B. KERN.

STREET SWEEPING MACHINE.

APPLICATION FILED MAY 18, 1916.

1,289,809.

Patented Dec. 31, 1918.

2 SHEETS—SHEET 1.

Fig. 1.

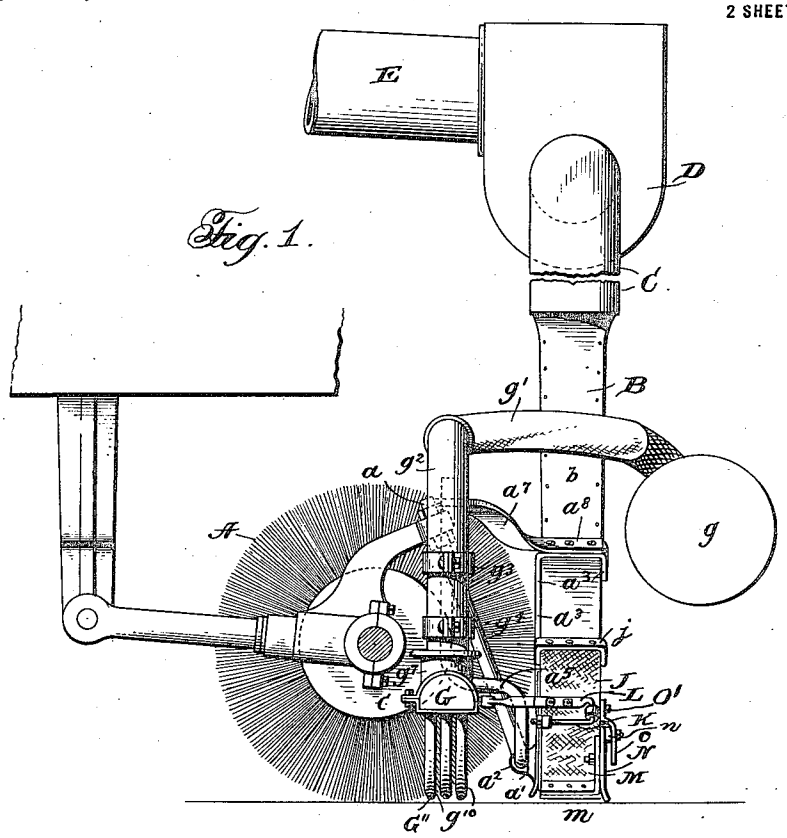
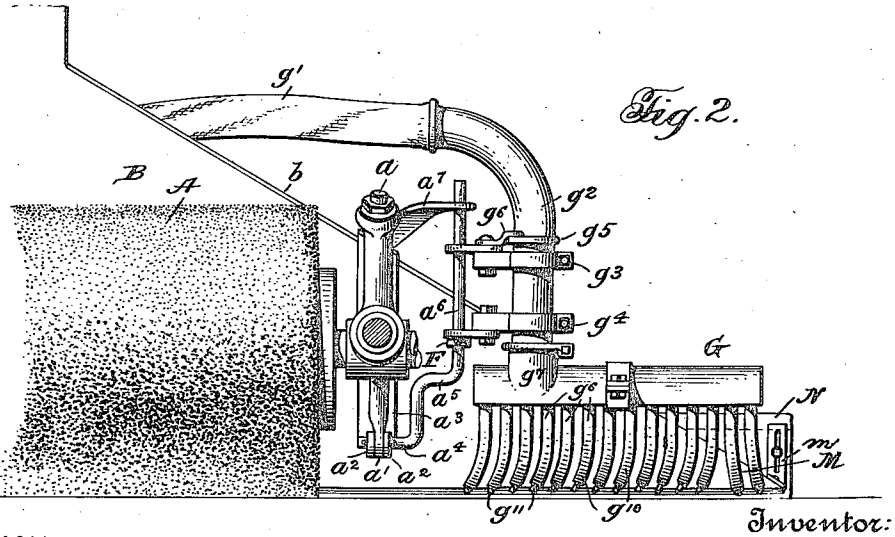


Fig. 2.



Witness:

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2 SHEETS—SHEET 2.

Fig. 3.

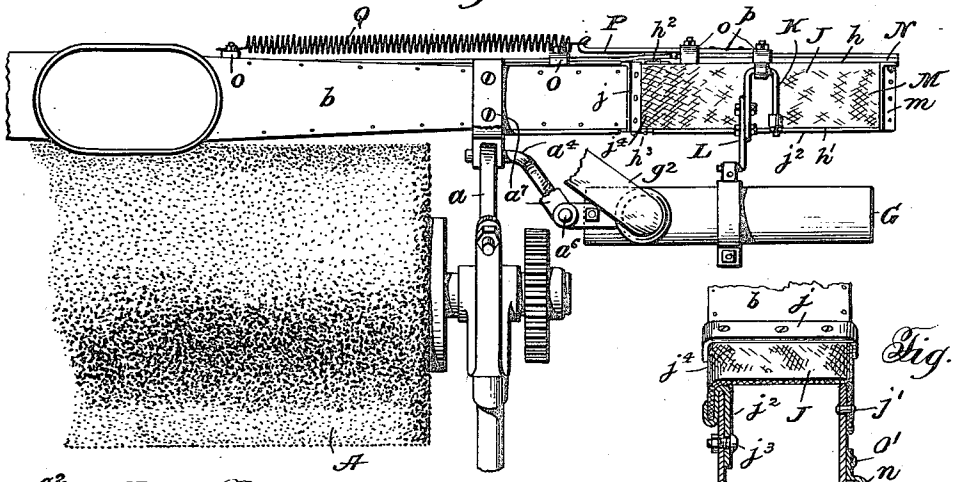


Fig. 6.

Fig. 5.

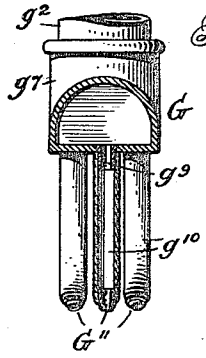
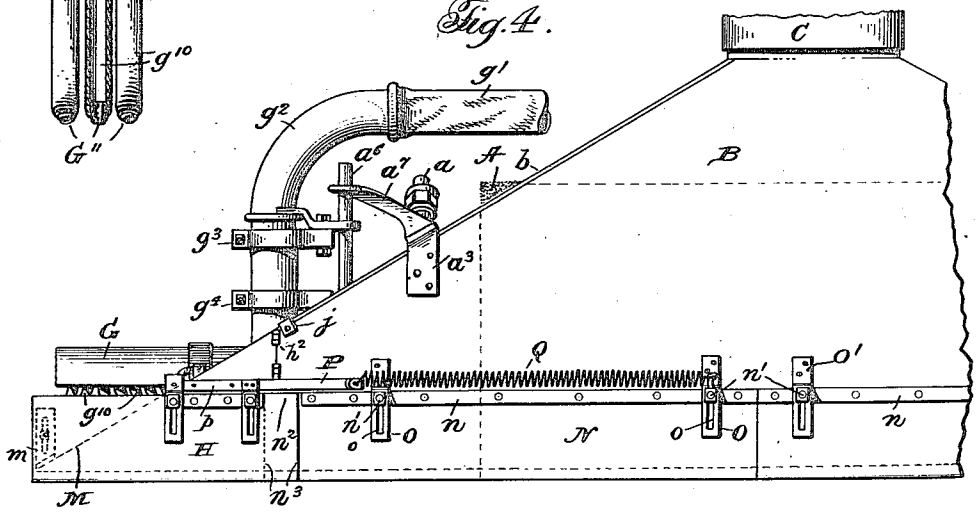


Fig. 4.



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UNITED STATES PATENT OFFICE.

BERNARD KERN, OF SANDUSKY, OHIO.

STREET-SWEEPING MACHINE.

1,289,809. Specification of Letters Patent. Patented Dec. 31, 1918.

Application filed May 18, 1916. Serial No. 98,379.

To all whom it may concern:

Be it known that I, BERNARD KERN, a citizen of the United States, residing at Sandusky, in the county of Erie and State of Ohio, have invented certain new and useful Improvements in Street-Sweeping Machines, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to improvements in street sweeping machines, and more specifically to that type of sweeper adapted to convey the dust or refuse by a volume of air leading from a point adjacent to the supporting surface to a suitable place of separation and deposit.

Usually, machines of the character stated employ a broom to loosen the dirt and cause the same to be raised from the street surface into the zone of influence of the air intended to catch and carry the same, as stated. In machines of this class, however, it has been a problem for many years to provide instrumentalities capable of operating not only in the roadway or street proper, but also in the gutters of the streets, it being recognized that to treat accumulations in the gutters or near the street curbings a very accurate driving of the machine is required, constantly attended by the danger of impact between the machine and curb, and consequent breakage or impairing of the former.

It has also been difficult to provide a satisfactory means in the nature of a gutter treating extension from which the dust or dirt released from the gutter will be conveyed inwardly to the collecting or separating portions of the machine without creating objectionable conditions arising from the dirt moving away from the machine or out of the collecting influence thereof.

With the foregoing matters in mind, the present invention contemplates the provision of pneumatic releasing and conveying means for gutter refuse, and also such means disposed to project laterally beyond the wheel trucks or underframing of the vehicle, but capable of yielding rearwardly of the line of travel of the vehicle when contacting with a curb or similar obstruction to prevent damage.

The invention further contemplates the provision of an air conducting means of a form and arrangement capable of coöperating with separate dust releasing devices arranged to remove the dust from the street, one operating beneath the vehicle and the other in the gutter, said dust conducting means preferably including a mouth-piece disposed transversely of the vehicle and projecting laterally beyond one side thereof (being the gutter side), the terminal portion of said mouth-piece being flexibly connected to the remaining major portion thereof to permit the terminal portion to yield under contact with the curb or the like.

The invention further embraces means for releasing the dirt or dust from the street surface comprising a means for creating an air blast and a multitude of jet nozzles in communication therewith adapted to be discharged at points adjacent to the street surface, and preferably the outermost nozzles being directed toward the curb, while the greater number thereof are directed toward the vehicle,—the former for the purpose of disturbing the dust in the corner constituted by the curb and adjoining street surface, and the latter to disturb the dust on the outwardly extending surface of the gutter and to draw and force the dust toward the body of the vehicle and toward the air collecting and conveying means in rear and laterally of said jet device beneath the vehicle.

The preferred embodiment of the invention also presents many improved details in construction and arrangement of parts, but these will be clear from the specific description hereinafter contained, when read in connection with the accompanying drawings forming part hereof and wherein said embodiment of the invention is illustrated.

In the drawings:

Figure 1 is an end view of enough of a street sweeper machine utilizing the present improvements to show the location, construction and operation of the latter;

Fig. 2 is a rear view of the same;

Fig. 3 is a top view;

Fig. 4 is a front view;

Fig. 5 is a vertical sectional view of the air jetting device, as shown in Fig. 2; and

Fig. 6 is a vertical sectional view of the mouth-piece extension as shown in Fig. 4.

Referring more specifically to the drawings, wherein like reference characters designate corresponding parts in the several views, A represents a revoluble broom adapted to engage the street surface to release the

dust and dirt from said surface and throw the same into the range of influence of the mouth-piece B, of an air conductor C, leading to a fan D, having an outlet E, adapted to lead to any suitable separator or place of deposit, not necessary to be herein described. The brush A may be revolved by any suitable means provided for that purpose and the same is held in adjustable relation to the mouth-piece by a screw rod support a having an eye a' at its lower end fitting between ears a^2, depending from an inverted U-shaped bracket a^3, adapted to embrace the top and side walls of the mouth-piece B and be riveted thereto, the eye a' of the screw-rod support being hinged to the ears by a pivotal pintle a^4 passing therethrough (Fig. 2), this pintle being in the nature of a horizontal extension on a metal upright or post offset rearwardly, as at a^5, and thence extended vertically, as at a^6, to constitute a hinge post, as will later appear the upper end of the post being held against displacement by a brace a^7, sleeved thereover and secured to the bracket a^3 as at a^8.

F is a fixed stop or rest on the hinge post a^6 from which the air jet device for jetting or disturbing the dust in the gutter, generally indicated at G, is supported. This jet device comprises a fan g, suitable mounted at any convenient point beneath the vehicle adapted to supply an air blast to a flexible conduit connection g', leading to an elbowed end of an upright metal feed pipe g^2, clamped in hinge arms g^3 and g^4, embracing the same, and having their outer ends sleeved for swinging movement upon the hinge post a^6. The feed pipe g^2 has an integral flange or collar g^5, from which a hanger g^6, detachably secured to the hinge arm g^3 fits to help maintain the jet device from slipping downwardly through the hinge arms. By having the pair of hinge arms in approximately the same vertical plane, any tendency of the jet device to tilt laterally in any direction is overcome.

The supply pipe g^2 is connected at its lower end to an upwardly opening nipple member g^7, having a multitude of nipples g^9, depending from the lower flat surface thereof, (Fig. 5), such nipples being detachably engaged by the upper ends of a similar number of flexible tubes g^{10} of rubber or similar hose material, the lower ends of the tubes carrying metal tips or nozzles G'' detachably interfitted therewith and adapted not only to emit a fine strong jet of air against the surface being treated, but protecting the ends of the rubber tubes against wear incident to accidental contact with the street surface or obstructions thereon.

Preferably, the two outermost series of jet nozzles (each series conveniently containing three nozzles) are shaped to cause the discharge of the jets downwardly and outwardly toward the curb so as to liberate accumulations in the corner formed by the curb and street surface, whereas all of the other jet nozzles are formed to project their jets downwardly and inwardly in the general direction of the body of the machine, thereby to create a strong draft away from the curb and to exert a tendency to throw the refuse beneath the machine and toward the broom A in advance of which the jet device operates. Owing to the flexible connection g' and the hinging of the jet device on the post a^6, it will be understood that the jet device may swing on the hinge post, as will be hereinafter more definitely set forth.

The mouth-piece B is of an elongated character, terminating at its outer end at a point adjacent to the corresponding end of the broom A, but at its inner end projecting a substantial distance beyond the broom so as to occupy a position in advance of the gutter air jet device above described, the mouth-piece nozzle having its receiving inlet inclining somewhat inwardly in the direction of the broom and jet device to be effective for the entire area described by the combined length of the jet device and broom. The interior of the mouth-piece is dimensioned to maintain a uniform area throughout, the same as the area of the cylindrical conducting pipe C, and an item of importance to be here emphasized is that the angle of inclination of the top walls b of the mouth-piece is preserved throughout the length of said top wall, that is, the top wall must be continuous and straight from the end thereof adjacent the end of the jet device up to the point the top wall merges into the cylindrical or trunk portion C. Experience has demonstrated that having different portions of the side top wall at varying angles, as for instance by changing the angle at the juncture of the top wall of the mouth-piece with the top wall of the jet thereof will cause an imperfect dust conveying action by the air passing upwardly through the mouth-piece.

The extension of the mouth-piece represented in general at H, has a front wall h and rear wall h' of metal similar to the metal body of the mouth-piece, these walls being pivoted to the adjacent walls of the mouth-piece by vertically disposed hinges h^2, h^3, out of alinement, as shown in Fig. 3, to prevent complete closing of the walls h and h' in flat relation to each other when swung on the hinges, as hereinafter brought out, and temporarily obstruct the air supply. The top of the extension, as distinguished from the metal top of the body of the mouth-piece is formed of flexible material, such as canvas J, the upper end of the canvas strip being secured to the top wall

of the body of the mouth-piece by a suitable clamp j, the front edge thereof being fastened to the forward upper edge of the wall h, as at j', and the rear edge being mounted for longitudinal sliding movement on the upper edge of the wall h', this being accomplished by crimping a metal binding j^2 to the edge of the canvas and continuing the binding upwardly and around the top of the wall h', so as to be supported on the latter, the parts being held in position while permitting the sliding movement referred to, by a pin and slot engagement j^3, all as will be readily understood from an examination of Fig. 6.

The metal binding j^2 terminates short of the upper edge of the top wall J to provide a flexible hinge part j^4 adapted to buckle as the mouth extension swings on its hinges in a rearward direction and when the rear edge of the canvas top J rides upon the top edge of the wall h'.

Normally the front and rear walls of the mouth extension H are spaced apart by a link K and the jet device and mouth extension are similarly spaced apart by a link connection L, the latter or both of these link connections possessing means enabling lengthwise adjustment if desired.

The extreme outer end of the canvas top J extends outwardly somewhat beyond the metal side walls to constitute a flexible toe piece M adapted to yieldably receive the thrust incident to contact with a curb and secured by an angle bracket m to this toe-piece and coöperating therewith is the adjacent end of a vertically disposed apron N extending across the lower face of the mouth-piece at the front thereof and downwardly from the mouth-piece to come into close proximity or contact at its lower end with the street surface to prevent the brush throwing the dust or other accumulations under the mouth-piece. This apron N may be made in suitable length either continuous or, as preferable, in overlapping sections, (Fig. 4), the same being formed of flexible material such as leather or rubber having a reinforcing strip n secured to the upper edge of the same and carrying bolts n' having suitable clamping nuts enabling the apron to be adjusted, and lowered to allow for wear, in the vertical slotted portions o of brackets O secured at their upper offset inner ends o' to the front wall of the body of the mouth-piece and front wall of the mouth-piece extension. Conveniently the reinforcing strip n is omitted in that portion of the apron represented at n^2 to permit the hinging of the mouth-piece extension, the adjacent edges n^3 of the sectional apron overlapping at this point to permit of the necessary freedom of movement under the swinging or hinging action.

Of course it is simply necessary, or I might say usually necessary to allow for the swinging movement of the mouth-piece extension and coöperating jet nozzle device only in a direction rearwardly of the travel of the machine, and some means must be provided for normally maintaining the parts in alinement and for restoring the mouth-piece extension to alined position, while preserving its appropriate relation to the jet nozzle device after the same has been deflected by accidental engagement with the curb, and to this end I mount upon the front metal wall of the extension a hook P, having an end shank secured at its outer end, as indicated at p, but free at its inner end to bridge the hinge line of the extension and to contact with the front face of the body of the mouth-piece under the drawing action of a spring Q fastened at one end to the hook P, and at its other end to any convenient part of the body of the mouth-piece, for example around one of the bolts n' beneath the clamping nut carried by the latter. When the mouth-piece extension is swung rearwardly the hook P carried thereby will move forwardly away from the face of the body of the mouth-piece, correspondingly expanding the spring Q and as soon as the obstruction is passed or avoided the contraction of the spring will pull the hook back into normal position against the face of the body of the mouth-piece, again bringing the mouth-piece extension into its alined or normal operating position.

Having thus described the invention, what is claimed is:

1. In a street sweeper, the combination with a main brush, of laterally yieldable means for releasing accumulations in a gutter projected laterally beyond said main brush, pneumatic collecting means having a mouth-piece of a length to be common to both said main brush and gutter device and having a similarly yieldable section, and means for normally holding the yieldable parts in their extended positions.

2. In a street sweeper, the combination with a main brush, of means for releasing accumulations in a gutter projected laterally beyond said main brush, and pneumatic collecting means having a mouth-piece of a length to be common to both said main brush and gutter device, the mouth-piece having inclined top portions leading to a trunk and extending from one end of the brush to said trunk and from the end of the gutter device to said trunk.

3. In a street sweeping machine, the combination with a main brush, of an auxiliary device for releasing gutter accumulations, and pneumatic collecting means having a mouth-piece of a length to be common to both said brush and gutter device, said mouth-piece leading to a trunk portion and

having a top wall inclining in a straight line from the trunk to the outer end of the gutter device.

4. In a street sweeping machine, the combination of main collecting means including a pneumatic conductor having an elongated mouth-piece disposed transversely of the machine, of a yieldable gutter extension projecting laterally from said mouth-piece, means for normally holding the yieldable gutter extension of the mouth-piece in its extended position, and means for disturbing gutter accumulations operatively related to said mouth-piece extension.

5. In a street sweeping machine, the combination of main collecting means including a pneumatic conductor having an elongated mouth-piece disposed transversely of the machine, of a gutter extension projecting laterally from said mouth-piece, means for disturbing gutter accumulations operatively related to said mouth-piece extension, and means for pivotally mounting the mouth-piece extension and said last mentioned gutter device to permit them to give rearwardly upon meeting an obstruction.

6. In a street sweeping machine, the combination of main collecting means including a pneumatic conductor having an elongated mouth-piece disposed transversely of the machine, of a gutter extension projecting laterally from said mouth-piece, means for disturbing gutter accumulations operatively related to said mouth-piece extension, means for pivotally mounting the mouth-piece extension and said last mentioned gutter device to permit them to give rearwardly upon meeting an obstruction, and means for restoring the parts to normal position when the obstruction is passed.

7. In a street sweeping machine, pneumatic collecting means including an elongated mouth-piece arranged transversely of the machine and having a yieldable gutter extension projected laterally beyond the side of the machine, and means for normally holding the yieldable gutter extension in its extended position, substantially as described.

8. In a street sweeping machine, pneumatic collecting means including an elongated mouth-piece arranged transversely of the machine and having a gutter extension projected laterally beyond the side of the machine, and means for pivotally connecting the body of the mouth-piece with its gutter extension to permit the same to yield when meeting with obstructions.

9. In a street sweeping machine, pneumatic collecting means including an elongated mouth-piece arranged transversely of the machine and having a gutter extension projected laterally beyond the side of the machine, means for pivotally connecting the body of the mouth-piece with its gutter extension to permit the same to yield when meeting with obstructions, and means for normally maintaining and restoring the mouth-piece extension into alined position with the body of the mouth-piece.

10. In a street sweeping machine, pneumatic collecting means including an elongated mouth-piece disposed transversely of the machine and having a gutter extension projected laterally beyond the machine, means for pivotally mounting the extension and for normally maintaining the same in alined position with the body of the mouth-piece while permitting the same to yield in meeting obstruction, said gutter extension comprising front and rear walls pivoted to the corresponding walls of the body of the mouth-piece, and a top portion having a flexible part to permit the swinging movement.

11. In a street sweeping machine, pneumatic collecting means including an elongated mouth-piece disposed transversely of the machine and having a gutter extension projected laterally beyond the machine, means for pivotally mounting the extension and for normally maintaining the same in alined position with the body of the mouth-piece while permitting the same to yield in meeting obstruction, said gutter extension comprising front and rear walls pivoted to the corresponding walls of the body of the mouth-piece, and a top portion having a flexible part to permit the swinging movement, said top part being fixed at one edge to the adjacent wall of the extension and slidably attached at its opposite edge to the other wall of the extension.

12. In a street sweeping machine, pneumatic collecting means including an elongated mouth-piece disposed transversely of the machine and having a gutter extension projected laterally beyond the machine, means for pivotally mounting the extension and for normally maintaining the same in alined position with the body of the mouth-piece while permitting the same to yield in meeting obstruction, said gutter extension comprising front and rear walls pivoted to the corresponding walls of the body of the mouth-piece, and a top portion having a flexible part to permit the swinging movement, the flexible top extending downwardly to constitute an independently yieldable toe-piece.

13. In a street sweeping machine, pneumatic collecting means including an elongated mouth-piece disposed transversely of the machine and having a gutter extension projected laterally beyond the machine, means for pivotally mounting the extension and for normally maintaining the same in alined position with the body of the mouth-piece while permitting the same to yield in meeting obstruction, said gutter extension comprising front and rear walls pivoted to

the corresponding walls of the body of the mouth-piece, a top portion having a flexible part to permit the swinging movement, the flexible top extending downwardly to constitute an independently yieldable toe-piece, and a flexible apron depending from the front of the extension and secured to said toe-piece.

14. In a street sweeping machine, pneumatic collecting means including an elongated mouth-piece disposed transversely of the machine and having a gutter extension projected laterally beyond the machine, means for pivotally mounting the extension and for normally maintaining the same in alined position with the body of the mouth-piece while permitting the same to yield in meeting obstruction, said gutter extension comprising front and rear walls pivoted to the corresponding walls of the body of the mouth-piece, a top portion having a flexible part to permit the swinging movement, the flexible top extending downwardly to constitute an independently yieldable toe-piece, the slidable connection being constituted by a binding affixed to the edge of the mouth-piece formed to ride upon the top edge of the adjacent wall of the extension, and a movable connection between said wall and said binding to hold the top against displacement relative to said wall.

15. In a street sweeping machine, pneumatic collecting means including an elongated mouth-piece having a gutter extension projecting laterally of the machine, means for pivoting the gutter extension to the body of the mouth-piece, means for maintaining the gutter extension in alinement with the mouth-piece while permitting the same to yield under obstruction, the extension comprising front and rear walls, and a flexible top part.

16. In a street sweeping machine, pneumatic collecting means including an elongated mouth-piece having a gutter extension projecting laterally of the machine, means for pivoting the gutter extension to the body of the mouth-piece, means for maintaining the gutter extension in alinement with the mouth-piece while permitting the same to yield under obstruction, the extension comprising front and rear walls and a flexible top part, and the pivotal connections for the front and rear walls being out of alinement, substantially as described.

17. In a street sweeping machine, pneumatic collecting means including an elongated mouth-piece having a gutter extension projecting laterally of the machine, means for pivoting the gutter extension to the body of the mouth-piece, means for maintaining the gutter extension in alinement with the mouth-piece while permitting the same to yield under obstruction, the extension comprising front and rear walls and a flexible top part, the pivotal connections for the front and rear walls being out of alinement, and a link connection between the front and rear walls.

18. A street sweeping machine comprising pneumatic collecting means including an elongated mouth-piece disposed transversely of the machine having a gutter extension projected outwardly from the machine and mounted to swing when meeting obstruction, a device for disturbing the gutter accumulations mounted to swing with the mouth-piece extension, and a link connection between the mouth-piece extension and the said gutter device.

19. A street sweeping machine comprising pneumatic collecting means including an elongated mouth-piece disposed transversely of the machine having a gutter extension projected outwardly from the machine and mounted to swing when meeting obstruction, a device for disturbing the gutter accumulations mounted to swing with the mouth-piece extension, and a link connection between the mouth-piece extension and the said gutter device, the mouth-piece extension comprising hinged front and rear walls united by a flexible top, and a link bridging said front and rear walls.

20. In a street sweeping machine, the combination with a main brush and pneumatic collecting means including an elongated nozzle, an adjustable connecting device for spacing the nozzle from the main brush, and a coupling uniting the adjusting device to the mouth-piece including a hinge post having an extension, and a gutter attachment mounted to swing on said post.

21. In a street sweeping machine, the combination with a main brush and pneumatic collecting means including an elongated nozzle, an adjustable connecting device for spacing the nozzle from the main brush, a coupling uniting the adjusting device to the mouth-piece including a hinge post having an extension, and a gutter attachment mounted to swing on said post, said coupling also including a bracket secured to the mouth-piece having a brace extending from the upper portion thereof to stay the upper end of the hinge post.

22. In a street sweeping machine, pneumatic collecting means including an elongated mouth-piece, means for throwing the street accumulations toward said mouth-piece, and an apron depending from that wall of the mouth-piece remotely related to said throwing means, said apron being formed of flexible material, and means for adjusting the same vertically with reference to the mouth-piece and street surface.

23. In a street sweeping machine, pneumatic collecting means including an elongated mouth-piece, means for throwing the street accumulations toward said mouth-

piece and an apron depending from that wall of the mouth-piece remotely related to said throwing means, said apron being formed of flexible material, means for adjusting the same vertically with reference to the mouth-piece and street surface, said means comprising a reinforcing strip along the upper edge of the apron, a bracket secured to the adjacent wall of the mouth-piece and depending across said reinforcing edge of the apron, and adjustable binding connections therebetween.

24. In a street sweeping machine, pneumatic collecting means including an elongated mouth-piece having a gutter extension mounted to swing with reference to the body thereof, instrumentalities for causing the street accumulations to be free to the influence of the pneumatic conducting means, and a sectional apron depending from that wall of the mouth-piece remotely related to said instrumentalities, the sections of the apron overlapping and permitting a freedom of movement therebetween at the line of swinging movement of the gutter extension.

25. In a street sweeping machine, pneumatic collecting means including an elongated nozzle having a gutter extension projected laterally of the machine and mounted to swing with reference to the body of the nozzle upon meeting obstruction, and means for normally maintaining and for restoring the body and gutter extension of the mouth-piece in alinement comprising a projecting part of the extension adapted to normally contact part of the body of the mouth-piece but to move away therefrom upon swinging of the gutter extension, and a spring secured at one end to said projection and at its other end to a part of the body of the mouth-piece to pull the projection and therethrough the gutter extension back to normal position.

26. In a street sweeping machine, pneumatic collecting means including an elongated mouth-piece having a gutter extension projected laterally of the machine and mounted to swing with reference to the body of the mouth-piece upon meeting obstruction, means for restoring the gutter extension to normal position when passing the obstruction including a spring operatively associated with the body of the mouth-piece and its extension and abutting portions between the latter to limit the action of the spring.

27. In a street sweeping machine, the combination with means for releasing the street accumulations and other means for collecting the same, means for mounting both of said means to swing in a plane approximately parallel to the street surface while maintaining operative association therewith, and means for normally holding the releasing and collecting means in extended position for permitting them to yield on meeting obstructions.

28. In a street sweeping machine, means for releasing the street accumulations, pneumatic collecting means operatively associated therewith in combination with means for mounting said releasing and collecting means to permit the same to swing in a plane approximately parallel to the street surface, and means for normally holding the releasing and collecting means in extended position for permitting them to yield on meeting obstructions.

29. In a street sweeping machine, releasing means for the street accumulations comprising a plurality of jet nozzles, and pneumatic collecting means operatively associated therewith, in combination with means for mounting said releasing and collecting means for swinging movement in a plane approximately parallel to the street surface.

30. In a street sweeping machine, releasing means for the street accumulations comprising a blower, and a multitude of air jet devices disposed to discharge upon the street surface, some of said air jet devices projecting outwardly in one direction while the others project in the opposite direction, substantially as described.

31. In a street sweeping machine, releasing means for the street accumulations comprising a blower, a multitude of air jet devices disposed to discharge upon the street surface, collecting means adjacent to said air jet devices to carry off the released accumulations, and means for projecting the releasing and collecting means laterally beyond the body of the machine to operate in a gutter and permitting lateral yielding thereof on contact with the curbing.

32. In a street sweeping machine, the combination with pneumatic collecting means, of means for releasing street accumulations operatively associated with said collecting means, means for mounting said releasing and collecting means to adapt them for operation in a gutter, and means for normally forcing them toward the curb but permitting them to yield upon meeting obstructions by the curb, substantially as described.

33. In a street sweeping machine, the combination with pneumatic collecting means, of means for releasing street accumulations operatively associated with said collecting means, means for mounting said releasing and collecting means to adapt them for operation in a gutter, said means permitting the device to swing when meeting with obstruction and restoring the device to normal position upon passing the obstruction.

34. In a street sweeping machine, the combination with pneumatic collecting means, of means for releasing street accumulations operatively associated with said collecting means, and means for mounting said releas-

ing and collecting means to adapt them for operation in a gutter, said releasing means comprising means for discharging a multitude of jets of air onto the street surface.

35. In a street sweeping machine, the combination with pneumatic collecting means, of means for releasing street accumulations operatively associated with said collecting means, and means for mounting said releasing and collecting means to adapt them for operation in a gutter, said releasing means comprising means for discharging a multitude of jets of air onto the street surface with some of the jets directed toward the curb and others directed away from the curb.

36. In a street sweeping machine, a main brush, pneumatic collecting means associated therewith including an elongated mouth-piece disposed transversely of the machine, and a gutter attachment including a pneumatic collecting extension, and means associated therewith for releasing the gutter accumulations including a multi-air jet device adapted to discharge upon the street surface, the outermost jets being directed toward the curb and the other jets toward the body of the machine.

37. In a street sweeping machine, a main brush, pneumatic collecting means associated therewith including an elongated mouth-piece disposed transversely of the machine, a gutter attachment including a pneumatic collecting extension, means associated therewith for releasing the gutter accumulations including a multi-air jet device adapted to discharge upon the street surface, the outermost jets being directed toward the curb and the other jets toward the body of the machine, and instrumentalities for pivotally mounting the gutter attachment to permit the same to swing upon meeting obstruction and to restore the same when the obstruction is passed.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

BERNARD KERN.

Witnesses:
L. N. WERNER,
LEWIS A. BIEHL.