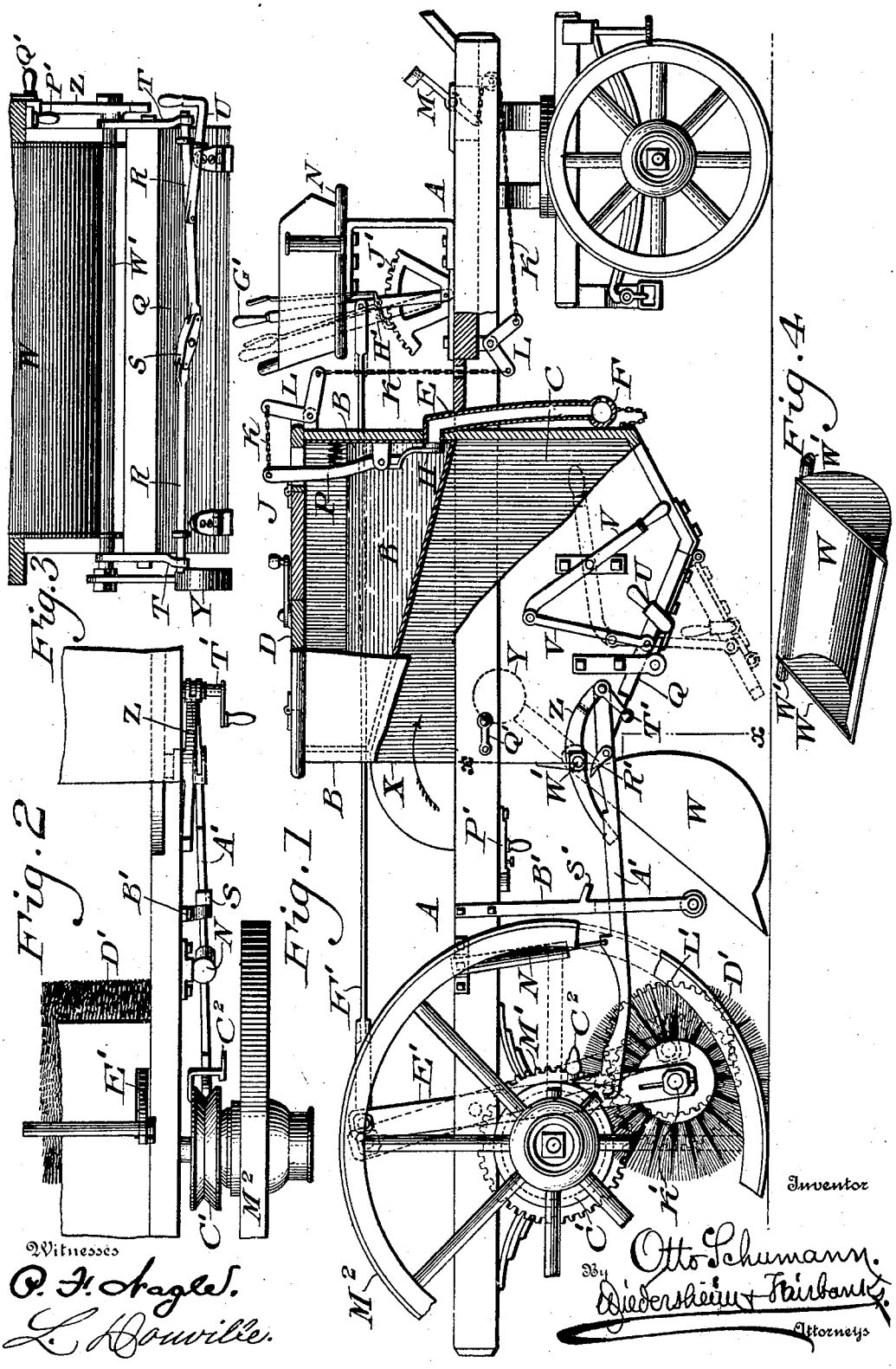
No. 681,514. Patented Aug. 27, 1901.

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STREET SWEEPER OR CLEANER.

Application filed Feb. 19, 1901.

(No Model.) 2 Sheets—Sheet 1.



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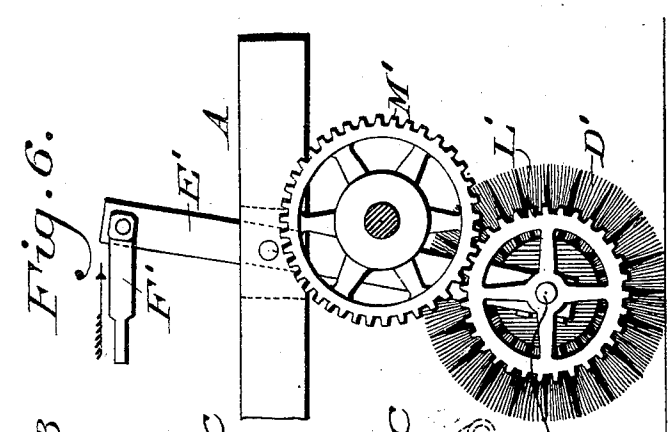
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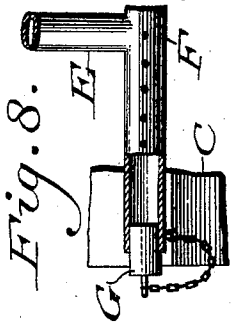
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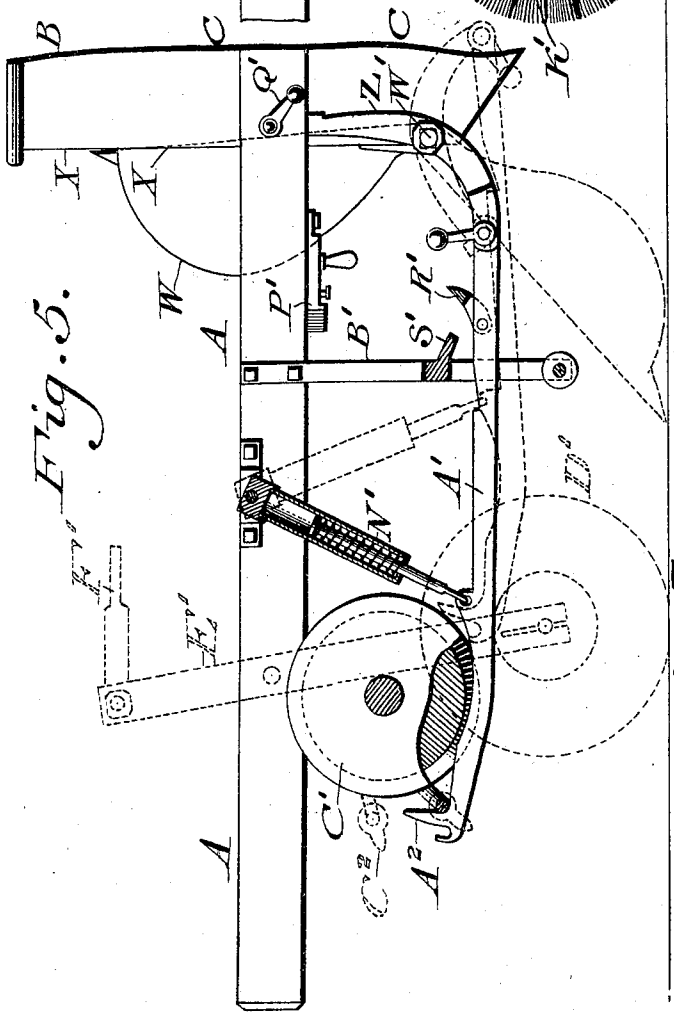
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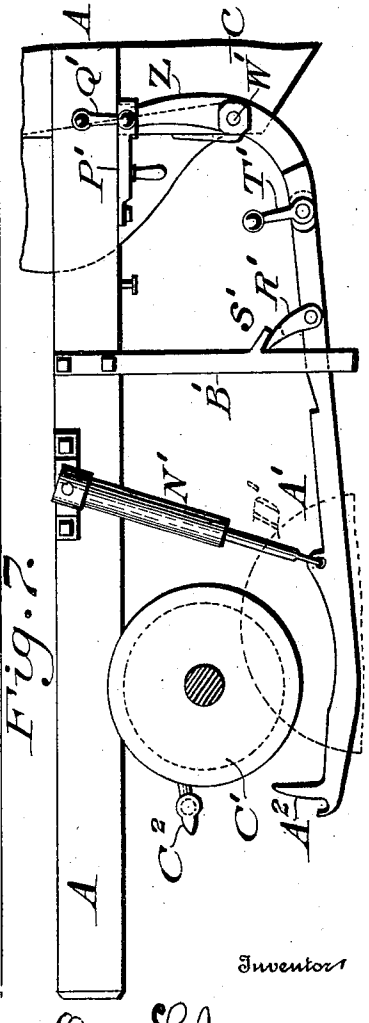
(Application filed Feb. 19, 1901.)

(No Model.) 2 Sheets—Sheet 2.









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STREET SWEEPER OR CLEANER.

SPECIFICATION forming part of Letters Patent No. 681,514, dated August 27, 1901.

Application filed February 19, 1901. Serial No. 47,910. (No model.)

To all whom it may concern:

Be it known that I, OTTO SCHUMANN, a subject of the Emperor of Germany, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Street Sweepers or Cleaners, of which the following is a specification.

My invention relates to a street sweeper or cleaner; and it consists of novel mechanism for taking up the dust, dirt, &c., at intervals and disposing of the same in a suitable receptacle on the apparatus and a brush for directing the dirt, dust, &c., into said bucket, means being also employed for raising the brush and throwing it out of gear and rendering the same inoperative and for placing the bucket at rest, and other details of construction, as will be hereinafter set forth.

Figure 1 represents a partial side elevation and partial vertical section of a street sweeper or cleaning apparatus embodying my invention. Fig. 2 represents a top or plan view of a portion thereof. Fig. 3 represents a partial rear view and partial transverse section on line *x x*, Fig. 1. Fig. 4 represents a perspective view of the bucket which receives the dirt, dust, &c., from the sweeper. Fig. 5 represents a partial side elevation and partial vertical section of a portion of the apparatus. Fig. 6 represents a side elevation of the brush and connecting mechanism of the apparatus. Fig. 7 represents a side elevation of a detached portion, showing the bucket-operating mechanism out of gear. Fig. 8 represents a front view of a portion of the water-distributing pipe and means for closing the end thereof.

Similar letters of reference indicate corresponding parts in the figures.

Referring to the drawings, A designates a truck having a frame on which is mounted the water-holding tank B and dust or dirt receiving box C, said tank being provided with a door or doors D for access to the interior thereof and having an outlet-pipe E, at the lower end of which is the sprinkling-pipe F, the ends of which are closed by plugs G, which when removed permit the washing and draining of said pipe. The box C is closed at top, the wall or roof for which in the present case constituting the bottom of said tank.

H designates the valve of the water-tank, the seat of the same being on the upper end of the pipe E, said valve having connected with it the lever or handle J, which by means of the chain or cords K and elbow-levers L is connected with the foot-treadle M, the latter being mounted on the truck convenient to be operated by the driver, who occupies the seat N, it being evident that by moving the treadle in one direction the valve H may be opened, permitting the sprinkling of the street, &c., and when the treadle is let go said valve may be closed, the latter being effected by the action of the spring P, which bears against the lever J and a fixed part of the water-tank. The lower portion of the box C is provided with an outlet or gate Q, so that when the same is opened the contents of the box may be discharged. In order to hold the gate in closed position, I employ the bolts R, which are guided on said gate Q and pivotally connected with the double crank-arm S, which is mounted on said gate. The bolts R are adapted to enter eyes T, which are connected with the sides of the box, as most apparent in Fig. 3.

In order to conveniently operate the bolts R, whereby they may shoot into and out of the eyes T, I employ the handle U, which is connected with one of the bolts R and guided on the gate Q. When the gate is unlocked, it may be readily opened by means of the hand-lever V, which is mounted on the side of the box C and connected with said gate, as most plainly shown in Fig. 1.

W designates a bucket which is mounted, as at W′, at the rear on the box C, the rear of the latter having an opening X, to and from which said bucket is adapted to move for purposes to be hereinafter explained. The shaft W′ of the gate Q has connected with one of its ends the counterpoise Y, which serves to ease the motions of said bucket to and from said opening X, and the other end of said shaft has connected with it the arm Z, the lower limb of which is pivoted to the bar A′, which is guided on the hanger B′, the latter being pendent from the adjacent sill of the truck. On the hub of one of the hind wheels is the tappet-wheel C′, which rotates with said wheel and is adapted to have its arm C^2 engage at intervals with the upper

face of the bar A′ and with the flange A^2 on the end of said latter, so as to impart motion to the latter in a downward and rearward direction, thus swinging the arm Z, and thereby turning the bucket, thus advancing the bucket to the opening X, it being here noticed that said bucket is adapted to receive the dirt, dust, &c., from the brush D′ of the apparatus and direct the same into the box C through the opening X, said brush being mounted at the rear of the apparatus on the swing-arms E′, which are pivoted on the truck A and connected by the rod F′ with the hand-lever G′, the latter being mounted adjacent to the driver's seat N and provided with a pawl or dog H′, which is adapted to engage with the segmental rack J′ for locking said lever, and consequently holding said arms E′ in the positions to which they may be placed, it being also noticed that the shaft K′ of the brush carries the spur-wheel L′, which gears with the spur-wheel M′, which is connected with the hub of the adjacent hind wheel M^2 of the apparatus, it now being seen that when the lever G′ is properly operated the brush may be thrown forward and raised from the street, road, &c., thus disengaging the spur-wheel L′ from the spur-wheel M′ and rendering said brush inoperative. When, however, the lever is operated in the reverse direction, the brush is moved rearward downward on the street, &c., and the spur-wheels are geared together, and thus the motion of the hind wheels is imparted to the gearing, and consequently to the brush, thus rotating the latter over the street or road to be swept and causing the dirt, &c., to be directed to the bucket W. The bar A′ has connected with it the spring N′, which depends from the sill of the truck and is adapted to raise said bar after the latter has been lowered by the tappet-wheel C′ and then released therefrom, as most plainly shown in Fig. 5.

In order to relieve the bucket W of motion or operation, the arm Z is raised and engaged by the lock P′ on the sill of the truck, said lock then being secured against outward movement by means of the pivotal latch Q′, which is mounted on said sill, it being noticed that when the arm Z is thus controlled the bar A′ is in lowered position, (see Fig. 7,) so as to be cleared of the tappet-wheel C′, whereby said bar is rendered inoperative and the bucket remains in closed position against the opening X of the box C, as most plainly shown in Figs. 5 and 7.

Attention is here directed to the fact that as the top of the dirt-receiving box C is closed and has its inlet at the rear and the rear opening X is also momentarily closed by the bucket, which when it reaches said opening covers the same, any dust that may arise as the dirt is dumped into said box is prevented from escaping, and, furthermore, when the device is in motion the wind is prevented from striking the dirt and raising the dust therefrom. Again, as the bucket has a long leverage or sweep, when it describes its upward throw and so closes the opening or inlet X it strikes the wall of said opening and receives a sufficient blow to cause the dirt to forcibly enter the box by inertia and loosen such dirt that might adhere to the bottom of the bucket, thus completely removing the contents of said bucket.

To assist further in holding the bar A′ in its inoperative position, I employ the dog R′, which is mounted on said bar A′ and adapted to engage upwardly with the tooth S′ on the hanger B′, so that the elevating motion of the spring N′ is restrained. When the bar A′ is in operation, the dog R′ is removed from the tooth S′, so as not to interfere with the proper motion of said bar, and consequently of the bucket.

To assist in easily raising the bucket W by hand when it is to be rendered inoperative, the pivotal joint of the arm Z and bar A′ has connected with it the handle T′, the same when rotated serving to raise said arm Z from the position shown in Fig. 1 to that shown in Fig. 7. As the bucket has its axis W′ connected with said arm Z, the latter may be turned, thus elevating the bucket and lowering the bar A′, the latter thus being out of gear. (See also Fig. 2.)

The operation is as follows: When the valve H is opened, the water from the box may be caused to sprinkle the street or road whether the brush is in operation or not, and the water may be cut off when desired. When the brush is geared with the wheels of the apparatus and the arm Z is released of its locking devices P′ Q′, the bar A′ may be engaged by the tappet-wheel, and thus the bucket may be raised and lowered at intervals, motion being also communicated to the brush, whereby it rotates and sweeps forward the dirt, dust, &c., into the said bucket when at the proper intervals said bucket rises, and as its center of motion is described from the opening X it throws or discharges its load into the box C. Then the bucket quickly lowers and receives a fresh charge of dirt, dust, &c., the bucket thus reciprocating from the brush D′ to the opening X, and vice versa. When for certain reasons it is not desired to operate the brush, it is thrown out of gear with the wheel M′, the effect of which is evident. Then, as the bucket is not required for use, the arm Z is elevated and locked, as has been stated, thus clearing the bar A′ of the tappet-wheel C′, so that the bucket remains in upright position, closing the opening X. When the box C is to be emptied, the gate Q is opened, and thus the contents of the former dump or drop out of the box, as is evident.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a street-sweeping apparatus, a dirt-receiving box having a closed top and an opening in its rear, a brush, means for operating said brush, and a swinging bucket adapted to oscillate between said brush and opening,

in combination with a radial arm connected with the axis of said bucket, a rising and falling bar which is pivotally mounted on the running-gear and connected at one end with said radial arm, and means on the running-gear for raising and lowering the other end of said bar.

2. In a street-sweeping apparatus, a frame provided with running-gear a dirt-receiving box, a bucket mounted thereon, an arm connected with the axis of said bucket, a bar pivotally attached to said arm, a tappet-wheel on said running-gear adapted to engage with said bar at intervals, and means adapted to hold said bar against said tappet-wheel.

3. In a street-sweeping apparatus, a frame provided with running-gear, a dirt-receiving box, a swinging bucket on said box, an arm connected with said bucket, a bar pivotally attached to said arm, means connected with said running-gear, engaging said bar, whereby the bucket is oscillated to and from said box at intervals, and means adapted to hold said bar against said tappet-wheel.

4. In a street-sweeping apparatus, a frame provided with running-gear, a dirt-receiving box, and a bucket adapted to be oscillated to and from said box, in combination with a lock for the oscillating mechanism of said bucket, and mechanism operated by the running-gear for oscillating said bucket.

5. In a street-sweeping apparatus, having a frame provided with running-gear, a dirt-receiving box, and a bucket mounted thereon adapted to be oscillated to and from said bucket, an arm connected with said bucket, a bar pivotally attached to said arm, means for operating said bar in opposite directions, and a lock on the apparatus adapted to engage said arm for locking said bar and said bucket in inoperative positions.

6. In a street-sweeping apparatus, a frame, a dirt-receiving box, and an oscillating bucket thereon, the arm Z mounted on said frame, the bar A′, the dog R′ thereon, said arm being pivotally connected with said bar, the tooth S′, the support B′ for said tooth, and the spring N′ which is adapted to raise said bar, said dog being adapted to engage said tooth.

7. In a street-sweeping apparatus, a frame a rotary brush, a toothed wheel thereon, a toothed wheel on the apparatus operated by the running-gear thereof, said wheels being adapted to mesh, a movable arm forming the bearings for said brush, a lever adapted to be operated by the driver of the apparatus, and a connection for said movable arm and lever in combination with a dirt-receiving box having an inlet-opening in its rear and a bucket mounted on the frame adapted to reciprocate between said brush and opening.

8. In a street-sweeping apparatus, a dirt-receiving box, a gate therefor, means for locking said gate consisting of bolts, a double crank-arm connecting the same, a handle attached to one of said bolts and eyes on said box, and a compound lever for opening said gate.

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