R. A. DICKINSON.

SCRUBBING MACHINE.

APPLICATION FILED APR. 29, 1916.

1,294,881.

Patented Feb. 18, 1919.

2 SHEETS—SHEET 1.

Fig. 1.

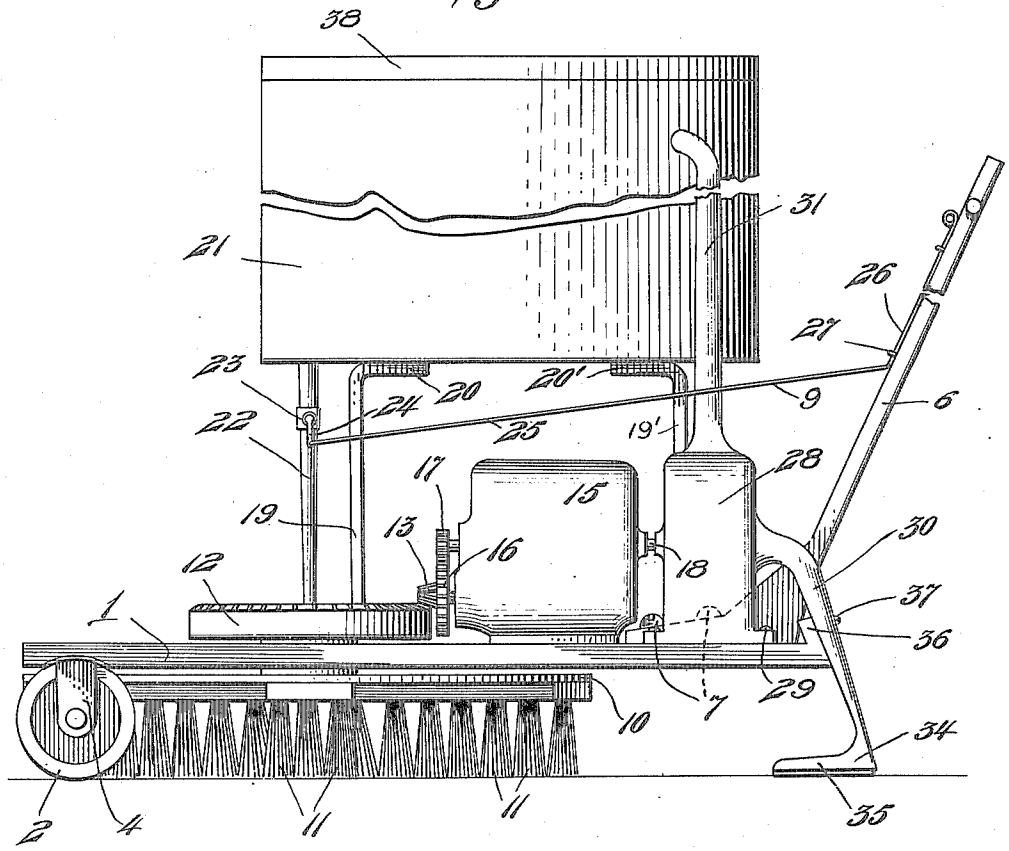
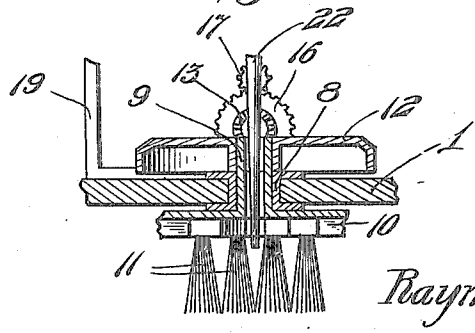


Fig. 3.



WITNESSES

K. L. Eberle.

A. D. Gallagher Jr.

INVENTOR,

Raymond A. Dickinson,

BY

Richard Owen,

ATTORNEY.

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2 SHEETS—SHEET 2.

Fig. 2.

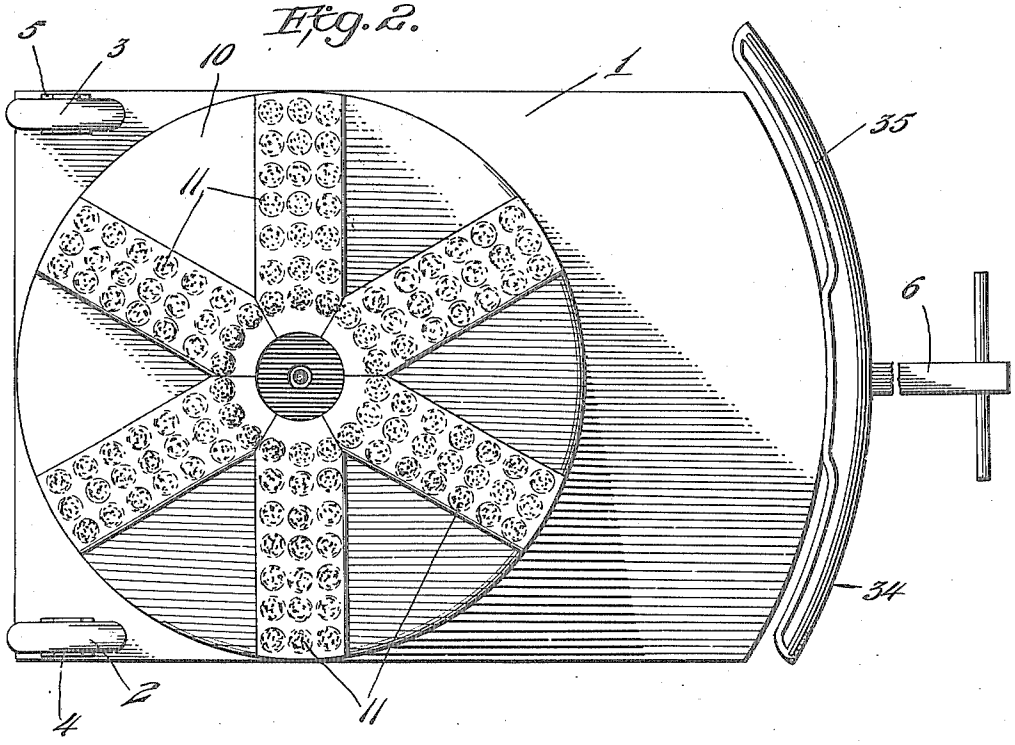


Fig. 5.

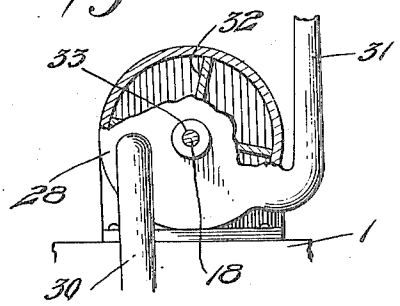
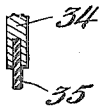


Fig. 4.



WITNESSES

T. S. Eberle.

A. F. Bellizzi.

INVENTOR,

Raymond A. Dickinson,

BY Richard B. Owen.,

ATTORNEY.

UNITED STATES PATENT OFFICE.

RAYMOND A. DICKINSON, OF BARKER, NEW YORK.

SCRUBBING-MACHINE.

1,294,881 Specification of Letters Patent. Patented Feb. 18, 1919.

Application filed April 29, 1916. Serial No. 94,432.

To all whom it may concern:

Be it known that I, RAYMOND A. DICKINSON, a citizen of the United States, residing at Barker, in the county of Niagara and State of New York, have invented certain new and useful Improvements in Scrubbing-Machines, of which the following is a specification.

This invention relates to scrubbing machines, and more particularly, to a power driven scrubbing machine.

The primary object of the invention, is to provide a power driven scrubbing machine, the same being so constructed so as to be portable in nature, whereby the same may be shifted to various positions in order that a surface may be efficiently cleansed, the water and soapsuds being discharged from a suitable supply tank onto the floor at a point in proximity to the scrubbers, thereby greatly facilitating the scrubbing operation.

Another equally important characteristic of the invention, resides in the provision of suction creating means, which are in turn, connected with a nozzle, whereby the water remaining on the surface may be removed therefrom and conveyed to the supply tank, whereat it is discharged thereinto for subsequent usage; the nozzle being constructed in such a manner as to cause the water to be gradually moved toward the middle thereof, thus, preventing the same from moving around the ends of the nozzle and consequently, leaving a portion of the surface covered with that water as deflected thereonto.

Other novel features, reside in the peculiar arrangement of the driving means and its connection with the scrubbers; the arrangement of the water supply tank; the specific construction of the frame or truck; finally, the provision of a cut-off valve interposed in the outlet pipe of the water supply tank, whereby the flow of water onto the surface to be cleansed may be controlled at will by the operator.

The annexed drawings and the following description, set forth in certain detail mechanism embodying the invention, such disclosed means constituting, however, but one of the various mechanical forms in which the principle of the invention may be used.

In said annexed drawings:—

Figure 1 is a fragmental side elevation;

Fig. 2 is a bottom plan showing the arrangement of the scrubbers and the suction nozzle;

Fig. 3 is a transverse section in detail of the power transmitting gear;

Fig. 4 is a fragmental detail in section showing the construction of the surface engaging portion of the rear wall; and

Fig. 5 is a detail partly in section of the suction creating means.

Referring now more specifically to the drawings, wherein like reference characters designate like or corresponding parts throughout the several views thereof, a supporting frame comprising a truck having a body 1, forwardly disposed wheels 2 and 3, these wheels being supported in suitable journals 4 and 5 and a handle member 6 secured to the rear extremities of the body 1, by means of fastening devices as indicated at 7, is proposed. An opening is arranged in the body 1 at a point in proximity to the forward end thereof and has arranged therein, a bushing 8, through which a hollow cylindrical bearing sleeve 9 extends, this hollow cylindrical sleeve in turn, being secured to a circular head 10, which head has arranged upon its under face a plurality of diametrically arranged scrubbers 11. The upper extremity of the bearing sleeve 9 has keyed thereto, a crown gear 12, which gear has in mesh therewith, a beveled gear 13 carried by the shaft 14 journaled in the housing of an electrical motor or other prime mover as indicated at 15 and arranged adjacent a cog wheel 16, also carried by the shaft 14. A second cog wheel 17 of less diameter than the wheel 16, is secured to the armature shaft 18 of the motor, whereby the necessary motion may be imparted to the scrubbers 11. Standards 19 and 19′ are affixed to the body portion 1 and have formed upon their adjacent extremities, angularly disposed bracket members 20 and 20′. A water supply tank 21 is receivable upon said brackets 20 and 20′ and may be affixed thereto in any suitable manner as is common to the art. The bottom of the supply tank has an opening arranged therein, which opening serves to receive a discharge pipe 22, which, as will be obvious, is gradually tapered off toward its nozzle. A rotary valve, not shown, is received in the casing 23, in the discharge pipe 22. A handle 24 is arranged upon the outer end of the float valve and is engaged by a connecting element 25, which element extends for-

wardly and is in turn, connected with a slidable actuating member 26, secured to the handle 6 by means of staples 27.

In order to provide for means whereby that water as remaining upon the surface subsequent to the scrubbing operation, may be removed therefrom, I provide a rotary air pump, comprising a casing 28 which is affixed to the body 1, by means of fastening devices as designated at 29 at a position rearwardly of the said body, the casing having arranged therein, an inlet pipe 30 and an outlet pipe 31, the outlet pipe communicating with the interior of the water supply tank 21. A rotary fan 32 is arranged interiorly of the casing 23 and journaled in suitable bearings 33 therein. The fan 32 is supported upon an extension formed upon the opposite extremity of the armature shaft 18, and, consequently, is driven thereby, when current is supplied the motor 15. The inlet pipe 30 has arranged upon its lower extremity, an arcuate nozzle 34, the rear wall of which is provided with a rubber flange or packing 35, this serving as means to prevent the escape of the water from under the nozzle. To provide means whereby the inlet pipe 30 may be rigidly supported, the body 1 has arranged thereupon, a lug 36, with which the said inlet pipe 30 is engaged and held in this position by means of a screw 37.

It is of course to be understood, that the water supply tank is provided with means whereby the same may be filled and to this end, I arrange thereupon, a detachable cover 38, thus, when it is desired to fill the same with water it is only necessary that the said cover be removed from the tank.

In reviewing the operation and assuming that the water supply tank has been previously filled, power is supplied to the motor 15 and the valve handle 24 is simultaneously actuated by the sliding member 26 carried by the handle 6. By so operating the device, it will be apparent, that the scrubbers 11, due to their connection with the motor 15, will be rotated and, that water will be carried from the supply tank 21 into the discharge nozzle 22 or to the surface to be scrubbed. If it is so desired, the water as contained in the supply tank 3 may have a quantity of soapsuds therein. As the scrubbing operation continues, the truck is moved slowly over the surface, causing the suction nozzle 34 to be engaged with the water as remaining upon the surface which has been scrubbed. Due to the fact that the rotary fan 32 is also driven by the armature shaft 18 of the motor 15, it will be obvious that the suction as created thereby, will cause the water to be removed from the surface and conveyed upwardly through the intake pipe into the discharge pipe 31 and then returned into the water supply tank 21, whereupon, it may be again used. When the scrubbing operation has been completed, the cut-off valve handle 24 may be so actuated as to discontinue the flow of water through the discharge pipe 22 and a suitable circuit breaker, not shown, may be actuated so as to discontinue the supply of current to the motor 15. The water as contained in the supply tank 21 may be then emptied, the top or cover 38 having been removed.

If so desired, the scrubbers 11 may be rotated and thus, serve as an efficient sweeper whereby dirt and other matter as contained in a carpet or the like, may be loosened and, as the device is moved across the surface, the suction nozzle 34 will be engaged with the loosened dirt and consequently, remove the same therefrom and deposit it within the tank 21. In this manner, the device will efficiently serve as a combined carpet sweeper and vacuum cleaner, it of course being understood, that the tank 21 serves in this particular instance, as a dirt receiving receptacle, instead of a water supplying means.

From the foregoing, it will be apparent to workers in the art, that I have provided a simple and efficient device, which, due to its construction may be manufactured at a minimum cost; one which will eliminate the heretofore laborious task of manual scrubbing and also, a device which may, at the option of the user, be used as both a scrubber and sweeper.

Other modes of applying the principle of my invention may be employed instead of the one explained, change being made as regards the mechanism herein disclosed, provided the means stated by any of the following claims or the equivalent of such stated means, be employed.

I, therefore, particularly point out and distinctly claim as my invention:—

1. In a device of the class described, the combination of a supporting body, scrubbing means carried by said body, an elongated nozzle carried by said body in the rear of said scrubbing means, the end portions of the nozzle being curved forwardly from the center of the nozzle, and suction means connected to said nozzle, thus causing the moisture upon a surface after the passing of the scrubbing means to be directed by the end portions of the nozzle toward the center of the nozzle to be sucked upwardly by the suction means.

2. In a device of the class described, the combination of a supporting body, wheels connected to the forward portion of said body, scrubbing means connected to said body, a nozzle secured to the rear end of said body, suction means connected to said nozzle, and a yieldable flange carried by said nozzle, said nozzle being adapted to support the rear end of said body and in turn

be supported by said flange, thereby causing the moisture engaging the flange to be positively retained from escaping thereunder and to be sucked upwardly through said nozzle.

3. In a device of the class described, the combination of a body, wheels supporting the forward end of said body, scrubbing means carried by said body, a lug carried upon the rear end of said body, a nozzle having a tube extending therefrom, suction means connected to said tube, said tube being fixedly secured to said lug, said nozzle having its end portions curved forwardly from its center portion, and a yieldable flange connected to said nozzle, said nozzle supporting the rear end of said body and in turn being supported by said flange, thus causing the end portions of the flange to direct the moisture toward the center of the nozzle to allow the moisture to be easily sucked up through said pipe.

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

RAYMOND A. DICKINSON.

Witnesses:

FRED. M. CLOPP,

RALPH J. BIDLEMAN.