

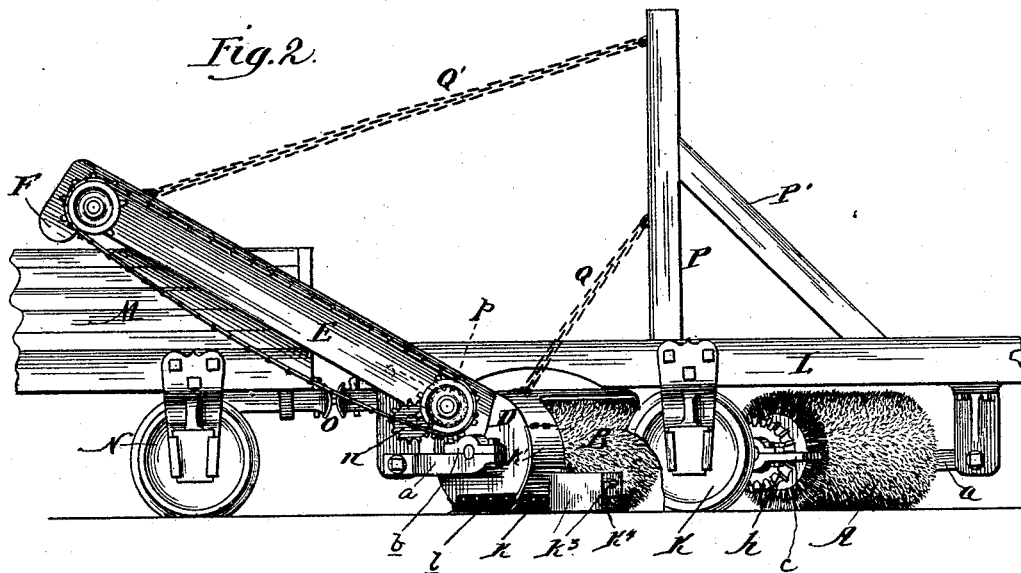
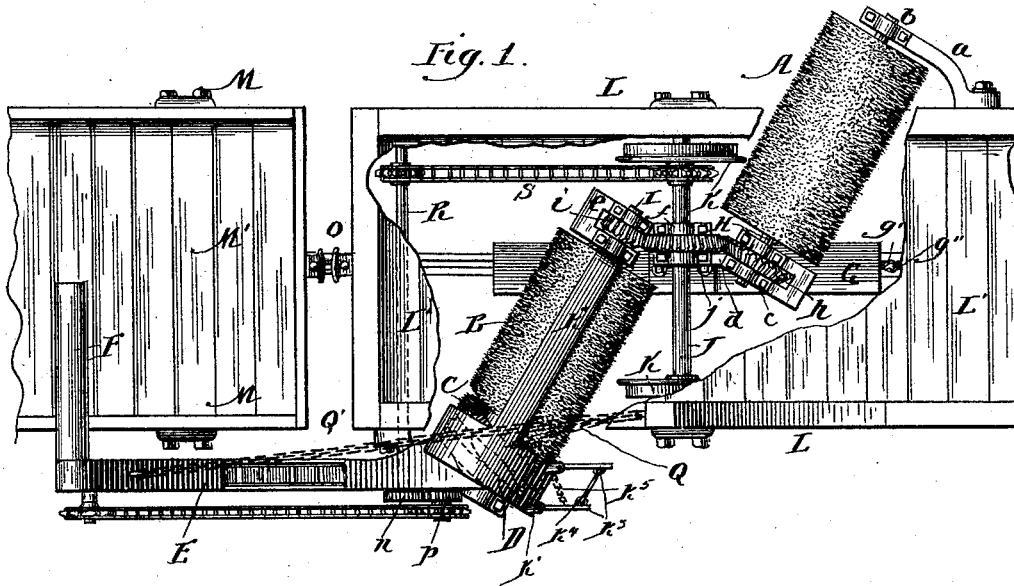
(No Model.)

2 Sheets—Sheet 1.

D. D. REYNOLDS.
TRACK CLEANER.

No. 418,063.

Patented Dec. 24, 1889.



Witnesses:

E. A. Law,

J. Thompson

Inventor:

Dayton D. Reynolds

by Franklin D. Hodge
att.

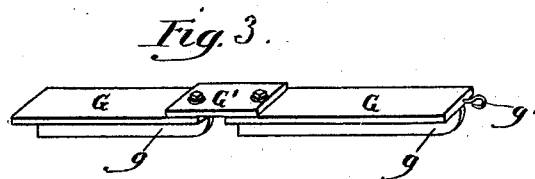
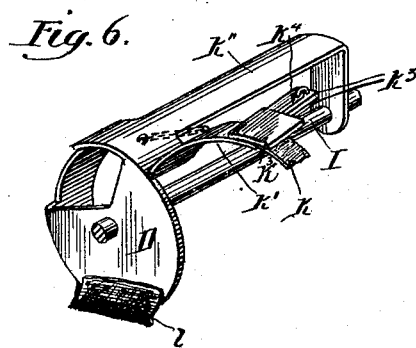
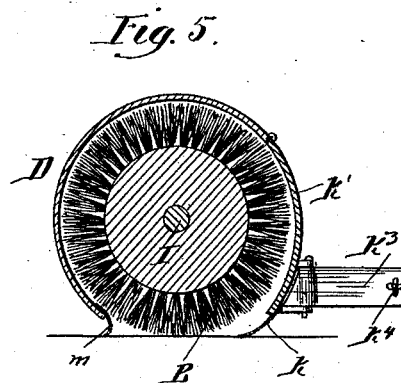
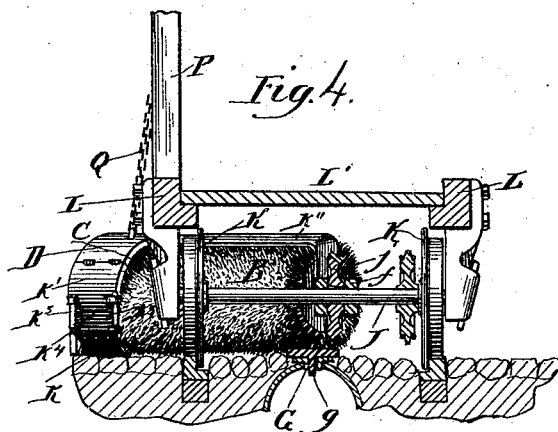
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No. 418,063.

Patented Dec. 24, 1889.



Witnesses:

E. A. Law

J. D. Thompson

Inventor.

Dayton D. Reynolds
by Franklin A. Douglass
Atty.

UNITED STATES PATENT OFFICE.

DAYTON D. REYNOLDS, OF ENGLEWOOD, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO THE UNITED STATES STREET SWEEPER COMPANY, OF CHICAGO, ILLINOIS.

TRACK-CLEANER.

SPECIFICATION forming part of Letters Patent No. 418,063, dated December 24, 1889.

Application filed April 14, 1888. Serial No. 270,687. (No model.)

To all whom it may concern:

Be it known that I, DAYTON D. REYNOLDS, a citizen of the United States, residing at Englewood, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Track-Cleaners; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to
10 which it pertains to make and use the same, reference being had to the accompanying drawings, forming a part hereof, in which—

Figure 1 is a top or plan view with the bottom of the frame or carriage partly broken out to
15 show the rotary brooms or brushes; Fig. 2, a side elevation with the side rail of the frame or carriage broken out; Fig. 3, a detail, being a perspective of the guard or cover for the slot of a cable road. Fig. 4 is a central vertical section. Fig. 5 is a transverse section
20 of the hood. Fig. 6 is a perspective view of the hood and its connections.

This invention relates to track-cleaners for street-railways; but the improvements can be
25 used for other street-cleaners, if so desired.

The objects of the invention are to insure the taking up and delivering of the dirt and dust along the railway-tracks and have the material swept up, delivered to a dirt-receptacle,
30 to insure the delivery of the material taken by the brooms or brushes to a conveyer for deposit in the dirt-receptacle, to prevent the material from being swept into the slot of a cable road, and to improve, generally, the
35 construction and operation of track-cleaners in which brooms or brushes having a rotary motion are used.

In the drawings, A represents the advance or forward broom or brush, of the usual construction, and set to stand diagonally with
40 its receiving end in advance of the delivery end.

B is the rearward or delivery broom or brush, having its receiving end of the usual construction, and also set to stand diagonally
45 and parallel with the forward broom or brush, and so that its receiving end will overlap the delivery end of the forward broom or brush, as shown in Fig. 1.

50 C is the delivery end of the rear broom or

brush B, formed of splints arranged in a worm or spiral form, the receiving end of this brush having its splints arranged in lines parallel with the ends of the brush similar to the arrangement of the splints for the broom or
55 brush A.

D is a hood incasing the delivery end C of the brush or broom B, and formed of a casing fitting around the delivery end C, with an opening at the bottom for the splints to en-
60 gage the road-bed, and having its outer end closed by a head or cover. The forward wall or side of the hood D is in the form of a hinged flap k' , to the lower end of which is secured
65 a strip k , of rubber or other suitable material, which, when the flap k' is down, will hug the road-bed and close the opening on the forward side of the brush or broom B, and this strip k extends the full length of the hood,
70 and a piece k'' extends out from the inner end of the hood and passes over the body of the brush, and its inner end is turned at the end of the brush and encircles the shaft I, and this strip k'' furnishes a brace or sup-
75 port for the inner edge of the hood.

The rear end of the hood D has secured thereto a strip m , of rubber or other material, that will hug the road-bed and close the opening between the hood D and the road-bed at
80 the rear of the delivery end C, and the head or cover of the hood D has also secured to its lower end a strip l , of rubber or other material, that will hug the road-bed or paving and close the opening at the bottom of the head
85 of the hood. The strips $k l m$ effectually close the openings at the bottom in front, end, and rear of the hood D for producing a suction from the rotation of the brush or broom B, by
90 which the material swept up is drawn to the delivery end of the brush and carried to the point of discharge in connection with the worm or spiral feed of the delivery end C.

E is a conveyer-spout, having therein a traveling belt or other conveyer on which the material is deposited from the delivery end C
95 of the brush B.

F is a delivery-spout leading from the delivery end of the conveyer-spout E for discharging the material into a dirt-receptacle.

G is a guard or cover formed, as shown, in
100

two sections, pivotally connected by a plate G', but which could be otherwise formed, so as to be flexible to pass around the curves of a cable road. Each section of this guard or cover G has a central depending flange *g*, of a thickness to enter the slot of a cable road, and this guard or cover G effectually closes the cable-slot against the entrance of the material caught and carried by the brooms or brushes. As shown, the forward end of the guard has a hook *g'* for the attachment of a chain *g''*, by which the guard or cover is attached to the frame or carriage of the brushes or brooms, so as to move with the brushes or brooms, and this guard or cover G is located and travels between the delivery end of the brush A and the receiving end of the brush B and is of a length to extend forward of the brush A and rearward of the brush B, as shown in Fig. 1.

H is the axle of the brush A, supported at its outer end in a movable box *b* on the end of an arm or support *a*, attached to the side of the frame or carriage of the brushes, and supported at its inner end in a box *c* on an arm or support *d*, journaled upon an axle of the brush-carriage.

I is the axle of the brush B, supported at its outer end in a similar manner to that of supporting the outer end of the axle H, and supported at its inner end in a box *e* on an arm or support *f*, journaled upon an axle of the brush-carriage. The supporting of the brushes in movable boxes allows the outer ends of the brushes A and B to rise and fall to follow inequalities in the road-bed or pavement and take up the dirt and dust in the depressions.

J is an axle of the brush-carriage, from which the arms or supports *d* and *f* swing. This axle J has secured thereto a bevel-gear *j*, to mesh with a bevel-gear *h* and drive the shaft H to rotate the brush A and to mesh with a bevel-gear *i* and drive the shaft I to rotate the brush B.

K are wheels for the axle J, of a form to run on a car-track or other road-bed, and the carriage is to be provided with another axle with wheels corresponding to the axle J and wheels K.

L is the brush - frame or carriage - body, formed of side and end pieces with a bottom L' in the construction shown.

M is the frame or body of a dirt-receptacle, formed of sides and ends with a bottom M'.

N are the wheels, mounted on suitable axles and carrying and supporting the dirt-receptacle.

O is a coupling between the brush-carriage and the dirt-receptacle.

P is a post or upright fastened to the brush-carriage and, as shown, braced by a diagonal brace P', running forward.

Q is a chain from the support or post P to the inner end of the hood D for carrying the inner end of the hood, and a chain Q' is provided running from the post P to the outer

end of the conveyer-spout E for supporting the spout at its outer end, the inner end of the spout being attached to the end head or cover of the hood D, around a discharge-hole in such head or cover.

R is a shaft supported in suitable boxes from the brush-carriage and having secured to one end a gear-wheel *n*, meshing with an idler-gear *o*, which meshes with a gear *p* to drive the conveyer-belt in the spout E.

S is a drive-chain running over a sprocket-wheel on the axle J and a sprocket-wheel on the shaft R for driving the shaft R.

The forward end of the brush-carriage is to be provided with means for the attachment of horses or for hitching it to a cart or other motive power, and in use as the carriage moves forward the dust and dirt are swept up by the action of the brushes A and B and conveyed to the delivery end of the brush B, to be deposited onto the conveyer in the spout E and discharged through the spout F into the receptacle M behind the brush-carriage and moving therewith. The advance or forward brush A, by reason of its diagonal set, carries the dirt and dust caught by it inward to a point where they will be taken by the receiving end of the brush B and be carried, together with the dust and dirt taken by the brush B, to the delivery end C of such brush B, where, by the worm or scroll action of the delivery end C, the dust and dirt will be carried around and discharged through the delivery-opening in the end head or cover of the hood D onto the conveyer-belt in the spout E.

The hood D, inclosing the delivery end C, prevents the rotation of the brush from throwing the dirt and dust outward, and this hood D, in connection with the closing-strips *k*, *l*, and *m*, forms a receiver into which the dust and dirt are drawn by suction created by the rotation of the delivery end C in the hood D, which draws the air in at the open end of the hood for escape at the discharge-opening in the hood, and the extending of the strip *k* inward in front of the brush B insures the carrying of the material to the delivery end and prevents the action of the brush from throwing the dust and dirt forward.

The guard or cover G effectually closes the cable-slot and forms a bridge over which the dust and dirt are carried, and at the same time forms an effectual guard against the entrance or admission of dust and dirt into the cable-slot, which is desirable and necessary, and by the use of this guard or cover G the employment of sweeping-machines is provided for in connection with a cable road. The delivery of the swept-up material by the delivery end C is one that insures a delivery to the discharge-opening in the end head or cover, thus concentrating the delivery at a single point at the end of the brush instead of a mouth extending the whole length of the brush.

The supporting of the brushes at the outer

ends by movable boxes or bearings permits each brush to rise and fall independently to enter depressions or hollows and take the dust and dirt therefrom and to ride over inequalities without any difficulty.

The apparatus can be used for sweeping without delivery by raising the flap k' with the strip k , in which case the dirt and dust will be deposited in a windrow at the delivery end of the brush B.

The conveyer-belt can be driven from the brush-shaft I by a bevel-gear on the end of the shaft to mesh with a bevel-gear on the shaft of the conveyer-belt, as shown in Fig. 3.

The forward side of the hood D has attached thereto by suitable hinges two vertically-standing scrapers k^3 , and, as shown, the two scrapers k^3 are connected together by a hook-rod k^4 , and the outer scraper is connected with the hood or other support by a chain k^5 to hold the scrapers against the draw of the machine. The inner scraper is to have its lower edge a few inches above the road-bed, and the outer scraper is to have its lower edge to run in contact with the road-bed or paving, and the inner scraper acts to prevent the dust and dirt from massing in front of the hood and to distribute and lay the material so as to be readily taken up by the brush, and the other scraper prevents the escape of the dust and dirt at the end of the hood. These scrapers can be adjusted to stand at any angle to the hood required by simply lengthening or shortening the chain k^5 , and when in use the scrapers k^3 are adjusted to stand diagonal or angling across the line of travel of the machine, and when not in use these scrapers k^3 stand parallel with the line of travel of the machine, or when the flap k' is raised the scrapers can be folded down against the front of the hood.

The delivery end of the brush B can be of a larger diameter than the receiving end, which will permit the receiving end to act over the space between the rails and not disturb sand or other dressing on top of the road-bed, and yet remove any foreign material on top of the dressing to be taken away by the delivery end running on the road-bed or paving.

The machine can be used for cleaning streets not having car-tracks, and when so used the guard G for the slot of the track can be detached and removed. The hood D can be made rigid at its inner ends, if so desired, by extending a strip from its inner end over the top of the brush to be attached to the frame-work or other support, as shown in the drawings.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a street-cleaning machine having a forward brush and a rearward brush, the combination, with the rearward brush, of a delivery end therefor having a worm or scroll shape, whereby the material caught by the brushes is carried to the delivery end of the

rear brush for disposition, substantially as specified.

2. In a street-cleaning machine having a forward brush and a rearward brush, both standing diagonal to the travel of the machine, the combination, with the rearward brush, of a delivery end therefor having a worm or scroll shape for receiving the material gathered by both brushes and delivering the same, substantially as specified.

3. In a street-cleaning machine having a forward brush and a rearward brush, the combination, with the rear brush, of a delivery end therefor having a worm or scroll shape and a hood inclosing the worm or scroll shape delivery end, substantially as and for the purpose specified.

4. In a street-cleaning machine having a forward and a rearward brush, the combination, with the rearward brush, of a delivery end therefor having a worm or scroll shape, a hood inclosing such delivery end, and a conveyer-spout communicating with the hood and leading therefrom, substantially as and for the purposes specified.

5. In a street-cleaning machine, a brush having its receiving end formed with splints running around in straight lines parallel with the brush end and having at its delivery end a series of splints winding around to form an end of a worm or scroll shape, substantially as and for the purposes specified.

6. The combination, with a brush B, having a delivery end C of a worm or scroll form, of a hood D, inclosing the delivery end C, substantially as and for the purposes specified.

7. The combination, with a brush B, having a delivery end C of a worm or scroll shape, of a hood D, inclosing the delivery end C and having the closing-strip k on its forward edge, substantially as and for the purposes specified.

8. The combination, with a brush B, having a delivery end C of a worm or scroll shape, of a hood D, inclosing the delivery end C and having a closing-strip m on its rear edge, substantially as and for the purposes specified.

9. The combination, with a brush B, having a delivery end C of a worm or scroll shape, of a hood D, inclosing the delivery end C and having its end head provided with a closing-strip l , substantially as and for the purposes specified.

10. The combination, with a brush B, having a delivery end C of a worm or scroll shape, of a hood D, inclosing the delivery end C, and a closing-strip k , extending the full length of the hood on the front side, substantially as and for the purposes specified.

11. The combination, with a brush B, having a delivery end C of a worm or scroll shape, of a hood D, inclosing the delivery end C and provided with closing-strips $k l m$ on its front, end, and rear edges, substantially as and for the purposes specified.

12. The combination, with a brush A and a brush B, having a delivery end C of a worm

or scroll shape, of a hood D, inclosing the delivery end C and provided with inclosing-strips *k l m* on its front, end, and rear edges, substantially as and for the purposes specified.

5 13. In a street-cleaning machine, a guard for closing the slot of a cable road, consisting of a front and rear section, each formed of a plate overlying the slot on both sides, and each plate having a central depending flange to enter the slot, and a pivotal connection between the two sections for forming a bridge for the slot, substantially as specified.

10 14. The combination, with the brushes of a street-cleaning machine, of a guard G for the cable-slot, formed in two sections, each having a central depending flange, and the connecting-piece G', pivotally connected to the sections of the guard for rendering the guard flexible and bridging the slot for the material to pass thereover from the brushes, substantially as specified.

15 15. In a street-cleaning machine having a brush with a delivery end, the combination, with such brush, of a hood inclosing the delivery end of the brush only and leaving the balance of the brush unprotected, whereby the caught material will be delivered to a point of discharge at the delivery end of the brush alone, substantially as and for the purposes specified.

16. In a street-cleaning machine, the combination, with a brush having a delivery end, of a hood inclosing only the delivery end and provided with a hinged flap on its front side, whereby the brush can be changed in its action by dropping the flap to form a delivery-brush and raising the flap to form a sweeping-brush, substantially as and for the purposes specified.

17. In a street-cleaning machine having a brush with a delivery end, the combination, with such brush, of a hood inclosing the delivery end only and provided on its front, outer end, and rear with flexible strips for closing the hood at the bottom, substantially as and for the purposes specified.

18. The combination, with a brush B, having a delivery end, of a hood D, inclosing the delivery end and provided on its front side with vertically-standing scrapers operating to distribute the material and insure the taking up thereof by the brush, substantially as specified.

DAYTON D. REYNOLDS.

Witnesses:

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M. L. PRICE.