

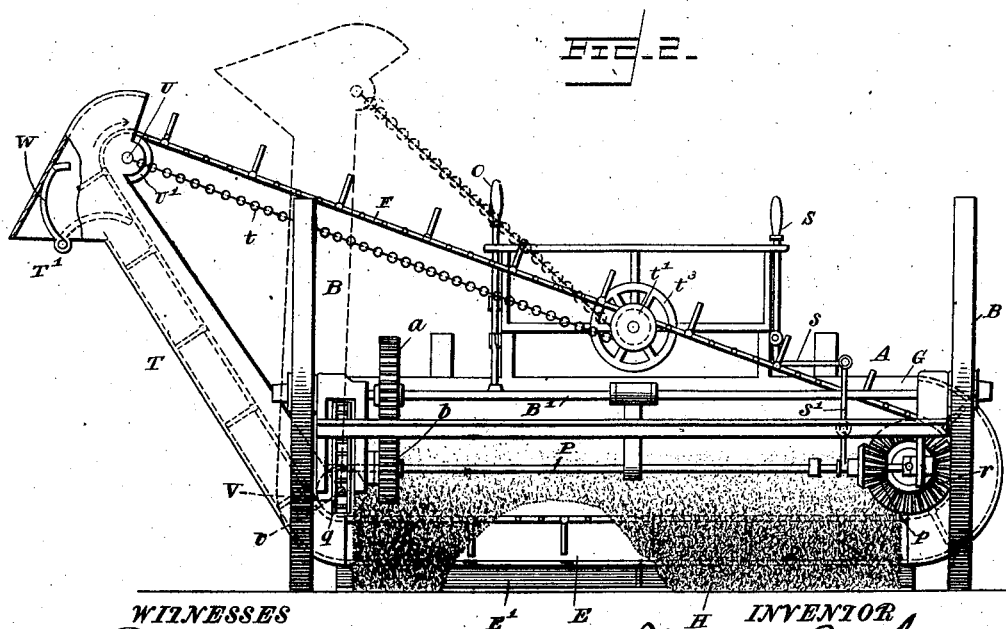
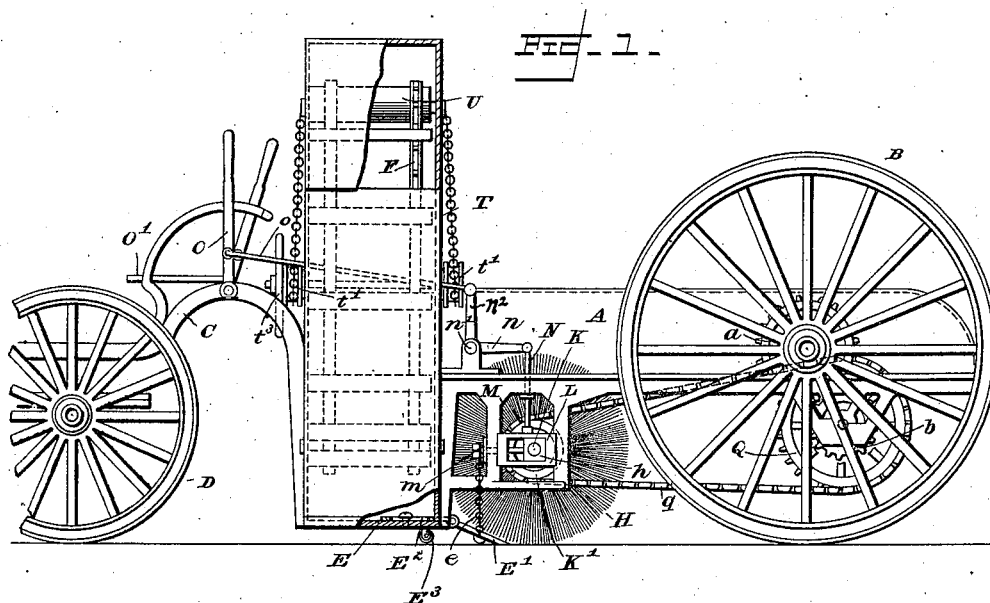
(No Model.)

2 Sheets—Sheet 1.

W. A. GREEN.  
STREET SWEEPER.

No. 525,075.

Patented Aug. 28, 1894.



**WITNESSES**

Edw. S. Durie Jr.  
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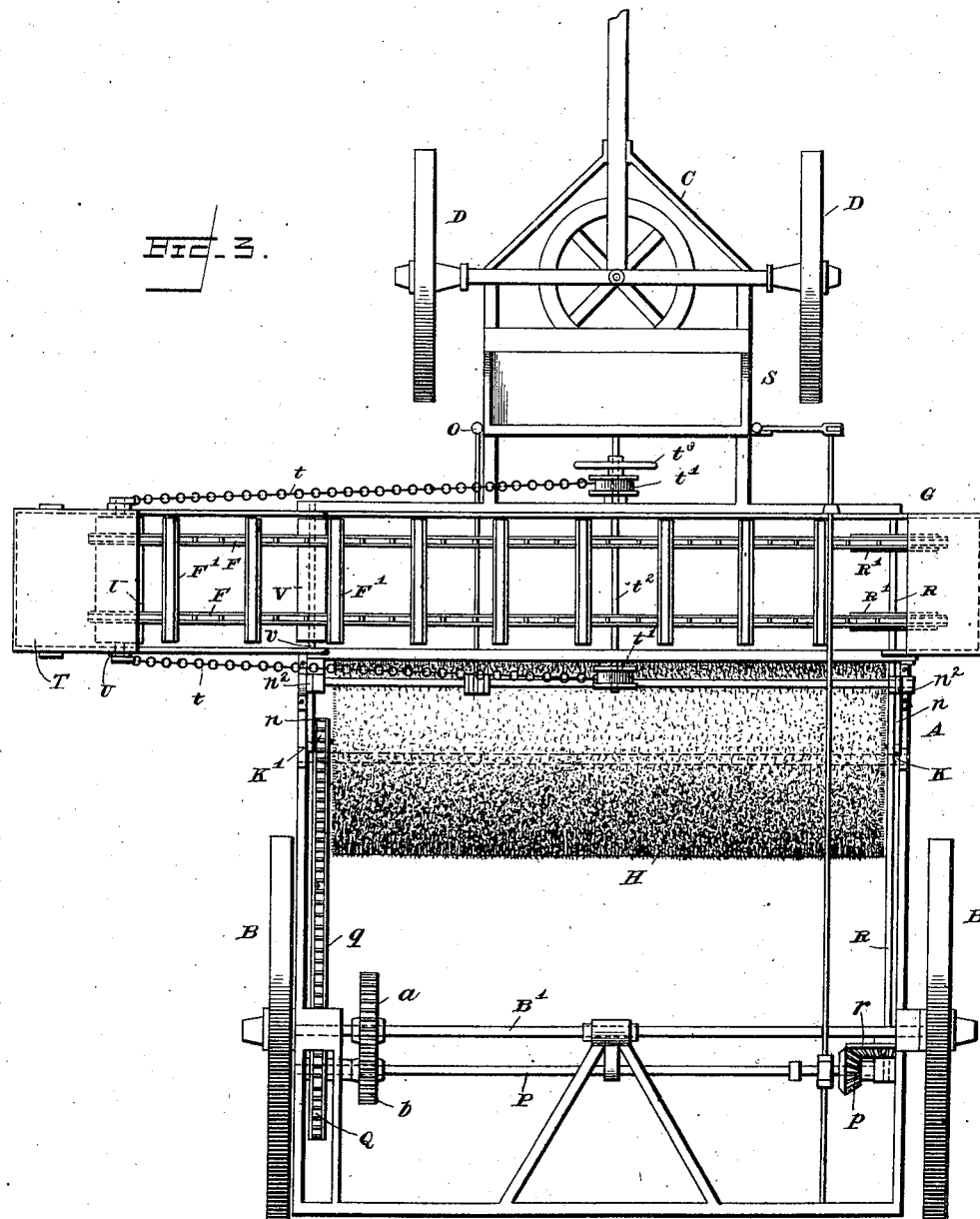
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 C. W. L. D. D. D. D.  
 Wm L. Boyden

*INVENTOR*

William A. Green  
per Fred W. Wacker,  
Attorney

# UNITED STATES PATENT OFFICE.

WILLIAM A. GREEN, OF TRENTON, NEW JERSEY, ASSIGNOR OF THIRTEEN-TWENTIETHS TO BARNETT G. D. UNGER, GEORGE H. WHITEHEAD, AND NICHOLAS JAHN, OF SAME PLACE, AND THOMAS H. CLARK, OF EWING, NEW JERSEY.

## STREET-SWEEPER.

**SPECIFICATION** forming part of Letters Patent No. 525,075, dated August 28, 1894.

Application filed August 4, 1893, Serial No. 482,401. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM A. GREEN, a citizen of the United States, residing at Trenton, in the county of Mercer and State of New Jersey, have invented a new and useful Improvement in Street-Sweeping Machines, of which the following is a specification.

This invention relates to an improvement in machinery for sweeping streets or other surfaces, the object being to simplify and perfect machinery for this purpose so that it may be more cheaply constructed, more extensively used and more efficiently operated for its purpose than is the case with the many forms of sweeping apparatus now in use to a small extent in different cities, and the invention therefore consists in the construction, arrangement and combination of parts substantially as will be hereinafter described and claimed.

In the annexed drawings illustrating my invention: Figure 1 is a side elevation of my improved street-sweeping machine with certain parts broken away. Fig. 2 is a rear elevation, likewise with certain parts broken away. Fig. 3 is a top plan view of the entire machine.

Similar letters of reference designate the same parts in the different figures.

A denotes the main frame of the carriage of my improved machine. This frame is mounted upon the rear wheels B and rear axle B', the fore carriage C and fore wheels D. The construction of the carriage frame however and its arrangements with wheels for the purpose of locomotion may vary within wide limits, and the particular combination herein given is by way of example merely.

Crosswise of the frame A and tolerably close to the ground, is a revolving brush H, constructed in any desired manner and of such strength and durability as will fit it to sweep the surface over which the carriage may be drawn. This brush is supported revolvably in the frame A. Its shaft K is held at each end in journal blocks h, which are supported in horizontal slots in boxes L. Thus the blocks h are adjustable in the slots so as to permit the brush H to be horizontally ad-

justed, and this adjustment of blocks h is effected by means of screw bolts m. The boxes L are vertically adjustable in the guide ways M in frame A, as shown.

To each of the vertically-movable journal box supports L, is attached a vertical rod N which works vertically through a bearing in frame A. The upper ends of the rods N are attached to the levers n n, which are affixed to the horizontal shaft n', which is supported in bearings upon frame A, as shown in Fig. 1, said levers being operated by means of the lever O, situated near the driver's seat O', which lever connects with the arm n' of shaft n', by means of link o. By operating the lever O therefore, the brush or broom H can be adjusted so as to be more or less above or upon the ground, as may be required by circumstances.

The main axle B' is made fast to the rear wheels B B and revolves therewith. This axle carries a gear wheel a, which meshes with a pinion b on a countershaft P, which is located in bearings and parallel to shaft B'. Thus the shaft P is driven by the motion of the vehicle. On shaft P moreover, are keyed the sprocket wheel Q at one end and the bevel pinion p at the other end—see Fig. 3. The sprocket wheel Q drives the brush H by means of a link belt q, which passes around sprocket Q and also around another sprocket wheel K', which is keyed fast upon the shaft K of brush H. The bevel pinion p is feathered on the shaft so as to slide back and forth to be engaged with or disengaged from another bevel gear wheel r, which is fast on shaft R that is located at right angles to shafts B' and P, and which extends substantially the full length of the frame A so that it may be employed in operating the dust-removing mechanism, as will be presently explained, see Fig. 3. The pinion p is adjusted and thrown into or out of engagement by means of pivoted lever handle S, situated near the driver's seat—see Fig. 2—which connects by rod s with the forked lever s' that engages a collar on the pinion p, all as clearly shown.

Beneath the frame A and adjacent to the

rotary brush H, is a flat horizontal dirt-receiving tray E. This is located close to the ground and receives the dirt and dust thrown upon it by the revolving brush. This tray E is provided with a hinged platform E', of a length equal to that of broom H, which platform or extension is adjacent to the broom H, as shown in Fig. 1 and is preferably inclined. The purpose of this extension E' is to bring the broom and platform E closer together so that the sweepings may be more effectually gathered.

The tray E may be made in sections if desired. Also it may be provided with rollers E<sup>3</sup> if desired, which are placed on the under side of the tray to prevent it from actually scraping upon the road-bed. The hinged extension E' is hinged to a plate E<sup>2</sup>, resting upon the tray E and so arranged that this plate E<sup>2</sup> may be adjusted nearer to or farther away from the periphery of the broom H, as may be required, and when adjusted it may be secured in place by means of bolts or other locking devices. At each end of the extension E' is attached a chain or cable e, which is connected to the elevating appliances of the broom axle, as for instance, to the bolts m, in such a way that when the broom is raised off the road, the hinged platform E' may likewise be raised clear of the roadway and may drop again when the broom is lowered.

Around and above the tray E is a dust guard or dust-receiver G which is simply a trough-shaped casing located transversely of frame A and supported thereby so as to direct all the dust and sweepings surely into the tray E. The shape of this trough or casing may vary considerably. Of course this casing will be open on the side next to the brush H.

I will now describe the mechanism by which the sweepings are removed automatically from the tray E and discharged continuously from the machine. At one side of the machine, preferably near the forward end is an upright chute or elevator casing T, having a discharge mouth T' at the upper end. This casing T is pivotally supported at its lower end on a shaft v, as shown, and it is therefore adapted to occupy an inclined position, as shown in full lines in Fig. 2, this being the position that it takes when the machine is in use and the elevator is in operation, or it may occupy the position shown in dotted lines in Fig. 2, where it is close against the side of the machine and out of the way, this being the position that it takes when the machine is not in use. The lower end of the casing T is opposite to one end of the tray casing G, so that the dirt in the tray may readily be carried therefrom into casing T and up through same to be discharged at mouth T'. This transference of the sweeping from the tray to the discharge is accomplished by means of an endless carrier or elevator, consisting of one or more chains or link belts two being

shown in the drawings at F F, to which is secured at short intervals apart, a series of scrapers or transverse blades F' F', acting as buckets to carry the dirt up the discharge. The shaft R transmits motion from the rear axle to operate this conveyer. Keyed upon this shaft are sprocket wheels R' R' around which the link belts F F pass. These wheels R' are at the end of tray E, farthest from the casing T. In the upper end of casing T, adjacent to the discharge mouth T', are guide rollers U around which the chains F also pass. And further it will be seen that there is a guide roller V at the base of casing T, around which roller the chains F F pass.

The casing T is provided with chains t, which wind upon pulleys t' on the shaft t<sup>2</sup>, which has an operating hand-wheel t<sup>3</sup> near the driver's seat. In this way the casing is moved upon its pivotal support and either drawn up into an upright position where it is out of the way, or lowered into an inclined position for use.

W denotes a supplementary scraper, supported pivotally in mouth T' of spout T. This scraper after traveling upon a scraper-blade F of the endless conveyer, falls into position to act upon the following blade, until released by the blade having attained a certain angular position, thus taking off any adhesive substance upon the blade of the endless scraper and delivering same through the opening T'.

The operation of the machine will be readily understood from the foregoing description. A cart can travel alongside of the sweeper, with its open body beneath the mouth T' to receive the dirt that will be discharged therefrom. The endless conveyer will act efficiently to convey the dirt gathered by the brush upon tray E, upward and out through the mouth T', and hence the machine will have great efficiency and capacity.

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

1. In a street sweeping machine, the combination of a rotary brush located transversely to the movement of the vehicle, a dirt receiver, consisting of a transversely located horizontal tray adjacent to the brush, a dust guard surrounding the tray and open on the side next to the brush, a box-shaped elongated chute leading outward and upward in an inclined position from one end of the dirt tray, said end being pivotally mounted, and the upper end of the chute having a discharge mouth, a supplementary scraper W pivotally supported in said mouth, a dirt conveyer consisting of chains F F and scraper blades F' secured thereto by means of which conveyer the dirt is carried upward through the chute and discharged at its mouth, and the chains t, shaft t<sup>2</sup>, having pulleys t' on which the chains wind, all arranged for the purpose of adjusting the chute, substantially as described.

2. In a street sweeping machine, the combination of the rotary brush H, having shaft K, the guideways M, the slotted box L, adjustable in said guide-ways and carrying blocks 5 h, in which shaft K is journaled, the bolts m for adjusting blocks h, the vertical rods N attached to the box L, levers for operating rods N, the dirt tray E, having extension E', and the chains e, attached to extension E' and to bolts m, all arranged substantially as described.

WILLIAM A. GREEN.

Witnesses:

BENJ. N. BALDWIN,  
WM. S. GARY.

It is hereby certified that in Letters Patent No. 525,075, granted August 28, 1894, upon the application of William A. Green, of Trenton, New Jersey, for an improvement in "Street-Sweepers," errors appear requiring the following corrections, viz: In line 7, of the grant and in the printed head of the specification, it is stated that said Green assigned "thirteen-twentieths" to Barnett G. D. Unger, George H. Whitehead, Nicholas Jahn, and Thomas H. Clark, whereas it should have been stated that he assigned *one-half*; and that the said Letters Patent should be read with these corrections therein that the same may conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 11th day of September, A. D. 1894.

[SEAL.]

JNO. M. REYNOLDS,  
*Assistant Secretary of the Interior.*

Countersigned:

S. T. FISHER,  
*Acting Commissioner of Patents.*