Dec. 9, 1941. W. E. DAHL 2,265,354

SURFACING MACHINE FOR BOWLING ALLEYS

Filed Dec. 6, 1940 4 Sheets-Sheet 1

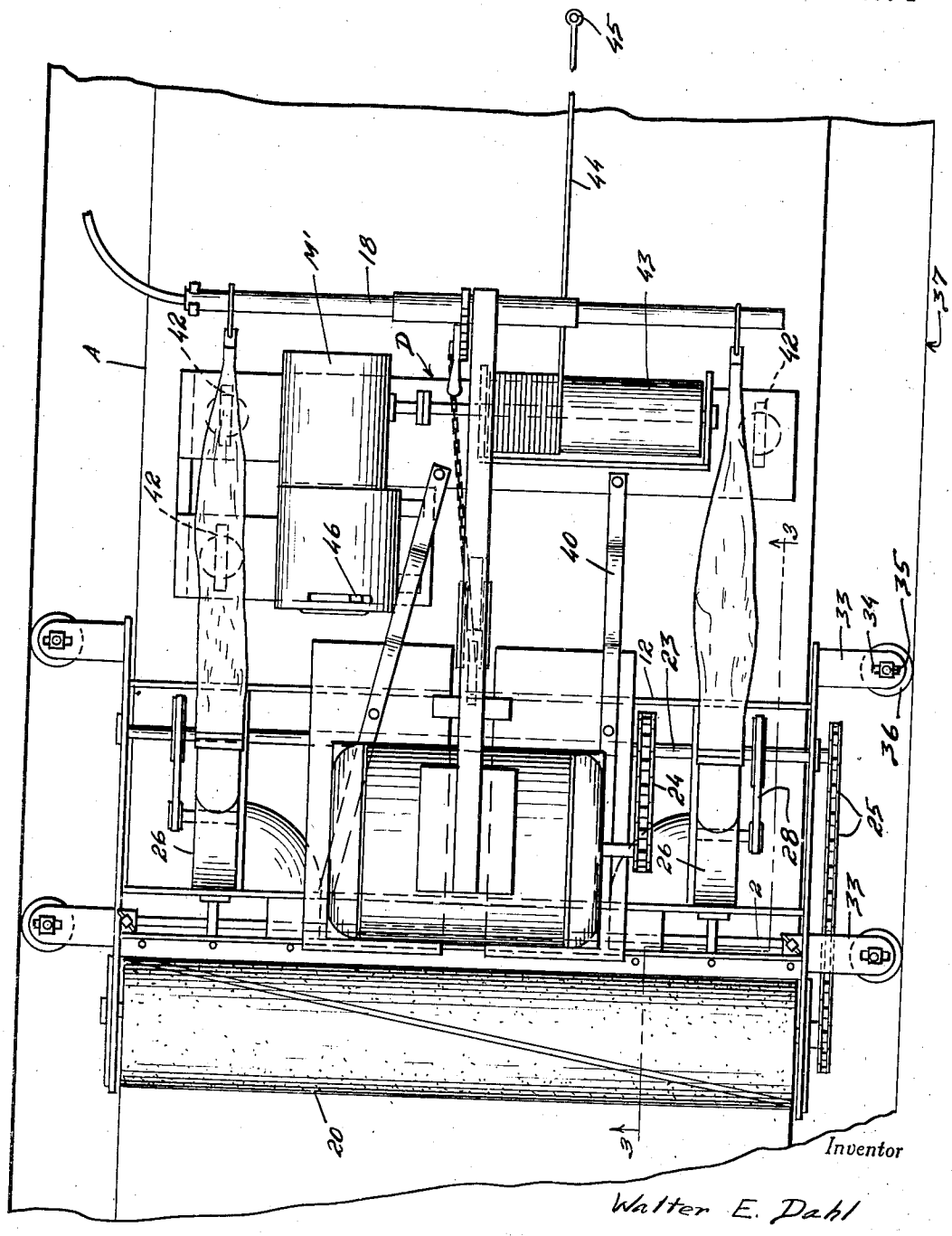


Fig. 1.

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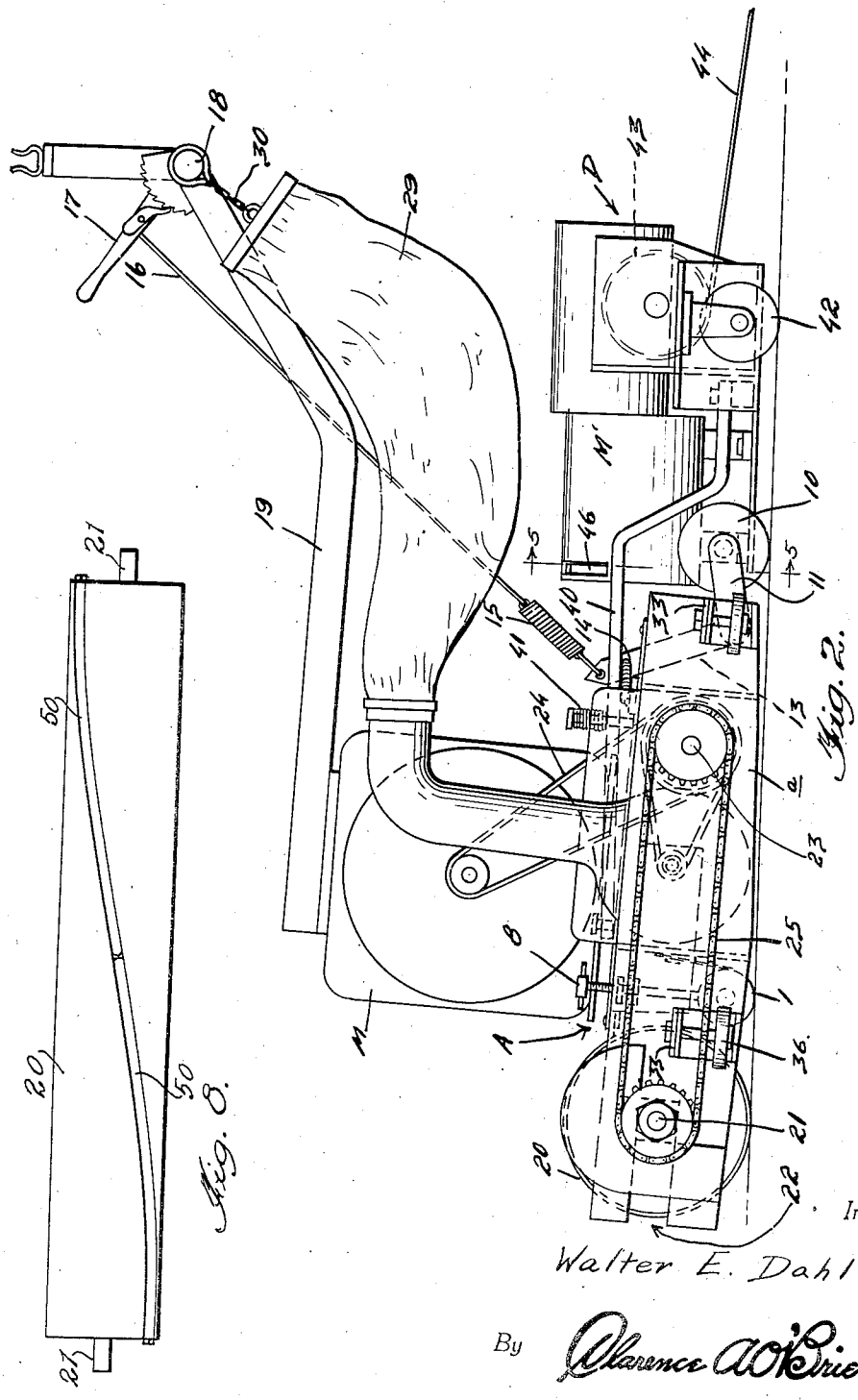


Fig. 2.

Fig. 8.

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SURFACING MACHINE FOR BOWLING ALLEYS

Filed Dec. 6, 1940 4 Sheets-Sheet 3

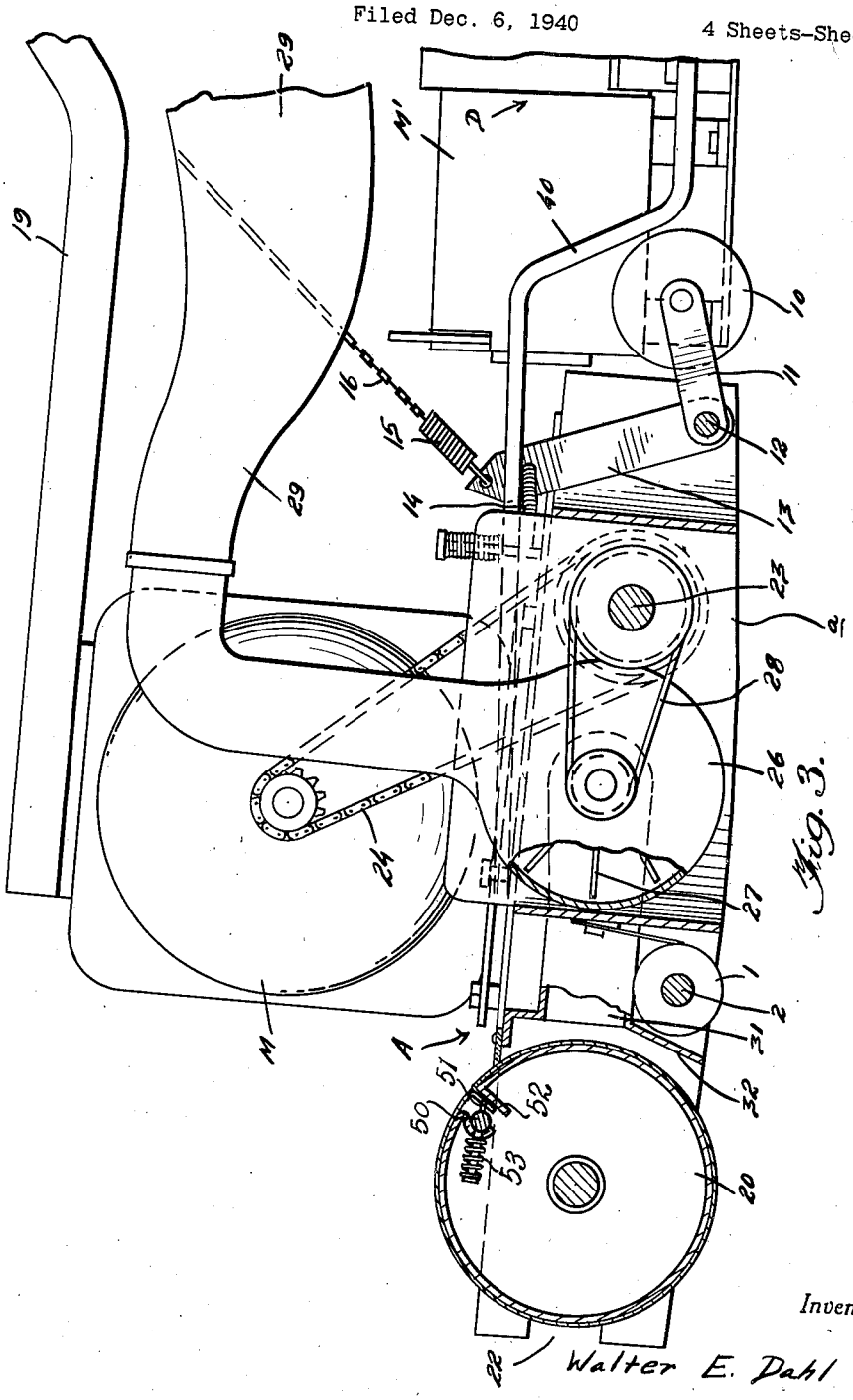


Fig. 3.

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SURFACING MACHINE FOR BOWLING ALLEYS

Filed Dec. 6, 1940 4 Sheets-Sheet 4

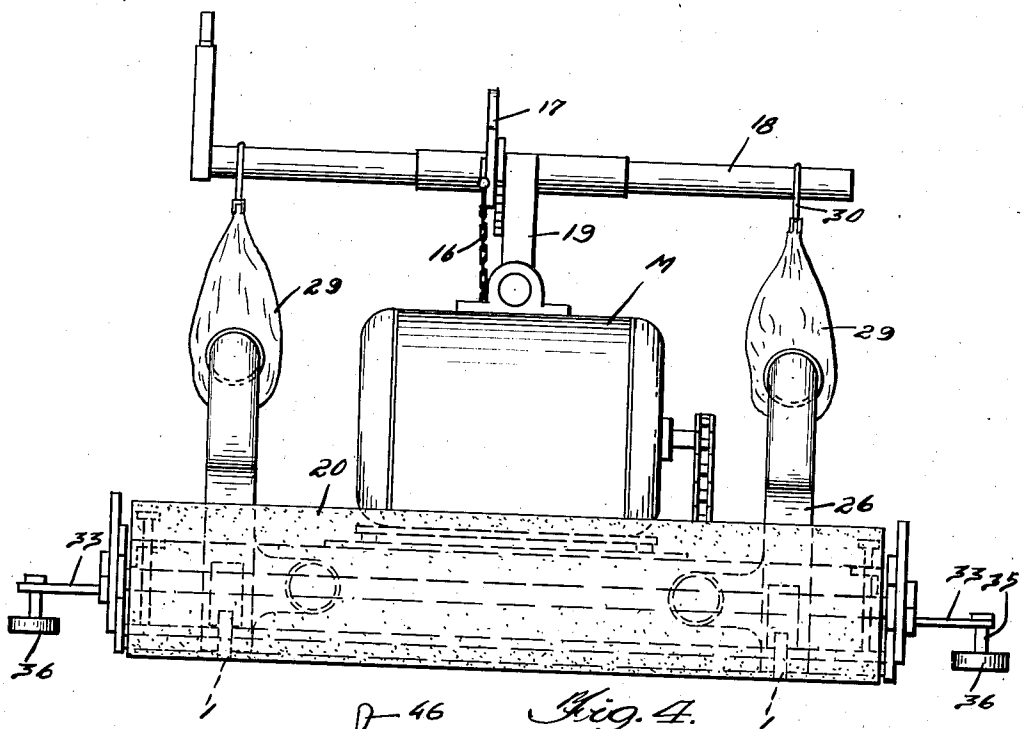


Fig. 4.

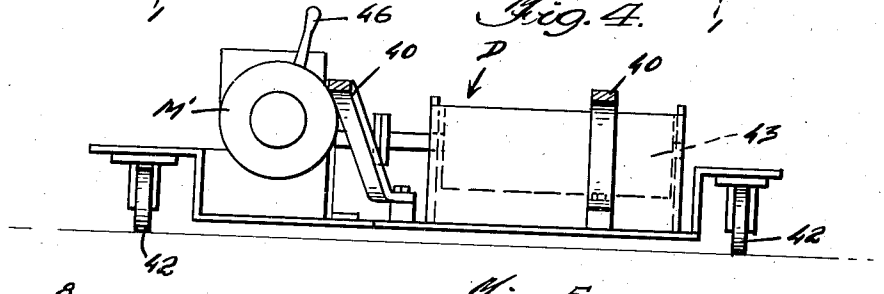


Fig. 5.

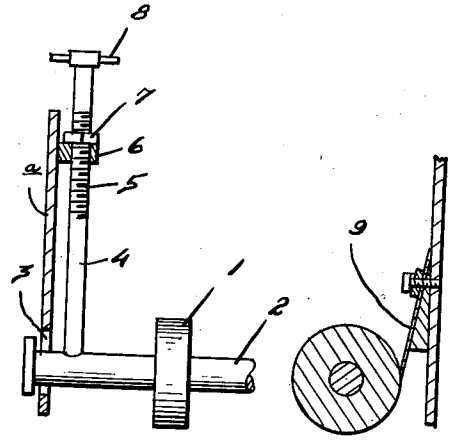


Fig. 6.

Fig. 7.

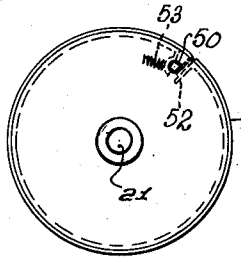


Fig. 9.

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UNITED STATES PATENT OFFICE

2,265,354

SURFACING MACHINE FOR BOWLING ALLEYS

Walter E. Dahl, De Forest, Wis.

Application December 6, 1940, Serial No. 368,957

3 Claims. (Cl. 51—176)

This invention relates to surfacing machine for bowling alleys, the general object of the invention being to provide an apparatus of this nature which will accurately surface the alley so that all grooves and other indentations or projections are removed, leaving the alley smooth so that the balls will travel over the same in a true manner.

Another object of the invention is to provide means whereby the apparatus is guided in its movement over the alley so that the sanding roller will properly engage the alley surface to be sanded with means whereby the material removed by the roller will be deposited into bags by suction apparatus.

Another object of the invention is to provide means whereby the operator can readily regulate the amount of cutting action of the cutting roller and also to provide a motor driven drum having a cable thereon which is adapted to be connected to a stake or the like at the top of the alley to cause the apparatus to move over the alley at an even and uniform speed.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts to be hereinafter fully described, illustrated in the accompanying drawings and specifically pointed out in the appended claims.

In describing the invention in detail, reference will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:

Figure 1 is a top plan view showing the apparatus in use on an alley.

Figure 2 is an elevational view of the apparatus.

Figure 3 is a section on the line 3—3 of Figure 1.

Figure 4 is a front view of the apparatus.

Figure 5 is a section on the line 5—5 of Figure 2.

Figure 6 is a sectional detail view showing the means for adjusting the front shaft which carries the front wheels.

Figure 7 is a detail view showing a cleaner for a wheel of the device.

Figures 8 and 9 are detail views showing how the sandpaper is held in the slot in the sanding roll.

In these drawings the letter A indicates the body of the device which is made of any suitable material, such as boiler plate, and the frame is made in the form of a platform with depending sides and other depending parts as will be referred to hereinafter. A front pair of wheels 1 act as supporting means for the major part of the frame and these wheels are carried by a shaft 2 extending transversely across an intermediate part of the machine with the ends of the shaft passing through vertical slots 3 in the side parts *a* of the frame as shown more clearly in Figure 6. Each end of the shaft 2 is connected to a vertical shaft 4 which has a threaded part 5 passing through a threaded hole in a bracket 6 attached to a side member *a* and a nut 7 is threaded on the shaft to lock the parts in adjusted position. The shaft 4 can be turned by a shaft 8. Thus by turning the shaft 4 the adjacent end of the handle 2 can be raised and lowered as desired to make the wheels 1 conform to the surface being acted upon.

Flexible wiper strips 9 are provided for the wheels 1 as shown more clearly in Figure 7 so as to keep the peripheries of the wheels clean.

A centrally arranged rear wheel 10 is rotatably carried by a forked member 11 which is pivoted to a bar 12 carried by the frame and this member 11 is attached to an upwardly and forwardly extending member 13 which is normally held in the position shown in Figure 3 by a spring 14. A spring 15 connects the upper end of the member 13 with a chain 16 which extends upwardly and rearwardly and is connected to a hand lever 17 carried by the handle bar 18 supported at the rear of the machine by the supporting members 19 which extend rearwardly and upwardly from the motor housing M supported by the frame A. Thus by moving the lever 17 rearwardly the members 13 and 11 will be moved to a position where the wheel 10 is lowered thus raising the rear part of the frame and tilting the front part about the wheels 1. Thus this wheel or roller 10 acts as a rear wheel and also as means for adjusting the frame to bring the sanding drum 20 into engagement with the surface of the alley with the desired amount of friction.

This drum 20 is of any suitable construction and has its pintles 21 journaled in blocks which are slidably arranged in the slots 22 formed in the projecting side pieces of the frame A as shown in Figures 2 and 3. A transverse shaft 23 is journaled in the frame and said shaft is driven from the motor by the chain and sprocket means shown generally at 24 and chain and sprocket means 25 connect the shaft 23 to the pintle 21 of the sanding drum so that this drum is driven from the motor. Blower casings 26 are supported by the main frame and the fans 27 in said casings are driven from the V-belts and pulleys shown generally at 28 from the shaft 23. The outlets of these casings 26 are connected to the sacks or bags 29 which have their rear ends supported from the handle bar 18 as shown at 30, these sacks being removable in the usual manner so that they can be emptied and then replaced. The inlets 31 for the casings 26 extend through a depending front plate 32 which extends transversely across the frame immediately in rear

of the drum 20 so that the suction created by the fans 27 will pick up material from the drum and from the alley and draw it into the casings 26 and then this material will be discharged into the sacks or bags 29.

Brackets 33 extend outwardly from the side parts of the main frame and have slots 34 therein for adjustably receiving the shafts 35 which are vertically arranged and carry the guide rolls 36 for engaging the side members 37 of the alley as shown in Figure 1, thus preventing the apparatus from swinging to the left or right as it is moving along the alley.

A small truck or dolly D is located at the rear of the apparatus and is connected with the apparatus by the bars 40 which permit limited vertical movement of the dolly but prevent sidewise movement thereof. Each bar 40 is pressed downwardly by a spring 41 on the main frame of the apparatus and the dolly is provided with the supporting wheels 42 and supports a drum or winch 43 for a cable 44 which has an eye 45 at its free end adapted to place over a pin or other fastener at the approaching end of the alley. A reversible electric motor M' is supported by the dolly and is suitably connected with the drum 43 to wind the same and a suitable control 46 is provided for the motor so that it can be readily caused to rotate the drum 43 either in one direction or the other.

The front wheels are preferably of the ball bearing type and by providing adjusting means for each end of the shaft which carry these wheels the apparatus can be adjusted to cut more on one side than on the other while the rear wheel enables the apparatus to be adjusted to make the drum 20 cut more or less as desired. The frame should be solidify built and as it carries both the drum 20 and the motor vibrations are practically eliminated and this prevents waves occurring in the finished floor and this is also prevented by having the two springs 14 and 15 for the adjustment of the rear wheel 10.

The slot in the sanding drum extends diagonally as shown and two shafts 50 are rotatably arranged in the slot and have their outer ends of non-circular shape in cross section so as to receive a wrench to turn the shafts. Each shaft carries the pins 51 for engaging a lip 52 formed on a wall of the slot and the pins are caused to engage the edges of the paper by the springs 53 as shown in Figures 3, 8 and 9.

The machine works and cuts both ways on the alley as it is being moved forwardly toward the pin end of the alley or toward the foul line. The sanding drum always rotates in the same direction and has a tendency at all times to pull the machine toward the pit. When going forward the cable and winch merely act to hold the machine back so it travels at a given speed and when the machine travels from the pit to the foul line it is being pulled back by the winch winding up the cable as the motor of the winch or cable drum is reversed after the machine reaches a point adjacent the pit. The cable after it is played out by the winch with the machine moving toward the pit insures the machine moving along the alley in a steady manner, thereby eliminating any stop marks commonly made by a sander when operated by hand. The operator by putting his weight gradually on the handle of the machine can glide off and on to the alley without making a stop or machine mark.

The wheel cleaning means prevents sawdust from collecting or packing in a thin layer around the wheels and then falling off and making the wheels oblong instead of round which would cause the machine to go up and down at every turn of the wheel and this would result in making waves on the alley.

It is thought from the foregoing description that the advantages and novel features of the invention will be readily apparent.

It is to be understood that changes may be made in the construction and in the combination and arrangement of the several parts provided that such changes fall within the scope of the appended claims.

Having described the invention, what is claimed as new is:

1. In a sanding device for bowling alleys, a frame, front and rear wheels for supporting the frame, a sanding drum at the front of the frame, suction means for picking up material from the drum and adjacent the drum, a motor carried by the frame, means for operating the drum and the suction means from the motor, a handle bar connected with the frame and located at the rear thereof, means actuated from a point adjacent the handle bar for raising and lowering the rear wheel to tilt the frame on the front wheels, a truck, means for connecting the truck with the main frame with the truck at the rear thereof, a cable carrying drum supported by the truck and motor means for rotating the drum in either direction.

2. In a sanding device for bowling alleys, a frame, front and rear wheels for supporting the frame, a sanding drum at the front of the frame, suction means for picking up material from the drum and adjacent the drum, a motor carried by the frame, means for operating the drum and the suction means from the motor, a handle bar connected with the frame and located at the rear thereof, means actuated from a point adjacent the handle bar for raising and lowering the rear wheel to tilt the frame on the front wheels, a truck, means for connecting the truck with the main frame with the truck at the rear thereof, a cable carrying drum supported by the truck and motor means for rotating the drum in either direction, brackets at the side of the main frame, vertical shafts carried by the brackets and rolls carried by the shafts for engaging side members of an alley being sanded.

3. In a sanding device for bowling alleys, a frame, front and rear wheels for supporting the frame, a sanding drum at the front of the frame, suction means for picking up material from the drum and adjacent the drum, a motor carried by the frame, means for operating the drum and the suction means from the motor, a handle bar connected with the frame and located at the rear thereof, means actuated from a point adjacent the handle bar for raising and lowering the rear wheel to tilt the frame on the front wheels, a truck, means for connecting the truck with the main frame with the truck at the rear thereof, a cable carrying drum supported by the truck and motor means for rotating the drum in either direction, brackets at the side of the main frame, vertical shafts carried by the brackets and rolls carried by the shafts for engaging side members of an alley being sanded, and means for cleaning the wheels as they rotate.

WALTER E. DAHL.