

UNITED STATES PATENT OFFICE.

MILO CARRIER, OF ST. PAUL, MINNESOTA.

STREET-SWEEPER.

SPECIFICATION forming part of Letters Patent No. 574,850, dated January 5, 1897.

Application filed September 21, 1895. Serial No. 563,188. (No model.)

To all whom it may concern:

Be it known that I, MILO CARRIER, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have made certain new and useful Improvements in Street-Sweepers, of which the following is a specification.

This invention relates to street-sweeping machines; and it consists in the construction, combination, and arrangement of parts, as hereinafter shown and described, and specifically pointed out in the claims.

In the drawings, Figure 1 is a side elevation with parts removed for clearness of illustration. Fig. 2 is a side elevation of the brush mechanism detached. Fig. 3 is a cross-sectional view of the brush mechanism. Fig. 4 is a longitudinal sectional elevation of the brush mechanism. Fig. 5 is a detached sectional detail of one of the sides of the depending adjustable dust guards or aprons detached. Fig. 6 is a plan view of the machine complete. Fig. 7 is a detached plan view of the brush-mechanism-supporting frame. Fig. 8 is a side elevation, and Fig. 9 is a plan view, of a portion of the brush mechanism, illustrating the manner of arranging the guard-apron. Fig. 10 is an enlarged side elevation, and Fig. 11 is an enlarged sectional front elevation, of one of the hangers of the smaller adjustable brush, illustrating more fully the construction of the adjusting mechanism.

A' is a platform or frame mounted upon wheels A² A³ and carrying a motor B, preferably of a hydrocarbon type, by which motion may be imparted to the moving parts.

Suspended beneath the framework A', preferably just in rear of forward wheels A², is an oblong frame D', having two cylindrical brushes D² D³ journaled therein and connected by gearing D⁴ D⁵ D⁶ D⁷, so that they both revolve inward toward each other, as shown.

The motion is imparted to the pulley a' on shaft a² of the brush D² by a belt a³ from a pulley a⁴ on a counter-shaft E', the latter in turn driven by a system of belts, as shown, from the motor B.

The frame D' is supported from the framework A' by side frames F' F², running in brackets F³ F⁴ and adapted to be adjusted perpendicularly by rack-and-pinion adjust-

ments F⁵ F⁶, as shown, to regulate the position of the brushes.

The journals b' b² of the shaft of the brush-cylinder D³ are supported in boxes b³ b⁴, which are adjustable perpendicularly, so as to elevate and depress the smaller brush independently of the larger brush, as more clearly shown in Figs. 10 and 11, which represent enlarged detail views of this adjusting mechanism.

Supported through the platform A' and fitting by its lower rim inside the frame D' is a hood G', which is converged and leads off to one side into the lower or inlet side of a suction-fan G², as shown, so that all the material brushed up by the brushes will be drawn upward by the fan.

The outlet of the fan leads over into the inlet of the centrifugal or vacuum dust-collector H', while the discharge H² from the dust-collector leads into an elevator H³, from whence it is conveyed away, as into a receptacle K, attached to the rear of the machine.

The hood G' is stationary, while the frame D' is adjustable perpendicularly independently of it.

Within the hood G', above the cylindrical brushes D² D³, are curved catch-plates d' d², partially covering the cylindrical brushes and supported from the frame D' by small bars d³ d⁴, as shown in Figs. 3 and 4, so as to be adjusted therewith to retain their same relative position to the brushes. These plates d' d² serve as guards to the brushes to catch the material thrown up by the brushes and prevent it from being carried around by them and thrown out from the other side, but retaining it within the influence of the upward draft of the suction-fan. The smaller cylindrical brush is made to revolve at a greater speed than the larger brush, so that it will catch and throw upward inside the hood all the material swept back by the larger brush, thereby gathering and elevating all the material and without creating dust or flying fragments.

The material discharged from the suction-fan by passing into the dust-collector is completely separated from the air and is discharged into the elevator and thus conveyed away, thereby avoiding the creation of any dust upon the street.

The arrangement of the oppositely-working brushes is an important feature of my invention, as without this arrangement it is not possible to avoid making very annoying clouds of dust, especially in sweeping asphaltum pavements.

The elevator may be arranged at one side, if preferred, to load into a wagon alongside instead of in the rear of the machine.

10 A guard-apron M will be attached to the frame D' and depending therefrom and made adjustable to close the gap between the lower edge of the frame and the surface being acted upon to still further confine the air and
15 increase the force of the suction-fan. This guard-apron consists of two flat plates M, parallel with and lying close to the ends of the frame D', and will be provided with slots for the passage of the shafts of the brushes, the
20 slots being elongated perpendicularly to provide for the adjustment and connected across their forward ends by an inclined cross-plate M', as shown.

Having thus described my invention, what
25 I claim as new is—

1. In a street-sweeper, a platform mounted upon wheels, a stationary hood and wind-trunk supported by said platform and through which artificial air-currents are caused to
30 pass, a frame suspended from said platform, and inclosing the open mouth of said hood and adjustable with relation to said platform, and two oppositely-revolving cylindrical brushes journaled to said frame within the
35 mouth of said wind-trunk, means for revolving one of said brushes at a greater speed

than the other, and means for adjusting said more-rapidly-revolving brush independently of its supporting-frame, substantially as and for the purpose set forth.

2. In a street-sweeper, a platform mounted upon wheels, a frame suspended adjustably beneath said platform, a stationary hood and wind-trunk supported by said platform and inclosed by said frame, and through which
45 artificial air-currents are caused to pass, and oppositely-actuated cylindrical brushes supported by said adjustable frame beneath the open mouth of said wind-trunk, substantially as and for the purpose set forth.

3. In a street-sweeper, a platform mounted upon wheels, a frame supporting oppositely-revolving cylindrical brushes and suspended from said platform and adapted to be adjusted perpendicularly with relation thereto, a stationary hood and wind-trunk above said frame
55 and brushes, and through which artificial air-currents are caused to pass, guards supported from said adjustable frame and depending from the sides thereof and yieldable perpendicularly with relation to said frame, to cover the space between the lower surface of said frame and the pavement being swept, to prevent the escape of dust, substantially as and for the purpose set forth.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

MILO CARRIER.

In presence of—

C. N. WOODWARD,
WM. A. PETERSON.