

(No Model.)

C. Z. O'NEILL.
STREET SWEEPING MACHINE.

No. 265,537.

Patented Oct. 3, 1882.

Fig. 1.

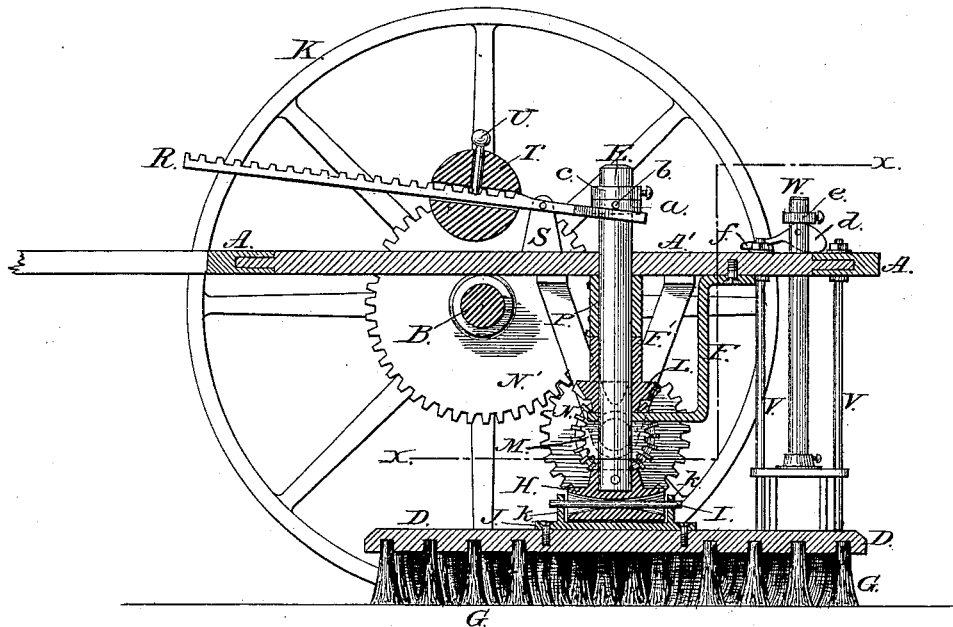


Fig. 5.

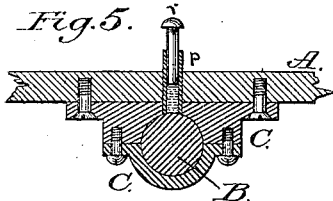


Fig. 2.

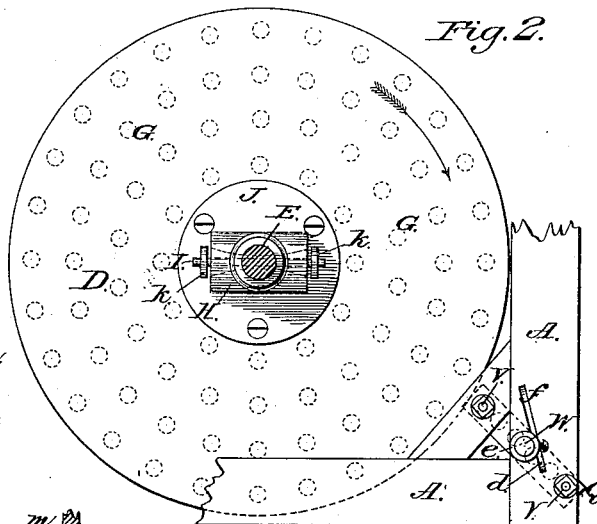


Fig. 3.

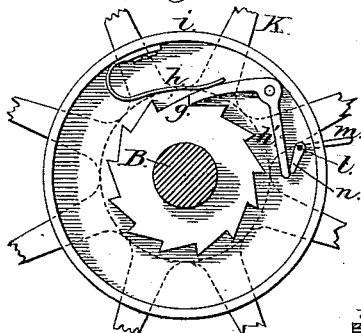
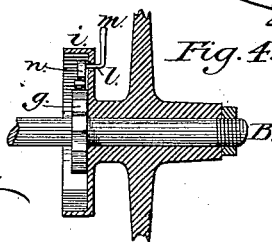


Fig. 4.



Witnesses:

John A. Ellis
Fuller Walker

Inventor:

Charles Z. O'Neil
By David A. Burr

Attorney.

UNITED STATES PATENT OFFICE.

CHARLES Z. O'NEILL, OF NEW YORK, N. Y.

STREET-SWEEPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 265,537, dated October 3, 1882.

Application filed May 9, 1882. (No model.)

To all whom it may concern:

Be it known that I, CHARLES Z. O'NEILL, of the city, county, and State of New York, have invented certain new and useful Improvements in Street-Sweeping Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

My invention relates to street-sweeping machines, and has for its object a more perfect adaptation of revolving brushes to the work of removing the dirt from the street and leaving it in windrows at one side of the machine, so as to produce an easier-running machine under more ready control of the driver than those heretofore in use.

It consists mainly of a brush-wheel constructed of a series of brushes secured concentrically upon a disk revolving in a horizontal plane upon a vertical shaft counterbalanced to admit of an adjustment of the pressure of the brushes to the requirements of the work, and mounted upon a universal joint, permitting the brushes to adapt themselves to the inequalities of the street. It embraces also details in the construction of the machine serving to increase its efficiency, as hereinafter fully described.

In the accompanying drawings, Figure 1 is a vertical section of my improved street-sweeping machine; Fig. 2, a transverse section in the irregular line *x x* of Fig. 1; Fig. 3, a transverse section through the axle, immediately inside of one of the wheels; and Fig. 4, a longitudinal section through the wheel-hub, illustrating the combination of a ratchet-gear therewith; Fig. 5, a transverse section through the axle in line with one of its journal-bearings, illustrating my lubricating device therefor.

A is the frame of my machine, supported upon the axle B by means of suitable journal-boxes, C, secured to its under side, as shown in Fig. 5.

D is a large horizontal disk or sweeping-wheel, suspended from a vertical shaft, E, journaled in a cross-bar, A', of the frame and in a rectangular bracket-arm, F, secured to said cross-bar, to depend therefrom as shown in Fig. 1. The disk D is armed upon its under

side with a series of brushes, G G, arranged to project downward therefrom in concentric rows. (See Fig. 1 and dotted lines, Fig. 2.) It is connected to the vertical shaft E by means of a transversely-slotted head, H, secured to the lower end of the shaft, and a pin, I, passing through said slot and fixed at either end to lugs *k k*, projecting upward from a plate, J, secured to the center of the disk. The slot is so enlarged as to permit a free oscillation of the disk and pin upon the shaft, while the transverse pin is so confined laterally that the rotation of the shaft will be communicated by means of the pin to the disk. The rotation of the shaft E and its sweeping-wheel D is produced by means of a bevel-pinion, L, upon a sleeve fitted upon the shaft above the bracket-F, and connected thereto by a spline, and which gears with a bevel-pinion, M, upon a counter-shaft supported in a hanger, F', dependent from the frame upon one side of the shaft E, the pinion N being itself geared by spur-wheel N' to the main axle B, as shown in Fig. 1. A loose collar, P, is interposed between the beveled pinion L and the cross-bar A' above. The spline upon pinion L permits the shaft E to move longitudinally upon its axis, so that it may be readily elevated or depressed. The elevation of the shaft E and sweeping-wheel D is effected by means of a lever, R, pivoted to a short upright standard, S, secured upon the cross-bar A' of the frame, immediately in front of the upper end of the shaft E. The short arm of the lever R is forked to embrace a loose collar, *a*, placed upon the shaft, and to engage pins *b* projecting therefrom, the loose collar *a* being confined by means of a second collar, *c*, fixed to the shaft by means of a set-screw. (See Fig. 1.) The upper side of the long arm of the lever R is serrated. A counterbalance-weight, T, is arranged to slide freely back and forth thereon, and a pin, U, adapted to drop vertically through an aperture in the upper side of the weight to engage the notches therein, serves by its gravity to lock the weight at any point on the lever at which it may be set. By this means the pressure of the brooms or brushes upon the street may be vertically adjusted at pleasure by simply lifting the pin U and moving the counterbalancing-weight T in or out upon the lever R. The use of the

gravitating lock-pin U dispenses wholly with all springs, gears, pawls, and chains in this connection and serves to fix and maintain the adjustment of the machine with ease and precision.

A fender consisting of cross-bar Q, (see dotted lines, Fig. 2,) adapted to move vertically upon guide-rods V V, suspended from the frame, (see Fig. 1,) and which is fitted either with a set of brooms or brushes or with a vertical foot-plate, is supported at the rear of the machine, upon the side thereof, so that its inner end shall touch the brooms or brushes on the periphery of the sweeping-wheel D and extend out therefrom radially or tangentially, as shown in Fig. 2, so as to arrest and divert the dirt and dust swept back by the rotation of the wheel and force it to one side. The fender Q is made adjustable as to height by means of an upright rod, W, extending up through the frame between the guide-rods V V. A plate, d, Fig. 1, pivoted eccentrically to the side of the rod between a collar, e, on its upper end and the frame of the machine, and which is turned by means of an arm, f, projecting therefrom, serves by its movement to lift the rod W or allow it to drop, as occasion may require.

The driving-wheels K are coupled to the driving-axle by means of pawl-and-ratchet gear, which permits their independent motion when running backward, the ratchet being fixed upon the axle and the pawl pivoted to the inner face of a flange, i, upon the inner end of the hub, so as to engage the ratchet g'. The pawl differs from those usually employed in this connection, in that it is in the form of a bent lever pivoted at its angle, as shown in Fig. 3. The engaging-arm h is made to bear upon the ratchet-wheel g' by means of a spring. Its free arm h' is thrown forward to lift the engaging-arm clear of the ratchet-teeth by means of an arm, m, upon the end of the pivot-rod l, (see Fig. 4,) extending through the side

of the flange i, and which terminates in a short lever or handle, m, projecting outward radially parallel with the outer face of the flange i. By turning this lever m the end of the inner arm, m, is brought to bear against the free arm h' of the pawl, so as to produce a disengagement of the pawl from the ratchet. The driver may thus readily disconnect the wheels from the driving-axle by a simple movement of the lever m.

I do not herein claim the form of ratchet-gear by which the driving-wheels are coupled to the driving-axle, as I contemplate making said devices, as described, the subject of a separate application for Letters Patent.

What I claim as my invention is—

The combination, in a street-sweeping machine, with its frame, and with a horizontal sweeping-wheel supported thereby and adapted to revolve in a plane parallel with the street-level, of a vertical shaft having longitudinal play in its bearings, connected to the wheel by a universal joint and suitably geared to the driving-axle of the machine, an adjusting-lever adapted to engage the wheel-shaft and counterbalance the weight of the sweeping-wheel, and a lateral fender dependent from the frame of the machine at an angle with its line of movement, so that one end shall be in contact, or nearly so, with the circumference of the adjustable rotating sweeping-wheel and the other extend therefrom radially or tangentially toward the rear of the machine, all substantially in the manner and for the purpose herein set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHS. Z. O'NEILL.

Witnesses:

DAVID A. BURR,
JOHN A. ELLIS.