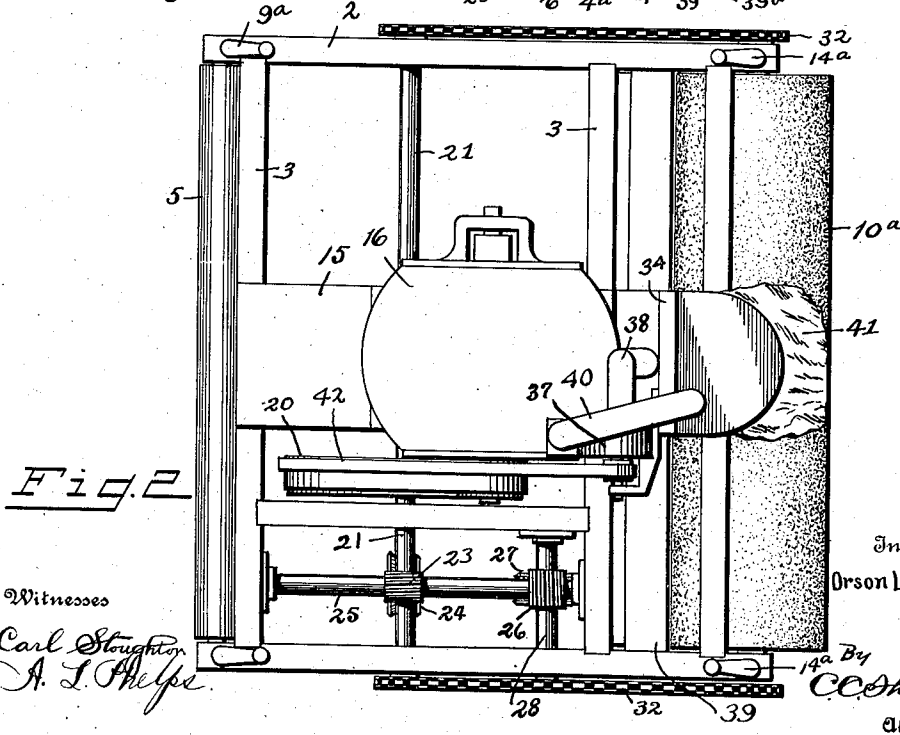
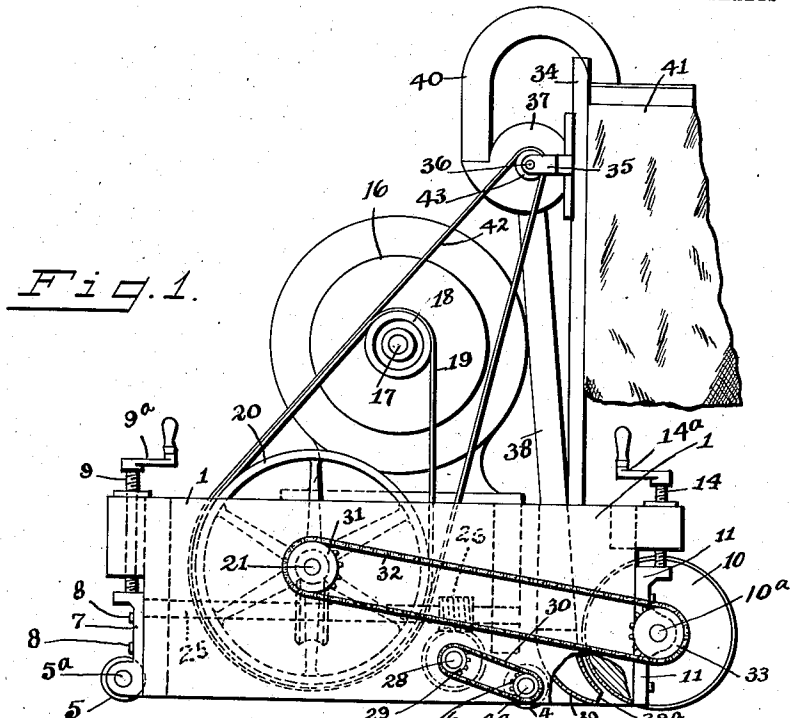


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APPLICATION FILED FEB. 18, 1909.

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Patented Nov. 9, 1909.
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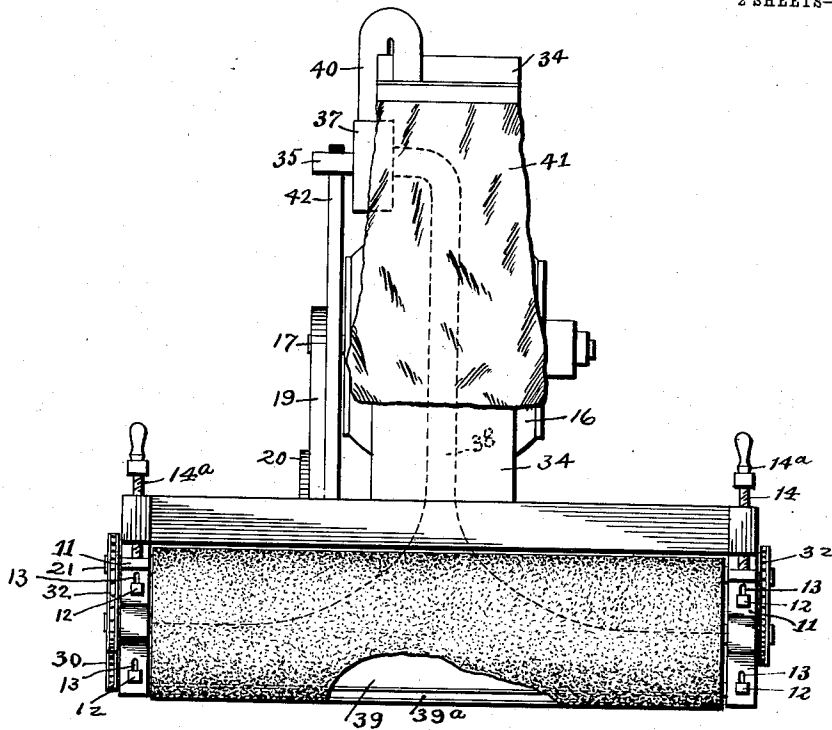


Fig. 3.

Witnesses
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UNITED STATES PATENT OFFICE.

ORSON L. PICKARD, OF COLUMBUS, OHIO.

BOWLING-ALLEY FINISHING AND LEVELING MACHINE.

939,544.

Specification of Letters Patent.

Patented Nov. 9, 1909.

Application filed February 18, 1909. Serial No. 478,636.

To all whom it may concern:

Be it known that I, ORSON L. PICKARD, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Bowling-Alley Finishing and Leveling Machines, of which the following is a specification.

This invention relates to bowling alley finishing, dressing and leveling machines, and the objects of my invention are to provide a comparatively simple form of machine of improved construction, by the use of which a bowling alley surface may be readily smoothed and leveled; to provide in connection with my improved machine, means for adjustably supporting the abrasive drum, thereby providing a means for leveling the alley surface, wherein a tendency of the floor to incline toward one side of the latter exists; to provide improved means of adjustment whereby the body of the machine may be raised or lowered longitudinally; to provide a simple driving and operating mechanism, and to produce other improvements which will be more fully pointed out hereinafter. These objects I accomplish in the manner illustrated in the accompanying drawings, in which:

Figure 1 is a side elevation of my improved machine, Fig. 2 is a plan view thereof, and, Fig. 3 is a front elevation.

Similar numerals refer to similar parts throughout the several views.

In carrying out my invention, I employ a truck-like frame comprising horizontally disposed and parallel side members 1 and 2, these side members being connected at desirable points by transverse frame members such as are indicated at 3. The machine is mounted to run upon two transverse bearing rollers 4 and 5. The roller 4 which is located in the forward portion of the machine and between the base portions thereof, has its shaft 4^a bearing in the side frame members 1 and 2, one end of said shaft carrying on the outer side of the frame member 1, a sprocket wheel 6. The remaining bearing roller has its end spindles or shaft ends which are indicated at 5^a, journaled in the lower end portions of vertical bearing brackets 7, one of which is adjustably supported in connection with the rear end of each of the side frame pieces 1 and 2, this connection being effected by headed bolts 8 which pass loosely through vertical slotted open-

ings of the members 7 and enter the frame members 1 and 2. This adjustable connection corresponds with that hereinafter described for the adjustable connection of the abrasive roller carrying brackets at the opposite end of the machine.

The roller 5 is adapted to bear upon the surface of the alley to be operated upon and the upper side of each of the roller carrying brackets 7 which is outturned as shown, is in contact with a vertically adjustable screw 9 which passes through a threaded opening in the rearward extension of the corresponding side frame member. The upper end of each of the adjusting screws 9, is provided with a suitable operating handle 9^a. At the forward end of the machine, I provide a transverse drum 10 of suitable circumference, which is adapted to be incased with sand paper or other suitable abrasive or polishing material. This drum 10 is provided with end spindles 10^a which bear in vertical bearing brackets 11 which are carried by the forward ends of the side frame members 1 and 2. Each of these supporting brackets is vertically adjustable, as prescribed for the brackets 7 and as shown more clearly in Fig. 3 of the drawing, this adjustable connection with the frame sides is effected by employing headed bolts, such as are shown at 12, the stems of which bolts pass through slotted openings 13 in said bracket bodies. The outturned heads or upper ends of the brackets, have their upper sides in contact with the lower ends of vertical adjusting screws 14, which engage threaded openings in extensions of the side frame members and each of which is provided at its upper end with a suitable operating handle 14^a.

Upon the central portion of the frame of my device, I mount upon a suitable supporting base or platform 15, a desirable construction of motor 16, said motor being provided with the usual central power shaft 17. This shaft carries on one end a pulley or comparatively small belt wheel 18 and about this pulley or belt wheel passes the upper portion of a belt 19, which also runs about a comparatively large pulley or belt wheel 20 carried by a shaft 21 which extends transversely between the side frame pieces 1 and 2 in the rear half of the machine. Toward one end, the shaft 21 carries a worm 23 which meshes with a worm gear wheel 24 carried on a shaft 25, which is journaled in the frame members 3 and extends at right

angles with the shaft 21. The shaft 25 also carries on its forward end portion a worm 26 which gears with a worm wheel 27 on a short journaled shaft 28 at right angles with the shaft 25. This shaft 28 carries on its outer end on the outer side of the frame member 1, a small sprocket wheel 29 which is connected with the sprocket wheel 6 of the bearing roller shaft 4^a through the medium of a chain belt 30.

On each end of the shaft 21 is carried on the outer side of the side frame members of the machine, a sprocket wheel 31, which through the medium of a chain belt 32 is connected with a sprocket wheel 33 on the corresponding end of the drum shaft or spindle 10^a.

Rising from the forward portion of the machine, is a vertical frame standard 34 from the upper portion of which project brackets 35 in which are pivoted the end spindles 36 of a suitable form of fan, which is contained within a fan chamber or casing 37. Leading downward from this fan casing is a pipe 38, said pipe in rear of the drum 10 communicating with a transverse hollow dust collecting head 39 which, as indicated more clearly in Fig. 1 of the drawing, is curved outwardly and downwardly and has its reduced lower end portion provided throughout its length with an opening 39^a. From the fan casing 37 there also leads upward and thence forward and downward a dust discharge pipe 40, the outer open end of which depends within the upper end of a dust collecting sack 41 which is suspended from the forward side of the standard 34. As shown at 42 an endless belt connects a belt or pulley wheel 43 on the fan shaft 36, with the wheel 20, the belt 42 passing over the belt 19.

In operation, it will readily be understood that from the motor shaft 17, rotary motion is contributed to the wheel 20 and its shaft 21, thence from the latter through the worm gear connections described to the shaft 25. From this last named shaft, rotary motion is imparted through the worm and gearing described, to the sprocket wheel 29 and thence through the chain belt 30 to the sprocket wheel 6 and driving or bearing roller 4. This roller being in contact with the surface of a bowling alley, will thus be utilized to propel the machine forwardly or rearwardly in accordance with the direction of rotation of the motor shaft. It will also be understood that through the rotation of the sprocket wheels 31 on the shaft 21 and the belt connections of said sprocket wheels with the sprocket wheels 33, a positive rolling or rotary motion will be imparted to the drum 10, which will insure an abrasive or polishing rotary contact with the alley surface operated upon. Owing to the rapid rotation of the fan shaft 36

which occurs from the connections described, a suction will be produced in the usual manner in the pipe 38 and its terminal head 39, which will result in the dust generated by the contact of the drum cover and floor, being drawn into the head 39 through the opening 39^a, thence upward through the pipe 38 into the fan casing, from which it will be blown outward through the pipe 40 and into the sack 41.

It is well known that the surfaces of bowling alleys, develop in the course of time, inequalities in the surface and it will be understood that the abrasive action of the drum covering and such a surface, will tend to remove these inequalities by the wearing down of the higher places in the alley and this, as will readily be understood, is more easily accomplished through the employment of the comparatively long drum shown herein, which permits of the drum bridging the lower places in the floor without acting on the surfaces thereof. It is also well known, that bowling alley surfaces are found to incline in many places, toward one side of the alley. This difficulty is readily remedied by the use of my device, for the reason first, that the drum carrying the abrasive material is of a length equal to the width of a standard bowling alley, and second, that by turning the desired one of the adjusting screws 14, a desirable lengthwise inclination may be imparted to the drum, thus compensating for an existing inclination of the alley surface and permitting of the drum acting upon the higher surface only. This adjustment may be carried also to the rear portion of the machine, by the rotation of one of the screws 9 and if desired, it is evident that the degree of contact of the drum and alley may be varied, by turning the screws 9 upward or downward to produce a raising or lowering of the forward end of the machine.

It will be observed that the construction of my improved machine, is simple and that the parts are of such arrangement, as to prevent their readily getting out of order.

What I claim, is:

1. A machine of the character described comprising a frame, a bearing roller mounted upon the forward portion of said frame, a bearing roller mounted at the rear end of said frame, independent vertically adjustable bearing members in which the ends of the rear bearing roller are mounted, an abrading drum mounted at the forward end of the machine, independent vertically adjustable bearing members in which said abrading drum is journaled, a motor, means for driving one of the rollers from the motor and means for driving the abrading drum from the motor.

2. In a machine of the character described, the combination with a frame, said frame

comprising parallel side members, of trans-
verse spacing members, bearing members
mounted upon the ends of the side members
of the frame, means for vertically adjusting
5 said bearing members with relation to the
ends of said frame, said side members of the
frame having overhanging end portions,
screws threaded into said overhanging por-
tions, the lower ends of said screws bearing
10 upon said bearing members, a bearing roller
journaled in said bearing members at one
end of the frame, an abrading member jour-
naled in said bearing members at the oppo-

side end of the frame, a second bearing roller
journaled in the frame intermediate the first 15
named bearing roller and the abrading drum,
a motor, means for driving said abrading
drum from said motor, and means for driv-
ing the last named bearing roller from said
motor. 20

In testimony whereof I affix my signature
in presence of two witnesses.

ORSON L. PICKARD.

Witnesses:

L. CARL STOUGHTON,
A. L. PHELPS.