

R. S. LA RUE.
FLOOR SCRAPING MACHINE.
APPLICATION FILED MAR. 26, 1908.

919,037.

Patented Apr. 20, 1909.

Fig. 1.

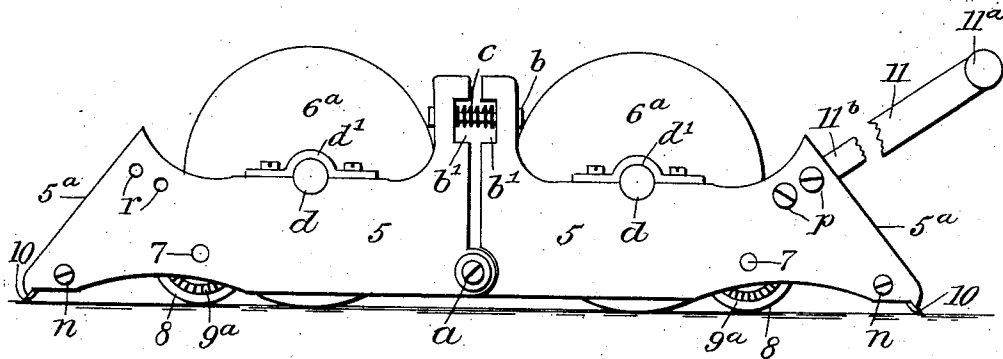


Fig. 2.

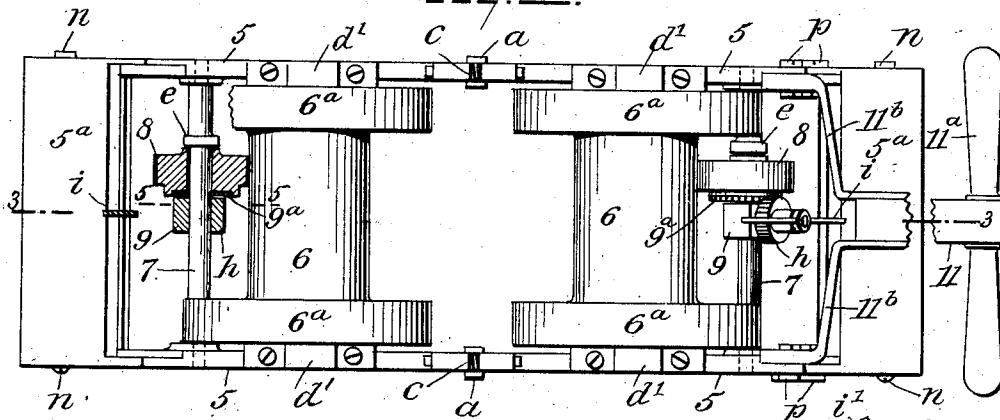


Fig. 3.

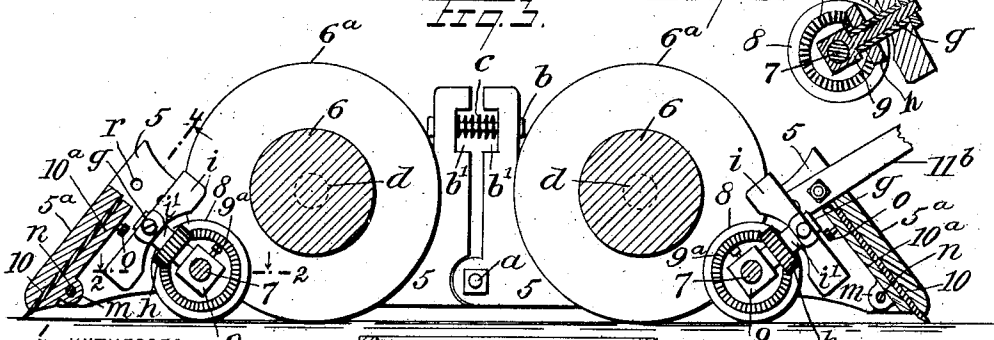


Fig. 4.

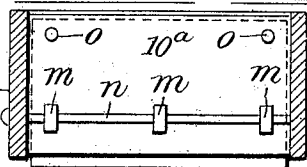
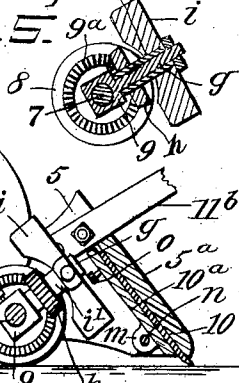


Fig. 5.



WITNESSES

H. Walker

M. J. Patton

Fig. 4.

Fig. 5.

INVENTOR
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BY

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UNITED STATES PATENT OFFICE.

RICHARD S. LA RUE, OF BELLEFONTAINE, OHIO.

FLOOR-SCRAPING MACHINE.

No. 919,037.

Specification of Letters Patent.

Patented April 20, 1909.

Application filed March 26, 1908. Serial No. 423,348.

To all whom it may concern:

Be it known that I, RICHARD S. LA RUE, a citizen of the United States, and a resident of Bellefontaine, in the county of Logan and State of Ohio, have invented a new and Improved Floor-Scraping Machine, of which the following is a full, clear, and exact description.

This invention relates to machines used for leveling and smoothing the surfaces of floors, and has for its object to provide novel features of construction for a machine of the type indicated, that afford a floor scraper which is simple, strong and durable, perfect in operation, readily adjusted and easy to operate.

The invention consists in the novel construction and combination of parts, as is hereinafter described and defined in the appended claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a side view of the improved surfacing machine. Fig. 2 is a partly sectional plan view of the same, the section being taken substantially on the line 2—2 in Fig. 3; Fig. 3 is a longitudinal sectional view, substantially on the line 3—3 in Fig. 2; Fig. 4 is a transverse sectional view substantially on the line 4—4 in Fig. 3; and Fig. 5 is a sectional side view of a detail, on the line 5—5 in Fig. 2.

The main frame of the machine, that affords support for working parts, is preferably formed in two sections, that are similar in form and dimensions and each of said frame sections comprises the following details. Two side walls 5, 5, of like form are spaced apart a proper distance and held parallel with each other by an end wall 5^a, these end walls for the frame sections inclining outward and downward an equal degree, as shown in Fig. 3. The adjacent ends of the main frame half sections, are pivoted together at the lower corners of the side walls 5, as is shown at *a* in Figs. 1 and 3. The contiguous ends of each pair of the side walls 5 are further connected together by a keeper bolt *b*, that is inserted through aligned perforations in the upper portions of said side walls, and limits the divergence of the ends of the sections. In the opposite recesses *b'*, formed in the end walls of the sides 5, a coiled spring *c* is supported by a respec-

tive keeper bolt *b*, whereon said spring is mounted. It will be seen that the similar expanding springs *c*, located as explained between each pair of side wall sections 5, 5, exert their force in a manner tending to press the end walls 5^a of the two-part main frame downward, or toward a level support upon which the frame may be seated. Two similar drums 6, 6, are at their ends formed into axial journals *d*, said journals being rotatably mounted in oppositely positioned boxes *d'*, that are in pairs mounted on the upper edges of the sides of each main frame section, as shown in Figs. 1 and 2. The drums 6, 6, each have a pair of rollers 6^a, formed or secured thereon, concentric with their axes, said rollers having equal diameters, and from their positions at the inner surfaces of the side walls 5, are adapted for the support and progressive movement of the main frame in any direction.

At a suitable distance from the axis of each drum 6, and from each end wall 5^a, a transverse shaft 7 is secured at its ends in the side walls 5 of a respective main frame section. Upon each shaft 7, a rubber-faced traction wheel 8 is loosely mounted, the diameter and relative positions of said wheels permitting them to impinge upon a floor whereon the rollers 6^a rest.

Upon each fixed shaft 7, a bracket block 9 is mounted and firmly secured at one side of and near to a respective traction wheel 8, and between each wheel 8 and an adjacent bracket block 9, a laterally toothed gear wheel 9^a is secured upon the nearest side of the traction wheel and concentric therewith. Each traction wheel 8 and gear wheel thereon, are held so as to loosely contact with an adjacent side of a respective bracket block 9, by a collar *e* that is mounted and secured upon a corresponding shaft 7, and bears loosely upon the opposite side of a respective traction wheel, whereby the gear wheels 9^a are adapted for free rotation along with the traction wheels, but are prevented from lateral movement.

A short stub shaft *g* is integrally formed or is secured upon an upper inclined side of a respective block 9, and upon each shaft *g*, a gear pinion *h* and a winged fan wheel *i* are together mounted, these parts being affixed upon a sleeve *i'* that is loosely secured upon a respective shaft *g*, as indicated in Fig. 5, and it will be seen that as the pinions mesh with the gear wheels 9^a, a progressive move-

ment of the traction wheels in any direction will cause the fan blades to rotate rapidly and create currents of air which will impinge upon the floor and surrounding parts of the machine.

A scraper blade 10 is provided for each end of the machine, these blades being flat planchets of steel plate, corresponding in dimensions and marginal shape with that of the end walls 5^a, 5^a, whereon said blades are clamped by the following described means. Two clamping plates 10^a, for coöperation with the end walls 5^a, each consist of a flat plate of metal marginally rectangular and having ears *m* formed on the normally outer side thereof, said ears on each plate that project at spaced intervals in transverse alinement and at a proper distance from the normally lower edge of the clamping plate, are centrally and transversely perforated. In the sides 5 of each frame section, at suitable points which are opposite each other, perforations are formed, which receive the end portions of a pivot bolt *n*, that is also inserted through the series of perforated ears *m* on a respective clamping plate 10^a. Threaded perforations are formed in each clamping plate 10^a at points near the upper and side edges thereof, these perforations receiving set screw bolts *o*. The clamping plates 10^a are so relatively positioned with relation to the respective end walls 5^a, that a scraper blade 10 may be placed between each end wall and adjacent clamping plate and fit neatly therebetween. It will be noted that a portion of each clamping plate 10^a extends below a respective pivot bolt *n*, and thus affords a clamping edge on each plate 10^a below the pivot bolt, the latter forming a fulcrum for the clamping plate to rock upon. After a proper insertion of each scraper blade 10 between an adjacent end wall 5^a and a clamping plate 10^a, which will permit the true, sharp, lower edge of said blade to project a short distance below the end wall, said blade will be firmly secured between the parts mentioned upon screwing the set screw bolts *o* forcibly against the upper edge portion of the scraper blade, as this will rock the clamping plate upon its pivot bolt *n* and cause the lower edge of the clamping plate to forcibly impinge upon the lower edge portion of the scraper blade, while the upper portion thereof is clamped upon the end wall 5^a by the set screw bolts *o*.

A handle bar 11 is employed for propelling the entire machine in any desired direction, said bar having the usual cross handle 11^a at one end and a pair of bent arms 11^b at the opposite end, the arms being secured in proper positions on the side walls 5 by bolts *p*, as is usual for such propelling means. If at any time, it is found desirable to provide a similar handle for the opposite end of the machine, this may be attached by bolting

its arms, similar to the arms 11^b, upon the sides 5, perforations, such as *r* in Figs. 1 and 3, being formed in each side wall above the end wall 5^a, for such a purpose.

In operation, the weight given to the entire machine holds the scraper blades 10 impinged forcibly upon the floor that is to be operated upon, so that the propulsion of the machine by means of the handle bar 11, will cause the edges of the scraper blades to rapidly and perfectly reduce high edges of flooring joints or like roughness on parquetry, and render the surface operated upon smooth and true.

It is of great advantage for effecting the rapid operation of the machine, to employ the fans shown and described, as these by the production of forcible wind currents keep the floor clean near the cutting edges of the blades 10, and prevent dust or fine shavings from clogging the same.

The novel means for adjusting and securing the scraper blades in inclined positions on the main frame at the ends thereof is convenient and reliable. It will also be obvious that the provision of a spring-pressed hinge joint, between two half-sections of the machine, positively enforces the bearing contact of the scraper blade edges upon the surface they operate on, and conduces to effect a perfect operation of the machine.

Having described my invention, I claim as new, and desire to secure by Letters Patent:

1. A floor scraper, comprising a frame formed of pivotally connected and spring pressed sections, each having an inclined outer end wall, rollers mounted in the frame, a fan carried by each frame section, means for operating the fans independently one of the other, and scraper blades carried by the inclined end walls of the frame sections.

2. A floor scraper, comprising a frame formed of sections connected together to have limited rocking movement, rollers mounted in the frame, a fan mounted in each frame section, means for independently operating the fans, and scraper blades carried by the outer ends of the frame sections.

3. A floor scraper, embodying a main frame formed in two sections that are hinged together at their lower corners, and held for limited rocking movement by keeper bolts at their upper corners.

4. A floor scraper, embodying a main frame formed in two half sections, each having parallel side walls, said walls being pivoted together at adjacent lower corners, the upper corners thereof having opposite recesses therein, a keeper bolt adapted to limit the divergence of these recessed portions, and an expanding spring mounted on each keeper bolt and occupying respective recesses.

5. The combination with a main frame having oblong rectangular form, and a scraper blade clamped on each end wall of

the frame, of a fan on the frame near each scraper blade, independent means for actuating each fan when the frame is moved, and a handle bar on the frame which affords means for moving the frame.

6. In a machine of the character described, the combination with a movable main frame, and a scraper blade on one end thereof, of a fan blower adjacent to the scraper blade, comprising a traction wheel supported for rotation on the frame, a gear on the traction wheel, a supported bracket block adjacent to said gear wheel, a rotatable pinion carried by the bracket block and meshed with the gear wheel, and a fan rotated with the pinion.

7. In a machine of the character described, the combination with a movable main frame, and a scraper blade adjustably secured on each end wall of said main frame, of a transverse fixed shaft near each scraper blade, a traction wheel rotatable on each fixed shaft, a bracket block secured on each fixed shaft, a gear wheel on each traction wheel adjacent to the bracket block thereat, a pinion rotatable on each bracket block, and a fan having ra-

dial blades and secured on the shaft of the pinion.

8. A floor scraper, comprising a frame formed of pivotally connected sections, means for limiting the swinging movement of the sections, resilient means for pressing the outer ends of the sections downward, rollers mounted in the frame, and a scraper blade carried by the outer end of each section.

9. A floor scraper, comprising a frame formed of pivotally connected sections, means for limiting the swinging movement of the sections, springs interposed between the sections, a roller support mounted in each section, and scraper blades at the outer ends of the sections.

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

RICHARD S. LA RUE.

Witnesses:

THOMAS L. MOORE,
MYRON E. LE SOURD.