No. 875,736. PATENTED JAN. 7, 1908.

S. M. RICH.

FLOOR POLISHING AND FINISHING MACHINE.

APPLICATION FILED DEC. 12, 1906.

2 SHEETS—SHEET 1.

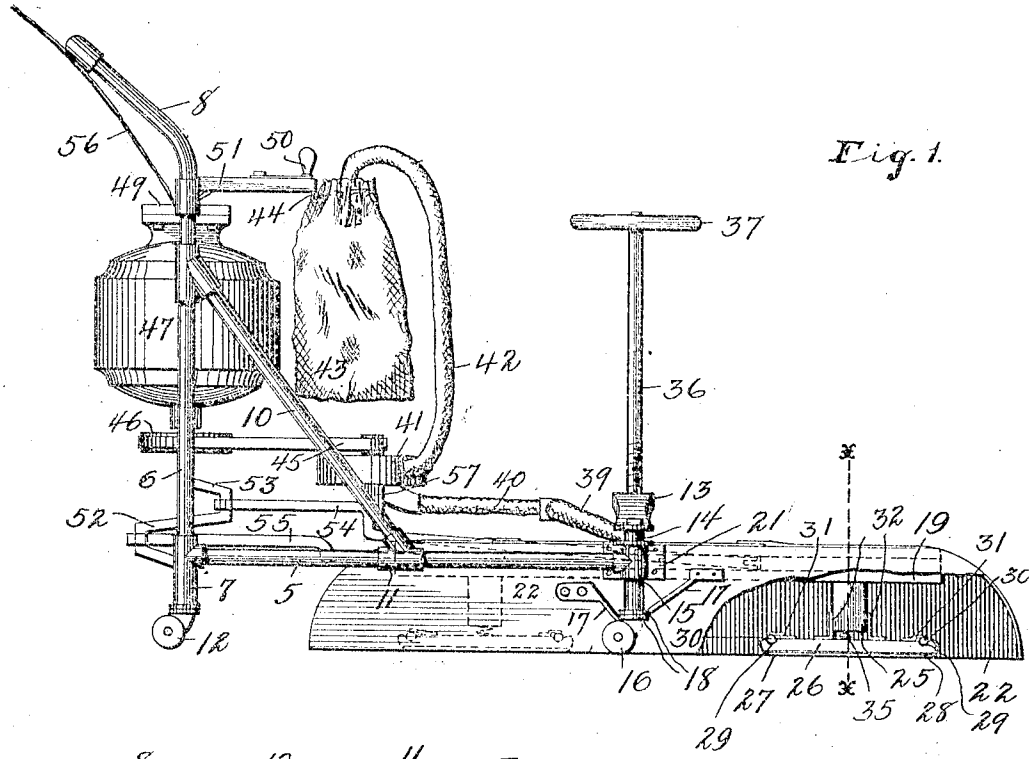


Fig. 1.

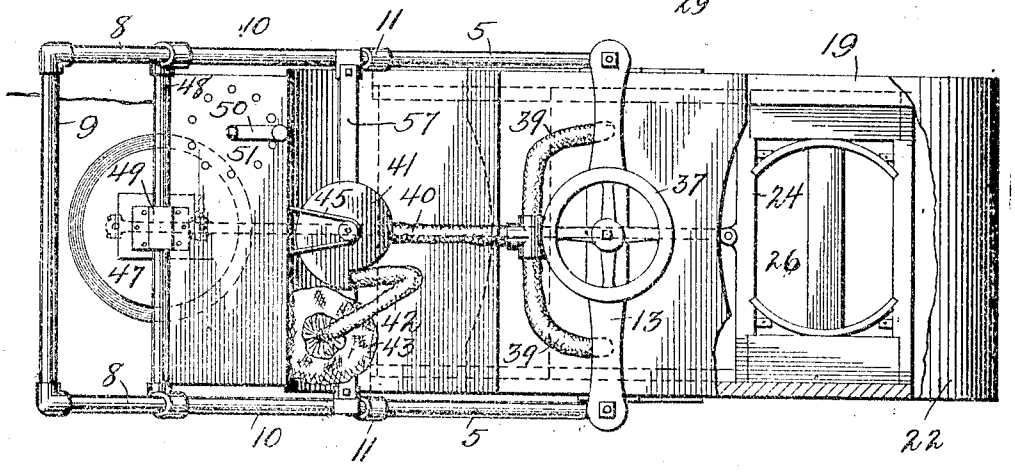


Fig. 2.

Witnesses
Carl Stoughton
Frank J. Campbell

Inventor
S. M. Rich

By Shepherd & Parker.
Attorneys

No. 875,736. PATENTED JAN. 7, 1908.

S. M. RICH.

FLOOR POLISHING AND FINISHING MACHINE.

APPLICATION FILED DEC. 12, 1906.

2 SHEETS—SHEET 2.

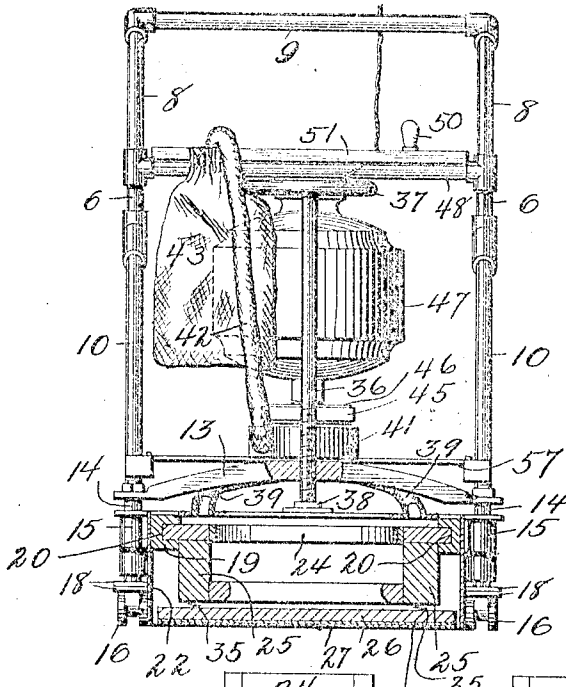


Fig. 3.

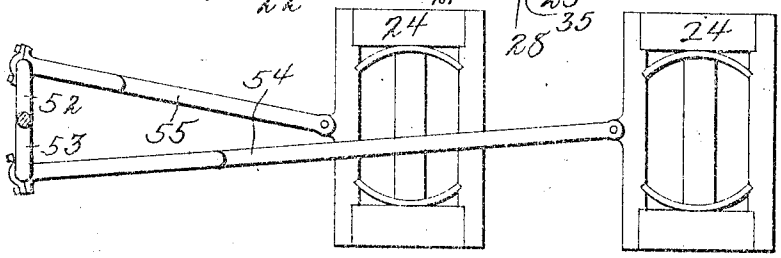


Fig. 4.

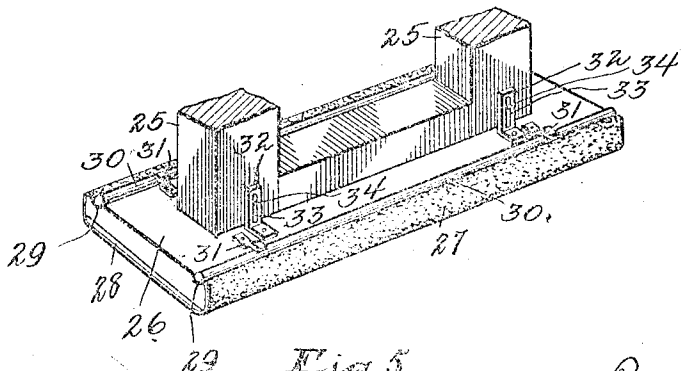


Fig. 5.

Witnesses

Carl Stoughton

F. G. Campbell

Inventor

S. M. Rich

By Shepherd & Parker

Attorneys

UNITED STATES PATENT OFFICE.

SAMUEL M. RICH, OF ALTADENA, CALIFORNIA.

FLOOR POLISHING AND FINISHING MACHINE.

No. 875,736. Specification of Letters Patent. Patented Jan. 7, 1908.

Application filed December 12, 1906. Serial No. 347,504.

To all whom it may concern:

Be it known that I, SAMUEL M. RICH, a citizen of the United States, residing at Altadena, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Floor Polishing and Finishing Machines, of which the following is a specification.

My invention relates to a device for finishing and polishing floors and has for its object the provision of a device of this character comprising means for abrading or polishing the surface of the floor and for conducting away from the surface abraded, any saw-dust or dirt which may be present upon the floor and for depositing the dirt or saw-dust in a removable receptacle.

A further object of the invention is the provision of a device constructed to accomplish the foregoing objects and having abrading or polishing members, and means for adjusting the pressure with which said members bear upon the floor.

Further objects and advantages of the invention will be set forth in the detailed description which now follows.

In the accompanying drawings: Figure 1 is a side elevation of a floor finishing machine constructed in accordance with the invention, with a portion of the apron thereof broken away, Fig. 2 is a plan view of the machine with a portion of the apron broken away, Fig. 3 is a transverse vertical section upon the line x x of Fig. 1, Fig. 4 is a detail plan view of a pair of reciprocatory cages hereinafter described, and, Fig. 5 is a detail perspective view of a polishing block hereinafter described.

Like numerals designate corresponding parts in all of the figures of the drawings.

Referring to the drawings, the numeral 5 designates the side members of a tubular frame. Vertically extending members 6 are secured to these members by couplings 7, said members 6 being outturned as at 8 and connected by a cross bar 9 to form a handle. Brace bars 10 connect the members 5 and 6 by means of couplings 11. Casters 12 are carried by the couplings 7 and serve to support the rear end of the frame. A yoke 13 is supported upon vertical members 14. Couplings 15 into which the forward ends of the members 5 are secured, are rigidly carried upon these vertical members 14. The members 14 are provided with casters 16 at their lower end.

A framework 19 having ways 20 formed therein, is secured to plates 21 which are carried by the couplings 15, the connection between said framework and said plates being compensating, such for instance as a bolt and slot connection to permit of the movement of the framework with relation thereto under circumstances of use which will be hereinafter described. An apron 22 incloses this framework and lies between the side members 19 of the frame and the plates 21. This apron entirely incloses the framework, except that the apron forms a casing which is open at the bottom. The apron 22 is provided with converging braces 17 which at their meeting ends have collars 18 that surround the members 14 and permit of a slight vertical movement of said apron and its associated parts with relation thereto. Reciprocatory cages 24 are slidably disposed in the ways 20. These cages carry depending blocks 25. Polishing blocks 26 are covered with sand-paper or other abrading material 27. A strip of felt 28 is preferably disposed between the sand-paper and the blocks to form a yielding cushion. The blocks 26 are grooved as at 29 and the ends of the sand-paper are carried beneath rods 30 which extend along these grooves. Latches 31 hold these rods in position and consequently clamp the sand-paper in position. The blocks 26 carry castings 32 which are slotted as at 33 for the reception of pins 34 which are carried by the blocks 25. This pin and slot connection permits a limited vertical movement of the blocks 26 with relation to the blocks 25. Springs 35 normally tend to force the blocks 26 away from the blocks 25 and into engagement with the floor.

A screw 36 having a hand wheel 37 mounted upon the upper end thereof, is threaded through the yoke 13 and has a swivel connection at 38 with the top of the casing formed by the framework 19 and the apron 22. Conduits 39 and 40 lead from this casing to a fan indicated at 41. A second conduit 42 leads from this fan to a removable receptacle 43 such as a bag, which is hung upon a hook 44. The fan 41 is driven by a belt 45 which leads from a pulley 46, said pulley in turn being driven from a motor 47 which is supported from a cross bar 48 by means of a bracket 49. A controller 50 of the usual and well known construction controls the speed of the motor and is mounted upon a controller board 51. Cranks 52 and

53 are driven by the motor and have connecting rods 54 and 55 connected thereto, the opposite ends of these cranks being connected to the cages 24 as is best illustrated in Fig. 4. Current may be supplied to the motor 47 from an outside source through wires 56. A transversely disposed bar 57 supports the fan casing from the brace bars 10.

The operation of the device is as follows: When it is desired to move the machine from place to place, the screw 36 is turned to the left to lift the casing and the parts carried thereby from the floor, the collars 18 sliding upon the members 14. At this time the casters 12 and 16 rest upon the floor and the machine may be rolled to the point at which it is to be used. When this point is reached, the screw is turned to the right to lower the casing to the floor. When the casing is closely adjacent to the floor, the springs 35 and felt 28 will cause the block 26 to bear with the proper degree of force against the floor, thus prevent the blocks 26 from sustaining any of the weight of the apparatus. This position is illustrated in Fig. 1, the blocks 26 at this time, bearing against the floor under the tension of the springs 35. If now, motion be imparted to the cranks 54 and 55 from the motor 51, a rapid reciprocatory motion will be imparted to the cages 24 through the said connecting rods and the cranks 54 and 53, the sand-paper or other abrading material 27 serving to finish the floor. Any wood fiber released by this process, will be drawn through the conduits 39 and 40 and delivered by the fan 41 to the receptacle 43. This receptacle may be readily removed to empty the contents therefrom when desired.

It is of course to be understood that any abrading material may be substituted for the sand-paper 27, or that a polishing material may be substituted therefor if it be desired to impart a high polish to the floor. The pin and slot connection between the blocks 25 and 26 permits, as has been before stated, a limited vertical movement of the blocks 26 with relation to the blocks 25, but prevents the complete disengagement of the blocks 26 from the blocks 25 when the casing is lifted from the floor.

From the foregoing description, it will be seen that simple and efficient means are herein provided for accomplishing the objects of the invention, but while the elements shown and described are well adapted to serve the purpose for which they are intended, it is to be understood that the invention is not limited to the precise construction set forth, but includes within its purview such changes as may be made within the scope of the appended claims.

What I claim is:

1. In a device of the character described, the combination with a supporting frame, of a motor mounted upon said frame, a vertically movable frame arranged within said supporting frame, reciprocating abrading mechanisms mounted in said last named frame, means arranged through said first named frame for adjusting said last named frame and said abrading mechanisms, and means for imparting reciprocatory movement to said abrading mechanisms, substantially as described.

2. In a device of the character described, the combination with a supporting frame, of a vertically movable frame arranged therein, reciprocatory abrading mechanisms arranged within said last named frame, an adjusting element arranged through a portion of said first named frame and against said last named frame to adjust the same and said abrading mechanism, and means for imparting reciprocatory movement to said abrading mechanisms, substantially as described.

3. In a device of the character described, the combination with the supporting side frames, of a vertically movable frame mounted therein, reciprocating abrading mechanisms arranged within said last named frame, a member bridging said side frames, an adjusting element arranged through said member and against said last named frame to adjust the same and said abrading mechanisms, and means for imparting reciprocatory movement to said abrading mechanisms, substantially as described.

4. In a device of the character described, the combination with the supporting side frames, of a vertically movable frame mounted therein, an apron carried by said second frame and forming a casing, reciprocatory abrading mechanisms mounted in said last named frame to move within said casing, a member bridging said side frames, and adjusting element arranged through said member and against said last named frame to adjust the same and said abrading mechanisms, and means for imparting reciprocatory movement to said abrading mechanisms, substantially as described.

5. In a device of the character described, the combination with the supporting side frames, of a vertically movable frame mounted therein, an apron carried by said second frame and forming a casing, reciprocatory abrading mechanisms, mounted in said last named frame to move within said casing, a member bridging said side frames, an adjusting element arranged through said member and against said last named frame to adjust the same and said abrading mechanisms, and a motor mounted on said first named frame for imparting reciprocatory movement to said abrading mechanisms, substantially as described.

6. In a device of the character described, the combination with a supporting frame, of

a motor mounted upon said supporting frame, a second frame, a casing secured to said second frame and movable therewith, said second frame and said casing being connected to the forward end of the first named frame, wheeled members slidably disposed with relation to said frame, a yoke connecting said vertical members, and a screw which is threaded into said yoke and engages the casing, as and for the purpose set forth.

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

SAMUEL M. RICH.

Witnesses:
J. D. ANDERSON,
ALMA JAMIESON.