

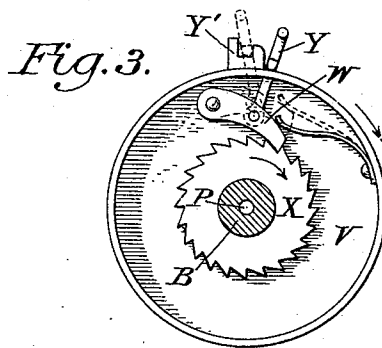
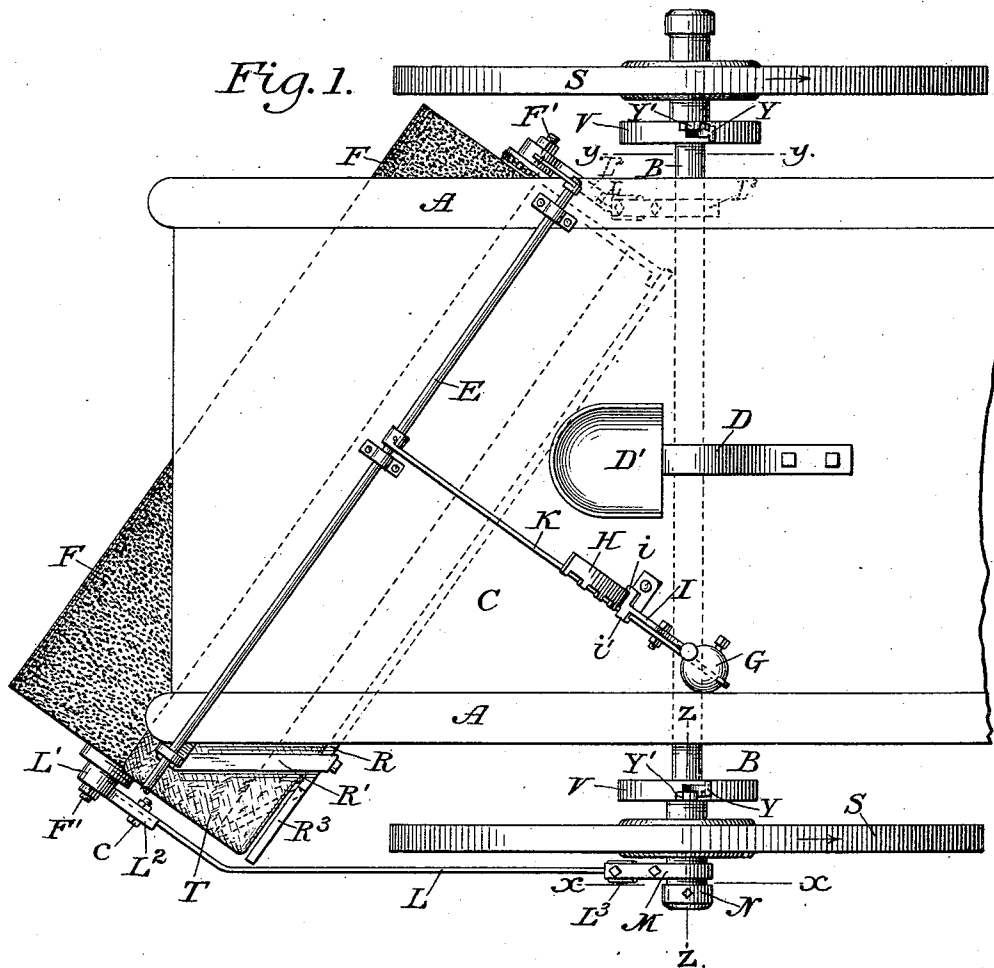
(No Model.)

2 Sheets—Sheet 1.

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

No. 473,163.

Patented Apr. 19, 1892.



Attest:

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UNITED STATES PATENT OFFICE.

CHARLES Z. O'NEILL, OF NEW YORK, N. Y., ASSIGNOR TO WILLIAM
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STREET-SWEEPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 473,163, dated April 19, 1892.

Application filed May 1, 1891. Serial No. 391,188. (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 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 machines for sweeping streets by the means of revolving brooms, and has for its object to simplify and perfect the details in the construction of such a machine by the improved devices, substantially as hereinafter described and claimed, for adjusting the broom, controlling the wheels, and protecting the machine from the mud and dirt thrown up by the action of the broom.

In the accompanying drawings, Figure 1 is a top or plan view of my improved street-sweeping machine, the gearing of the broom, with the driving-wheels, being omitted from the drawings; Fig. 2, a sectional side elevation thereof in line *x x* of Fig. 1; Fig. 3, a sectional detail in line *y y* of Fig. 1, illustrating the inner end of the hub of one of the wheels.

Similar letters indicate like parts in all of the figures.

The machine is constructed in the customary manner of a frame A, mounted upon an axle B and supporting a platform C, upon the front end of which is fixed, by means of a curved elastic standard D, the driver's seat D'. Upon the rear end of the platform is fitted in suitable bearing-blocks a rock-shaft E, having radial arms projecting rearwardly from its ends and from which are suspended the axial shaft F' of the revolving broom F, which may be of any approved construction. The rock-shaft E and the broom suspended therefrom are placed at an angle of about thirty degrees (more or less) with the axle B. From the rock-shaft E an arm or lever K is made to extend forward with an upward inclination alongside of the driver's seat D'. The end of the lever K is fitted with a weight G, longitudinally adjustable thereon and sufficient to so far counterbalance the weight of the broom as to permit the broom to be readily lifted from the ground by a depression of the lever.

A standard H is secured upon the platform C close alongside of the lever K, and the vertical side or edge thereof next to the lever is notched at intervals to receive and hold the lever, the lever being made to engage either of the notches or to be freed therefrom by a simple lateral movement of the lever when it is required to raise or lower it. When the lever has been made to enter a notch in the standard H, it is locked therein by means of a latch-piece I, pivoted upon the side of the lever next to the standard and whose end is provided with lateral lips *i i'*, the one adapted to lap over the outer straight edge of the standard and the other *i'* the outer edge of the lever. The free end of this pivoted latch extends upward and above the end of the lever within ready reach of the driver, who by depressing said free end will disengage the lips from both the standard and the lever, and thus leave the latter free to be swung out laterally clear of the notches in the standard in readiness to be raised or lowered to adjust the weight of the broom as required.

The rearmost end of the inclined axial shaft F' of the broom is connected by a brace-rod L with the proximate end of the axle B. This brace-rod is connected with the broom-shaft by means of a collar L' on the end of the broom-shaft, having a longitudinally grooved and slotted box L², projecting radially therefrom. The end of the brace-rod is made to fit and slide longitudinally in the groove and is held fast, when adjusted therein, by means of a transverse bolt c, passing through an aperture in the brace-bar and through the longitudinal slot in the box L². This bolt is locked to prevent its longitudinal movement in the slot after it is tightened up by means of notches in the wall of a longitudinal groove formed in the outer face of the box to receive the head of the bolt, said notches being adapted to engage the head when it is closely seated in the groove, as shown in Fig. 2. The adjustment of the brace-bar may be readily and quickly effected by simply loosening the bolt sufficiently to permit the disengagement of the head from the notches without withdrawing the bolt entirely, and thereby permitting the separation of the parts. A similar brace-rod L is pro-

vided for the other end of the broom-shaft and the upper end of each rod is swiveled to the end of the axle by means of a block L³, in which the brace-rod is made fast and which is pivoted to turn upon an axle in a vertical plane at a right angle to the length of the rod between two pivot-screws in the projecting arms of a band or plate M, bent around the end of the axle or around the cap N, fitted around the axle, so as to swing freely thereon outside of the wheel, the plate being confined upon the axle by a block M', interposed between its arms, as shown in Fig. 2. This swivel-joint provided between each brace-rod and the axle prevents any torsional or lateral strain upon the brace-rod when the broom in its working meets with unusual obstructions.

The axle is left free to rotate in suitable bearings dependent from the frame. The wheels S S of the machine are fitted to revolve loosely and independently upon the axle; but the inner end of the hub of each wheel is fitted with a cylindrical box V of enlarged diameter, secured against its face to inclose a ratchet-wheel X, fitted upon the axle (see Fig. 3) and which is adapted to be engaged by a spring-actuated pawl W, pivoted to the inner face of the box. When left free, this pawl is automatically carried into engagement with the ratchet, and thereby so couples the wheel and axle as that the forward movement of the wheel will turn the axle, the wheel being left free, however, to revolve independently in the opposite direction. A link Y is pivoted to the pawl to extend outwardly therefrom through a slot on the flange of the box V and to hook over a suitable lug or projection Y' on the outer side of the flange to hold the pawl out of engagement with the ratchet when lifted by the link. When the pawl is thus held clear of the ratchet, the wheel is left free to turn independently of the axle in either direction; but by simply unhooking the link from the projection Y' the pawl is left free to drop into engagement with the ratchet and couple the wheel to the axle.

A mud-fender R is suspended vertically from the frame A by means of suitable suspension-bars R' R' to depend in front of the broom F parallel with its axis. The lower portion of the fender is formed by a separate strip R², (see Fig. 2,) which is hinged to the upper part by means of hinges, which permit it to yield and swing rearwardly in case it strikes against an obstruction. In like manner the end of the fender is fitted with a hinged piece R³, forming an extension thereof, which is free to yield rearwardly, but which under the action of the broom or of springs

(not shown) may return to its normal position when left free. The hinging of the section R³ makes it possible to shield the broom completely in front without shortening the broom so that it would not extend to the track of the wheel. For as the broom necessarily has some freedom of motion from side to side it would not be possible to extend the broom and the fender as far as shown in the drawings if the fender were in one rigid piece, for the reason that the edge of the fender strikes from time to time against the brace-rod L and injury to one or the other would follow. The section R³ will yield, however, when it contacts with the brace-rod, and will immediately resume its proper position in front of the broom as soon as the contact is relieved. The fender is rendered more complete by means of a canvas-covered frame T, fitted to extend rearwardly from the top of the fender over the broom, as shown in Fig. 2.

I claim as my invention—

1. In a street-sweeping machine, the combination of a counterbalancing-lever by which the broom may be raised and lowered, a laterally-notched standard engaging the free end of the lever, and a latch pivoted upon the side of the lever having lips, one of said lips being adapted to lap over the outer straight edge of the standard, while the other is adapted to lap over the outer edge of the lever, substantially in the manner and for the purpose herein set forth.

2. The combination, in a street-sweeping machine, with the revolving broom and its axial shaft, of the axle, the brace-bar extending from the outer end of said shaft to the proximate end of the axle, the block to which the brace-bar is pivoted, and the band swinging upon the axle to which the block is pivoted, forming a swivel-joint for the brace-bar, substantially in the manner and for the purpose herein set forth.

3. The combination, in a street-sweeping machine, with its axle, its inclined revolving broom, and the brace-bar pivoted to the outer end of the broom and swiveled to the axle, of the vertical mud-fender interposed between the broom and axle and the swinging piece hinged to the end of the fender next the brace-bar, 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.

CHARLES Z. O'NEILL.

Witnesses:

A. N. JESBERA,
A. WIDDER.