

No. 646,624.

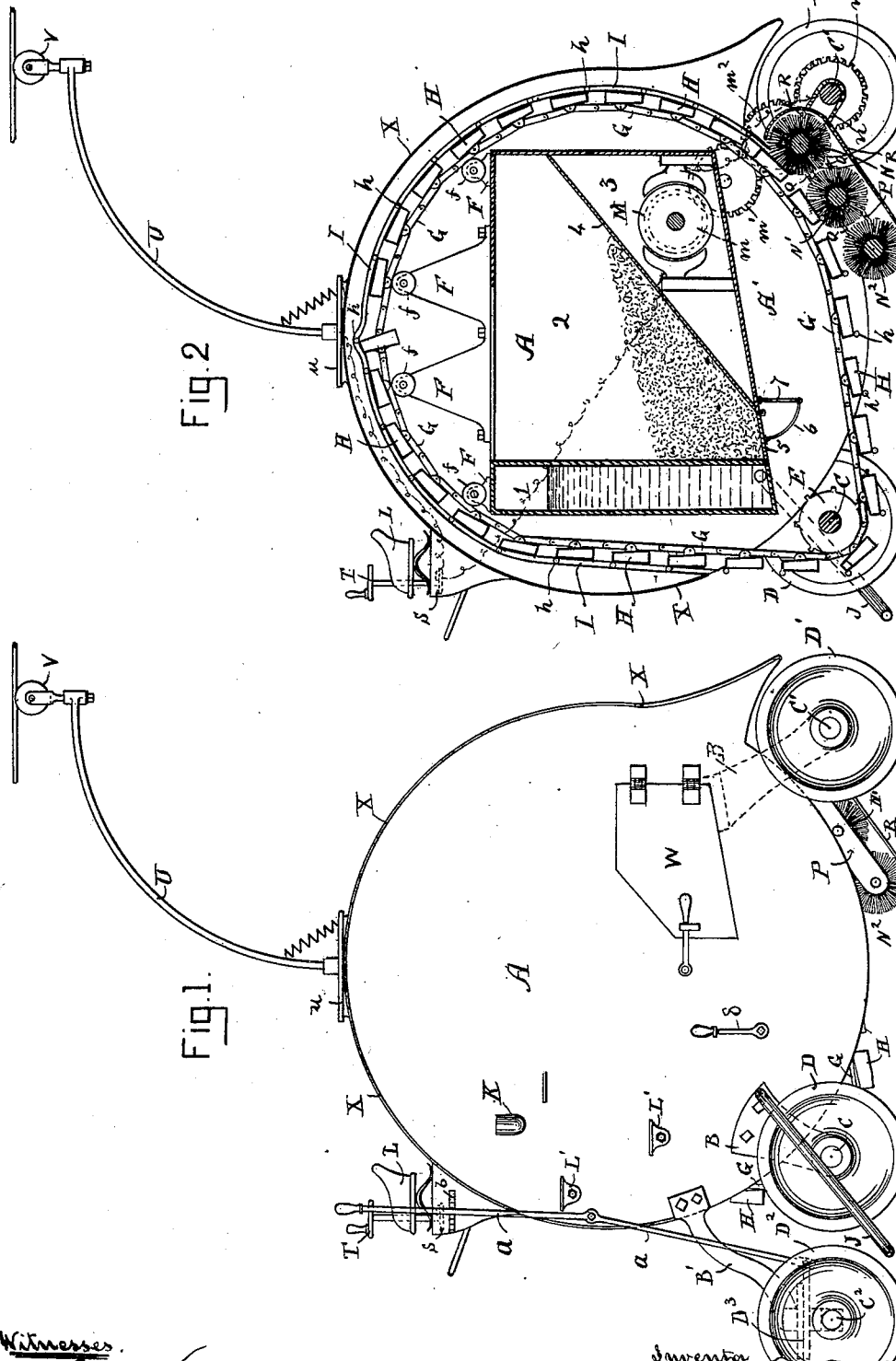
Patented Apr. 3, 1900.

H. W. LIBBEY.
STREET SWEEPER.

(Application filed Oct. 1, 1898.)

(No Model.)

2 Sheets—Sheet 1



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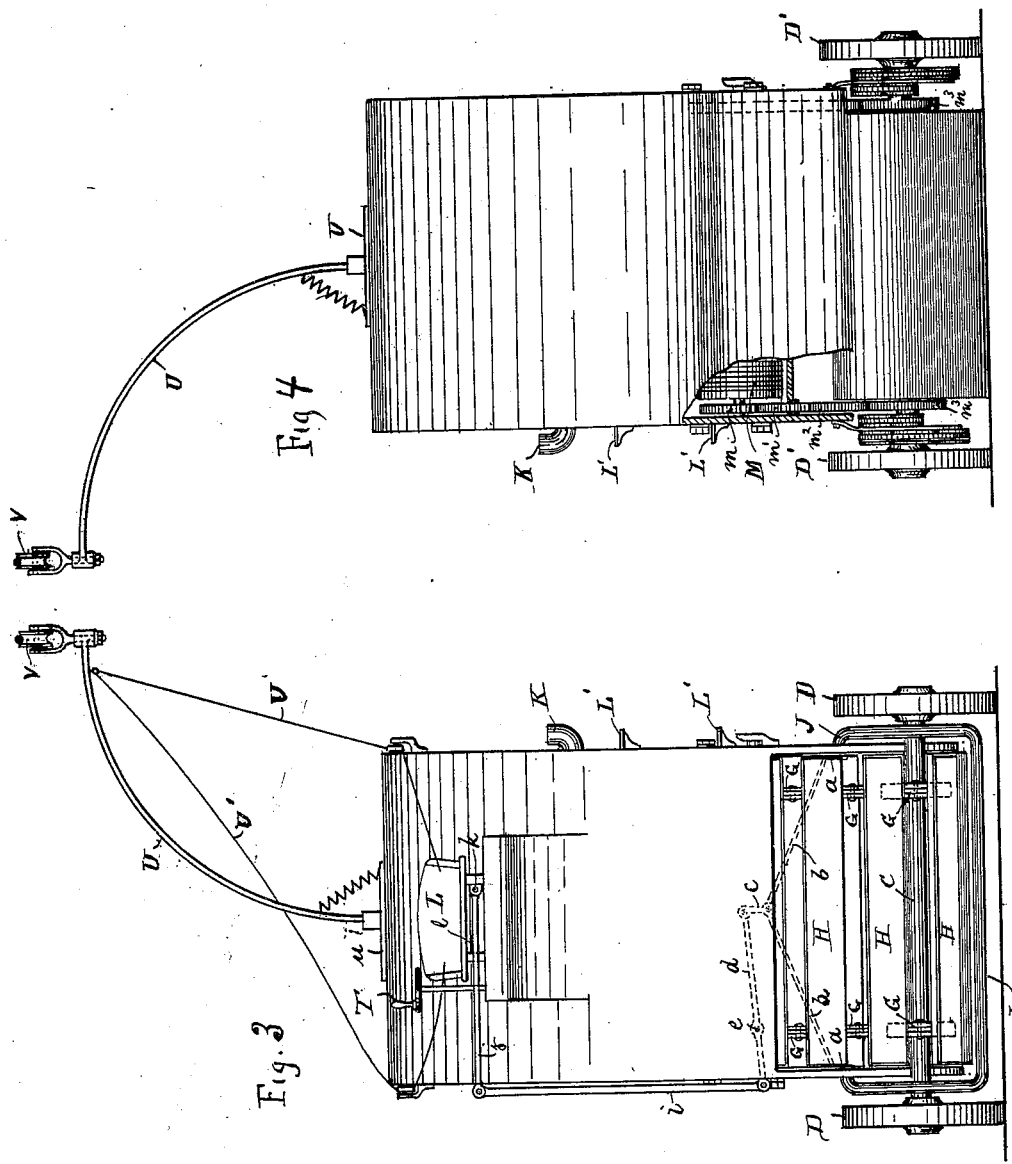
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2 Sheets—Sheet 2.

(No Model.)



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UNITED STATES PATENT OFFICE.

HOSEA W. LIBBEY, OF BOSTON, MASSACHUSETTS.

STREET-SWEEPER.

SPECIFICATION forming part of Letters Patent No. 646,624, dated April 3, 1900.

Application filed October 1, 1898. Serial No. 692,456. (No model.)

To all whom it may concern:

Be it known that I, HOSEA W. LIBBEY, a citizen of the United States, and a resident of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Electrically-Propelled Street-Sweeping Machines, of which the following is a specification.

The object of my invention is to produce an electrically-propelled street-sweeping machine that will first water the street and then gather up the dust and dirt into buckets mounted upon endless chains, which buckets deposit their contents into a suitable receptacle, said machine being also fitted with and driven by an electric motor, to which electricity is supplied by means of a trolley adapted to connect with a wire directly over or on either side of said machine.

The invention consists of a box-like body divided into three compartments—the front one for containing water that is through a perforated pipe sprinkled on the ground in advance of the machine by the driver operating suitable valves, the middle compartment to receive the dirt and dust collected, and the third compartment to receive the electric motor, the body being mounted upon arms carried by axles to which the wheels are secured, the front axle being mounted so as to steer the vehicle, the middle axle being fitted with sprocket-wheels over which endless chains pass, said chains being carried at the upper end by wheels mounted in bearings secured to the top of the body, said chains having buckets attached at their central portion, and the rear of said buckets are at their inner ends each fitted with a small roller that travels in a groove formed in the sides of the body, said grooves being at their upper ends shaped so as to form cams to tilt the buckets at the proper time and cause them to deposit their contents into the dust-receptacle, the electric motor contained in the third compartment transmitting motion to the rear axle through trains of gears, the electric energy being supplied by means of a trolley adapted to be applied to a wire directly over the machine or on either side of same, and a series of brushes and a shield for collecting the dust

or dirt and conveying it to the buckets, as hereinafter set forth, and pointed out in the claims.

Referring to the accompanying drawings, Figure 1 represents a side view of a street-sweeping machine embodying my invention with the trolley set to connect with a wire directly over the machine. Fig. 2 is a longitudinal vertical section of same with the steering-wheels removed. Fig. 3 is a front view of same with the trolley set to connect with a wire on one side of the machine. Fig. 4 is a rear view of same.

A represents the body, which is divided into three compartments 1 2 3 and carried by arms B, mounted upon axles C C', to which the wheels D D' are secured. In advance of the wheels D, upon an axle C², are mounted steering-wheels D², and also a fifth-wheel D³, that is carried by brackets B', secured to the body of the vehicle. This axle is turned to steer the vehicle by means of a lever *a*, fulcrumed to the body of the vehicle, so that by pushing the lever back the axle will be turned in one direction, and by pushing it forward it will be turned in the opposite direction. The lever may be held in the desired position by means of a rack *b*, as shown.

On the axle C are secured sprocket-wheels E, and on the top of the body are secured arms or brackets F, carrying wheels *f*.

G G are endless chains that pass over said rollers *f*, and sprocket-wheels F, to which chains are attached buckets H, by a lug in their center, on their under side. Said buckets H are at each side of their rear end fitted with small rollers *h*, each of which travels in a groove I, formed in the sides A' of the body, these sides being of circular form, and the grooves are at their upper ends shaped to form a cam, so as to tilt the buckets at the proper time, so that they will deposit their contents into the compartment 2, which has a sloping bottom 4, and at its lower end a hinged door or flap 5, held in the closed position or opened by means of an arm 6, connected to a bar 7 on a rod that passes under the body and operated by a lever 8 by the side of the body.

The compartment 1 forms a tank for hold-

ing water, and to its lower end, on each side, is connected the ends of a perforated pipe J, the water being admitted thereto or cut off by suitable valves. In the drawing Fig. 3 I have shown two slide-valves a' , connected together by an angle-bar b' , pivoted to a connecting-link c , the other end of which is pivoted to a lever d , fulcrumed at e , the outer end of which is connected to an upright bar i , the upper end of which is connected to a lever j , fulcrumed at k and provided with a foot-rest l , so that when the driver presses down with his foot upon said lever the valves are opened and the water flows into the pipe J and out through the perforations and sprinkles the street. Water is supplied to the tank through a nozzle K on the side of the body.

L is the driver's seat at the front of the body, and L' are steps to assist him in reaching same.

In the compartment 3 is arranged an electric motor M, which by trains of gears $m m' m'' m'''$ transmits motion to the rear or driving axle C', that by a chain or belt n transmits motion to a shaft carrying the upper rotary brush N, that has its bearings in two swinging arms P, that also carries two other rotary brushes N' N'', driven by a sprocket-chain Q, so that all the brushes rotate in the same direction, and by having said rotary brushes mounted in swinging arms the lower brush N'' will always be in contact with the ground. At the rear of the brushes is arranged a scoop or guide B, curved at its upper end so as to conduct the dirt or dust into the buckets H.

Electricity for feeding the motor M is by a trolley taken from a wire and conducted to a switch S of ordinary construction, arranged under the driver's seat and operated by a lever or hand-wheel T, and thence by a wire to the motor. The pole U, carrying the trolley-wheel V, is curved, as shown, (see Figs. 3 and 4,) and mounted upon a plate u , that is free to be turned round, so that the current can be taken from a wire directly over the machine or from either side, as shown. Ropes U' may be attached to the trolley-pole and pass over pulleys to the driver's seat, as shown in Fig. 3, so that the driver can change the position of the trolley-pole without leaving his seat. W are doors in the sides of the body in order to give admittance to the compartment containing the motor.

A thin sheet of metal or other suitable covering X is secured to the sides of the upper portion of the body, so as to inclose the apparatus and prevent the escape of any dust.

The wheels are preferably provided with rubber tires for the purpose of deadening objectionable noise.

What I claim is—

1. In a street-sweeper, the combination with a body mounted on suitable wheels and containing a dirt-receptacle, of a flexible endless chain having buckets pivoted thereto and surrounding said dirt-receptacle and passing over the top thereof, brushes for sweeping dirt into said buckets, and means for moving the chain of buckets.

2. In a street-sweeper, the combination with a body mounted on suitable wheels and containing a dirt-receptacle, of a flexible endless chain having buckets pivoted thereto and surrounding said dirt-receptacle and passing over the top thereof, brushes for sweeping dirt into said buckets, means for moving the chain of buckets, and means for insuring the discharge of dirt from the buckets successively as they pass over the said dirt-receptacle.

3. In a street-sweeper, the combination with a body mounted on suitable wheels and containing a dirt-receptacle, of a flexible endless chain having buckets pivoted thereto and surrounding said dirt-receptacle and passing over the top thereof, brushes for sweeping dirt into said buckets, and a motor carried by said body for propelling the sweeper and moving the chain of buckets.

4. In a street-sweeper, the combination with the body having side walls provided with arms B, axles and wheels carried by said arms, a dirt-compartment located between said side walls, a flexible endless chain having buckets pivoted thereto and surrounding said dirt-receptacle and one of said axles, and means for brushing dirt into said buckets, said buckets being adapted to discharge dirt as they pass over the top of the dirt-compartment.

5. In a street-sweeper, the combination with a body consisting of side walls, of arms B carried by said side walls, axles and wheels carried by said arms, guides I carried by the sides of the body, a dirt-receptacle between the side walls of the body, an endless chain having buckets pivoted thereto and surrounding said dirt-receptacle and one of the wheel-axles, the ends of said buckets having rollers running in the guides I, and means for brushing dirt into said buckets, one portion of the guides above the dirt-receptacle being formed to tilt the buckets, substantially as described.

In testimony whereof I have affixed my signature in presence of two witnesses.

HOSEA W. LIBBEY.

Witnesses:

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