

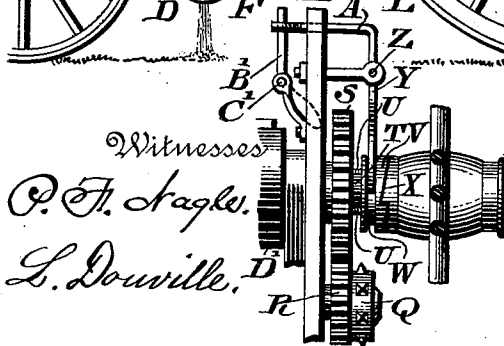
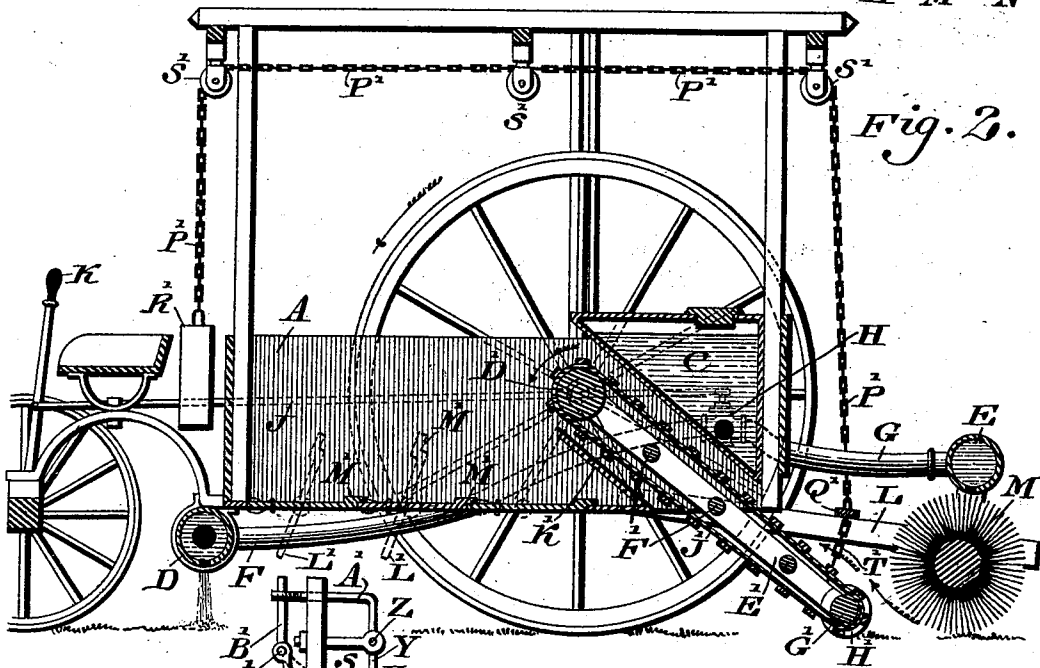
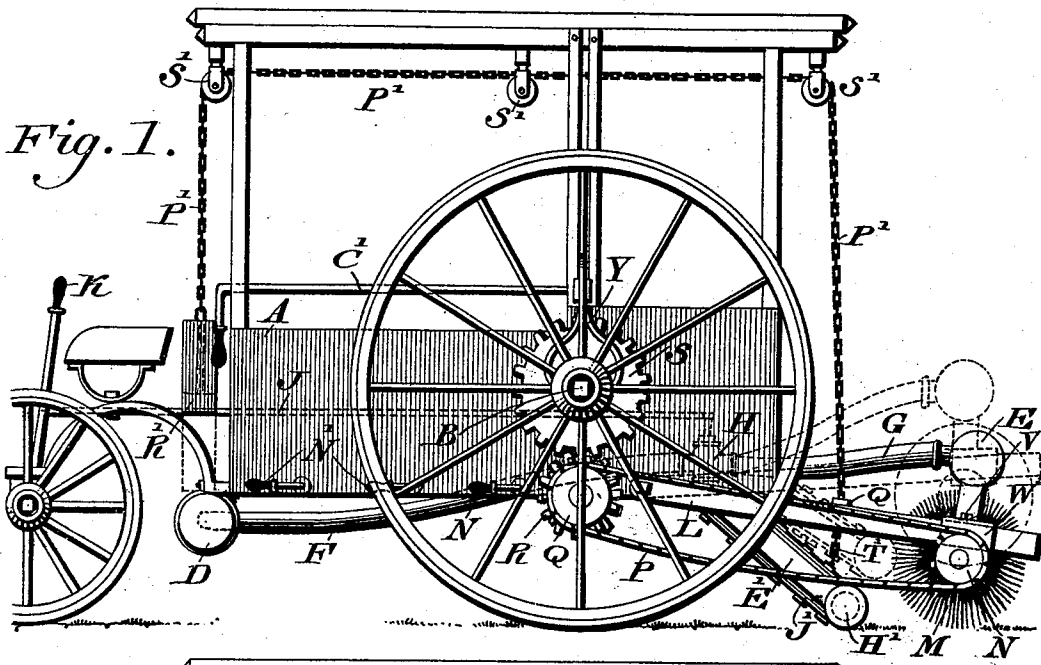
(No Model.)

2 Sheets—Sheet 1.

W. HAYWOOD.  
STREET SWEEPER.

No. 551,208.

Patented Dec. 10, 1895.



Witnesses

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*L. Dowille.*

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*Attorney*

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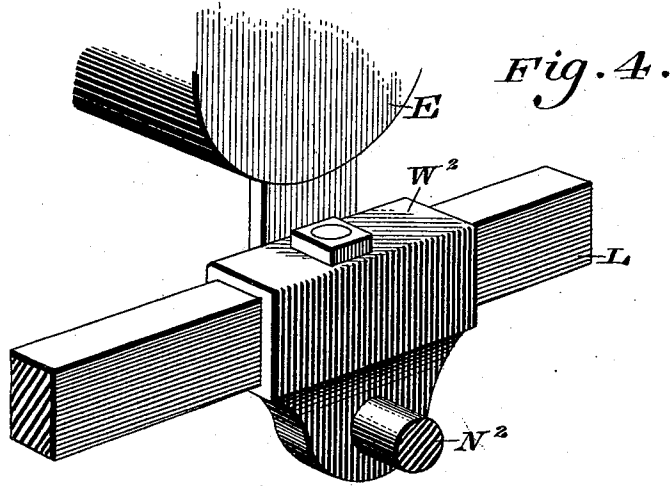


Fig. 4.

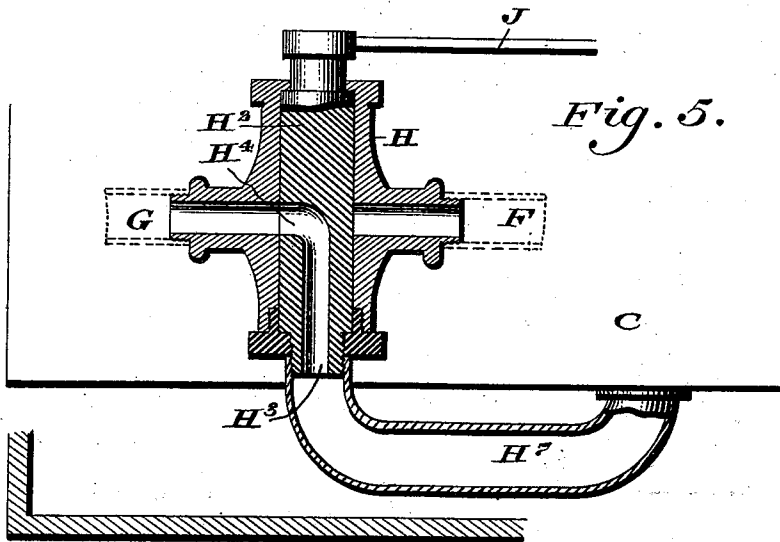


Fig. 5.

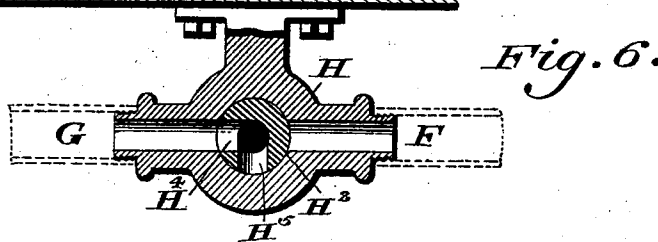


Fig. 6.

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# UNITED STATES PATENT OFFICE.

WILLIAM HAYWOOD, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF TWO-THIRDS TO WALTER J. WARNER AND WILLIAM S. P. SHIELDS, OF SAME PLACE.

## STREET-SWEEPER.

SPECIFICATION forming part of Letters Patent No. 551,208, dated December 10, 1895.

Application filed October 29, 1894. Serial No. 527,247. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM HAYWOOD, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Street Sweepers and Sprinklers, which improvement is fully set forth in the following specification and accompanying drawings.

My invention relates to improvements in street sweepers and sprinklers, and my object is to construct an apparatus which shall be at all times under the control of the driver, and which shall be readily applicable for simultaneously sprinkling and sweeping either asphalt, Belgian block, or other pavements; and for this purpose it consists of the combination and arrangement of parts as hereinafter set forth and claimed.

Figure 1 represents a side elevation of a street sweeper and sprinkler embodying my invention. Fig. 2 represents a longitudinal vertical sectional view of the same. Fig. 3 represents, on an enlarged scale, a detail view of the clutch mechanism to be hereinafter referred to. Fig. 4 represents, on an enlarged scale, a perspective view of a support for certain parts of the apparatus to be hereinafter referred to. Figs. 5 and 6 represent vertical and transverse sectional views of a two-way valve employed.

Similar letters of reference indicate corresponding parts in the several figures.

Referring to the drawings, A designates the body of the sweeper, and B designates the rear axle of the same, which in conjunction with the front axle supports said body.

C designates a water-tank arranged in the rear of said wagon, and having one of its sides preferably inclined.

D and E designate transverse water pipes or sprinklers which are located at the front and rear of the wagon, respectively, and provided with perforations on their under sides, the sprinkler E being preferably located above the rotary brush or sweeper, to be hereinafter referred to, and supported by means of vertical arms or standards on side bars of the same. (See Fig. 1.)

F and G designate supply-pipes leading

from said tank C to said pipes D and E, said pipes being controlled by the valve H, which is controlled by the driver by means of the rod J and the handle K, so that water can be admitted to either of the sprinklers E or D, as may be desired, the valve H being so controlled that when the passage to the sprinkler E is open, the passage to the sprinkler D is closed.

L designates bars which are pivoted at one end to the lower rear portion of the body A, while in the other ends of said bars are suitably mounted the bearings W<sup>2</sup> for the journals of the rotary sweeper or brush M. The said bearings W<sup>2</sup> can be adjusted relatively to the endless apron to be hereinafter referred to, so that as the brush M wears out its efficiency will not be impaired. One of the journals N<sup>2</sup> of said brush M is extended beyond its bearing, as seen in Fig. 4, and has attached thereto the sprocket-wheel N, which is actuated by means of the chain P, which is itself actuated by the sprocket-wheel Q, which is suitably secured to the pinion R, and revolves in unison therewith.

S designates a gear which meshes with said pinion R and is adapted to be thrown into and out of motion by means of the clutch mechanism shown in Figs. 1 and 3.

The gear S is mounted on a sleeve T, which turns freely on the rear axle B, and U U designate splines on opposite sides of said sleeve.

V designates a clutch having the groove W and the serrated outline or cut-away portion X, which corresponds to a similar outline of the hub of the rear wheel.

Y designates a yoke, which is pivoted at Z and has the portion A' bent at right angles and engaged by the upturned end B' of a rod C', which is actuated by the driver, and it is evident that a movement in either direction of the rod B' will throw the clutch V out of or into engagement with the hub of the wheel, and thus impart motion to the brush M by means of the gear and pinion and the sprocket-wheels and other chains.

The preferred construction of the two-way valve H employed is best seen in Figs. 5 and 6, the casing of said valve having the pipes F and G entering the same and adapted to be

in communication alternately, as desired, with the ports H<sup>4</sup> and H<sup>5</sup> of the plug H<sup>2</sup>, said ports communicating with the tank C, by means of the port H<sup>3</sup>, through a suitable conduit H<sup>7</sup>, it being understood that while I have shown the conduit H<sup>7</sup> in Fig. 5 as communicating with the under portion of said tank C, I do not desire to be limited thereto in every instance, since it is evident that the connection may be made at any other convenient part of the tank and the inlet-port of the valve may be at the side of the casing, if desired.

The parts are shown in Fig. 3 in operative position. The rear axle B has secured to that portion thereof which extends between the sides of the body A the roller D', and said axle also serves to support the upper ends of the frame, formed by the bars E' and the cross-pieces F', the lower cross-piece G' turning freely in said bars, and having at its extremities the rolls or wheels H', which contact with the ground when the device is in operation.

J' designates an endless apron of suitable construction, which is adapted to carry the dirt, &c., swept upon it up into the receptacle or body A, and the inclined plate K' retains the same within said body.

It will be understood that the apron J' and the rotary brush M revolves in unison, the movement of each being governed by the clutch V.

The bottom of the wagon is constructed of slats L', which have their ends M' weighted so that they will be normally retained in closed position, said slats being readily manipulated by means of the handles N', Fig. 1.

P' designates a chain, one end of which is connected to the cross-piece Q', which is secured to the bars L, while the other end has attached thereto the weight R', said chain being suitably supported by the pulleys S' mounted in a frame extending above the body of the sweeper.

T' designates a connection between the bars L and E', so that any movement of the connection P' will move the brush M and the apron J', as also the sprinkler E, in unison, as is evident.

The operation is as follows: When it is desired to use the sweeper on pavements other than asphalt, by letting water into the sprinkler D, on the proper manipulation of the valve H the street will be sprinkled in advance of the brush or sweeper M, and when the clutch has been thrown into the position seen in Fig. 3, and the wagon moved to the left, the brush M will rotate in the direction of the arrow, and the dirt, refuse, &c., will be thrown upon the endless apron J', and will be carried up into the receptacle A, as is evident. The wagon can be unloaded by moving the slats L' into the position seen in dotted lines in Fig. 2. When an asphalt pavement is to be swept, it is desirable to wet the same as little as possible, so the sprinkler E alone is used, the operation of the other parts being

the same as before. When it is desired to lift the brush M and the wheels H' from the ground, it is only necessary for the driver to pull the connection P', and the parts will assume the position seen in dotted lines, Fig. 1, as is evident, the pipe G rising, as it is flexible or flexibly connected to the valve H.

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

1. A street sweeper and sprinkler having a water tank in the body behind the rear axle of the running gear, side bars pivoted to said body and having a brush journaled therein, a sprinkling pipe supported on said side bars above said brush and connected with said water tank, a frame extending above said body and a weighted chain connected with said bars and passing over pulleys on said frame, said parts being combined substantially as described.

2. In a street sweeper and sprinkler, a wagon body, a water tank, mounted thereupon, an endless apron, a supporting frame therefor, said apron being adapted to travel within the rear portion of said wagon body, a partition located under said apron, a brush rotatably mounted in bars pivoted to the rear portion of the wagon, a sprinkler mounted above said brush and adapted to be raised and lowered in unison therewith, a second sprinkler arranged in advance of said brush, a conduit leading from said tank to each of said sprinklers, a two-way valve in said conduit, and means for operating said valve, said parts being combined substantially as described.

3. In a street sweeper and sprinkler, a wagon body, a suitable frame supported thereon, an endless apron movable around said frame, bars movably attached to said body, a brush rotatably mounted in said bars, a tank supported upon said wagon body, a conduit leading therefrom to a sprinkler also mounted upon said bars above said brush, a connection from said bars to the frame around which said apron travels, in combination with means for raising and lowering said sprinkler, brush and apron, in unison, substantially as described.

4. In a street sweeper and sprinkler, a wagon body, a water tank supported in the latter, bars pivotally attached to said body, a brush rotatably mounted in said bars, an endless apron for conveying sweepings into said body located in advance of said brush, means for actuating said apron, a sprinkler secured upon supports carried by said bars above said brush, and a conduit leading from said tank to said sprinkler, said parts being combined substantially as described.

5. In a street sweeper and sprinkler, a wagon body, a water tank supported therein, bars pivotally attached to said body, a brush rotatably mounted in said bars, a sprinkler secured above said brush so as to wet the latter alone, a second sprinkler suitably

mounted in advance of said brush, a conduit leading from said tank to each of said sprinklers, a two-way valve in said conduit, whereby water can be directed into either of said sprinklers, in combination with means for conveying sweepings into said wagon body, substantially as described.

6. A street sweeper having a body, a roller mounted upon an axle of said body, a frame mounted on said axle, and having rollers journaled therein, an endless apron mounted on said frame, a plate secured within said wagon body below said frame and adapted to retain sweepings within said body, a brush rotatably mounted upon suitable supports, a chain or other connection for raising said frame and brush supports, a supporting device for said chain and rollers journaled on said device, over which said chain passes, the free end of the latter having a weight attached thereto, substantially as described.

7. A street sweeper and sprinkler consisting of a body, a water tank in the rear of the rear axle of the running gear of said body, side bars carrying a brush and supporting a sprinkling pipe receiving water from said tank, an endless apron mounted on a roller journaled in a rearwardly extended frame and on a roller on said axle, a frame extending above said body, a weighted chain connected with said side bars and passing over pulleys on said frame, and means adjacent to a seat in the front of said body for controlling the supply of water to said sprink-

ling pipe, said parts being combined substantially as described.

8. A street sweeper and sprinkler consisting of a body, a water tank having an inclined bottom in the rear of said body, side bars carrying a rotatable brush and supporting a sprinkling pipe receiving its supply from said tank, a frame pivotally mounted on the rear axle of the running gear and having wheels mounted on the lower end thereof, an endless apron rotatable on said frame and on a roller on said axle, gearing including a clutch connected with the said axle and with said brush for rotating the latter, said parts being combined substantially as described.

9. A combined street sweeper and sprinkler consisting of a body with running gear, a water tank supported on said body in rear of the axle of said running gear, a pivoted frame in rear of said axle carrying an endless apron, said frame having rollers on its lower end, pivoted arms extending rearwardly of said frame and carrying a brush, and a sprinkling pipe, said pipe having a flexible connection with said water tank, a weighted chain connected with said arms and apron frame and passing over pulleys on a frame extending above said body, and operating gearing for said brush and apron, said parts being combined substantially as described.

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Witnesses:

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