Dec. 30, 1924. 1,520,769

J. J. PETERSON

FLOOR SCRUBBING MACHINE

Original Filed March 18, 1921

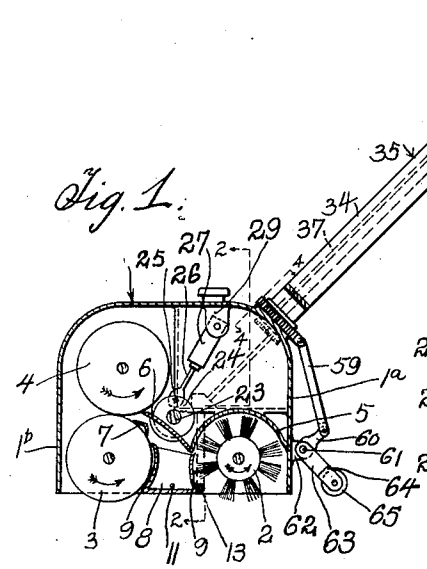


Fig. 1.

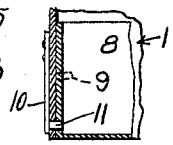


Fig. 8

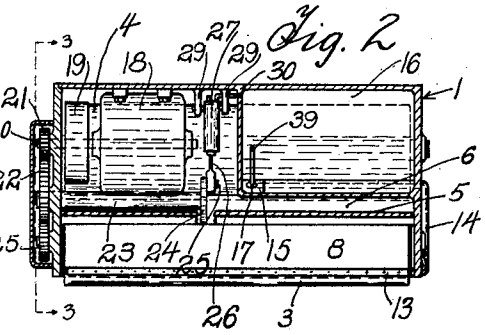


Fig. 2

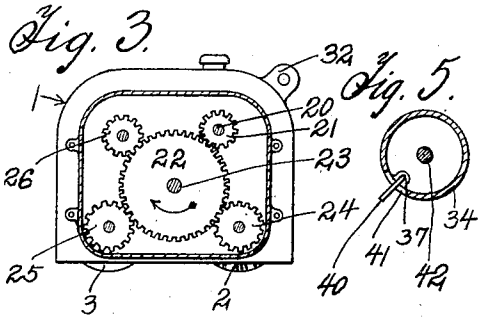


Fig. 3.

Fig. 5.

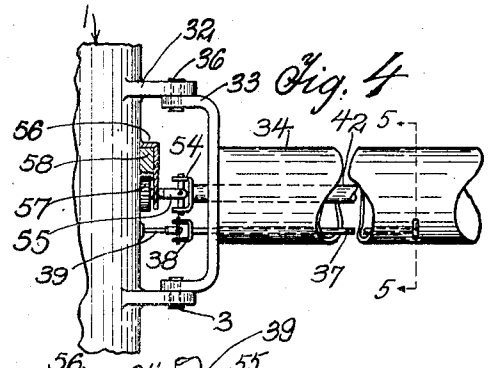


Fig. 4

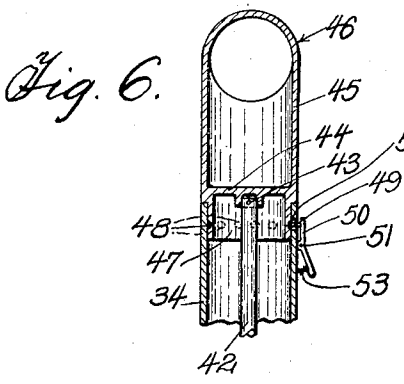


Fig. 6.

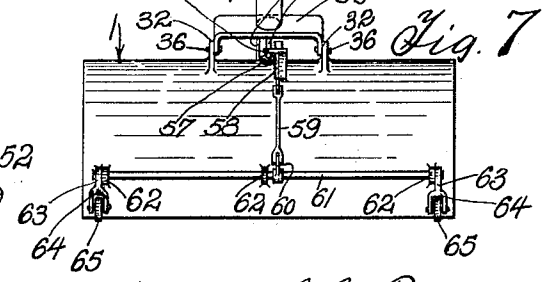


Fig. 7

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Patented Dec. 30, 1924.

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UNITED STATES PATENT OFFICE.

JOHN J. PETERSON, OF STEUBENVILLE, OHIO.

FLOOR-SCRUBBING MACHINE.

Application filed March 18, 1921, Serial No. 453,229. Renewed May 23, 1924.

To all whom it may concern:

Be it known that I, JOHN J. PETERSON, a citizen of the United States, residing at Steubenville, in the county of Jefferson and State of Ohio, have invented new and useful Improvements in Floor-Scrubbing Machines, of which the following is a specification.

This invention relates to cleaning and scrubbing machines, and more particularly to a machine adapted for scrubbing floors and for similar purposes.

One of the main objects of the invention is to provide a machine of the character stated of simple and efficient construction which may be readily moved over the floor or other surface to be scrubbed. A further object is to provide a machine whereby a suitable washing solution is sprayed upon the floor, the floor being then scrubbed with this solution which is subsequently collected and deposited in a suitable receptacle, after which the floor is subjected to the action of a drying and polishing roller. Another object is to provide simple and efficient means for transporting the machine when not in use. Further objects will appear from the detailed description.

In the drawings:

Figure 1 is a transverse sectional view through the machine.

Figure 2 is a longitudinal sectional view taken substantially on line 2—2 of Figure 1.

Figure 3 is an end view taken substantially on line 3—3 of Figure 2.

Figure 4 is a fragmentary detail of the handle and the control means associated therewith, partly in section.

Figure 5 is a section taken substantially on line 5—5 of Figure 4.

Figure 6 is a fragmentary section through the handle.

Figure 7 is a back view of the machine.

Figure 8 is a fragmentary section through one end of the casing showing the means for supporting the dirt-receiving tank.

The machine includes a casing 1 of substantially rectangular shape within which is rotatably mounted a brush 2 of suitable type positioned adjacent to and parallel with back wall 1^a of the casing. A drying and polishing roller 3 is rotatably supported adjacent to the front wall 1^b of the casing and contacts with a cleaning roller 4 rotatably mounted in the casing above roller 3. If desired, though not necessarily, any suitable or preferred means may be provided for holding roller 4 resiliently pressed against roller 3.

An arcuate guard plate 5 extends about the upper portion of brush 2 and is provided at its forward edge with an upwardly and forwardly inclined scraper 6 which contacts with roller 4 for removing foreign materials therefrom. The materials removed from roller 4 are deposited upon the upper arm of a guide and scraping member 7 of substantially flattened V shape in cross-section which extends the length of casing 1 between rollers 3 and 4. The lower arm of this member contacts with the periphery of roller 3 and acts as a scraping element to remove foreign materials from roller 3, these materials, together with the materials removed from roller 4, being deposited in a suitable receptacle or tank 8 supported in casing 1 between the roller 3 and brush 2. The receptacle 8 is centered at each end by pins 9 projecting from the inner face of the end wall of casing 1. A leaf spring 10 is secured to the outer face of each end wall of the casing and carries a pin 11 which projects through the casing and through an aperture in the adjacent end wall of receptacle 8. This provides simple and efficient means for positioning and supporting the receptacle 8 within the casing between roller 3 and brush 2. As will be noted more clearly from Figure 1, the rearward wall of receptacle 8 terminates a short distance below the forward edge of guard member 5 so as to leave a space 12 through which materials discharged from brush 2 may enter receptacle 8, the upper edge of the rearward wall of the receptacle acting as a scraper for removing materials from the brush.

A spray pipe 13 extends longitudinally of the tank in advance of brush 2. This pipe communicates at one end, by means of an arm 14 of substantially L shape, with a valve casing 15 mounted within a washing solution supply tank 16 supported in the upper rearward portion of casing 1. A valve 17 of suitable type operates in the valve casing 15 so that by turning this valve in proper direction the flow of solution to the spray pipe may be regulated, or cut off or turned on, as desired.

An electric motor 18 of suitable type is supported within casing 1 and may be connected to a suitable source of electrical energy in any suitable or preferred manner. This motor is connected through a suitable

reducing means or gearing 19 of any preferred or known type to a shaft 20 rotatably mounted through one end of the casing. A spur pinion 21 is secured on this shaft and meshes with a spur gear 22 secured on a shaft 23 projecting through the end of the casing. Spur gear 22 meshes with spur pinions 24, 25 and 26 secured on the spindles of brush 2, roller 3, and roller 4, respectively. While I have specified the use of a reducing gearing between the motor and shaft 20 this gearing can, if desired, be omitted and a low speed motor of suitable type used. Shaft 23 projects inwardly of the casing and is provided at its inner end with a disc 24 keyed on the shaft. This disc is connected at 25 to the lower end of a piston rod 26 of an air pump or compressor 27 of any suitable or preferred type which is rockably supported at its upper end between lugs 29 depending from the top wall of the casing, this pump being connected by a tube 30 to tank 16 adjacent to the top thereof. This provides simple and efficient means for providing air pressure for forcing the solution from tank 16 into the spray pipe 13 when the valve 17 is open thus insuring that the washing solution will be projected against the floor surface with appreciable velocity so as to assist in cleaning the same.

Two upwardly and rearwardly projecting lugs 32 are provided at the back of casing 1. These lugs receive between them the arms of a yoke 33 secured to the lower end of tubular body 34 of a handle 35. Suitable pins 36 serve to establish pivotal connection between yoke 33 and lugs 32. A valve control rod 37 extends through body 34 and is connected at its lower end, by a universal joint 38, to the upper end of valve rod 39 so that by turning valve control rod 37 the valve 17 may be opened or closed, as desired. Rod 37 is turned downwardly and outwardly at its upper end to provide an outwardly projecting finger 40 which operates in a slot 41 provided in body 34 of the handle. Movement of finger 40 into its extreme position in one direction will open the valve 17, movement of the finger into its other extreme position closing the valve.

An adjusting rod 42 extends through body 34 of handle 35 and is secured at its upper end, at 43, to a web element 44 provided in stem 45 of a T member 46 at the upper end of the handle. This T member is provided at its lower end with a reduced neck 47 fitting snugly into the upper end of body 34, this neck being provided in its outer surface with a plurality of radially disposed recesses 48. These recesses are adapted to receive a pin 49 projecting inwardly from the upper end of a control lever 50 pivoted at 51 on the body 34. Pin 49 operates through an aperture 52 in body 34 and the upper end of lever 50 is pressed toward the body of the handle by an expansion spring 53 confined between the handle body and the lower end of the lever. This provides simple and efficient means whereby the adjusting rod 42 may be rotated and may be secured in rotary adjustment.

Rod 42 is connected at its lower end, by means of a universal joint 54, to a stub shaft 55 rotatably supported through a bracket 56 mounted on the upper rearward portion of the casing 1. A pinion 57 is secured on the lower end of stub shaft 55 and meshes with a rack 58 slidable in bracket 56. This rack is connected by a link 59 to an arm 60 secured on a shaft 61 rockably mounted in lugs 62 projecting from the back of the casing. Arms 63 are secured on this shaft at each end thereof, each arm being provided at its lower end with a fork 64 in which is rotatably mounted a roller 65. By turning adjusting rod 42 in proper direction shaft 61 may be rocked so as to raise or lower rollers 65 as desired. When it is desired to move the machine from one position to another, the rollers are depressed so as to raise the body of the casing above the floor surface, the machine being transported upon the rollers. During operation of the machine the rollers are raised out of contact with the floor surface, the machine being supported upon roller 3 and brush 2.

As will be understood, it may be found desirable in practice to resort to changes in details of construction and arrangement of parts of the invention without departing from the field and scope of the same, and I intend to include all such variations, as fall within the scope of the appended claim, in this application in which a preferred form only of my invention is disclosed.

What I claim is:—

In a machine of the character described, a casing, a handle connected to said casing, a shaft rockably mounted on the casing, arms projecting from said shaft and provided at their free ends with rollers, a member carried by the handle at the upper end thereof and rotatably adjustable in said handle, an adjusting rod carried by the handle and having its upper end secured to said member, and connections between said adjusting rod and said shaft for rocking the shaft in either direction in accordance with rotation of the adjusting rod.

In testimony whereof I affix my signature.

J. J. PETERSON.