

No. 619,348.

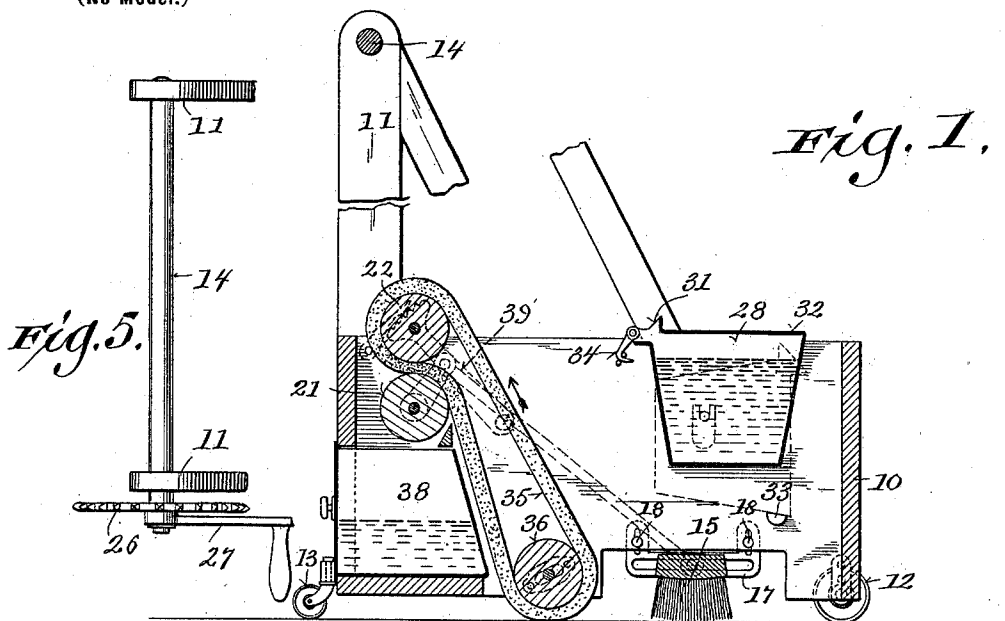
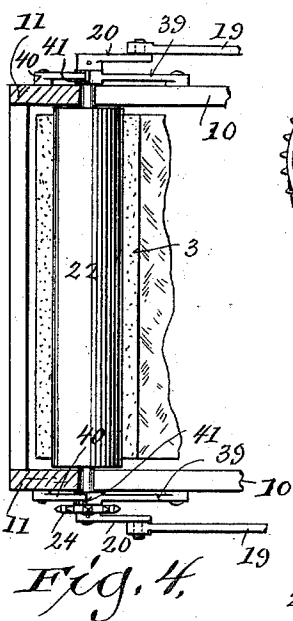
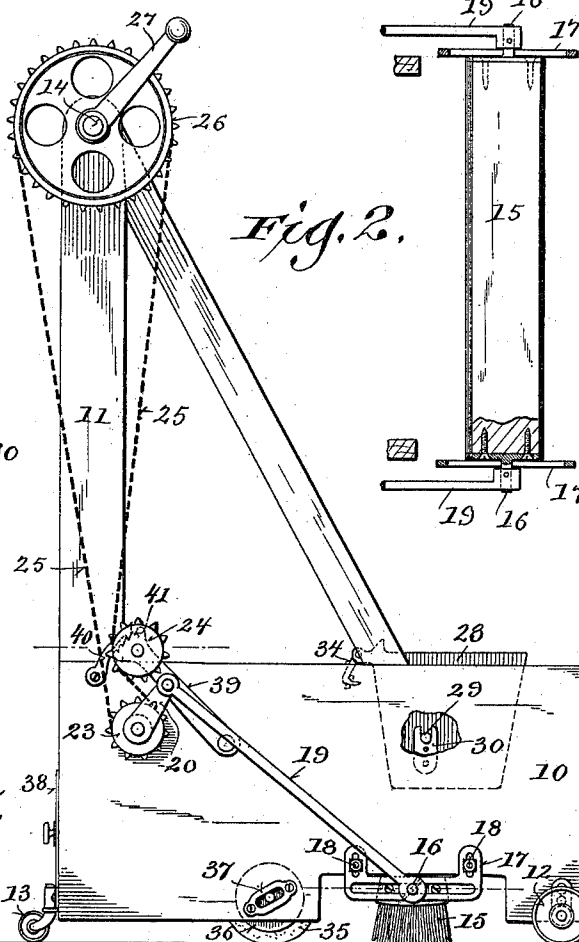
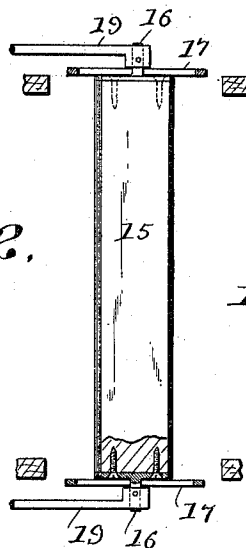
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A. O. RICKMEIER & W. B. HADLEY.

SCRUBBING MACHINE.

(Application filed Aug. 2, 1898.)

(No Model.)



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UNITED STATES PATENT OFFICE.

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SCRUBBING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 619,348, dated February 14, 1899.

Application filed August 2, 1898. Serial No. 687,501. (No model.)

To all whom it may concern:

Be it known that we, ADOLPH O. RICKMEIER, of Plymouth, Sheboygan county, and WALTER B. HADLEY, of Rice Lake, in the
5 county of Barron, State of Wisconsin, have invented a new and useful Improvement in Scrubbing and Mopping Machines, of which the following is a description, reference being
10 had to the accompanying drawings, which are a part of this specification.

Our invention relates to improvements in machines especially adapted for scrubbing and mopping up floors in buildings or where-
ever smooth hard floors exist.

15 The invention consists of the machine, its parts, and combinations of parts, as herein described and claimed, or their equivalents.

In the drawings, Figure 1 is a longitudinal section of the complete machine, parts being
20 broken away for convenience of illustration. Fig. 2 is a side elevation of the complete machine, parts being broken away for exhibiting interior construction. Fig. 3 is a detail,
25 partly in section, of the brush-head and related parts. Fig. 4 is a top plan view of the pressure-rolls and related parts. Fig. 5 is a top plan view of the sprocket driving-wheel, its support, and related parts.

The framing supporting the operative
30 mechanism and devices employed in our improved machine consists, preferably, of a box-like structure 10, open at the top and mostly open at the bottom, with standards 11 11 projecting upwardly and fixed and preferably
35 braced thereon. This framing is supported conveniently and so as to travel freely over the floor to be scrubbed and cleaned by means of wheels 12 12, axled on and supporting
40 the front end of the frame, and by wheeled casters 13, swiveled to and supporting the rear end of the frame. A transverse rod 14, fixed in the standards 11 11 at or near their tops, serves as a convenient means for the attendant to grasp, whereby to push or pull the
45 machine along on the floor.

The scrubbing-brush 15, substantially as long as the interior distance between the sides of the framing 10, is provided with pins
50 or trunnions 16, rigid to the head of the brush, which trunnions enter and travel reciprocally in horizontal elongated slots or guide-

ways in brackets 17 17, one on each side of the framing on the outside. These brackets are severally secured to and adjustable vertically on the framing 10 by means of
55 bolts 18 18, fixed in the framing and passing through vertically-elongated slots in the brackets. By this construction the brush can be adjusted to the floor. Rods 19 19, secured rigidly to the trunnions 16, are wristed at
60 their other extremities on the pins of cranks 20 20 on the journals of a pressure-roll 21, the journals of which have their bearings in the framing 10. A complementary pressure-roll 22 is located above parallel with and adjacent to the roll 21. The rolls 21 and 22
65 are severally provided with sprocket-wheels 23 24, and a driving sprocket-chain 25 runs on these wheels and also on a wheel 26, axled on the extended extremity of the rod 14.
70 The chain 25 runs on the sprocket-wheels 23 and 24 in such manner as to cause the rotation of the rolls toward and past each other in the same direction on their inner or adjacent sides.

75 The driving sprocket-wheel 26 is provided with a crank-handle 27, by the rotation of which by the attendant the pressure-rolls 23 and 24 are rotated and the brush 15 is reciprocated. It will be observed that the brush is
80 so disposed as to properly bear against the floor on which the machine is supported and travels by means of the wheels 12 and casters 13, and it will be understood that by reason of the rod 19 being fixed to the head of the
85 brush the brush is given not only a reciprocating motion, but also a rocking movement, by the rotation of the crank 20.

A water-tank 28 is mounted in the framing above and a little in front of the brush and is
90 adapted to hold hot water to be discharged onto the floor just in front of the brush when the machine is in use. This tank may conveniently be constructed of metal and is substantially as long as the interior width of the
95 framing, in which it is removably supported conveniently by means of trunnions 29, fixed on its ends, preferably at the rear of its center of gravity, and these trunnions are adapted to enter sockets therefor in brackets 30 30,
100 fixed on the inner sides of the frame. The top of this tank is preferably substantially closed,

and the tank is provided with a funnel-shaped mouth 31 at and extending along the entire length of its rear upper corner, and there are apertures 32 in this cover of the tank along 5 and near the front upper corner. The open elongated funnel-shaped mouth 31 is intended and adapted for conveniently filling the tank with water, and the apertures 32 are adapted for discharging the water limitedly and slowly 10 therefrom when the tank is tilted over toward the front to a position in which the front side wall of the tank rests on the stop 33, secured to the framing. The tank is tilted over to this position when the machine is in use, so 15 that there may be automatically a continuous but limited discharge of water therefrom sprinkled on the floor in front of the brush. A hook 34, hinged on the tank, takes into a catch therefor on the frame and is adapted to 20 hold the tank in its upright position (shown in Fig. 1) against the action of gravity, which would otherwise overturn it, bringing its front side down onto the stop 33. It is ordinarily desirable to have the water hot that is discharged from this tank onto the floor, and as 25 this tank is removable from the framing it may be filled with water and placed on a stove and the water heated, and thereafter the tank can be replaced in the frame.

30 For taking up the dirty water and mopping the floor behind the brush a mop is provided that consists of an endless belt or apron 35, of some water-absorbing material, preferably felt, substantially as wide as the length of 35 the brush, which runs on a roll 36 and on the roll 22 and between the rolls 22 and 21. The journals of the roll 36 have their bearings in elongated slots in boxes 37, secured to the sides of the framing 10. These boxes 37 are 40 so disposed that the elongated slots therein form arcs of the circle the center of which is the axis of the roll 22, whereby the roll 36 is capable of a slight movement upwardly and downwardly, whereby its position is auto- 45 matically adjusted with reference to the floor and in such direction as always to keep proper strain on the apron 35, running thereon, to hold it taut. The distance between the roll 21 and the roll 22 is such that the apron 35 is 50 compressed in its passage between these rolls to such extent as to squeeze or force the water therefrom that has been absorbed on the floor and has been taken up by the apron. The apron runs up at the front over the roll 55 22, and, passing down at the rear of the roll 22, between it and the roll 21, the water is squeezed out at the rear of the roll 21, whereby it is separated and entirely removed from the apron in its passage therefrom downwardly, and the water falls into a receptacle 60 38, which is supported in the frame, and may be readily withdrawn therefrom for emptying it of its contents. The roll 22 is journaled in the free extremities of arms 39, pivoted 65 at their other extremities on the frame 10. The arms 39 are so disposed as to be capable of being swung toward the rear, thereby in-

creasing the tension on the apron 35 and on the sprocket-chain 25, or of swinging toward the front slightly, thereby releasing the tension on said apron and chain. These arms 39 70 can also be swung forwardly beyond their perpendicular, carrying the upper end of the endless apron, with the roll 22, sufficiently far to take the mop entirely away from the roll 75 21, whereby the parts are so separated as to put them in the best possible position for drying out the mop. Pawls 40, hinged on the frame, are adapted to take into racks 41 on the free extremities of the arms 39 and hold 80 them releasably in position.

In use the attendant with one hand takes hold of the rod 14 and pushes the machine along and pulls it back, while with the other hand he takes hold of the handle 27 and by 85 rotating it operates the brush and the apron-mop, thus scrubbing the floor and taking up the dirty water and discharging it into the receptacle 38. The tank 28 at the same time is tilted over, so as to sprinkle water there- 90 from on the floor in front of the brush.

What we claim as our invention is—

1. In a scrubbing-machine, the combination of a frame having wheels adapted to travel on a floor, a pair of brackets secured to the 95 frame adjustable vertically thereon and having horizontally-disposed guideways therein, a brush located between the brackets and having trunnions fixed in its head and projecting laterally therefrom into and reciprocable and rotatable in said guideways, a 100 driven roller mounted in the frame and a connecting-rod fixed to one of the trunnions of the brush and to a wrist-pin on the crank of said roller. 105

2. In a scrubbing-machine, the combination of a frame having wheels adapted to travel on a floor, a pair of brackets mounted adjustable vertically on the frame and having horizontally-disposed guideways therein, a brush 110 between and mounted so as to be reciprocable and tiltable in said ways, a driven roller mounted in the frame having a crank with a wrist thereon, a rod fixed to said brush and pivoted on said crank-wrist, a cranked shaft 115 mounted in the frame and connected operatively to the driven roller.

3. In a scrubbing-machine, the combination of a frame adapted to travel on a floor, horizontally-disposed ways on the frame, a brush 120 reciprocable horizontally on the ways, a driven roller having a crank mounted in the frame, a connecting-rod wristed on the crank and fastened to the brush, a distant crank-handle mounted on the frame and a sprocket-chain 125 connecting the crank-handle operatively to the driven roller.

4. In a scrubbing-machine, the combination with a frame, of an elongated substantially closed water-holding vessel having trunnions 130 on its ends at one side of the vertical plane of its center of gravity, said vessel having a series of water-discharging apertures arranged transversely of the machine and in

the portion of the vessel that is above the water-line when the vessel is in its normal upright position, and releasable means for holding the vessel upright against the action
5 of gravity.

5. The combination in a scrubbing-machine with a frame, of a tank comprising a substantially closed vessel having trunnions on its ends at one side of the vertical plane of
10 its center of gravity, a funnel-shaped mouth in the upper part, discharge-orifices in the upper part at a distance from said mouth, and means for supporting the tank removably on the frame and for securing it releasably in
15 position thereon.

6. In a mopping-machine, the combination with a frame, of an endless-apron mop, a roll

on which the mop is carried at the lower part of its line of travel, a second roll mounted in the frame against which the mop travels, a
20 third roll above said second roll and on which third roll the mop is carried in the upper part of its travel, and swinging arms pivoted on the frame in which said third roll is jour-
naled and by which the roll and mop can be
25 removed from the adjacent pressure-roll.

In testimony whereof we affix our signatures in presence of two witnesses.

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WALTER B. HADLEY.

Witnesses:

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C. T. BENEDICT.