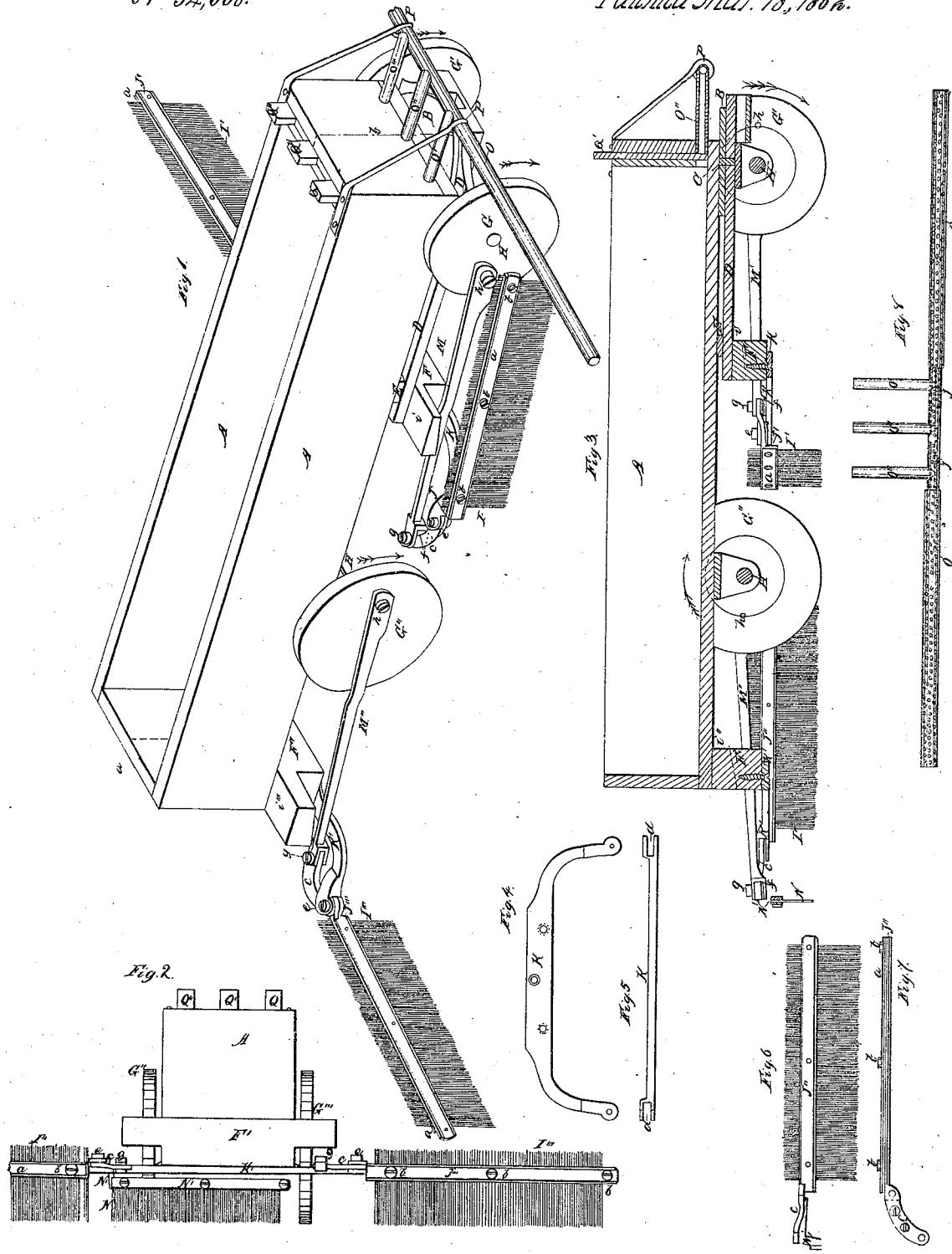


R. D. Cary.

Street Sweeper.

No 34,668.

Patented Mar. 18, 1862.



Witnesses.

John L. Hayes  
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# UNITED STATES PATENT OFFICE.

R. D. CARY, OF PHILADELPHIA, PENNSYLVANIA.

## IMPROVEMENT IN SWEEPING-MACHINES.

Specification forming part of Letters Patent No. 34,668, dated March 18, 1862.

*To all whom it may concern:*

Be it known that I, R. D. CARY, of the city and county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Sweeping-Machines; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a perspective view of the machine. Fig. 2 is a back elevation of the same. Fig. 3 is a vertical longitudinal section at the line *a b* of Fig. 1. Fig. 4 is a top view of a fulcrum-bar *K*. Fig. 5 is an edge view of the same. Fig. 6 is a front view of the broom *I''* and the broom-stock *N'*, the latter being represented by red lines. Fig. 7 is a top view of the same. Fig. 8 is a view of the sprinkling-pipe *O* and the branch pipes *O', O'', and O'''* inverted for the purpose of representing the perforations in the under side of the same.

Like letters in all the figures represent the same parts of the machine.

The nature of my invention consists in combining and arranging with a cart or wagon one or more brooms or brushes and scrapers for cleaning the streets, and also a sprinkling apparatus, all of which are constructed and arranged substantially in the manner which I will hereinafter describe.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

*A* is the body of a wagon.

*B* is the fifth-wheel, and *C* its center pin; *D*, the hounds.

*E* is the body-stay.

*F* is the front bolster, and *F'* the back bolster.

*G* and *G'* are the front traveling-wheels, and *G''* and *G'''* the back wheels.

*H H* are the shafts of the said wheels.

*I, I', I'', and I'''* are brooms or brushes, by which a portion of the street on each side of the wagon is swept. I usually make the brooms of canes or twigs, which I fasten on the stocks *J, J', J'', and J'''* by means of the flat bars *a* and the bolts *b b b*. The front brooms *I* and *I'* are placed at right angles, or nearly so, to each other, so that while one of them is sweeping the other is returning to its

place of beginning, and the brooms *I''* and *I'''* are arranged in the same manner in relation to each other. The broom-stocks *J, J', J'', and J'''* have their handles *c* bent inward, as represented in connection with the machine in Figs. 1, 2, and 3 and detached therefrom in Figs. 6 and 7.

*K* and *K'* are fulcrum-bars for the brooms *I, I', I'', and I'''*. They are bolted to the under side of the bolsters *F* and *F'*. One of the said bars is shown detached from the machine in Figs. 4 and 5. The other bar is exactly like it. The fulcrum part of the handle *c* of each broom fits in one of the slots *d* of the fulcrum-bars, and is connected with the bar by means of the bolt *e*, the end of the handle in like manner fitting in the slot *f* of one of the connecting-rods *M*, to which it is connected by means of the bolt *g*, the other end of each connecting-rod being connected to one of the traveling-wheels *G* by means of the crank-pin *h*, so that as the wheels revolve in the onward movement of the wagon the brooms have an oscillatory movement on their fulcrum-pins *e*. The brooms in their forward movement pass from a position at right angles, or nearly so, with the wagon to one about parallel therewith. In the backward movement of the brooms they are elevated to prevent their back action on the street by the upper edges near the rear end of the connecting-rods *M, M', M'', and M'''* bearing against the angular sides of the lugs or projections *i, i', i'', and i'''* of the bolsters *F* and *F'*, in the manner which I will presently describe.

The broom *N*, which is shown in Figs. 2 and 3, is bolted to the under side of the handle *c* of the broom-stock *J'''*. Its stock *N'* is shown in connection therewith in detail by red lines in Figs. 6 and 7.

I have attached to the body *A* of the wagon a sprinkling apparatus, which is fed by water contained in the said body, or by a distinct tank, which may be attached to any part of the wagon, for the purpose of sprinkling the street in advance of the operation of the brooms to prevent the raising of the dust by their operation. The said apparatus consists of the pipe *O* and branch pipes *O', O'', and O'''*, the pipe *O* having perforations in its un-

der side for the emission of the water, as represented in Fig. 8, which is an inverted view of the apparatus. The projecting ends of the branch pipes  $O'$ ,  $O''$ , and  $O'''$  fit in openings in the front end of the body A.

$Q$ ,  $Q'$ , and  $Q''$  are gates for shutting off the supply of water to the branch pipes  $O'$ ,  $O''$ , and  $O'''$ . As there is nothing peculiar in their construction and arrangement, a particular description of them I deem unnecessary. I do not confine myself to this mode of shutting off the supply of water, as other modes may be adopted to suit the views of the constructors.

The pipe O is made in three pieces for the purpose of detaching one or both of the end pieces when the brooms may be detached at any time from one or both sides of the wagon. In view of this arrangement there are partitions  $j$  in the middle piece near its ends, as represented in Fig. 8, to make the action of each piece independent of the other.

The operation of the machine is as follows: The gates  $Q$ ,  $Q'$ , and  $Q''$  are elevated, and as the wagon is moved forward the water in the tank or body A flows through the branch pipes  $O'$ ,  $O''$ , and  $O'''$  into the sprinkling-pipe O and is emitted through the perforations in the under side of the same, thereby sprinkling the street in advance of the brooms to prevent the raising of the dust by the operation of the latter. The connecting-rods  $M$  and  $M'$  being connected at opposite sides of the wheels  $G$  and  $G'$ , as the latter revolve in the direction of the arrow in the forward movement of the machine, the broom I in a semi-revolution of the wheels is brought from the position which it assumes in Fig. 1 (which is somewhat of an inclination inward from a line parallel to the body A) to the position of the broom  $I'$ , which is a little back of a right line with the said body, the broom  $I'$  at the same time changing its position to that of broom I; and during the other half of the revolution of the wheels the said brooms are brought to their first position, both the brooms making a forward and backward movement at one revolution of the wheels. The brooms  $I''$  and  $I'''$  having their connecting-rods  $M''$  and  $M'''$  connected at opposite sides of the wheels  $G''$  and  $G'''$ , similar movements are given to the said brooms as those of I and  $I'$ , as just described. The forward motion of all the brooms I,  $I'$ ,  $I''$ , and  $I'''$  is given while the crank-pins  $h$  move below a horizontal line of the center of the shafts  $H$   $H$ , and the brooms touch the ground throughout their sweeping movement, and their backward movement is given while the said crank-pins are moving above the said line, causing the rear end of the connecting-rods  $M$ ,  $M'$ ,  $M''$ , and  $M'''$  to bear against the under side of the angular lug  $i$ ,  $i'$ ,  $i''$ , and  $i'''$ , on the end of the bolsters F and  $F'$ , by which action the handles  $c$  of the brooms are depressed and

the brooms consequently elevated above the surface of the street to prevent any back action of the said brooms on the street. The upper edge of the rear end of the said connecting-rods may be curved in such a manner as to cause the brooms to have a uniform elevation during their backward movement, if desired. Instead of the lugs  $i$ ,  $i'$ ,  $i''$ , and  $i'''$ , friction-wheels may be substituted. As the broom  $I''$  is moving back from its position as shown in the drawings to its starting-point for sweeping, the broom N, which is connected with it, as above described, is thereby moved forward to a position parallel, or nearly so, to the body of the wagon, to sweep the main portion of the street between the traveling-wheels I,  $I'$ ,  $I''$ , and  $I'''$ .

There may be another broom N connected with one of the front brooms, or there may be one in connection with each of the side brooms by having the brooms N short enough to clear each other.

In some cases I leave the brooms N off entirely, as when running the machine on the track of a railroad.

By the peculiar construction and arrangement of the brooms I any or all of them may be detached at any time and the middle brooms N only used by having the stocks of the latter constructed with handles similar to the handles  $c$  of the brooms I.

When greater speed of the brooms is desirable than can be given by attaching the connecting-rods directly to the traveling-wheels, I use intermediate gearing to increase their speed.

When the dirt is too thick or too wet to be swept, I use scrapers instead of the brooms. The scrapers may be bolted to the broom-stocks in front of the brooms without disturbing the latter, or separate stocks to which scrapers are attached may be placed in the machine in lieu of the broom-stocks.

Having thus fully described the construction and operation of the sweeping-machine as invented or improved by me, what I claim as my invention, and desire to secure by Letters Patent, is—

1. Combining and arranging one or more brooms I with the traveling-wheels of a wagon or cart or with intermediate gearing, substantially as described, so as to give a sweeping movement to the brooms, substantially as and for the purpose set forth.

2. The lugs  $i$ ,  $i'$ ,  $i''$ , and  $i'''$ , or their equivalent, constructed and arranged in relation to the connecting-rods M, substantially as described, for the purpose of raising the brooms in their backward movement, as above set forth.

3. The arrangement of central brooms N with the side brooms I, or in lieu thereof, substantially in the manner and for the purpose set forth.

4. The combination and arrangement of

scrapers with a sweeping-machine, substantially as described, for the purpose set forth.

5. Combining and arranging the sprinkling-tube O with a sweeping-machine, substantially in the manner described, for the purpose set forth.

In testimony that the above is my inven-

tion I have hereunto set my hand this 7th day of February, 1862.

R. D. CARY.

Witnesses:

EDM. F. BROWN,

CHAS. McD. BROWN.