No. 811,119. PATENTED JAN. 30, 1906.

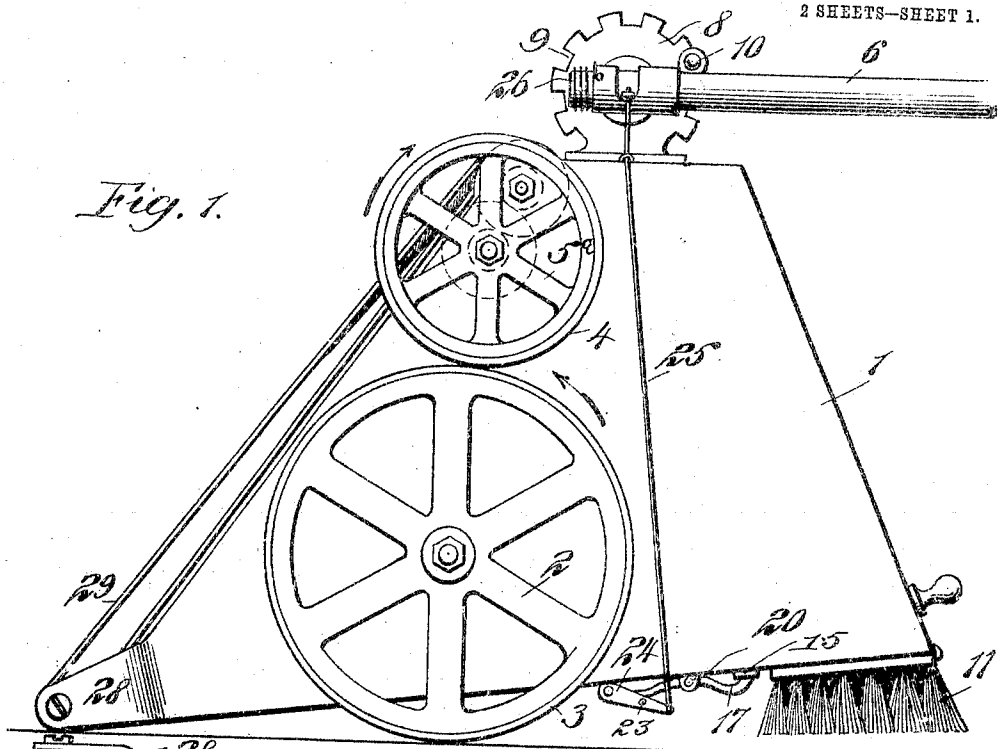
F. F. ANDERSON.

MEANS FOR CLEANING FLOORS.

APPLICATION FILED FEB. 19, 1904.

2 SHEETS—SHEET 1.

Fig. 1.



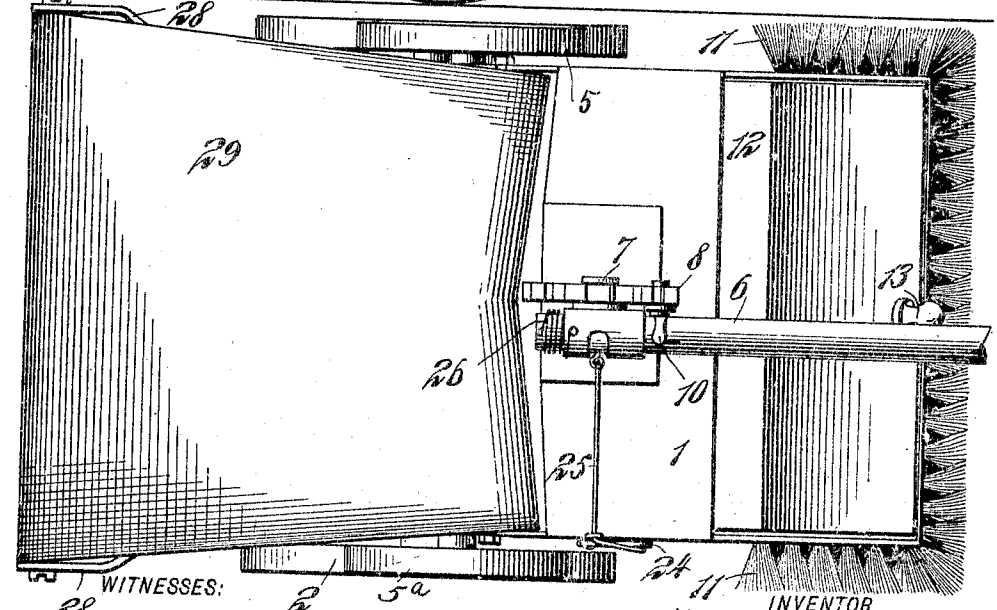


Fig. 2.

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Fig. 3.

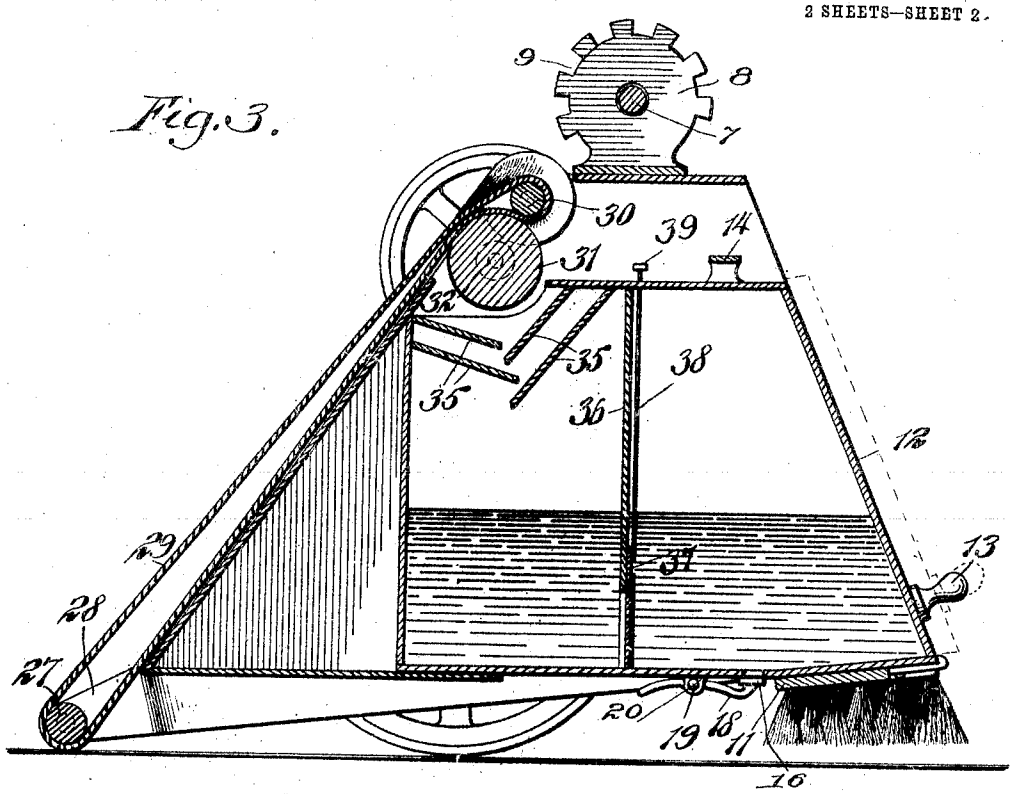


Fig. 4.

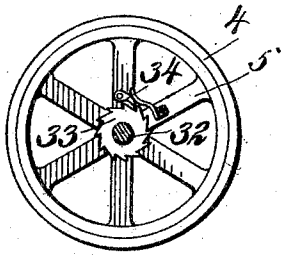


Fig. 5.

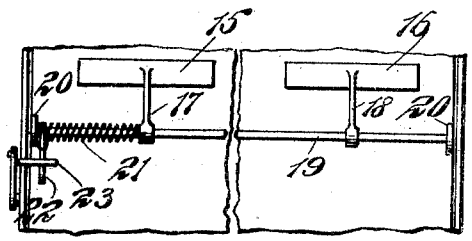
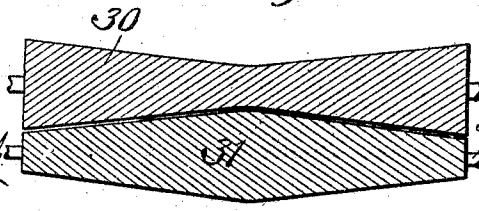


Fig. 6.



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MEANS FOR CLEANING FLOORS.

No. 811,119. Specification of Letters Patent. Patented Jan. 30, 1906.

Application filed February 19, 1904. Serial No. 194,341.

To all whom it may concern:

Be it known that I, FREDERICK F. ANDERSON, a citizen of the United States, residing in the city, county, and State of New York, have invented a certain new and useful Improvement in Means for Cleaning Floors; of which the following is a specification.

This invention relates to means whereby the washing and drying of floors, pavements, and the like may be accomplished with a minimum of effort and time and without the necessity of the operator kneeling or stooping to reach his work.

In its preferred form this invention has the following advantages: A small compact device is provided which can be easily operated with one hand and can be pushed into corners and close to the wall, so as to leave no part of the floor untouched. A single handle acts both to push and pull the device over the floor and to give complete control of the supply of water for cleaning the floor, so that the operator can propel the machine and regulate the amount of water and either shut off or turn on said water with the same hand.

I have illustrated one preferred form of this invention in the accompanying drawings, wherein—

Figure 1 is a side view of the complete washing and drying apparatus. Fig. 2 is a top view of the same. Fig. 3 is a longitudinal median section of the same. Fig. 4 shows a preferred means for connection between the driving-wheel and rollers for the drying-band. Fig. 5 is a fragmentary view looking up beneath the water-tank and showing the valves, and Fig. 6 is a longitudinal section of the preferred rollers for moving and squeezing the drying-band.

It is to be understood that while in the drawings I have shown a device combining the scrubbing and drying functions this invention is not limited to this combination, but covers either used alone, substantially as hereinafter described.

In the preferred form shown an outer wheeled carrier 1 is employed, which may be given the form shown in Figs. 1 and 2. The weight of this carrier is supported upon wheels 2, which are preferably supplied with an adhesive tire 3, which may be made of rubber. This is for the purpose of facilitating transmission of movement to a similar tire 4 on the driven wheel 5 for the purpose hereinafter mentioned. Any well-known means for insuring constant frictional effect between these two wheels may be employed without departing from this invention. It is also to be understood that my invention covers any well-known form of power-transmitting device whereby the wheels which carry the frame 1 act to drive the wheels 5 and 5^a. The arrows in Fig. 1 show the respective directions of movement of the wheels 2 and 5 when the frame is pushed forward.

The frame 1 is controlled by means of a long handle 6, attached by means of a horizontal revoluble shaft 7 passing through an appropriate bearing 8. In the preferred form this bearing is supplied with a number of notches 9, and a pin 10, carried on the handle 6, is used to connect the handle with the bearing 8 by insertion of the pin into any one of said notches, thus permitting a wide range in the position of the handle during use.

At one end of the frame 1 there is attached a strong brush 11, the back of which brush extends across from side to side underneath the frame 1 and practically forms part of it.

Above the brush 11 and partly resting upon it, as shown in Fig. 3, there stands the water-tank 12, which may be given any desired form and is preferably supplied with handles, such as 13 and 14. This tank is carried by the frame 1 between its two sides and is removable therefrom whenever it is desired to renew the supply of water or to throw away the dirty water. The removability of the tank 12 is indicated in Fig. 3 by the dotted lines, indicating the position of the front of the tank when pulled slightly forward. The tank is supplied with a suitable valve for discharge of the clean water in proximity to the brush 11, which valve may be of any desired character and may be controlled by any appropriate means. In the preferred form shown two valves are illustrated, the openings of which are placed just behind the brush 11 underneath the tank. These openings are normally covered by the valves 15 and 16, carried on arms 17 and 18, which are fixed to the revoluble shaft 19 under the tank, turning in bearings 20, fixed to the tank itself. The coiled spring 21 or equivalent device is applied to the shaft 19 in such a manner as to tend at all times to close the valves. To one end of the shaft 19 there is fixed an operating-arm 22, commanded by a pin 23, which is carried on an outside arm 24, pivoted to the side of the frame 1. When

this arm 24 is drawn upward toward the bottom of the tank 12, the pin 23 presses the arm 22 and turns the shaft 19 in opposition to the spring 21, thus opening both of the valves 15 and 16 and permitting escape of water. In the preferred form shown the raising of the arm 24 for opening the valves is accomplished by means of a cord, wire, or the like 25, attached at one end to the arm 24 and at the other end to the side of the handle 6 in such a way that when the handle is revolved the tension exerted on the cord 25 will raise the arm 24. The coiled spring 26 exerts a constant tendency to return the handle 6 to the position shown in the drawings, and thus keep the valves closed. The attachment of the cord 25 at its upper end is preferably arranged in line with the center of the shaft 7, on which the handle 6 turns. This is done to permit rotation of the handle 6 around its shaft without affecting the valves, and the particular arrangement of the cord as shown in the drawings insures operation of the valve by turning the handle, whatever may be the degree of inclination of the handle.

The parts thus far described, omitting the wheel 5 and its tire, are sufficient to accomplish the scrubbing functions, and I have claimed this much of the device separately without reference to its combination with the drying means hereinafter described. Said drying means are also themselves claimed separately without reference to their combination with the scrubbing device.

The preferred form of drying means which is best adapted to combination with the scrubbing means thus far described is shown in the drawings and comprises a movable absorptive band so arranged as to convey the water from the floor or pavement to a point where it may be squeezed out of the band. The roller 27 is pivoted between appropriate arms 28 on the sides of the frame 1, and an endless absorptive band, which may be made of appropriate textile material, runs on said roller, the same being shown at 29 in the drawings. The upper part of the endless band is also carried on a roller, and a special form is given to this second roller in the preferred form of this device, as best shown in Figs. 2 and 6.

In order that the device may be used to run close up into corners, the arms 28 are bent outward, so as to carry the band 29 out as far as the outer planes of the supporting-wheels 2. It is obvious, however, that the upper end of the band 29 in the form of device shown must be contracted within the space between said wheels, and for this purpose I preferably employ a carrying-roller 30, the shape of which is clearly shown in longitudinal section in Fig. 6 and wherein the smallest diameter is near the middle. The movement of the band 29 and the squeezing of moisture therefrom are both accomplished in the preferred form shown by means of a driving-roller 31, shaped to fit the carrying-roller 30 and whose longitudinal section is clearly illustrated in Fig. 6. The roller 31 is carried on pivots 32. (Shown in dotted lines in Fig. 3 and in section in Fig. 4.) The roller 31 is fastened to these pivots, and the toothed wheel 33 is also fastened to that pivot which lies on the same side as the wheel 5. This wheel turns loosely on the pivot 32 and carries a spring-pawl 34. When the wheel turns in the direction opposite to the arrow in Fig. 1, the pawl 34 and ratchet-wheel 33 coöperate to move the roller 31. Contrary movement of the wheel 5 causes the pawl 34 to travel idly over the ratchet-wheel. Thus the band 29 is always carried in one direction—namely, the outside moving upward—and by tilting the frame 1 into the position shown in Figs. 1 and 3 this band is brought in contact with the floor or pavement while driven as above described, thus absorbing water and carrying it up to the rollers 30 and 31, between which it is squeezed, thus causing water to fall into any appropriate receptacle below said rollers to catch it. It is preferred to arrange baffle-plates 35, projecting opposite each other, below the opening into the receptacle for dirty water. By use of these plates the agitation of the vessel 12 is prevented from throwing the water out from the top opening.

In the preferred form of my invention the tank 12 is divided into two compartments separated by the partition 36. The compartment over the valves will contain the clear water and the other compartment will be destined to receive the dirty water. Where it is desired to use the same water over again, as may be done where water is scarce, the gate 37 is supplied, controlling communication between the two compartments of the tank 12, which gate can be raised and lowered by means of the rod 38 and handle 39. On raising this gate the whole tank becomes virtually one compartment and becomes equivalent to a tank having no partition 36, which arrangement is within my invention. This last arrangement may be used even where only clean water is to be applied to the floor. In this case the scrubbing operation is completed over the whole floor before the drying-band is used, and the dirty water is returned to the tank 12 only after the whole floor has been cleaned.

It will be obvious that by tilting the frame 1 to bring either the band or the brushes against the floor one or the other of the functions of the entire combination may be made separately available.

A variety of changes may be made in this device without departing from the spirit and scope of this invention, and I am not to be understood as limiting myself to the details herein shown and described.

What I claim is—

1. In a device of the class described, a frame and brush attached beneath the same, a water-tank above said brush, a valve beneath the tank, a single propelling-handle rotatably mounted on said frame and a mechanical connection between said handle and said valve for opening and closing the valve by movement of the handle, substantially as described.

2. In a device of the class described, a frame, a brush pivoted beneath said frame a water-tank above said brush supported by said frame, a valve beneath said tank, a propelling-handle for the frame rotatably mounted thereon, a spring for closing the valve, a pin on the handle and a flexible connection between said pin and said valve whereby turning the handle on its own axis will act to open and close said valve, substantially as described.

3. In a device of the class described, a frame, a brush carried beneath the frame, a tank supported by the frame above said brush, a valve beneath said tank and a propelling-handle; in combination with wheels supporting said frame, a roller near the bottom of the frame and extending to each side as far as the planes of said wheels, two corresponding rollers each of varying cross-section pivoted near the top of the frame over said tank, means connecting the supporting-wheels with one of said last-named rollers for driving the same and an endless band of absorbent material as wide as said lower roller supported by and running on all three rollers so as to spread out near the bottom of the frame, and be contracted within narrower limits near the top thereof, substantially as described.

4. In a device of the class described, a frame, a tank supported by said frame; a valve beneath the tank, a brush supported under one end of the frame near said valve a roller extending across and supported by said frame at its opposite end, a single pair of supporting-wheels for the frame between said brush and said roller, rollers supported by the frame above said tank, means connecting the supporting-wheels and one of said last-named rollers for driving the latter, an endless band of absorbent material passing over the first-named roller and over the last-named rollers, and a propelling-handle for the frame said supporting-wheels extending below the plane of the brush and lower roller so that the frame may be tipped on said supporting-wheels by means of said handle to bring said brush or said band in contact with the floor at will, substantially as described.

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