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No. 853,525. PATENTED MAY 14, 1907.

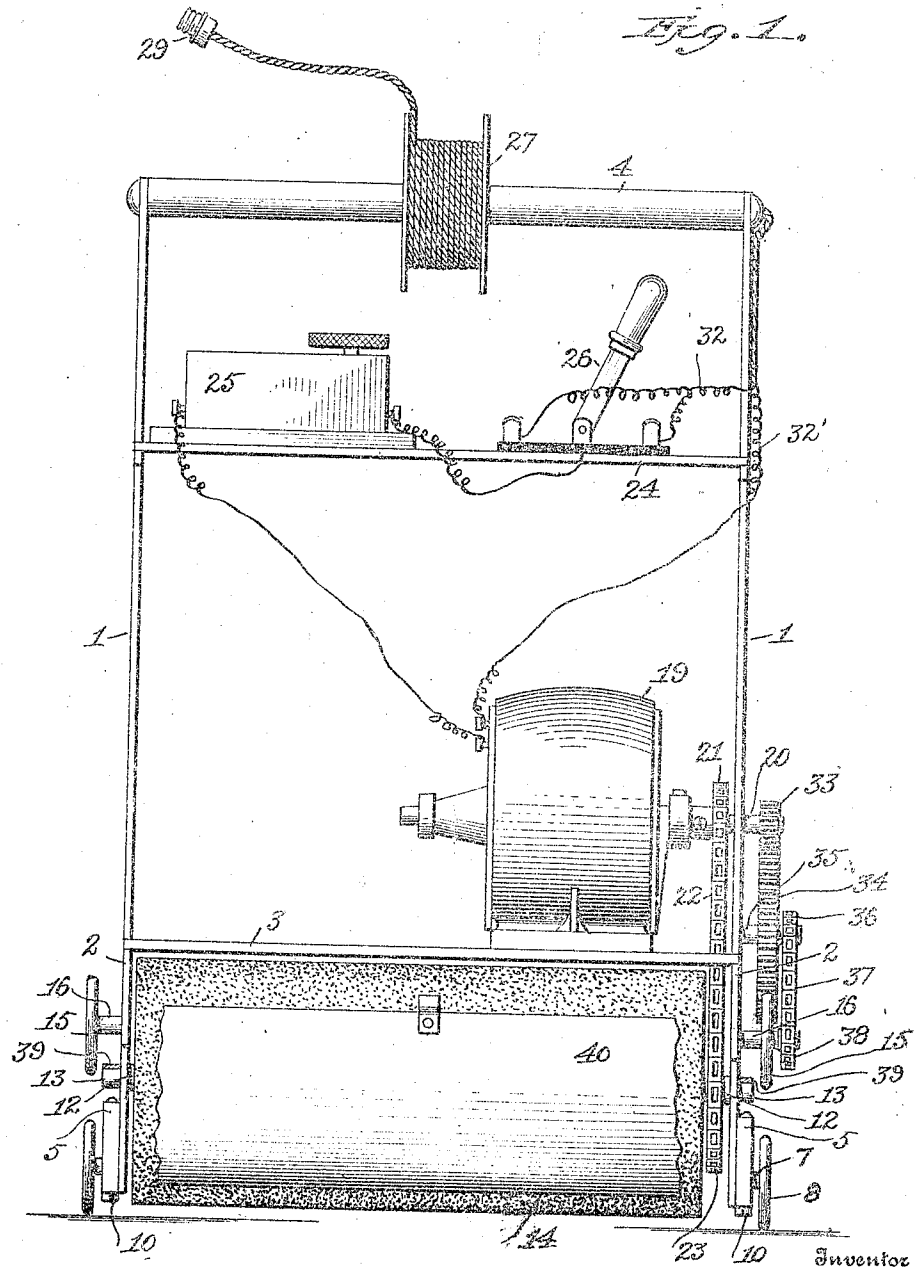
E. J. STEWART.

SWEEPING AND SCRUBBING MACHINE.

APPLICATION FILED JULY 6, 1906.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 3.

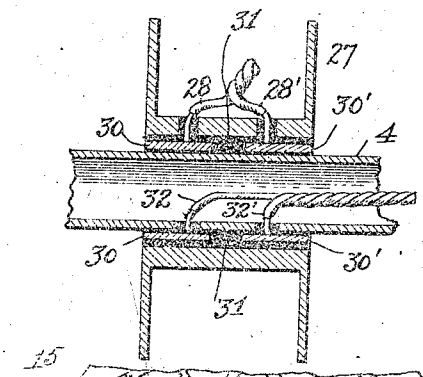


Fig. 2.

Fig. 4

Witnesses

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UNITED STATES PATENT OFFICE.

EMMOR J. STEWART, OF NEW YORK, N. Y.

SWEEPING AND SCRUBBING MACHINE.

No. 853,525. Specification of Letters Patent. Patented May 14, 1907.

Application filed July 6, 1906. Serial No. 324,987.

To all whom it may concern:

Be it known that I, EMMOR J. STEWART, a citizen of the United States, residing at New York city, borough of Manhattan, and State of New York, have invented certain new and useful Improvements in Sweeping and Scrubbing Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to improvements in sweeping, scrubbing and cleaning machines and particularly to the truck in which the cleaning device is mounted.

The machine is designed for the utilization of electricity as a motive power and as such power is supplied from a fixed point, the truck is adapted to be operated equally well in opposite directions without the necessity of turning the same.

The invention comprehends a rotary brush mounted above two central supporting wheels the latter being so mounted in relation to the brush that it may be held above the floor; wheels being also provided to support and drive the truck when the brush is brought into operative contact with the floor.

The invention also contemplates the provision of means for adjusting the central supporting wheels, to allow for wear of the brush, and which permits the driving and driven members of the brush to remain in the same relative position.

The invention further embraces a novel type of reel for storing the electric conductor and renders its use especially advantageous in a machine of the character herein defined. The novel details in the construction and arrangement of the several parts of the machine will be apparent from the detailed description when read in connection with the accompanying drawings.

In the drawings, Figure 1 is an elevation of the machine. Fig. 2, a side view, and Fig. 3, a detail vertical section of the reel. Fig. 4 is a detail view of a modification.

The truck frame consists of two main supporting members 1. 1. constituting levers for controlling the truck each member having a cross-piece 2 to which latter is secured a horizontal support 3, the upper ends of the levers 1 being joined by a handle 4. On the lower ends and sides of each lever 1 is mounted a guide frame 5 in which is movably mounted a bearing block 6 carrying a stub-shaft 7 on which is mounted a wheel 8. These bearing blocks are screw threaded to receive a threaded bolt 9, swiveled in the top of the guide frame 5. By rotating these bolts by means of the squared end portions 10, the blocks can be raised and lowered in the guide frame, the blocks being prevented from turning with the bolt by means of ribs 11 taking into grooves formed in two sides of the blocks.

Above each guide frame on the levers 1 are mounted fixed bearings 12, to receive an axle 13 on which is rigidly mounted a cylindrical brush 14. As shown the diameter of the brush 14, is such as to prevent it from touching the ground when the levers are held in a vertical position but, when these levers are tilted in either direction the brush will come into contact with the ground. To prevent the whole weight of the truck from coming directly on the brush and the truck from being tilted too far in either direction, and thereby interfere with the rotation of the brush, I provide wheels 15. These wheels are mounted on each end of the cross pieces 2, by means of stub-shafts 16 which are fixed in depending ends of the cross pieces. These wheels acting in conjunction with the wheels 8 permit the brush to effectively contact with the surface to be scrubbed. And this same degree of contact may always be maintained, as the brush wears off, by moving the wheels 8 by means of the adjustable blocks, nearer the axis of the brush.

The rotation of the brush is effected through the medium of an electric motor 19, mounted on the support 3. The armature shaft 20 of said motor carries a sprocket wheel 21, which is connected by means of a chain 22 to a sprocket wheel 23 on the axle 13 of the brush.

A shelf 24, fixed to the levers 1. 1. above the support 3 carries a controller box 25, and a suitable double pole switch 26, for reversing the direction of rotation of the armature shaft 20. On the handle 4 is mounted a reel 27 which carries a flexible conductor composed of two wires 28, 28', suitably insulated

from each other and which may be connected with an electric socket (not shown) by means of a plug 29. Connection is established between the conductor and the motor 19 through the switch and controller in the following manner. Metallic rings 30, 30′, Fig. 3 surround the handle 4 and are separated by an insulating medium 31. The wire 28 projects through a hole in the hub of the reel and is in constant contact with the ring 30 while wire 28′ projecting through another hole in the hub contacts with the ring 30′. A shorter conductor composed of wires 32, 32′ being connected with the switch and motor, passes through the handle, the wire 32 being connected with the ring 30 and wire 32′ with the ring 30′.

In addition to driving the brush by means of the motor, I also drive the truck through the medium of the wheels 15 which are driven from the armature shaft 20 by means of the following mechanism. The armature shaft 20 is extended through one lever and carries on its end a small gear 33, which meshes with a larger gear wheel 34 mounted on a stub-shaft 35 fixed on said lever. This gear wheel 34 carries a small sprocket wheel 36 which is connected, by means of a sprocket chain 37, with sprocket wheels 38 fixed to the hubs of the wheels 15. If desired a sprocket 38′ may be mounted on one of the wheels 8 and be driven in unison with the wheels 15 by means of the chain 37 as shown in Fig. 4.

The construction of truck is especially advantageous when a large quantity of dirt is encountered; and when it is desirable to form the dirt into piles, the brush may be readily raised from the ground and above the piles by either raising or lowering the handle. When the handle is raised the wheels 8 serve as a fulcrum and when it is lowered the wheels 15 on one side will serve as a fulcrum.

The bearings 12 of the axle 13 form supports for a frame 39, carrying fenders 40 and as this frame has stable equilibrium it will not be affected by the inclination of the truck so that the fenders will always remain in the same position in relation to the ground.

I claim:—

1. The combination of the supporting levers, a brush mounted therein above the fulcrum point of each lever and means to operatively support the levers in oppositely inclined positions.

2. The combination of the swinging supporting levers, a brush journaled therein, wheels on the lower ends of the levers forming a fulcrum for raising and lowering the brush and means on each side thereof adapted to serve as a fulcrum for the levers.

3. The combination of the supporting levers, a cylindrical brush journaled therein, wheels on the lower ends of the levers forming a fulcrum for raising and lowering the brush, cross-pieces mounted on the levers and wheels on each end of the cross pieces adapted to serve as fulcrums between the brush and power ends of the levers.

4. The combination of the supporting levers a cylindrical brush journaled therein, wheels on the lower ends of the levers forming a fulcrum for raising and lowering the brush, cross pieces mounted on the levers to limit the swing thereof, wheels on both ends of the cross pieces, and means to adjust the first mentioned wheels, for the purpose specified.

5. The combination of the supporting levers, a cylindrical brush journaled therein above the fulcrum point of each lever, means connected with the levers to form a fulcrum on each side thereof between the brush and power ends of the levers, wheels on said means, and means to drive said wheels.

6. The combination of the supporting levers, a bearing fixed on each lever, a cylindrical brush journaled in said bearings, wheels mounted on the lower end of the levers, means to adjust said wheels on the levers, a cross piece mounted on each lever extending beyond the periphery of the brush, wheels on the ends of the cross pieces and means to drive the wheels.

7. The combination of the supporting levers, a cylindrical brush journaled therein, wheels on the lower ends of the levers forming a fulcrum for raising and lowering the brush, wheels carried by the levers adapted to serve as fulcrums between the brush and power ends of the levers, a motor, means connecting the motor and brush, and means connecting the motor and wheels.

8. The combination of the supporting levers, a cylindrical brush journaled therein, wheels on the lower ends of the levers forming a fulcrum for raising and lowering the brush, wheels carried by the levers extending beyond the sides of the brush and adapted to serve as fulcrums between the brush and power ends of the levers, a support between the levers, an electric motor mounted on the support a sprocket carried by the motor shaft, a sprocket carried by the brush, and a chain connecting the sprockets.

9. The combination of two supporting levers, a brush an axle fixed therein, bearings fixed on the levers in which the axle is journaled, wheels adjustably mounted in the lower ends of the levers serving as fulcrums for raising and lowering the brush, wheels on each side of the levers adapted to serve as fulcrums between the brush and power ends of the levers, a support mounted between the latter, a motor mounted on the support, means connecting the motor and brush for operating the latter, and means connecting the last mentioned wheels with the motor.

10. The combination of two supporting levers, wheels mounted on the lower ends thereof, a cleaning device mounted between

the levers, and means on each side of the levers adapted to serve as a fulcrum between the wheel ends and power ends of the levers.

11. The combination of the supporting levers, a brush journaled therein, wheels mounted on the lower ends of the levers forming a fulcrum for raising and lowering the brush, means to adjust the wheels on the levers to compensate for wear of the brush, and means on each side adapted to serve as a fulcrum between the wheel ends and power ends of the levers.

12. The combination of the supporting levers, wheels on the lower ends thereof, bearings fixed on the levers, a cleaner supported by the bearings, a support between the levers above the cleaner, a motor mounted on the support, means connecting the motor and cleaner for operating the latter and means on each side thereof adapted to serve as a fulcrum between the wheel ends and power ends of the levers.

In testimony that I claim the foregoing as my invention, I have signed my name in presence of two subscribing witnesses.

EMMOR J. STEWART.

Witnesses:
RALPH HOLMES,
Mrs. E. J. STEWART.