounted in the end plate 11. The shaft 30 is rotated by a ratchet mechanism 20. In the embodiment shown, the ratchet mechanism 20 consists of a ratchet wheel 31 keyeed or otherwise fixed to the outer end of the shaft 30. A housing 32, provided with a handle 33, is mounted for rotation about the shaft 30. A pawl 34 is pivoted on the housing 32 in such a way as to engage teeth 35 on the ratchet wheel 31, as shown in Figure 3. The handle 33 is normally biased in any suitable manner to a rearward position at which it rests against a stop pin 38 on the end plate 11.

The housing 32, in the embodiment shown, is provided with a lug 36 positioned to engage a stop 37 when the handle 33 has been moved forwardly through an annular distance sufficient to permit the pawl 34 to engage a succeeding tooth 35 of the ratchet wheel 31, when the handle is returned to its normal rearward position, as shown in Figure 3.

A rear spindle 40 extends between the ends 9 and 11 above and along the trailing side of the sole plate 7. The spindle 40 is demountably and rotatably carried by pins 43. The spindle 40 serves to hold a roll of soft dusting flannel 45. The flannel 45 extends from the roll on the rear spindle 40, beneath a flannel pad 47 which covers the bottom of the sole plate 7, to the spindle 25. The flannel pad 47 is held in position by clamping strips 48, one of which extends along and is mounted on each side of the sole plate 7.

The pad 47 is given an external downwardly convex shape, either by making it thick in the center and thin at the leading and trailing edges of the sole plate, as is illustrated, or by making the sole plate curved and the pad of substantially uniform thickness. This convexity permits dirt and oil to get under the leading edge and be taken up by the cloth. It also helps prevent scratching of the alley surface, and makes pushing the conditioner easier.

Preferably, the stroke of the ratchet is such as to move a rolled section of the flannel from beneath the sole plate 7, but not to change the entire surface of the flannel beneath the sole plate. For example, if the sole plate is three inches wide, it is preferred that the ratchet stroke be such that about two inches of flannel is moved forwardly beyond the front edge of the sole plate and out of contact with the alley for each stroke of the ratchet.

It can be seen that in the embodiment shown, the amount of flannel moved will depend upon the radius of the front roll since the angular rotation of the ratchet wheel for each stroke remains constant. In such an arrangement, the stop 37 can be fixed at a position such that the optimum condition is had when half of the flannel has been wound on the front spindle 25. However, numerous simple expedients may be used to make the travel of the flannel with each stroke of the ratchet more nearly uniform. For example, in the embodiment of ratchet arrangement shown in Figure 6, the pin 37 extends through a slot 60 in the end plate 11 and is connected with an arm 63 pivoted to the inside face of the end plate 11. The arm in turn is so arranged that its tip opposite the stop 37' with respect to its pivot point rests on the inner edge of the roll of flannel on the front spindle 25. Thus, as the diameter of the roll of flannel on the front spindle 25 increases, the stop 37' will be moved in a direction...
toward the lug 36 so as progressively to limit the stroke of the ratchet. In this arrangement, the number of teeth on the ratchet wheel may be increased to permit finer adjustment, as is well understood in the art. If the diameter of the empty spindle 25 is made large with respect to the diameter of the fully wound roll, the variation in draw of a fixed-stroke ratchet between an empty and a fully loaded spindle will be minimized.

The feature of moving only a part of the underlying flannel has several advantages. It is more economical, since the forward half of the underlying strip will always pick up most of the oil and dirt. In addition, the moving of the rearward portion of the strip to a forward position at which it will first come in contact with the oil and dirt, provides a preheated strip along that vital forward area.

In preparing the conditioner for use, a roll of clean dusting flannel is placed on the spindle 40, and the spindle 40 is mounted on the pins 41. In practice, the flannel will ordinarily already be rolled on a spindle 40 when the roll is purchased. The free end of the flannel 45 is led beneath the pad 47 and is fastened to and along the front spindle 25.

In operation, when the conditioner is to be used on a freshly oiled bowling alley, the cable 17 is connected to an electrical outlet so as to energize the heating element 8 in the sole plate 7. When the sole plate 7 has become hot, and heated the pad 47 and the strip of flannel thereunder, the conditioner is simply pushed slowly along the length of the alley. Preferably, the sole plate 7 is made slightly longer than the width of an alley, so as to extend entirely across the alley and project a short distance over the gutters on either side. The sole plate heating element may be provided with a thermostatic control so as to heat the flannel pad 47 to a temperature just below that at which the flannel will scorch, or to a lower temperature depending upon the type of oil used and the condition of the surface of the alleys.

When the forward area of the dusting flannel becomes heavily soiled, the ratchet handle is moved forward until the lug 36 engages the stop 37, thus rotating the spindle 25 and rolling up a strip of flannel 45. This moves the heavily soiled part of the underlying flannel beyond the leading edge of the sole plate, out of contact with the alley, and moves a preheated section of flannel into the forward position. The application of heat to the oil apparently aids in the impregnation of the alley. It also hastens the drying of the oil and, at the same time, the removal of excess oil from the surface, along with all dust and dirt which may be incorporated with the surface oil. In any event, it has been found that the device of this invention accomplishes in one operation the purpose of both the heavy rotary polishing machines known heretofore and the light dusters.

Numerous variations in the details of construction of the device of this invention within the scope of the claims will become apparent to those skilled in the art in the light of the foregoing disclosure. The various parts may be made of any suitable materials, such, for example, as steel or aluminum for the sole and end plates, and wood for the spindles. Also, the materials of which the dusting cloth and backing pad are made do not form a part of the invention and may be of any suitable sort.

Having thus described the invention, what is claimed to be secured by Letters Patent is:

1. A bowling alley conditioner comprising a base frame having an electrically heated, elongated sole plate, a handle connected to said base frame, a roll of soft, absorbent fabric mounted on said sole frame along the leading edge of said sole plate, said fabric extending beneath said sole plate and being attached for winding to a spindle positioned along the leading edge of said sole plate, and ratchet means operatively connected to said spindle for rotating said spindle, and means for limiting the amplitude of movement of said ratchet means to that required to wind said spindle a substantial length of fabric which is substantially less than the width of said sole plate, whereby a preheated strip of fabric is positioned adjacent the leading edge of and beneath said sole plate, said conditioner being intended to be pushed in a direction toward the leading edge of the sole plate whereby most oil and dirt is picked up by a length of the fabric, lying adjacent the leading edge, corresponding with the length of fabric wound on said spindle by said spindle rotating means.

2. The device of claim 1 wherein a pad is provided between the sole plate and the fabric, said pad being downwardly convex, so as to impart a similar configuration to the fabric, and thus to make the leading and trailing edges of the strip of fabric higher than its center with respect to a flat bowling alley.

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