No. 815,460. PATENTED MAR. 20, 1906.

R. McCOY.

LEVEL SURFACING MACHINE.

APPLICATION FILED AUG. 2, 1904.

Fig. 1.

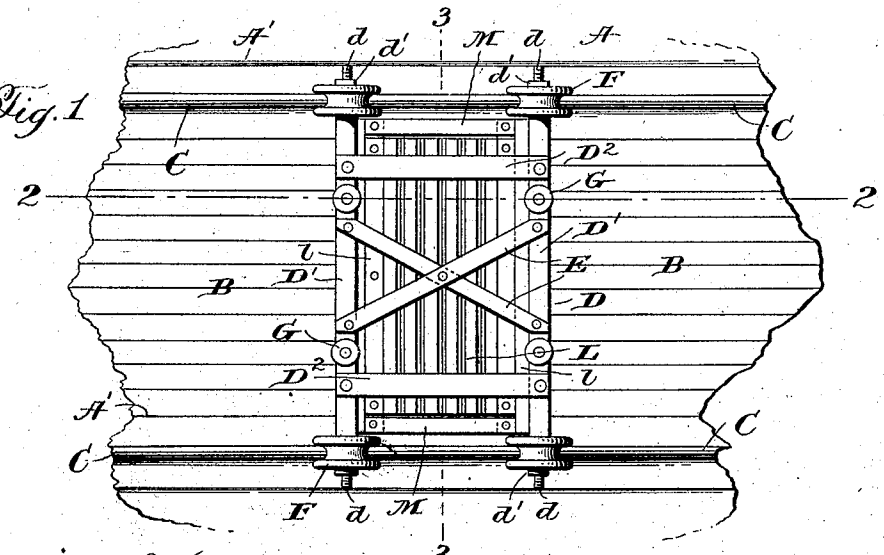


Fig. 2.

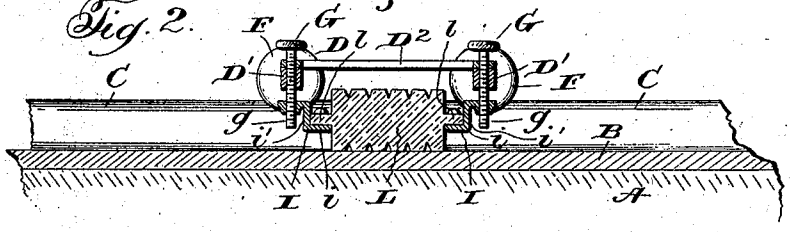


Fig. 3.

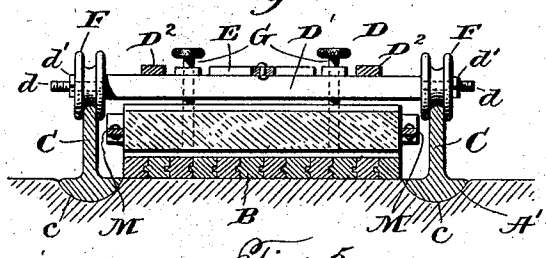


Fig. 4.

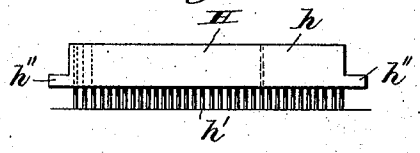


Fig. 5.

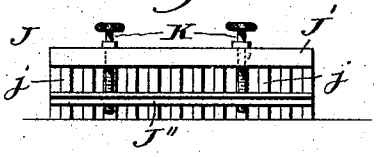
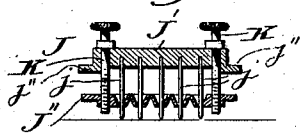


Fig. 6.



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UNITED STATES PATENT OFFICE.

ROBERT McCOY, OF NEW YORK, N. Y.

LEVEL-SURFACING MACHINE.

No. 815,460. Specification of Letters Patent. Patented March 20, 1906.

Application filed August 2, 1904. Serial No. 219,250.

To all whom it may concern:

Be it known that I, ROBERT McCOY, a citizen of the United States, residing at 230 West Twenty-fourth street, New York city, in the State of New York, have invented a Perfect-Level-Surfacing Machine to be Used on Bowling-Alleys and Floors of Any Kind, of which the following is a specification.

My invention relates to improvements in level-surfacing machines, and though susceptible of many different uses has for its primary object the leveling and polishing of bowling-alleys, where it is essential that the surface be not only level, but polished to a high degree.

My invention is especially adapted for use on alleys or floors which have become worn or uneven and embraces means for removing the old shellac or finish therefrom, scraping and leveling the same, and finally polishing the leveled surface.

My invention further contemplates means whereby the machine support or carriage may travel longitudinally relative to the surface without contacting or marring the same, while permitting the working parts of the machine to remain in juxtaposition relative to the surface.

Further novel features will be brought out in the detail description following when read in connection with the accompanying drawings, forming a part hereof, and wherein a preferable embodiment of the invention is disclosed for the purpose of illustration.

In the drawings, Figure 1 designates a top plan view of the carriage or support in position on a bowling-alley, having connected therewith the polishing device. Fig. 2 is a cross-sectional view on the line 2 2 of Fig. 1. Fig. 3 is a longitudinal sectional view on the line 3 3 of Fig. 1. Fig. 4 is a detail view of the scouring or scraping device detached; and Figs. 5 and 6 are detail views in elevation and cross-section, respectively, of the leveling device detached.

Referring now more particularly to the drawings, wherein like reference characters designate corresponding parts throughout the several views, A designates the support for the alley-surface, having the usual spaced gutters A′ extending longitudinally thereof, and B represents the floor or surface proper mounted upon the support between the respective gutters.

C C represent portable tracks having transversely-extended bottom portions *c*, curved complementary to the curvature of the gutters and adapted to loosely rest therein.

D represents the carriage of my machine, the frame of which comprises spaced longitudinal bars D′ and transverse bars D^2, extending therebetween and connected in any suitable manner at their ends to said longitudinal bars. Arranged intermediate said transverse bars are cross brace-bars E E, centrally connected and secured in any suitable manner at their ends to the respective longitudinal bars. Outwardly-extended reduced portions *d* on the bars D′ constitute axles for antifriction-rollers F, adjustably mounted thereon in any desired manner, as by nuts *d*′ engaging the screw-threaded ends of said axles *d*.

G represents threaded bolts extending through the longitudinal bars D′, said bolts having a screw-threaded portion *g*, to which are adapted to be interchangeably connected the scouring or scraping, leveling, and polishing devices, respectively.

H represents the scouring device comprising a back-support *h* and downwardly-projecting closely-associated metallic pins *h*′.

I I represent oppositely-disposed inverted-Z-shaped bars, the lower angle portion *i* of which are connected in any desired manner to outwardly-projecting portions *h*″ on the scraper H, and the upper angle portions *i*′ have suitable apertures therein adapted for the reception of the screw-threaded ends of the bolts G.

J represents a leveling device comprising the top member J′ and a series of longitudinally-extended rows of thin flat blades *j*, preferably springy in character and the resiliency thereof being adjustable through the means about to be described.

J″ designates a plate having a series of apertures extending throughout the same, one for each blade *j*, and the wall surrounding said apertures being depressed for the easy insertion of said blades.

K designates adjusting-screws extended between the members J′ and J″, whereby the said plate J″ may be vertically adjusted to simultaneously adjust the resiliency of each of said blades *j*. The member J′ has outwardly-extended portions *j*″ at its respective sides, to which are secured inverted-Z-shaped bars similar in all respects to the bars I above described.

L represents the polishing attachment, formed of any suitable material, preferably

emery-stone, and has at its respective sides outwardly-extended portions *l*, to which are secured inverted-Z-shaped members similar in all respects to the bars I before described. Suitable brace-rods M extend between the respective pairs of inverted-Z-shaped bars I.

From the above it is believed the operation of my machine is obvious. When it is desired to surface the floor of an alley or the like, the portable tracks are positioned in the gutters thereof and the carriage placed thereupon, the rollers being adjusted to proper position for engaging the respective tracks. The first operation being to scour or scrape the floor, the scraper H is connected to the carriage and through the means of the projecting pins will remove any shellac or irregular portions from the floor during the longitudinal travel of the carriage. The second operation being to level the scoured floor, the scraper H is removed from the carriage and the leveler J properly positioned thereon. After the floor has been accurately leveled the polishing device L is properly positioned upon the carriage and will give to the floor a finish.

Having thus described my invention, what I claim is—

1. The combination with an alley bed or support having oppositely-disposed longitudinally-extended cut-out portions constituting gutters, of a pair of spaced rails detachably mounted in said gutters, a carriage adapted for longitudinal travel relative to the alley, rollers for the carriage arranged to engage the rails, and said rails having bottom-supporting portions of the same size and shape as said gutters whereby the former are held in place.

2. The combination with an alley bed or support having oppositely-disposed longitudinally-extended concave cut-out portions constituting gutters, of a pair of rails mounted in said gutters but unattached thereto, a carriage adapted for longitudinal travel along said alley and having antifriction devices for engaging the rails, and said rails having convex bottom portions shaped to snugly rest in the concave gutters, whereby the latter constitutes the only retaining means therefor.

3. In a machine of the character described, the combination with a carriage, of a surfacing device having outwardly-projecting portions, inverted-Z-shaped bars connected with said projecting portions, and vertically-adjustable means on the carriage for adjustably supporting said surfacing device including bolts engaging apertures in the upper angles of said Z-shaped bars.

4. In a machine of the character described, the combination with a carriage, of a scraper, leveler and polisher, adapted to be interchangeably mounted thereon, and each of which having outwardly-projecting portions and inverted-Z-shaped bars connected at their lower angle with said projecting portions, and vertically-adjustable means on the carriage for adjustably supporting either said scraper, leveler or polisher, said means including bolts engaging apertures in the upper angles of said Z-shaped bars.

5. In a machine of the character described, the combination of a pair of spaced rails, a carriage having antifriction devices adjustably mounted for travel thereon, shafts for said antifriction devices, a surfacing device, angle-bars connected to said surfacing device, and means for adjustably mounting the surfacing device on said shafts including bolts engaging apertures in said angle-bars.

6. In a machine of the character described, the combination with a carriage of a leveling device mounted thereon, said leveling device comprising a supporting member having a series of longitudinally-extending thin flat blades thereon, said blades being of a springy character, and means connected with the support for regulating the resiliency of said blades, including a plate having a series of longitudinally-extended slots through which pass the blades.

7. In a machine of the character described, the combination with a carriage, of a leveling device mounted thereon, said leveling device comprising an elongated supporting member having a series of thin flat longitudinally-extending blades thereon, said blades being of a springy character, and means connected with the support for regulating the resiliency of said blades including a plate having a series of longitudinally-extended slots through which pass the respective blades, and adjusting-screws connected respectively with said plate and support.

8. In a machine of the character described, the combination with a carriage, of a leveling device, means for detachably mounting said leveling device upon said carriage, said leveling device comprising a supporting member having a series of rows of longitudinally-extending thin flat blades of resilient material, and means connected with the support and engaging each of said blades for simultaneously adjusting the resiliency thereof, including a plate having slots through which pass said blades.

9. In a machine of the character described, the combination with a carriage of a leveling device having outwardly-projecting portions, inverted-Z-shaped bars connected at their lower angles with said projecting portions, vertically-adjustable means on the carriage for adjustably supporting said surfacing device, including bolts engaging apertures in the upper angles of said Z-shaped bars, and said leveling device comprising a series of resilient blades.

10. In a machine of the character described, the combination with a carriage, of a

leveling device having outwardly-projecting portions, inverted-Z-shaped bars connected at their lower angles with said projecting portions, vertically-adjustable means on the carriage for adjustably supporting said surfacing device, including bolts engaging apertures in the upper angles of said Z-shaped bars, and said leveling device comprising a series of thin flat resilient blades and means for regulating the resiliency thereof.

11. In a machine of the character described, the combination with a carriage, of a leveling device mounted thereon, vertically-adjustable means on the carriage for said leveling device, and said leveling device comprising an elongated supporting member having a series of thin flat blades extending longitudinally thereof, said blades being of a springy character, and means connected with the support for regulating the resiliency of said blades including a plate having a series of longitudinally-extended slots through which pass the respective blades, and adjusting-screws connected respectively with said plate and support

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ROBERT McCOY.

Witnesses:
GEO. BROCKWAY,
HARRY HIND.