

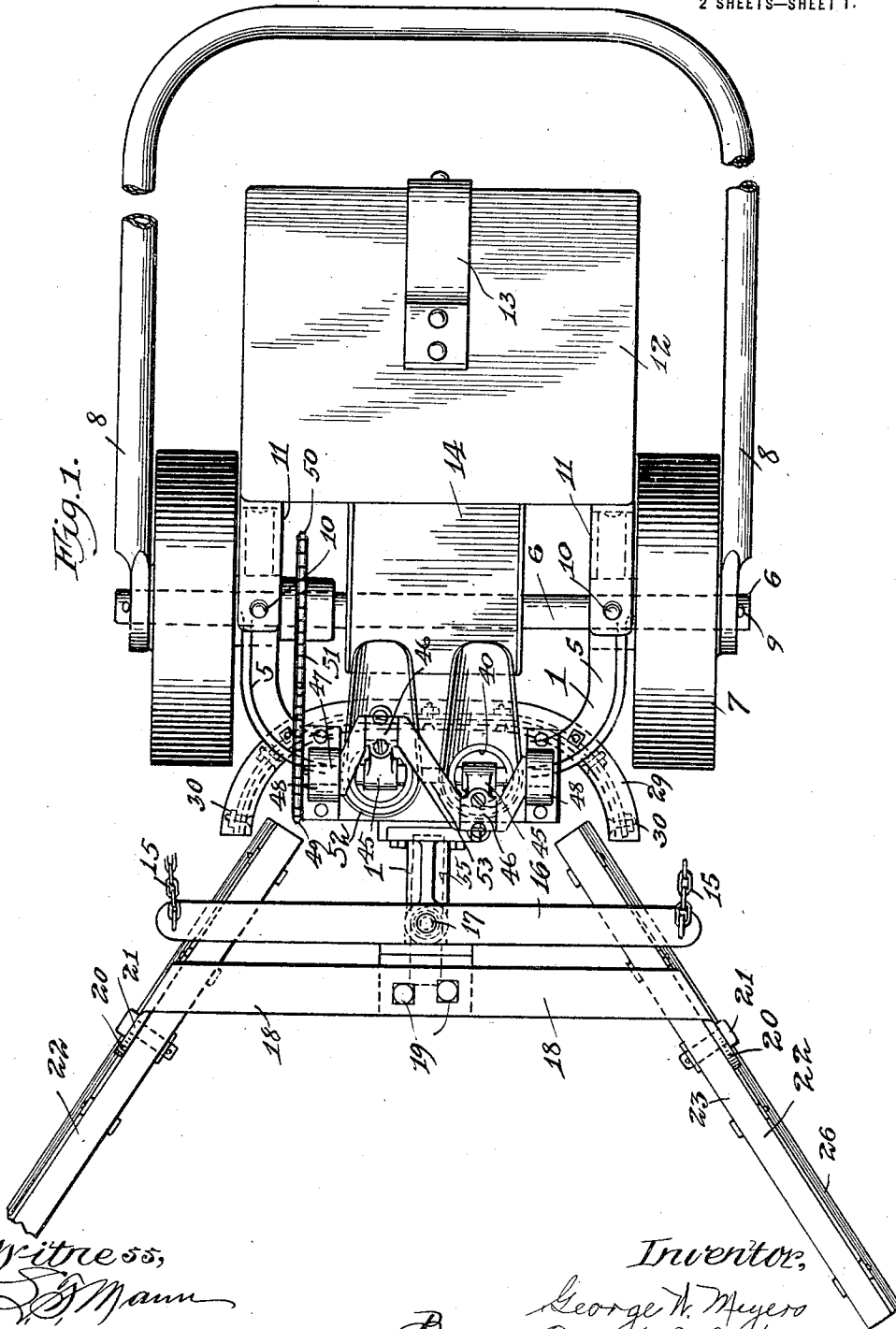
G. W. MEYERS.
CLEANING APPARATUS.

APPLICATION FILED DEC. 26, 1916. RENEWED JAN. 16, 1919.

1,297,384.

Patented Mar. 18, 1919.

2 SHEETS—SHEET 1.



Witness,
E. Mann

By

Inventor,
George W. Meyers
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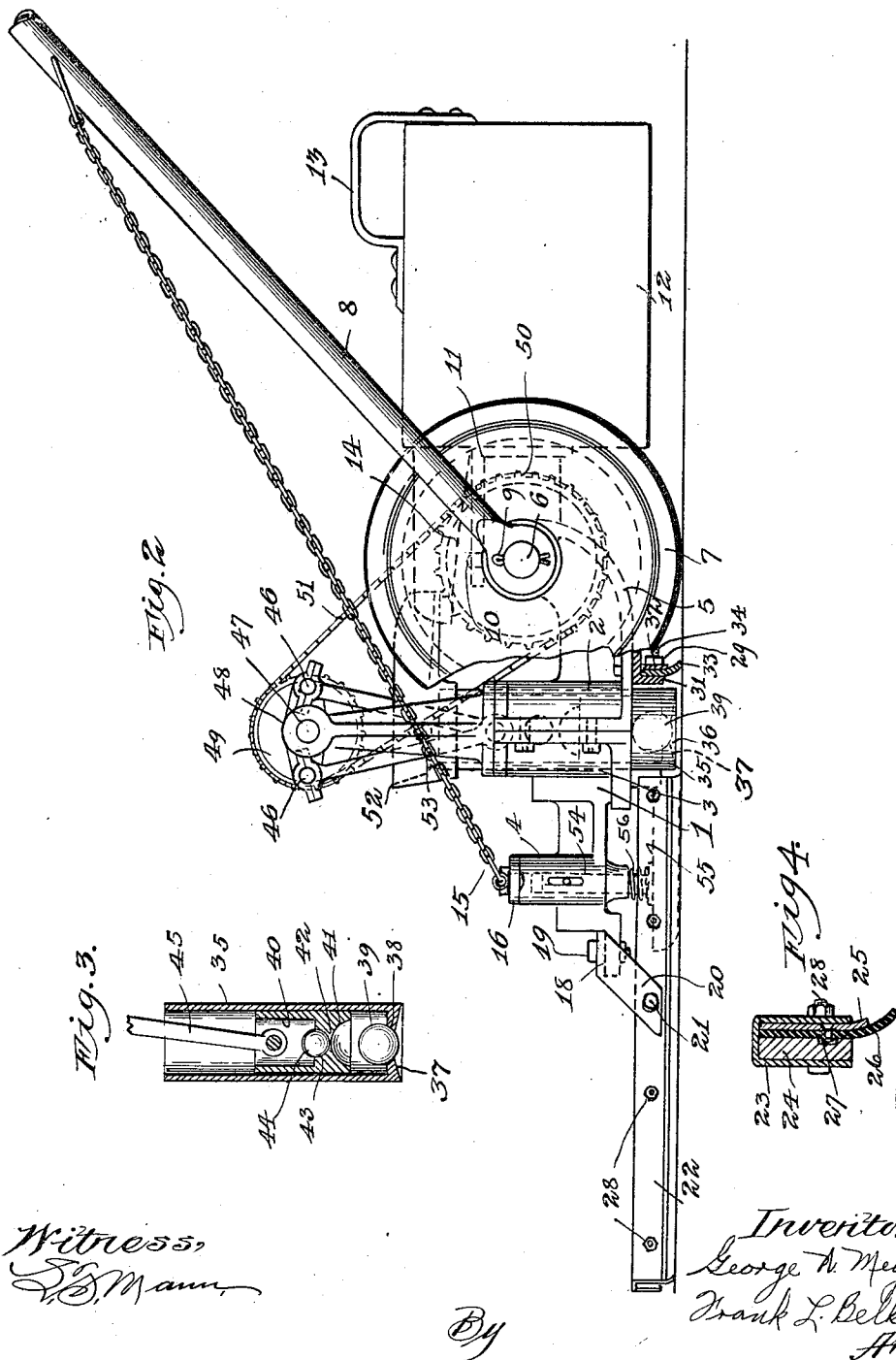
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UNITED STATES PATENT OFFICE.

GEORGE W. MEYERS, OF CHICAGO, ILLINOIS, ASSIGNOR TO BUILDING EQUIPMENTS MANUFACTURING COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

CLEANING APPARATUS.

1,297,384.

Specification of Letters Patent.

Patented Mar. 18, 1919.

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To all whom it may concern:

Be it known that I, GEORGE W. MEYERS, a citizen of the United States, residing in the city of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Cleaning Apparatus, of which the following is a specification.

This invention relates to improvements in cleaning apparatus and refers more particularly to a squeegee-like construction for cleaning floors and the like after they have been washed or scraped, although in its broader aspects the invention may be utilized as a cleaning apparatus wherever practical.

Among the salient objects of the invention are to provide a construction in which the forward movement of the machine simultaneously acts to brush or scrape the water or other liquid toward the collecting mechanism and convey or carry it to a suitable tank or container; to provide a construction in which the removal of the water from the floor is accomplished by means of pumps actuated by the movement of the machine itself; to provide in a construction of the character last referred to, novel form of pumping mechanism peculiarly adapted for use in the present invention; to provide in a construction of the character referred to, a novel form of squeegee mechanism which is adapted to automatically take care of any irregularities in the floor and in which the rubber scraper is so mounted that it is reversible whereby both sides of the rubber can be used; to provide a construction in which the cleaner arms, pumps and receiving tank are all mounted on a single and simple frame structure; and in general to provide an economical and improved construction of the character referred to.

In the drawings:

Figure 1 is a plan view of my device, with parts broken away to reduce the size of the drawing.

Fig. 2 is a side elevation of the device with parts broken away and parts shown in dotted lines in order to bring out more clearly, the details of construction.

Fig. 3 is a sectional detail view of the pump construction.

Fig. 4 is a detail sectional view of one of the cleaner or squeegee arms.

Referring to the drawings in detail, 1

designates a main frame, in the present instance shown as made of three castings 2, 3 and 4, suitably bolted together or otherwise connected. On the yoke arm 5, projecting rearwardly from the main frame is mounted the axle 6, on which are journaled the traction wheels 7. To the outer ends of the axle 6 is secured the handle 8, by means of the cotter pins 9. This handle is held up by means of chains 15 secured to a cross bar 16, pivoted as shown at 17 to the main frame. On the yoke arm is mounted a pair of pins 10, to which are secured angle brackets 11, carrying a receiving tank 12, which is provided with a handle 13. The front of the tank 12 is provided with a spout 14. It is understood that the bracket arms 11 are detachably mounted on the pins 10, so that the tank can be removed when filled.

Describing now more particularly the squeegee or cleaner arms, at the front end of the frame is secured a cross bar 18 as shown at 19. The outer ends of this cross bar 18 are bent downwardly at 20 and to these extensions 20 are pivoted as shown at 21 the squeegee arms designated as a whole 22. Each of these arms 22 may take the form of a channel bar 23, within which is mounted a wooden filler block 24 and a brass plate 25, to which is secured the rubber scraper 26 by means of rivets 27. The parts just described are detachably held in the channeled frame by means of bolts 28. It will be noted that the rubber scrapers 26 are secured to the plates 25 midway the length of the frame so that when one side of the scraper 26 wears out, the parts can be removed. I have found that the particular construction of squeegee arms here shown is particularly adapted for the purpose in question.

As shown more clearly in Fig. 1 the arms 22 are inclined outwardly from the machine, the arrangement being such as to scoop up and force inwardly the water or other material, which it is desired to remove from the floor. It will be noted that by pivoting the squeegee arms to the extensions 20 of the cross bar 18, the arms are so mounted as to take care of any irregularities in the floor. There is a third squeegee member or arm 29 secured to the frame. This squeegee member 29 has its ends curved forwardly as shown at 30, it being noted that the extensions 30 extend outside of the inner ends of

the inclined ends of the squeegee arms 22 in order to catch all the water that is forced toward the machine by the arms 22. The arm 29 consists of an angle piece 31, a metal plate 32 between which is secured a rubber scraper 33, by means of bolts 34.

The water or liquid which is forced toward the machine by the squeegee arms is conveyed to the tank 12 by means of the pumping mechanism now to be described. In the main frame is secured a pair of pump cylinders 35, which project down nearly to the floor as shown at 36. The lower end of each of these cylinders is beveled inwardly as shown as 37 and is provided with an inlet port 38. In each of the ports 38 is loosely seated a ball 39, thus forming a ball valve. Working in each cylinder is a piston 40, the lower end of which is provided with a hemispherical recess 41 forming a cup-shaped portion adapted to fit over the ball 39. Just above this cup-shaped portion, the piston is provided with a valve port 42. Just above the port 42 the lower end of the piston is provided with a cup-shaped recess 43 adapted to receive the ball 44 which is loosely seated therein. Each piston is provided with a piston rod 45, connected to the crank arms 46 of the crankshaft 47. This shaft 47 is mounted between a pair of standards 48, extending upwardly from the main frame. On one end of this crankshaft is secured a sprocket wheel 49, which is operatively connected to a sprocket wheel 50 by means of sprocket chain 51. The sprocket wheel 50 is mounted on the axle 6. The arrangement is such that as the machine is moved forward, thus rotating the traction wheels, the sprockets will be driven and the crankshaft rotated and the pistons operated.

The water is delivered from the upper ends of the cylinders to the spout or pan 52, which connects with the spout 14 of the receiving tank 12. These spouts 52 are connected by means of a cross tube 53, to insure that when the machine is first started, the first pump will deliver a part of its liquid to the other, acting in effect as a primer, and furthermore, to insure of there being some liquid in the cylinders at all times during the operation. The material operated by these pumps is liable to be of a gritty nature and it may be desirable that the pumps be of loose construction or loose fitting so as not to be so readily affected by wear and the capacity of the pumps is such that the delivery of part of the liquid back to the cylinders does not affect the efficient operation of the pump.

The novel arrangement of the valves and balls in the pump cylinders and pistons is peculiarly adapted for the present invention. As the piston is raised, suction lifts the ball 39, which permits the liquid being drawn into the pump cylinders. When the ball 39 descends it of course closes the port 38. At the start of the downward stroke, of the piston, the ball 44 will rise from its seat, allowing the water to go above the piston. As the piston starts on its upward stroke, the ball 44 again seats and the piston lifts the water out of the cylinder into the spouts.

To provide a support for the front end of the machine, in the casting is mounted the stem 54 of a shoe 55, this shoe being normally forced downward by an expansion spring 56.

The operation of the apparatus is apparent from the foregoing description and need not be further described. The invention is not limited to the details of construction shown except as set forth in the appended claims.

I claim as my invention:

1. In a cleaning apparatus, the combination with a main frame, of a pair of squeegee members projecting forward therefrom and having their rear ends spaced apart, and diverging toward the front apart, cooperating pump members located substantially between the rear ends of said squeegee members, and a third squeegee member extending back of said pumps and outside of the rear ends of said pair of squeegee members.
2. In a cleaning apparatus, the combination with a main frame, of a pair of squeegee members projecting forwardly therefrom, a third squeegee member extending in the rear thereof, a tank carried by the frame, a pump for removing the water from the floor adjacent the squeegee members and connections between the pump and tank for delivering the water to the latter.
3. In a cleaning apparatus, the combination with a main frame, driving wheels therefor, a pair of squeegee members supported by said main frame and diverging outwardly therefrom and spaced apart at their rear ends, a third squeegee member mounted in the rear of the former, a pump for removing water from the floor adjacent the squeegee members, a tank carried by said main frame and adapted to receive water from the pump, and connections between the driving wheels and pump for operating the latter.

GEORGE W. MEYERS.