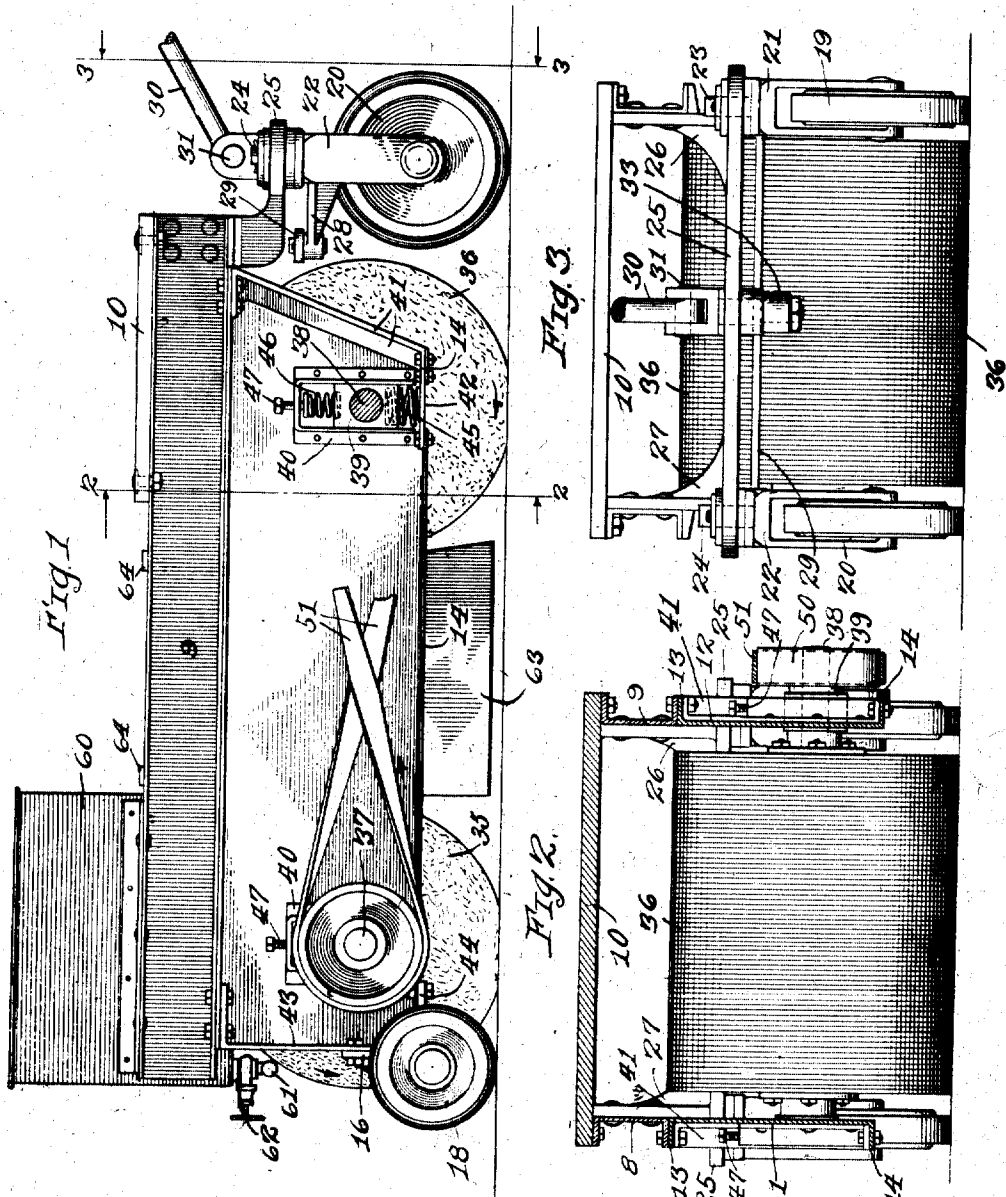


G. S. BLAKESLEE.
FLOOR SCRUBBING MACHINE.
APPLICATION FILED APR. 17, 1914.

1,250,131.

Patented Dec. 18, 1917.
3 SHEETS—SHEET 1.



Witnesses:
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By

Inventor:
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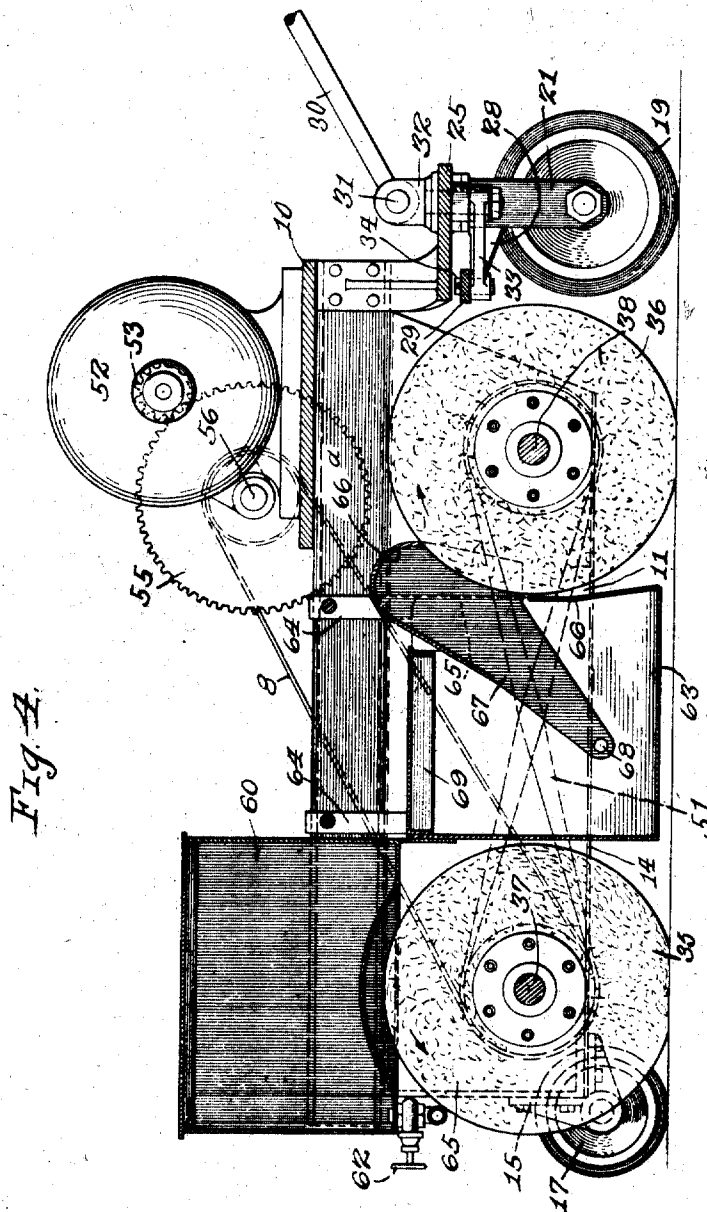


Fig. 4.

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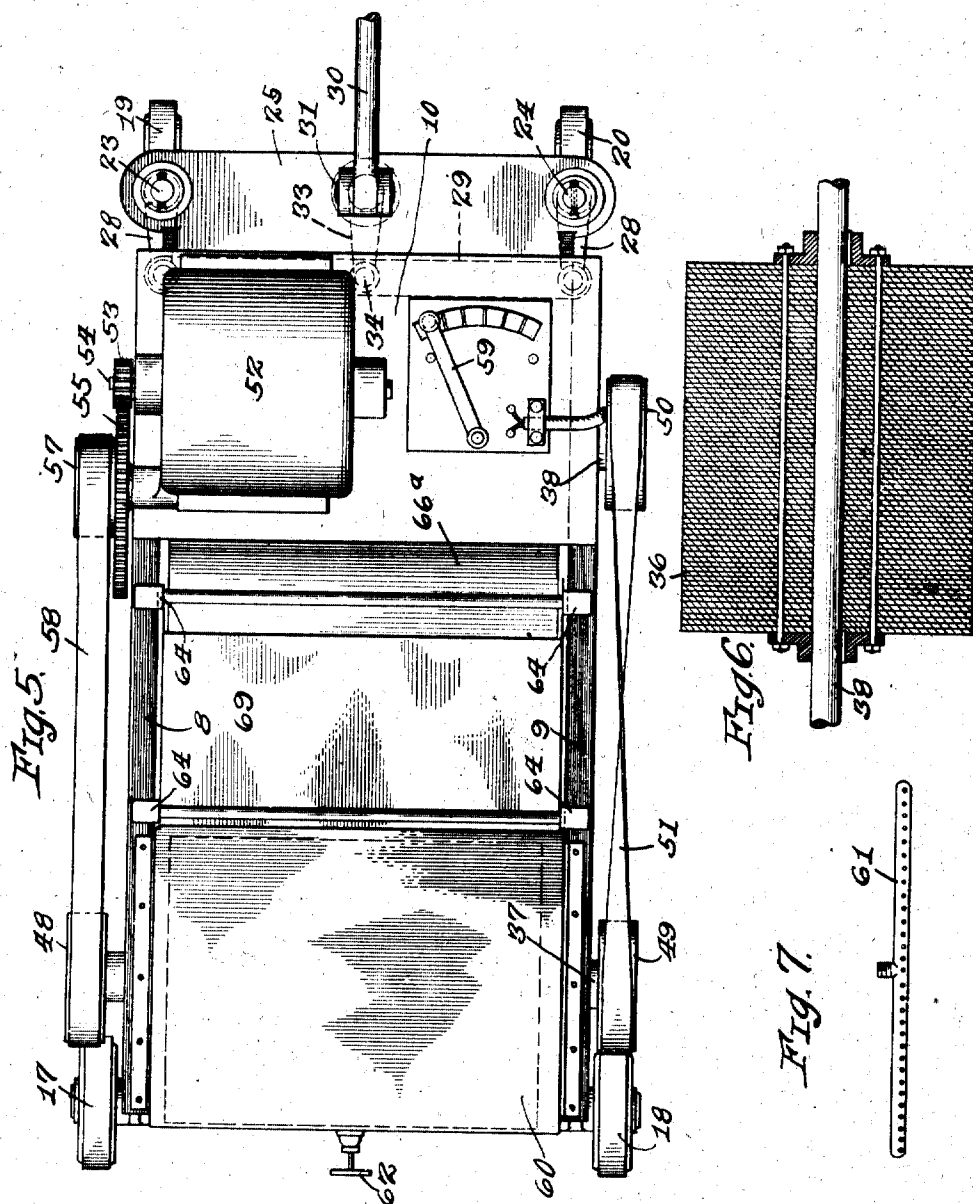
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

GEORGE S. BLAKESLEE, OF CHICAGO, ILLINOIS.

FLOOR-SCRUBBING MACHINE.

1,250,131.

Specification of Letters Patent.

Patented Dec. 18, 1917.

Application filed April 17, 1914. Serial No. 832,476.

To all whom it may concern:

Be it known that I, GEORGE S. BLAKESLEE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Floor-Scrubbing Machines, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to apparatus for scrubbing floors, and has for its object to provide certain improvements in the construction and operation of such machines. Such improvements relate to the devices for supporting and steering the machine, the manner of mounting the scrubbing and wiping brushes, the manner of supporting the waste water receptacle, and to devices for removing the waste water from the wiping brush and depositing it in such waste water receptacle. I accomplish my object as illustrated in the accompanying drawings and as hereinafter described.

What I regard as new is set forth in the claims.

In the drawings,—

Figure 1 is a side elevation, one pulley being removed;

Fig. 2 is a vertical cross-section on line 2—2 of Fig. 1;

Fig. 3 is an end view taken on line 3—3 of Fig. 1;

Fig. 4 is a central, longitudinal, vertical section;

Fig. 5 is a plan view;

Fig. 6 is a longitudinal, vertical section of one of the rotary brushes; and

Fig. 7 is a view of the water-distributing pipe.

Referring to the drawings,—

8—9 indicates the side-bars of the main frame of the machine, and 10 indicates a plate or platform mounted upon the rear end portions of the side-bars 8 and secured thereto in any suitable manner so as to firmly connect said side-bars and also form a platform which supports certain parts of the apparatus, as hereinafter described. The side-bars 8—9 are preferably channel-bars, as shown in Fig. 2. 11—12 indicate side-plates, each having an upper flange 13 and a lower flange 14, the upper flanges 13 being secured to the lower margins of the side-bars 8—9, as shown in Fig. 2. 15—16 indicate corner-brackets secured to the lower, front corners of the side-plates 11—12, respectively, and

having bearings for the journals of supporting-rollers 17—18. 19—20 indicates caster-wheels mounted in forked brackets 21—22, respectively, having vertical pivots 23—24 which are journaled in suitable bearings in a cross-bar 25 secured by brackets 26—27 to the rear end portions of the side-bars 8—9, as shown in Figs. 1 and 3. The caster-wheel brackets 21—22 are provided with horizontally-projecting arms 28, shown in Fig. 1, which are connected by a cross-bar 29 pivoted to said arms 28, as shown in Fig. 4, so that by moving said bar 29 endwise both caster-wheels may be turned in the same direction. 30 indicates a guiding and controlling rod by which the movement of the apparatus over the floor is controlled. Said rod is pivotally connected at 31 to a pivoted bolt 32 journaled centrally in the bar 25 and having an arm 33 similar to and parallel with the arms 28. The arm 33 is pivoted centrally to the connecting-bar 29 as shown at 34 in Fig. 5. The rod 30 is free to swing up and down independently of the bolt 32, but when said rod is swung laterally said bolt is partially rotated, thereby swinging its arm 33 to one side or the other. Thus, by swinging the controlling-bar 30 to one side or the other, the two caster-wheels may be correspondingly turned to guide the apparatus as it is pushed over the floor.

35 indicates a scrubbing-wheel and 36 a wiping or drying wheel. Said wheels are alike in construction, being preferably formed of a multiplicity of disks of cotton or other suitable material pressed closely together so as to form a brush-like wheel having its surface sufficiently flexible to enable it to be pressed closely upon the surface to be scrubbed and to adapt itself to such surface—somewhat after the manner of a cylindrical brush. The scrubbing-wheel 35 is mounted upon a shaft 37 disposed transversely of the machine between the side-plates 11—12 and mounted in suitable bearings carried by said side-plates. In like manner, the drying or wiping wheel 36 is mounted upon a shaft 38 which is similarly arranged and mounted. In Fig. 1 I have illustrated one of the bearings provided for the wiping-wheel. As therein shown, the ends of the shaft 38 which constitute journals for said wheels, are fitted with bearing-blocks 39 which are mounted in bearings formed by rectangular brackets 40 secured to the side-plates 11—12. Said brackets 40

are preferably angle-iron bent to suitable form and riveted to the side-plates around elongated openings cut in said side-plates, to permit the ends of the shaft 39 to extend through the side-plates. In order to secure greater strength at the bearings, the side-plates are provided at the rear with bracing-bars 41 which, at their upper ends, are secured to the side-bars 8-9 and at their lower ends are secured to the lower flanges 14 of the side-plates. The flanges 14 are cut away at the lower ends of the openings above mentioned, and removable bars 42 connect the separated portions of the flanges 14 under such openings, the brackets 40 resting upon and being secured to said bars 42, as shown in Fig. 1. The bars 42 are made removable so that the shaft 38 and the bearing-blocks 39 in which it is mounted may be withdrawn when it is necessary to renew the wheel 36. Substantially the same construction is provided at the front end of the machine for the shaft 37 of the scrubbing-roller, except that instead of using braces like the braces 41, I employ braces 43 which extend vertically and are bent at their lower ends and secured to the flanges 14, as shown at 44 in Fig. 1. The shaft 37 is removable in the same way as the shaft 38. These braces 43 also form a secure means of attachment for the corner-brackets 15-16, as shown in Fig. 4. The bearing-blocks 39 of both the scrubbing and drying wheels are yieldingly mounted so that they may rise and fall slightly, having springs 45 below them resting on the bars 42 and springs 46 above them, as shown in Fig. 1. The tension of the springs may be regulated by set-screws 47 which pass through the upper portions of the brackets 40, as shown. By this means, the pressure of the scrubbing and drying wheels upon the floor may be regulated as conditions require. 48-49 indicate pulleys mounted upon the ends of the shaft 37, and 50 indicates a pulley mounted upon one end of the shaft 38. 51 indicates a twisted belt connecting the pulleys 49-50, so that the shafts 37-38 rotate in opposite directions.

52 indicates a motor mounted on the platform 10 and secured in any suitable way. 53 indicates a pinion mounted on the motor-shaft 54, said pinion meshing with a gear 55 mounted on a shaft 56 which carries a pulley 57. The latter pulley is connected by a belt 58 with the pulley 48. Thus the motor 52 drives both the scrubbing and the drying wheels, but as above explained, said wheels rotate in opposite directions. 59 indicates a rheostat mounted on the platform 10 for controlling the operation of the motor 52.

60 indicates a water-tank supported by the side-bars 8-9 at the forward end portions thereof and having connected thereto a transverse perforated pipe 61 arranged ad-

jacent to the upper forward portion of the scrubbing-wheel 35 so as to discharge water thereupon. The discharge of the water is controlled by a valve 62, as shown in Fig. 1.

63 indicates a tank arranged between the scrubbing and wiping wheels, as shown in Fig. 4. Said tank is supported by straps 64 which hook over the side-bars 8-9 so that it may readily be removed, as occasion requires, and is open at its upper rear side, as shown at 65 in Fig. 4, being provided with a partition 66 at its rear side extending from the bottom of the tank up to about the center of the drying-wheel and adjacent thereto. The drying-wheel rotates in the direction indicated by the arrow in Fig. 2, and the purpose of the tank 63 is to receive the water removed from the drying-wheel as said wheel rotates. 66^a indicates an overhanging scraper having a semi-cylindrical portion which extends longitudinally of the wiping-wheel 36, the edge of said scraper being adapted to bear upon the upper inner portion of such wiping-wheel for scraping the surface thereof and causing the water removed from it to be discharged into the tank 63. Said scraper is carried by swinging side-plates 67 pivoted at 68 to the tank 63. Thus the scraper may be swung away from the wheel 36 when desired, but ordinarily it extends in an inclined position over the forward portion of said wheel and presses by gravity thereupon. 69 indicates a cover-plate fitted over the upper portion of the tank 63 between the scraper 66 and the front side of the tank. Said cover serves not only as a cover, but also prevents the scraper from accidentally moving out of operative position.

The operation of the apparatus is as follows: The tank 60 being filled with soapy water, or other suitable cleansing fluid, the valve 62 is opened to the desired extent, thus discharging streams of water downward over the length of the scrubbing-wheel 35. The motor being started, the scrubbing-wheel is rotated in the direction indicated by the arrows and the machine is pushed over the floor. By thus rotating the scrubbing-wheel, the surface treated is thoroughly cleansed, the surplus water being thrown back under the machine. At the same time, the drying or wiping wheel 36 is rotated in the opposite direction, and as it passes over the surface washed, the surplus water is taken up and part of it is thrown into the interior of the scraper 66 by centrifugal action, the remainder being scraped off by said scraper. The water taken up, therefore, is deposited in the tank 63, leaving the floor dry. By means of the caster-wheels, the device may be readily guided. When the tank 63 is full, it may be readily lifted out and emptied without disturbing any other parts of the apparatus.

That which I claim as my invention, and desire to secure by Letters Patent, is,—

1. A floor-scrubbing machine, comprising a frame, transversely-disposed scrubbing and wiping wheels disposed horizontally under said frame and supported thereby, said wheels being spaced a distance apart, a water receptacle disposed between said scrubbing and wiping wheels and suspended from said frame, and a scraper pivotally mounted upon said receptacle and adapted to engage the upper inner portion of said wiping wheel for directing water scraped therefrom into said receptacle.
2. A floor-scrubbing machine, comprising a frame, transversely-disposed scrubbing and wiping wheels disposed horizontally under said frame and supported thereby, said wheels being spaced a distance apart, a water receptacle disposed between said scrubbing and wiping wheels and suspended from said frame, and a scraper having an overlying semi-cylindrical portion, pivotally

mounted upon said receptacle, said semi-cylindrical portion being adapted to engage the upper inner portion of said wiping wheel for directing water scraped therefrom into said receptacle.

3. A floor-scrubbing machine, comprising a frame, transversely-disposed scrubbing and wiping wheels disposed horizontally under said frame and supported thereby, said wheels being spaced a distance apart, a water receptacle disposed between said scrubbing and wiping wheels and suspended from said frame, a scraper pivotally mounted upon said receptacle and adapted to engage the upper inner portion of said wiping wheel for directing water scraped therefrom into said receptacle, and a cover fitted upon said receptacle and arranged to prevent displacement of said scraper.

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