

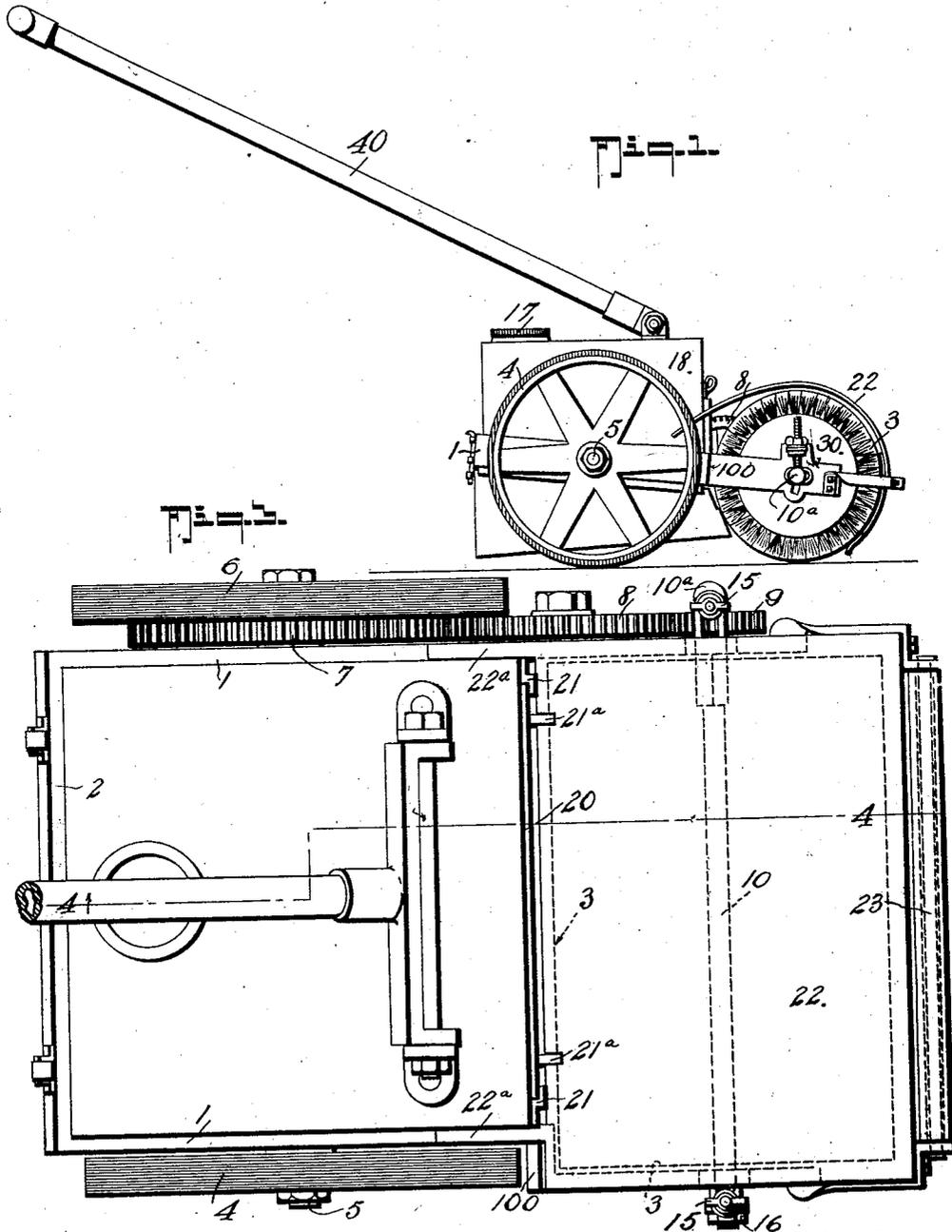
March 31, 1925.

1,531,701

J. L. JOSSART
FLOOR SCRUBBING MACHINE

Filed May 13, 1921

3 Sheets-Sheet 1



INVENTOR

John L. Jossart

BY
Fred G. Dietrich
ATTORNEYS

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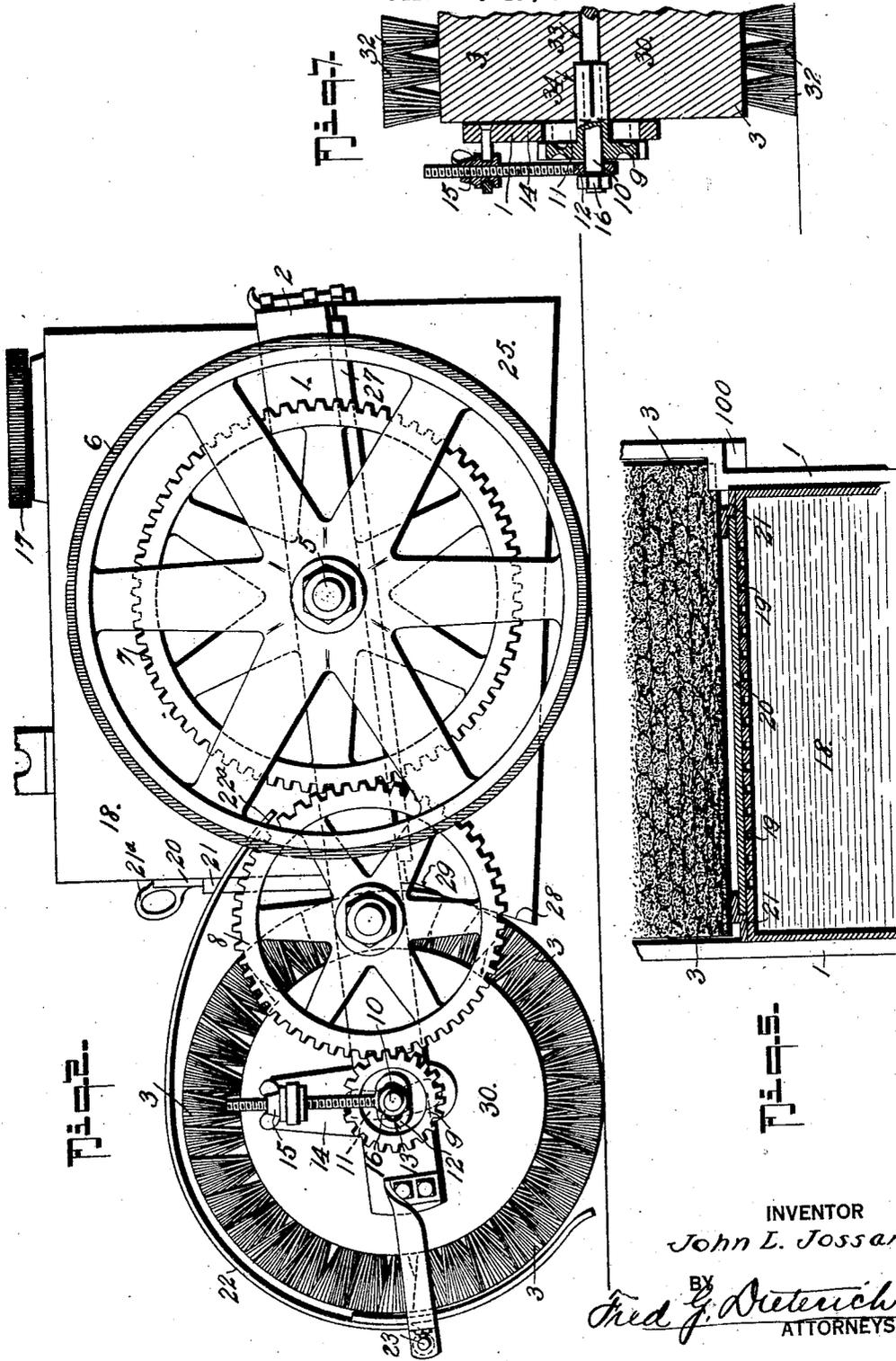
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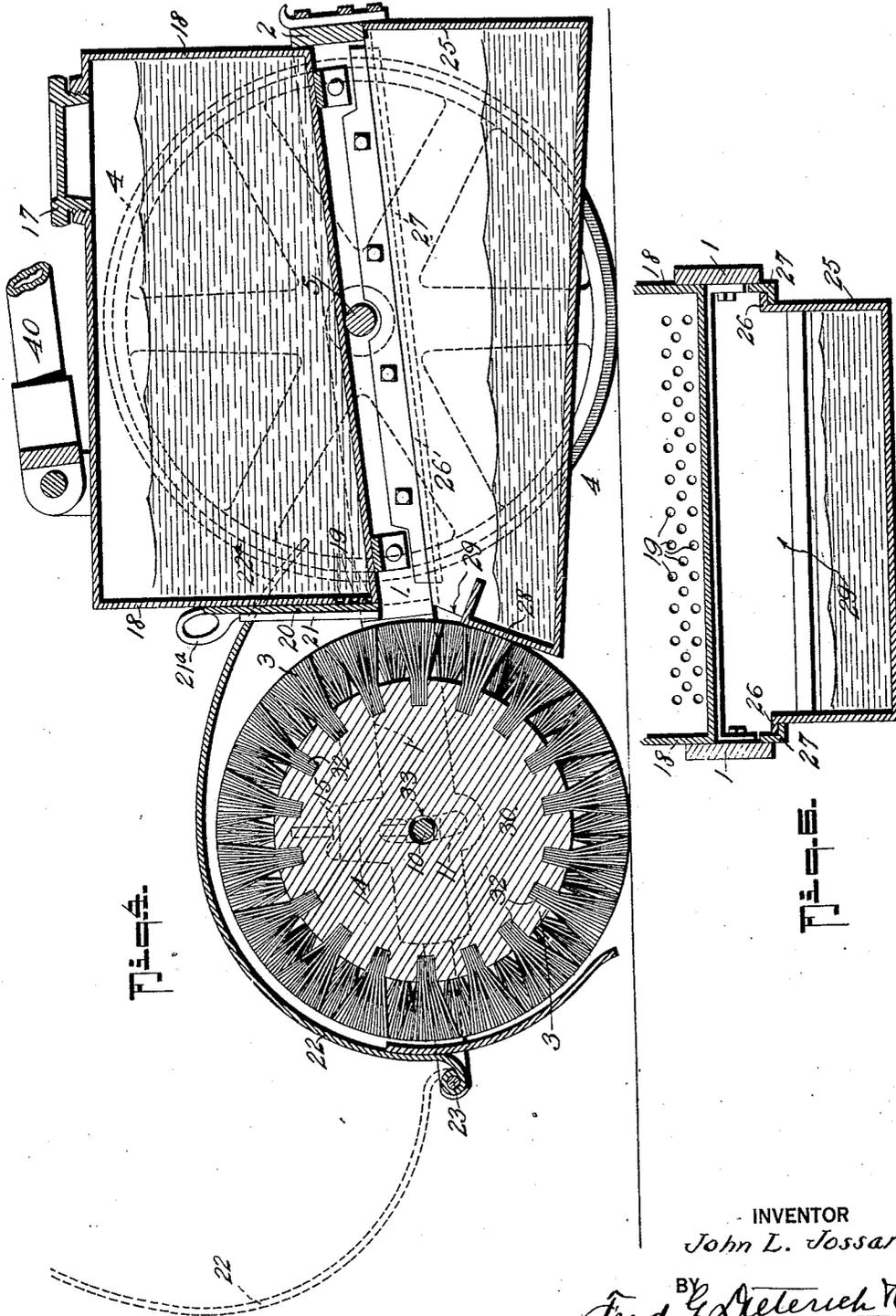
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FLOOR SCRUBBING MACHINE

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3 Sheets-Sheet 3



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UNITED STATES PATENT OFFICE.

JOHN L. JOSSART, OF MARINETTE, WISCONSIN.

FLOOR-SCRUBBING MACHINE.

Application filed May 13, 1921. Serial No. 469,179.

To all whom it may concern:

Be it known that I, JOHN L. JOSSART, a citizen of the United States, residing at Marinette, in the county of Marinette and State of Wisconsin, have invented certain new and useful Improvements in Floor-Scrubbing Machines, of which the following is a specification.

This invention relates to floor scrubbing and cleaning machines and has particular reference to improvements in that type of floor scrubbers adapted for being manipulated similar to that in which carpet sweepers are ordinarily used and my said invention primarily has for its purpose to provide a machine of the general character stated in which the scrubbing elements are so designed and cooperatively combined whereby to present a relatively inexpensive and simple mechanism for the purpose stated, and one that can be operated without much exertion and which effectively serves its intended purposes.

My invention further contemplates the provision of a simplified arrangement of a rotary scrubbing brush, power transmission connecting it with the driving wheels, a scrubbing water reservoir and catch pan and devices that provide for readily using the machine as a scrubber when moved in the forward direction, and as a cleaner for taking up the scrubbing water from the floor when moved backwardly.

Another object of my invention is to provide, in a floor scrubber, certain improvements that relate to the construction of the frame, the mounting of the scrubbing element whereby the machine can be worked close up to a wall, and improved means for covering the scrubbing brush that can be readily adjusted to permit of removing the said scrubbing brush; improved devices for supporting the brush whereby to readily adjust it with respect to its contact with the floor, as it becomes worn, being also provided.

With other minor objects in view that will hereinafter be apparent, my invention embodies, in a floor scrubbing machine, the peculiar features of construction and novel combination of parts fully stated in the following detailed description, as specifically pointed out in the appended claims and

illustrated in the accompanying drawings, in which:

Figure 1 is an elevation of one side of my construction of floor scrubbing machine.

Figure 2 is a like view of the opposite side of the machine.

Figure 3 is a top plan view thereof.

Figure 4 is a longitudinal section taken substantially on the line 4—4 of Figure 3, the upper hinge portion of the cover for the rotary scrubbing brush being shown at the turned out position in dotted lines.

Figure 5 is a detail horizontal section of the water reservoir and the gate controlled outlets through which the water discharges onto the brush, a portion of the brush being shown in plan view.

Figure 6 is a detail view which illustrates the slidable mount for the catch pan hereinafter specifically described.

Figure 7 is a detail view of one of the adjustable brush shaft bearings for effecting adjustment of the scrubbing brush with respect to its contact with the floor.

In the practical development of my invention, I provide a substantially rectangular frame composed of opposite side bars 1—1, that join, at their rear ends, with a cross bar 2 and whose separated front ends constitute supports for a rotary scrubbing brush 3, which is journaled in the said front ends of the members 1 in the manner presently explained.

One of the side members 1, is offset as at 100, at a point to the rear of the brush 3, whereby the forward or brush carrying portion of the frame is of somewhat greater width than the other or rear portion of such frame to provide for setting the drive wheel 4, at that side of the machine inside of the adjacent end of the rotary brush 3, as is best shown in Figure 3, for reasons hereinafter specifically stated.

5 designates a shaft whose ends are journaled in bearings through the opposite side members 1—1, near the rear ends thereof, and on the opposite projected ends of the said shaft are fixedly held the wheels 4 and 6 that support the rear end of the machine and which constitute the drivers for imparting motion to the rotary scrubbing brush 3, such motion being transmitted through a main driving gear 7 of large diameter, in

practice, five inches, and mounted on that end of the shaft that projects through the straightway side bar 1 and inside of the said bar. The gear 7 meshes with an intermediate or idler gear 8, of suitable diameter, and also journaled on the inside of the bar 1 and in advance of the main gear 8, and the latter gear 8 meshes with a small diameter gear 9 mounted on the brush shaft, the said transmission connections operating to impart a relatively rapid rotation to the scrubbing brush, as the machine is moved forwardly or backwardly as will be hereinafter further explained.

The rotary scrubbing bush 3 consists of a solid core 30, to the periphery of which is secured, in any suitable manner, an annular scrubbing element which may be, and preferably is, in the nature of closely associated brush bristles 32.

The brush core 30 has an axial bore 33 that is enlarged at one end to produce a socket 34 for receiving the bushing of the gear 9, as shown in Figure 7.

10 designates a shaft adapted for being passed through the side bar 1, at one side of the machine, through the axial bore of the brush core 30 and through the side bar 1 at the opposite side of the machine, and to provide for readily adjusting the brush downwardly for proper engagement with the floor and for taking up wear on the brush, the opposite side bars 1-1 have slots 11-11 curved on an arc with the axis of the intermediate driving gear 8 as the center, through which slots the opposite ends of the shaft 10 pass.

To provide for effecting the vertical adjustment of the brush 3, for reasons before stated, without disturbing the connection of the gears 8 and 9, the ends of the shaft 10 are supported in hanger bearings 12-12, each of the said bearings having an elongated horizontal slotway 13 for receiving its respective end of the shaft 10.

Each hanger bearing 12 includes a vertical extension 14, threaded at its upper end, for receiving a winged adjusting nut 15 rotatably mounted upon the side bars and held against vertical movement, relatively to the said side bars, whereby as the nuts 15 are turned, the shaft 10, with the rotary brush thereon, may be raised or lowered with respect to the supporting frame, as desired.

The shaft 10 has a head 10^a at one end and is threaded at the other end for receiving a clamp nut 16 for holding the shaft in place, it being understood that by removing the shaft 10 endwise from the frame and the brush, the latter may be readily removed from between the front ends of the frame when the cover member 22, presently again referred to, is swung back, as shown in dotted lines (Figure 4).

18 designates a main reservoir for holding the scrubbing water and it is suitably mounted on the supporting frame and, in practice, is of sufficient width to extend across the machine substantially the full length of the rotary brush whose rear end is disposed in close proximity to the front wall of the said reservoir 18. The bottom of the reservoir is supported on the opposite side beams 1-1 of the main frame and the lower edge of the front wall of the said reservoir has a series of horizontally extended spray outlets 19 through which the water passes from the reservoir onto the rear face of the brush, as is clearly shown in Figures 4 and 5 of the drawings, by reference to which it will also be noticed that means is provided for closing the outlets 19, at times, particularly when the machine is to be used for wiping up the scrubbed floor.

Any suitable means may be provided for regulating the opening and closing of the outlets 19; in the drawing a gate plate 20 is shown, as extending across the outer face of the reservoir front, which plate has a limited play in guides 21 on the said front and is provided with a central upright or handle member 21^a by which the said gate plate 20 may be readily raised or lowered, as desired.

Cooperative with the rotary brush is the cover or guard 22 which is in the nature of a plate of sufficient width to extend across the full length of the rotary brush. The plate or guard 22 is curved to snugly fit over the brush and form a hood that prevents the brush from throwing off the scrubbing washer supplied to it from the main reservoir 18 as the machine is driven forwardly during a scrubbing operation.

The forward end of the hood 22 is hinged on a brace member 23 that is rigidly attached to and projected from the forward ends of the side bars 1-1, and the inner end of the said hood is cut out to provide for closely fitting up, to the front wall of the reservoir 18, its opposite sides terminating with extensions 22^a that straddle the opposite sides of the main reservoir when the hood is adjusted to the operative or full line position, shown in Figure 4, it being understood that owing to the peculiar shape of the hood and the manner of securing its front end, the said hood can be readily swung forward to the position indicated in dotted lines in Figure 4, when it is desired to remove the rotary brush.

25 designates a catch pan for picking up the scrubbing water when wiped up from the floor as the machine is pulled back as the brush is rotated in reverse or backward direction.

The catch pan 25 has lateral flanges 26 at its opposite upper edges whereby to provide for readily sliding the pan, which is of prac-

5 tically the full width of the rotary brush, in position for catching the picked up water, the said bars 1—1 of the frame having inturned hanger flanges 27—27 onto which the flanged members 26 of the pan 25 are slid endwise from the rear end of the machine.

10 The bottom of the catch pan inclines from the forward to the rear end whereby the pan is deeper at the said rear end so as to offset the forward tip of the machine.

15 The front end 28 of the catch pan is inclined rearwardly to provide for fitting up close to the rear face of the rotary brush and at the junction of the said front and the closed top the said catch pan has an opening 29 that extends practically the full length of the brush and is in position for receiving the water lifted by the brush when the latter is rotated backward during the operation of wiping up the scrubbed floor surface. The position of the opening 29 also provides for catching any excess water that discharges from the main reservoir and which is not picked up by the brush on its forward rotation.

20 The arrangement of the parts so far as described, is such that when water is cut off from passing out of the main reservoir, after effecting the desired scrubbing operation, by pulling the machine backwardly and thereby imparting backward rotation to the rotary brush 3, the floor can be effectively wiped and the scrubbing water picked up and deposited into the catch pan.

25 By offsetting the side bar of the main frame at one side, as stated, and placing the driving wheel 4 at that side inside of the outermost end limit of the brush at that side, the machine can be readily worked with the brush up close or practically against the wall.

30 The machine is manipulated by a handle 40, the lower end of which is hingedly joined to suitable cleats mounted on the top of the water reservoir, the handle being joined thereto in such manner that it may be readily detached or swung back to raise over the machine so that the said machine may be readily set in a corner or close to a wall when not in use, and in such a manner that pressure will be equalized between the tractor wheels and the scrubbing brush.

35 In the use of my machine, when it is de-

sired to scrub the floor, the main reservoir 55 18 is filled with the scrubbing fluid through a suitable tap 17, and the gate, which shuts off the spray outlet from the reservoir, is pulled up to the open position.

The machine is then wheeled along the 60 floor, the operator manipulating it with the handle projected from the rear end thereof.

In practice, the drive wheels 4 and 6 are provided with suitable traction treads to prevent them from slipping.

65 After the floor has been scrubbed, as desired, the water supply from the main reservoir is cut off and the machine is then ready for being drawn backward, thereby causing the rotary brush to pick or wipe up the dirty water from the floor, as before stated. When the catch pan is full it may be readily pulled out from the frame, emptied and as readily returned to its pendent position under the frame.

70 What I claim is:

1. In a floor scrubbing machine which includes a substantially rectangular frame, a wheel axle that is supported on the rear portion of the side members of the frame, a 80 water tank supported above the wheel axle and having discharges for feeding the water onto the brush, a rotary brush mounted between the forward ends of the frame and adjustable journal bearings for the axle of the rotary brush and a hood cover journaled on the forward end of the frame for fitting over the brush.

2. In a floor scrubbing machine which includes a substantially rectangular frame, a 90 wheel axle that is supported on the rear portion of the side members of the frame, a water tank supported above the wheel axle and having discharges for feeding the water onto the brush, a rotary brush mounted between the forward ends of the frame, adjustable journal bearings for the axle of the rotary brush and a hood cover journaled on the forward end of the frame for fitting over the brush, the said adjustable journal bearings each comprising a vertically adjustable hanger having a horizontal slotway in which the end of the axle journals, the adjacent portion of the frame end having a 95 vertically curved slot through which the said axle passes and a take-up screw that engages the adjustable hanger as set forth.

100 JOHN L. JOSSART.