F. C. HOFFER & J. F. SMEDLEY.

STREET SWEEPER.

APPLICATION FILED MAY 15, 1916.

1,256,561.

Patented Feb. 19, 1918.

3 SHEETS—SHEET 1.

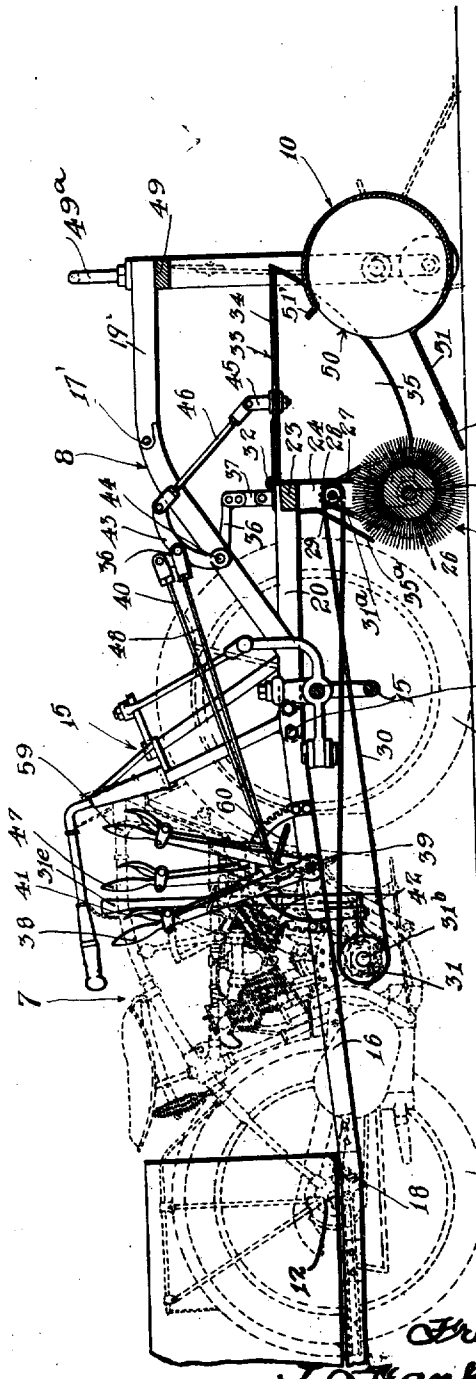


Fig. 1.

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3 SHEETS—SHEET 2.

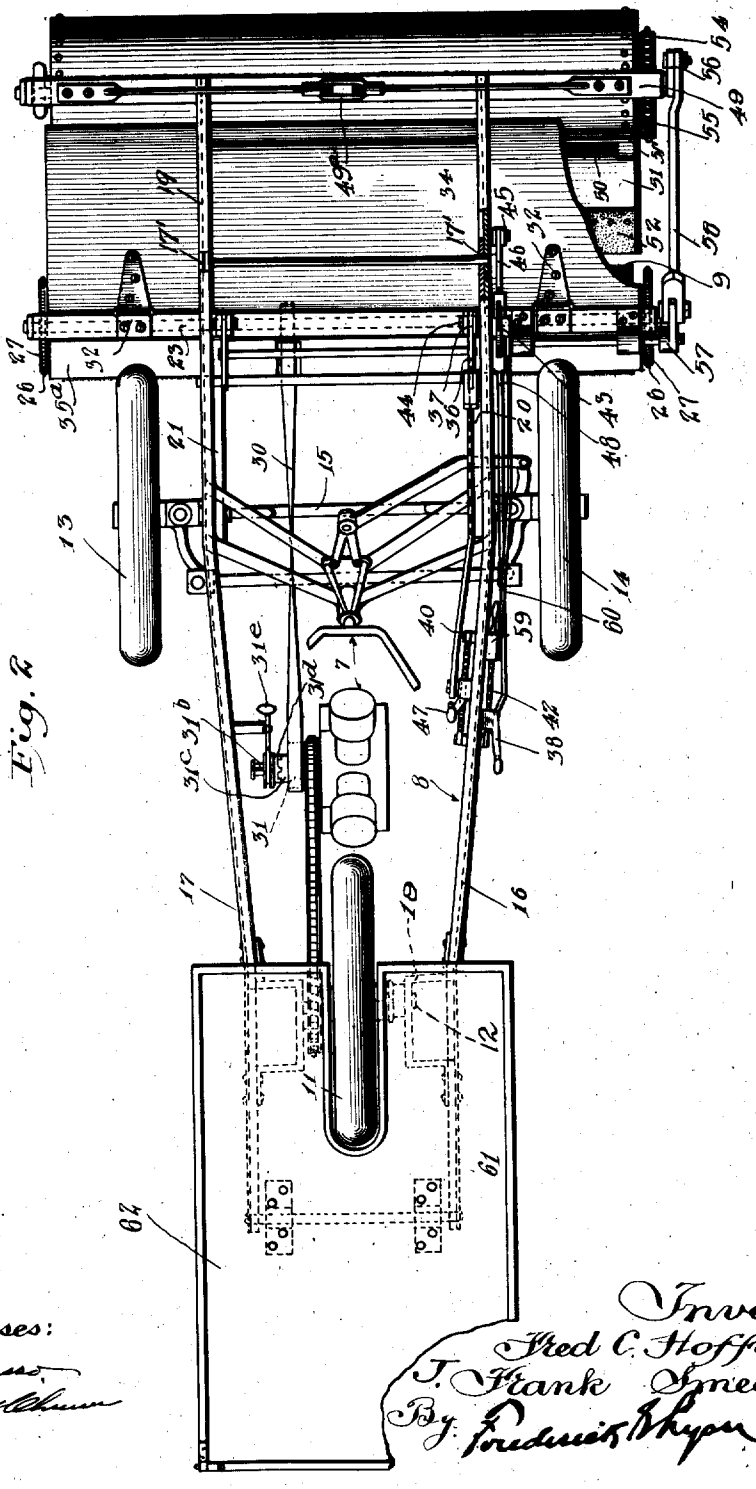


Fig. 2

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3 SHEETS—SHEET 3.

Fig. 3

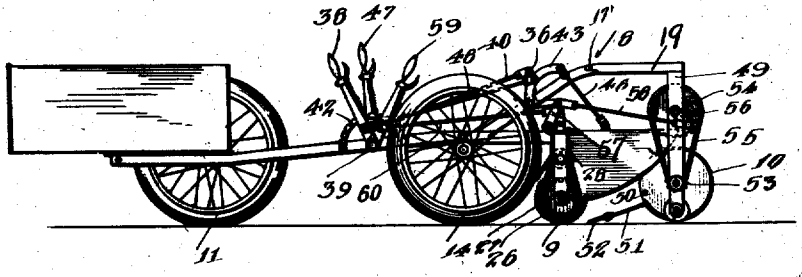


Fig. 4

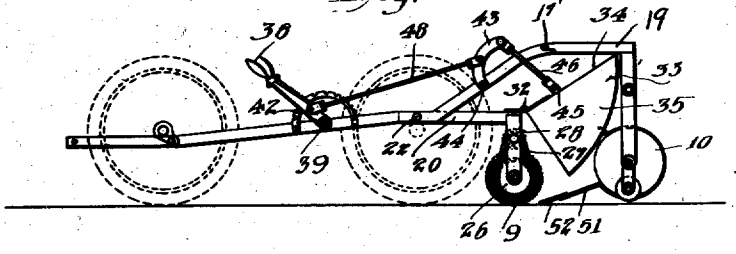


Fig. 5

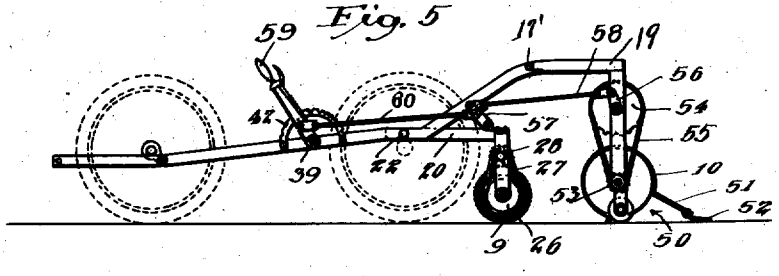
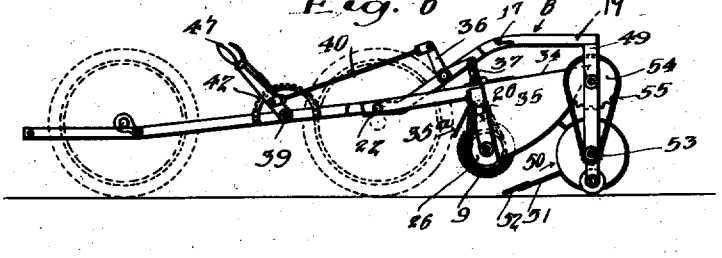


Fig. 6



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UNITED STATES PATENT OFFICE.

FRED C. HOFFER, OF LOS ANGELES, AND JESSE FRANK SMEDLEY, OF PASADENA, CALIFORNIA, ASSIGNORS TO MOTORCYCLE SWEEPER COMPANY, OF LOS ANGELES, CALIFORNIA, A CORPORATION OF CALIFORNIA.

STREET-SWEEPER.

1,256,561. Specification of Letters Patent. Patented Feb. 19, 1918.

Application filed May 15, 1916. Serial No. 97,464.

To all whom it may concern:

Be it known that we, FRED C. HOFFER and JESSE FRANK SMEDLEY, both citizens of the United States, residing at Los Angeles and Pasadena, respectively, in the county of Los Angeles and State of California, have invented a new and useful Street-Sweeper, of which the following is a specification.

This invention relates to improvements in street sweeping machines and resides in the provision of a light, simply constructed and inexpensive street sweeping machine, which is motor-propelled and especially adapted for use in connection with light motor vehicles, such as motorcycles.

An important object of this invention is to provide a street sweeping means which is especially designed as an attachment for standard motorcycles and includes a motor-driven sweeping member which is movable into and out of position and controlled by means operable from the seat of the motorcycle.

Another object of this invention is to provide effective and reliable means for receiving the rubbish swept by the revolving brush of the machine which may be moved into receiving or dumping position from the seat of the motorcycle or vehicle.

Other objects and advantages may appear from the subjoined detail description.

The accompanying drawings illustrate the invention:

Figure 1 reperesents a side elevation of the machine showing parts in section;

Fig. 2 is a top plan view;

Fig. 3 is a side elevation showing the receptacle for storing the rubbish attached to the machine;

Fig. 4 is a side elevation showing the machine in position prior to the raising of the brush and the dumping of the machine;

Fig. 5 is a side elevation showing the dumping member in dumping position; and

Fig. 6 is a side elevation showing the machine in the position it assumes when out of brushing position.

Referring to the drawings by characters of reference, 7 designates as an entirety, a motor vehicle which in this instance is a motorcycle of standard construction, 8 a frame attached to the motorcycle and extending in front thereof, 9 a rotary sweeping member or brush connected with the frame and operated by the motor of the motorcycle, and 10 a rubbish receiving means for debris swept up by the member or brush 9.

In the present embodiment of the invention, the motorcycle 7 includes a single rear wheel 11 mounted upon an axle 12 and front wheels 13 and 14 mounted on an axle 15, said front wheels being steered by mechanism 15^a.

The frame 8 comprises substantially parallel and horizontal bars 16 and 17 which are mounted on opposite sides of the motorcycle and secured to the axle 12 intermediate their ends near the rear ends thereof by U-shaped brackets 18 so as to be spaced from the sides of the motorcycle. The bars 16 and 17 extend beyond the ends of the motorcycle and from a point near the front wheels 13 and 14 extend upwardly and forwardly, the axle 15 acting as a support for the bars. Hinged to the forward ends of bars 16 and 17, as at 17′ is a pair of parallel arms 19 which will be later more fully described.

The bars 16 and 17 comprise the main stationary frame and a brush supporting frame consisting of horizontal parallel bars 20 and 21, is pivotally connected to the bars 16 and 17, as at 22. The forward ends of the bars 20 and 21 are connected with one another by a bar 23 and depending from said bar are brush-supporting arms 24 between and upon which is journaled a shaft 25 for the brush 9. A sprocket wheel 26 is carried by the brush 9 and has mounted thereon a chain 27. This chain coöperates with a sprocket 28 fixed to a shaft 29 located between the arms 24 above the brush. The shaft 29 is driven by a belt 30 which is rove around a pulley 31 carried by the motor shaft 31^b of the motorcycle 7 and a pulley 31^a on the shaft 29. The pulley 31 is loosely mounted upon the shaft 31^b driven by the motorcycle 7. This pulley is also provided upon one side face with a clutch member 31^c, and a clutch member 31^d is splined upon the shaft and adapted for coöperation with the clutch member 31^c. Clutch shifting lever 31^e is provided to move the clutch member 31^d into and out of operative position.

Hinged as at 32 to the forward end of the brush supporting frame comprising the bars 20, 21 and 23, is a dust hood 33 which includes a top plate 34 and depending end plates 35, the latter closing the space between

the brush 9 and chamber 10. A guard plate 35ª is secured to the arms 24 and extends downwardly and rearwardly from said arms over the brush 9. This plate prevents debris from being thrown rearwardly by the brush during the operation thereof.

Pivoted upon the bar 16 of the main frame is a bell crank 36 which is connected at one end to the bar 23 by a link 37. A lever 38 is pivoted as at 39 upon said bar 16 at a point near the rear end thereof and connected with the lever and bell crank is a rod 40. The lever 38 is provided with locking mechanism 41 which coöperates with a notched quadrant 42 fixed to the bar 16. It will be seen that when the lever 38 is moved rearwardly, a pull will be communicated to the bell crank 36 through the rod 40, and the frame comprising the bars 20 and 21 and which supports the brush 9 and hood 33 will be lifted upwardly, causing the brush to be spaced from the surface which is to be swept.

An arm 43 is pivoted as at 44 to the bar 16 at one end and is connected to an upstanding ear 45 carried on the hood 33 by a link 46. A lever 47 similar to the one 38 and cooperating with the quadrant 42 is pivoted upon the same pivot for the lever 38 and is connected with the arm 43 by a rod 48. When this lever is moved rearwardly, the hood 33 is lifted upwardly so that the top plate 34 thereof is moved from overlying relation to the chamber 10.

An inverted U-frame 49 is fixed to the free end of the arms 19 and rotatably supports the chamber 10. An adjustable bracing means 49ª is carried on top of the frame 49. The chamber 10 is preferably cylindrical and is provided with a longitudinal opening 50 in one side thereof, the ends of the chamber being closed. Projecting from one longitudinal edge of the opening 50 is a guard plate 51 extending the full length of the chamber 10 and provided at its free longitudinal edge with a flexible strip 52 designed to contact with the surface being swept. This plate 51 serves to guide the debris swept by the brush into the chamber 10 through the opening 50 and acts as an ordinary dust pan. A similar smaller plate or a flange 51′ is provided on the corresponding edge of the opening 50. A sprocket wheel 53 is fixed to the chamber 10 for rotation therewith and cooperates with a larger sprocket 54 mounted upon one of the vertical bars of the frame 49.

A chain 55 is mounted upon the sprockets 53 and 54. A crank arm 56 is fixed to the sprocket 54. Pivoted upon the forward end of the brush supporting frame is a rocker member 57 to the upper end of which is pivoted a rod 58 also connected with the crank arm 56. A lever 59 is pivoted upon the bar 16 upon the pivots for the levers 38 and 47. A rod 60 connects the lever 59 with the member 57. It will be seen that when the lever 59 is moved, motion is transmitted the sprocket 53 through the member 57, sprocket 54 and chain 55, causing the chamber to rotate.

As shown in Figs. 2 and 3, a rubbish carrying receptacle 62 is attached to the motorcycle so that the rubbish swept up by the brush and after having been discharged from the chamber 10 may be placed with the receptacle. This receptacle is preferably rectangular and is rigidly fastened to and supported upon the bars 16 and 17 also upon a rod 63 which connects the rear ends of the bars with each other. An elongated opening or recess 64 is formed in the receptacle to receive the wheel 11 and the rear end wall of the receptacle is hinged as at 65. Suitable spring catches 66 hold the hinged wall in closed position. A lid not shown may be provided for the receptacle if desired.

Carried at the lower ends of the frame 49 are rollers 66 which extend below the chamber 10 and are normally spaced from the ground.

These rollers are adapted to encounter the ground or pavement when the machine operates upon rough surfaces and prevent the chamber 10 from bumping or scraping the ground. Should the rollers encounter the ground or a bump the whole frame 49 including the chamber 10 and arms 19 moves upwardly, the hinged arms 19 permitting this action.

In operation, the motorcycle is run in the ordinary manner and the operator by manipulating the levers 38, 47 and 59 may set the sweeping apparatus at the proper position for sweeping. Assuming that the mechanism is in the position shown in Figs. 1 and 3, the brush 9 will be rotated in a counter-clockwise direction through the pulley 31, belt 30, pulley 31ª, sprocket 28, belt 27 and sprocket 29. Rubbish swept up by the brush will enter the chamber 10 through the opening 50 and the plates 57 and 57′ together with the flexible strip 52 thereof prevent the brush from throwing the debris ahead of the machine. The hood 33 in covering the space between the brush and open side of the member 10 prevents the dust and debris from being scattered. By adjusting the lever 38, the brush 9 may be moved into the desired relation to the surface to be swept so that a light or full sweeping action may be had as desired.

When it is desired to dump the rubbish from the member 10, the lever 47 is pulled rearwardly, causing the hood 33 to be lifted into the position shown in Fig. 4 of the drawing. When the hood is in this position, the member 10 is free to be rotated and a rearward movement of the lever 59 causes the member 10 to rotate and assume the position shown in Fig. 5 of the drawings. Thus the contents of the member 10 may be

dumped and picked up and placed within the receptacle 62 by the operator of the machine. The entire sweeping apparatus may be lifted from contact with the ground by pulling the lever 47 to the position shown in Fig. 6 of the drawings. This lifts the frame comprising the bars 20 and 23 and the brush 9 carried by the frame, allowing the motorcycle to move freely and in the ordinary manner.

With reference to the foregoing description and accompanying drawings, it will be seen that we have provided a street sweeping machine which may be easily handled throughout congested traffic districts in cities and will operate effectively to sweep up rubbish and the like from the streets in an expeditious manner.

We claim:

1. In a street sweeping machine, a frame adapted to be connected with a motor vehicle, a brush supported by the frame, means associated with the motor of the vehicle for rotating the brush, means for moving the brush into and out of operative position, a rubbish chamber located in front of the brush and adapted to receive rubbish swept up by the brush, and means to move said rubbish chamber into dumping position.

2. In a street sweeping machine, a frame adapted to be secured to and extending in front of a motorcycle, a street sweeping brush carried by the frame, means operated by the motor of the motorcycle to rotate the brush, a rotary rubbish chamber mounted in front of the brush, means to move said chamber into dumping position, and a hood covering the space between the chamber and brush.

3. In a street sweeping machine, a frame adapted to be secured to and extending in front of a motorcycle, a street sweeping brush carried by the frame, means operated by the motor of the motorcycle to rotate the brush, a rotary rubbish chamber mounted in front of the brush, means to move said chamber into dumping position, a hood covering the space between the chamber and brush, and a guard plate carried by the chamber and projecting rearwardly and downwardly relative to the brush.

4. In a street sweeper, a frame adapted to be secured to a motorcycle having a front axle, comprising bars adapted to be secured to opposite sides of the motorcycle and to extend over and beyond the front axle, a brush supporting frame pivoted to said bars, a rotary brush carried by said brush supporting frame, means to raise and lower the brush supporting frame to move the brush into and out of operative position, a rubbish chamber, means to rotatably support the rubbish chamber secured to and depending from the forward ends of the bars, said rubbish chamber having an opening therein to receive rubbish swept up by the brush, and means to move said rubbish chamber whereby the rubbish will be discharged through the opening therein.

5. A street sweeper comprising a frame, a rotary brush carried by the frame, a cylindrical rubbish chamber rotatably mounted in front of the brush, said chamber having an opening in one side thereof through which rubbish swept up by the brush enters the receptacle, a plate carried by the chamber and extending toward the brush from one longitudinal edge of the opening therein, a dust hood mounted over the brush and chamber, and means to rotate the chamber to move the opening therein into position whereby the rubbish may be discharged therethrough.

6. A street sweeper comprising a frame, a brush rotatably mounted upon said frame, a rubbish chamber rotatably mounted in front of the frame upon the brush and having a longitudinal opening therein through which rubbish swept up by the brush passes into the chamber, means to rotate the chamber to bring the opening therein into position whereby the rubbish will be discharged, means to move the brush into and out of operative position, a dust hood including a top and sides hinged to the frame and having its sides extended over the ends of the brush and chamber, said chamber having a plate thereon extending inwardly toward the brush from the opening therein, and means to move the hood into and out of operative position.

7. In a street sweeper, a frame adapted to be secured to a motorcycle having a front axle, comprising bars adapted to be secured to opposite sides of the motorcycle and to extend over and beyond the front axle, a brush supporting frame pivoted to said bars and extending in front of the motorcycle, a brush carried by the frame, means operated by the motorcycle to rotate the brush, means to move the frame up and down whereby the brush is moved into and out of operative position, said bars extending beyond said frame, a supporting member depending from the outer end of said bars, a rubbish chamber rotatably mounted upon said supporting member in advance of the brush, said chamber having an opening therein to receive rubbish swept up by the brush, means to move said chamber whereby the opening assumes a position to discharge the rubbish therein, said chamber being spaced from the ground, and a plate carried by the chamber along one longitudinal edge of the opening therein and extending toward the brush, said plate having its free edge arranged to contact with the surface to be swept.

8. In a street sweeper, a frame adapted to be secured to a motorcycle having a front axle, comprising bars adapted to be se-

cured to opposite sides of the motorcycle and to extend over and beyond the front axle, a brush supporting frame pivoted to said bars and extending in front of the motorcycle, a brush carried by the frame, means operated by the motorcycle to rotate the brush, means to move the frame up and down whereby the brush is moved into and out of operative position, said bars extending beyond said frame, a supporting member depending from the outer end of said bars, a rubbish chamber mounted upon said supporting member in advance of the brush, said chamber having an opening therein to receive rubbish swept up by the brush, means to move said chamber whereby the opening assumes a position to discharge the rubbish therein, said chamber being spaced from the ground, a plate carried by the chamber along one longitudinal edge of the opening therein and extending toward the brush, said plate having its free edge arranged to contact with the surface to be swept, a dust hood pivoted to said frame and closing the space between the chamber and brush, and means to raise and lower said dust hood.

9. In a street sweeper, a frame adapted to be secured to a motorcycle, comprising bars adapted to be secured to opposite sides of the motorcycle and to extend beyond the front of the motorcycle, a brush supporting frame connected with said bars, a rotary brush carried by the brush supporting frame, means operated by the motorcycle to rotate the brush, means carried by said bars to receive rubbish swept up by the brush, and means to move said brush into and out of sweeping position.

10. In a street sweeper, a frame adapted to be secured to a motor vehicle and extending outwardly from the front end of the vehicle, a rotary sweeping brush carried by the frame at the forward end thereof, and a rubbish chamber carried by the frame at the rear end thereof and receiving rubbish swept up by the brush.

11. In a street sweeper, a frame adapted to be secured to a motorcycle having a front axle and a rear axle, comprising bars secured to the rear axle on opposite sides of the motorcycle and extending over and beyond the front axle, a brush supporting frame pivoted to the bars in front of the vehicle, sweeping means carried by the frame, a frame pivoted to the bars in advance of the first named pivoted frame, and a rubbish chamber carried by the last named frame.

12. In a street sweeper, a frame adapted to be secured to a motorcycle and to extend in front thereof, a brush supporting frame adapted to be secured to the first frame, a rotary brush carried by said brush supporting frame, means controllable from the motorcycle to raise and lower the brush, a rotary rubbish receiving chamber, means to support said chamber pivotally connected with the frame, said chamber having an opening therein through which rubbish is deposited, and means to rotate the chamber to discharge the rubbish through the opening therein.

13. In a street sweeper, a frame adapted to be secured to a motor vehicle and extending in front thereof, a brush supporting frame attached to the frame in front of the vehicle, a rotary brush carried by said means, means controllable from the vehicle to raise and lower the brush, a rotary rubbish receiving chamber, means to support said chamber pivotally connected to the frame, said chamber having an opening therein through which rubbish is deposited therein, means to rotate the chamber whereby the rubbish will be discharged through said opening, and rollers connected with the rubbish chamber and located to engage the ground in advance of said chamber, said rollers being normally spaced from the ground.

14. A street sweeper comprising a frame, a rotary brush carried by the frame, a rubbish chamber mounted parallel with the brush upon the frame, and having an opening extending longitudinally thereof on its side which is opposed to the brush, a dust hood carried by the frame and covering the space between the chamber and the brush, and means to rotate the chamber into position whereby the rubbish therein will be discharged through the opening.

15. A street sweeper for motor vehicles comprising a frame adapted for attachment to a motor vehicle, a rotary brush carried by the frame, a rubbish chamber carried by the frame and being located in parallel spaced relation to the brush, said chamber having a longitudinal opening therein in its side opposed to the brush to receive rubbish swept up by the brush, said chamber being spaced from the ground, and means to move said chamber into dumping position whereby the contents thereof will be discharged through the opening.

16. A street sweeper for motor vehicles comprising a frame adapted for attachment to a motor vehicle, a rotary brush carried by the frame, a rubbish chamber carried by the frame and being located in parallel spaced relation to the brush, said chamber having a longitudinal opening therein in its side opposed to the brush to receive rubbish swept up by the brush, said chamber being spaced from the ground, means to move said chamber into dumping position whereby the contents thereof will be discharged through the opening, means to raise and lower said brush, and rollers carried by the chamber and being normally spaced from the ground.

17. In a street sweeping machine, a frame adapted to be secured to and extend in front

of a motor vehicle, a brush supporting frame pivotally connected with the frame, a rotary street sweeping brush carried by the brush supporting frame, means adapted to be associated with the motor of the vehicle for rotating the brush, a frame carried upon the outer end of the first named frame, and means carried by said frame to receive rubbish swept up by the brush.

18. In a street sweeper, a vehicle frame, a frame secured to and extending in front of the vehicle frame, a brush supporting frame having connection with the second named frame, a rotary brush carried by the brush supporting frame, means to rotate the brush, a frame connected with the second named frame, and wheels connected with said frame and the vehicle frame.

19. In a street sweeper, a vehicle frame, a frame secured to and extending in front of the vehicle frame, a brush supporting frame having connection with the second named frame, a rotary brush carried by the brush supporting frame, means to rotate the brush, a frame connected with the second named frame, wheels connected with said frame and the vehicle frame, and rubbish receiving means carried by the last named frame.

Signed at Los Angeles, California, this 9th day of February, 1916.

FRED C. HOFFER.
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