

(No Model.)

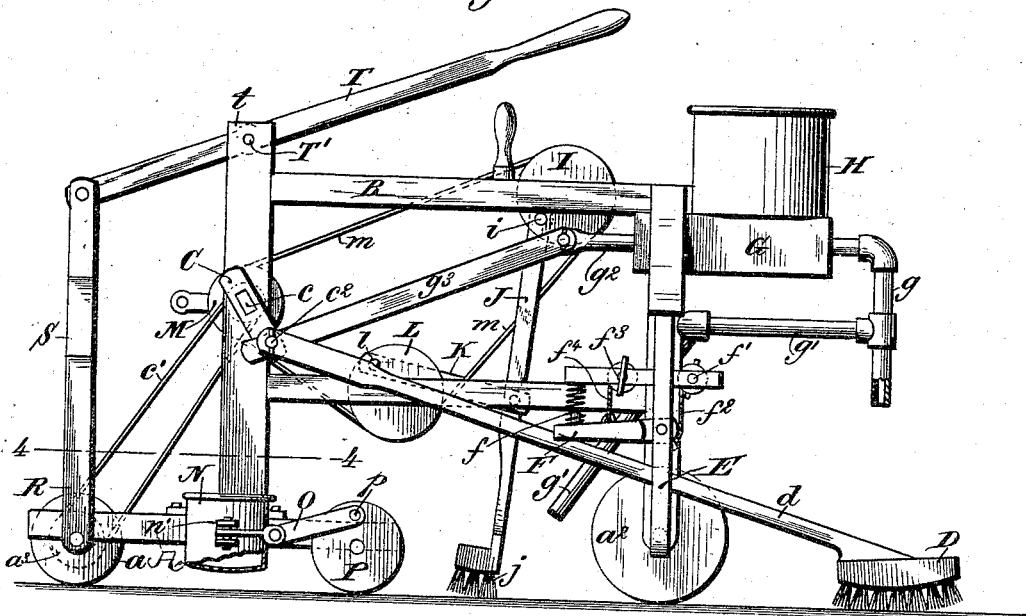
2 Sheets—Sheet 1.

W. W. HEAD.  
FLOOR SCRUBBING MACHINE.

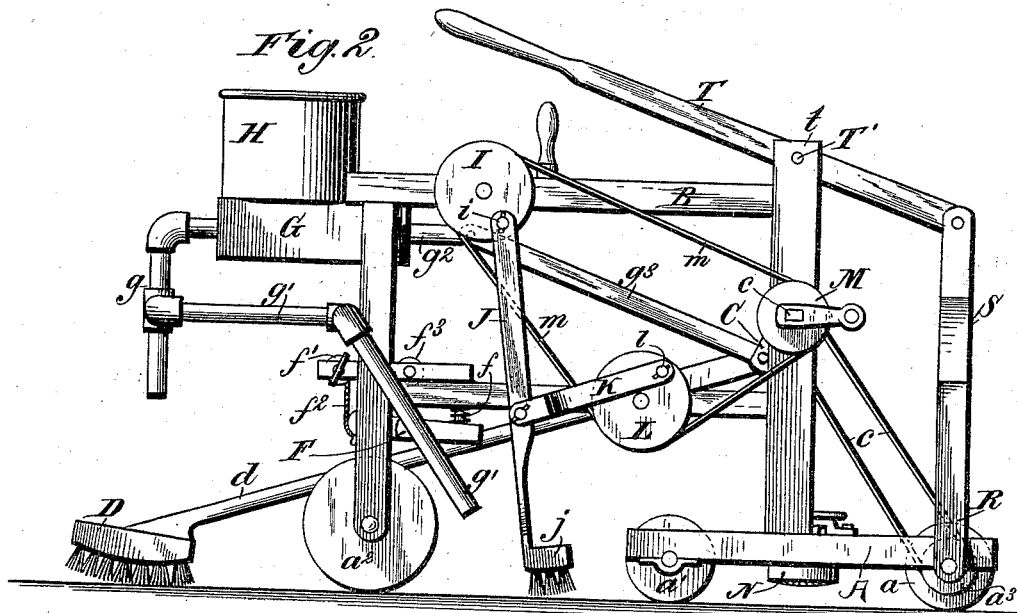
No. 526,315.

Patented Sept. 18, 1894.

*Fig 1*



*Fig 2*



Witnesses:  
*Robert G. Smith,*  
*Dennis C. Sully,*

Inventor:  
*William W. Head.*  
By *James L. Norris,*  
*Atty.*

(No Model.)

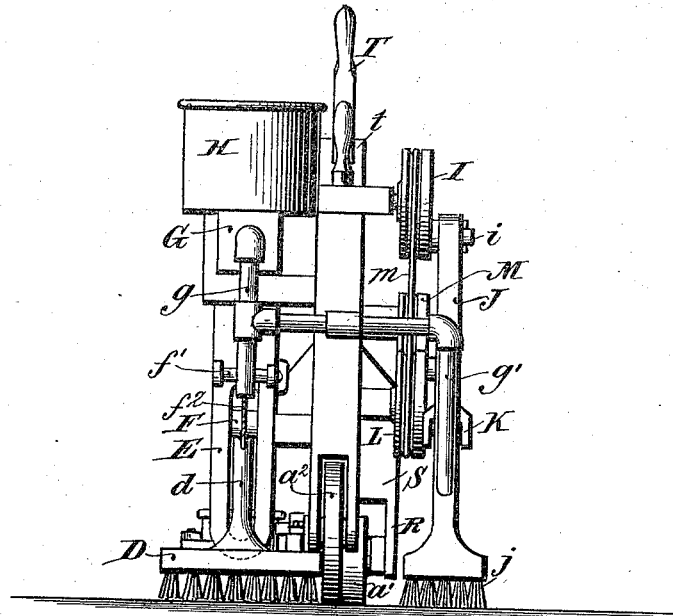
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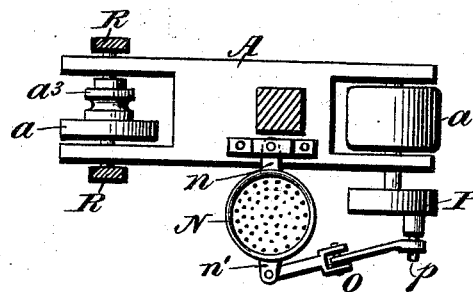
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Patented Sept. 18, 1894.

*Fig. 3.*



*Fig. 4.*



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# UNITED STATES PATENT OFFICE.

WILLIAM W. HEAD, OF PLEASANT VIEW, TENNESSEE.

## FLOOR-SCRUBBING MACHINE.

SPECIFICATION forming part of Letters Patent No. 526,315, dated September 18, 1894.

Application filed May 17, 1894. Serial No. 511,596. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM W. HEAD, a citizen of the United States, residing at Pleasant View, in the county of Cheatham and State of Tennessee, have invented new and useful Improvements in Floor-Scrubbing Machines, of which the following is a specification.

My invention relates to a floor-scrubbing machine, and has for its object to provide such a machine with a reciprocating scrubbing brush and an oscillating mopping-brush, said brushes being operated by the movement of the machine over the floor; also to provide means for furnishing water to either of said brushes in regulated quantities, and to provide means for sanding the floor to aid the scrubbing, and to these ends my invention consists in the novel construction, arrangement, and combination of parts hereinafter fully described and specifically pointed out in the claims following the description, due reference being had to the accompanying drawings forming a part of this specification, wherein—

Figure 1 is a side elevation of my improved machine; Fig. 2, a similar view looking from the other side; Fig. 3, a rear end elevation; and Fig. 4 is a sectional plan through the line 4—4 of Fig. 1.

Referring to the drawings the letter A indicates a carriage mounted upon wheels  $a$ ,  $a'$ , and to which the front end of the frame B of the machine is secured, the rear end of said frame being supported on a wheel  $a^2$  journaled therein. Journaled in the front end of the frame B is a shaft  $c$ , carrying at one end a crank C and driven by a belt  $c'$  passing around a pulley  $a^3$  mounted on the axle of the wheel  $a$ .

D indicates the scrubbing-brush rigidly secured to one end of a pitman  $d$ , the other end of said pitman being pivotally secured to a crank-pin  $c^2$  on the crank C. Said pitman is guided in a slotted bracket E secured to the frame of the machine, and to said bracket is pivoted an arm F, the free end of which bears on the pitman  $d$ , a coiled spring  $f$  exerting a pressure on said arm to force the scrubbing brush down upon the floor as it is reciprocated back and forth by the crank C and pitman  $d$ . A shaft  $f'$  is journaled in bearings

on the bracket E about which is wound a cord  $f^2$  that is connected to the end of the arm F and by which said arm may be forced with great pressure upon the pitman  $d$ . A shaft  $f^3$  is also journaled in bearings on the bracket E and has wound thereon a cord  $f^4$  secured at its end to the arm F and by which the arm may be held out of engagement with the pitman. Upon the rear end of the frame B is mounted a pump G from which leads a discharge pipe  $g$  adapted to deliver the water to the scrubbing brush D, and communicating with said pipe is a branch pipe  $g'$  leading to the mopping brush, as hereinafter described. A reservoir or tank H is arranged above the pump G and communicates therewith. The piston-rod  $g^2$  of the pump is connected by means of a pitman  $g^3$  with the crank C by which the pump is operated to deliver water from the tank or reservoir H to the brushes in regulated quantities.

Near the rear end of the frame B, and upon the side opposite to the scrubbing brush D, is journaled a pulley I provided with a crank-pin  $i$ , to which is pivotally connected one end of an arm J, to the other end of which is connected the mopping brush  $j$ .

To the arm J, at a point about midway of its ends, is pivoted one end of a pitman K, the other end of which is pivoted on a crank-pin  $l$  carried by a pulley L mounted on the frame B, the pulleys L and I being driven by a belt  $m$  passing around said pulleys and around a pulley M mounted on the driven shaft  $c$ . The pulley I imparts to the brush-arm J a reciprocating motion in a vertical direction, while the pulley L and pitman K impart to said arm an oscillating movement in a lateral direction, the two combining to impart to the brush a sweeping action that brushes up in front of it, as the machine advances, the sand, dirt and water which are collected or taken up by hand and removed. The branch pipe  $g'$  communicates with the pipe  $g$ , and has its discharge end arranged in proximity to the mopping-brush  $j$ , whereby water may be discharged upon the floor in the path of said brush, for the purpose hereinafter described.

To one side of the carriage A, and at a point over the path followed by the scrubbing brush D, is pivoted the sanding device, con-

sisting of a box N having a foraminous bottom and provided with a projecting arm *n* by which it is pivoted to the carriage and a bifurcated arm *n'* oppositely arranged to the arm *n*, in which is pivotally secured one end of a jointed pitman O, the other end thereof being pivoted upon a crank pin *p* carried by a disk or wheel P rigidly secured to the shaft of the wheel *a'*.

Mounted upon the extended ends of the axle supporting the driving-wheels *a*, are arms R, forming part of a tongue S, to which is jointed a handle T. This handle may, at times, be laid in a forked support *t*, in the upper end of the part A, where it can be temporarily secured by a pin T', inserted in the forked bearing and passing through an opening in the handle. The lever and handle are used to control the machine when the latter is used in the house.

The operation of my device is as follows: The tank H having first been supplied with water and the box N having been filled with sand, the machine is in readiness for use. As the machine is drawn over the floor the wheel *a*, through the medium of the belt *c'* rotates the shaft *c*, and by means of the crank C and pitman *d* reciprocates the scrubbing brush D back and forth over the floor, the pressure of the brush upon the floor being regulated by means of the spring actuated arm F and shaft *f*<sup>3</sup> in the manner before described. At the same time the sand box N is agitated by means of the mechanism described to sift sand over the path followed by the scrubbing brush, and the pump operates to discharge water over the floor at the point being operated upon by the scrubbing brush. At the same time the scrubbing brush D is operating to scrub and scour the floor the brush *j* is operating upon that portion of the floor previously scrubbed by the brush D, and being given a sweeping movement by means of the mechanism before described, serves to sweep or brush up in advance of the machine the sand, dirt, and water left by the scrubbing brush, and which may then be gathered up and removed by hand. By inserting a plug in the open end of the branch pipe *g'*, the water supplied by the pump is directed entirely upon that portion of the floor being operated upon by the scrubbing brush, and by removing the plug from said pipe, water may be supplied to both brushes; or, on the other hand, by inserting the plug in the discharge end of the pipe *g* the brush *j* is alone supplied with water, this being especially desirable when the machine is employed for mopping up a floor which it has previously scrubbed or scoured.

Having described my invention, what I claim is—

1. In a scrubbing machine, the combination with a reciprocating scrubbing brush, a water-tank or reservoir, a pump for discharging the contents of said tank in measured quantities

over said brush, means for operating said brush and pump, and a sanding device for distributing sand in the path of the brush, substantially as described.

2. In a scrubbing machine, the combination with a reciprocating scrubbing brush and means for actuating the same, of a pivoted arm bearing upon the brush support, and a coiled spring for depressing said arm, substantially as described.

3. In a scrubbing machine, the combination with a reciprocating scrubbing brush and means for actuating the same, of a pivoted arm bearing upon the brush support, a coiled spring for depressing said arm, and means for holding said arm out of engagement with the brush support, substantially as described.

4. In a scrubbing-machine, the combination with a reciprocating scrubbing-brush and means for actuating the same, of a mopping-brush, a crank connected to the upper end of the brush handle for reciprocating it vertically, a pitman connected to said brush handle intermediate its ends for oscillating it laterally, and means for actuating said crank and pitman, substantially as described.

5. In a scrubbing machine, the combination with a reciprocating scrubbing-brush, a tank for supplying water to said brush, and a sanding device comprising a vibrating box provided with a foraminous bottom, substantially as described.

6. In a scrubbing machine, the combination with the carriage A mounted on traction wheels, the frame B, the shaft *c* carrying the crank C and driven by the belt *c'* from one of the axles of the traction wheels, the pitman *d* pivotally connected at one end to said crank and near its other end loosely arranged within a slotted bracket, and a brush attached to the free end of said pitman, substantially as described.

7. In a scrubbing-machine, the combination with the carriage A mounted on traction wheels, the frame B, the shaft *c*, carrying the crank C and driven by the belt *c'* from one of the axles of the traction wheels, the pitman *d*, pivotally connected to said crank and provided at its free end with a brush D, a pivoted arm F bearing upon said pitman, a spring *f* for depressing said arm, and a cord and shaft for raising said arm, substantially as described.

8. In a scrubbing machine, the combination with the carriage A mounted on wheels *a*, *a'*, the frame B, the shaft *c* carrying the crank C and driven by the belt *c'* from the wheel *a*, the pitman *d* pivotally connected to said crank and carrying a brush D, the pump G communicating with a water reservoir and provided with a pipe for conducting the water to the brush, and a pitman *g*<sup>3</sup> connected at one end to the crank C and at its other end to the piston-rod of the pump, substantially as described.

9. In a scrubbing machine, the combination

with the carriage A mounted on wheels  $a, a'$ ,  
of the sand box N pivotally secured to said  
carriage and provided with a foraminous bot-  
tom, the crank P driven by the wheel  $a'$ , and  
5 a pitman O connected at one end to said  
crank and at its opposite end to the sand box,  
substantially as described.

In testimony whereof I have hereunto set  
my hand and affixed my seal in presence of  
two subscribing witnesses.

WILLIAM W. HEAD. [L. S.]

Witnesses:

W. W. PEPPER,  
W. W. DAVIS.