F. B. DICKASON.

STREET CLEANING MACHINE.

APPLICATION FILED NOV. 12, 1908.

**922,677.** **Patented May 25, 1909.**

Fig. 1.

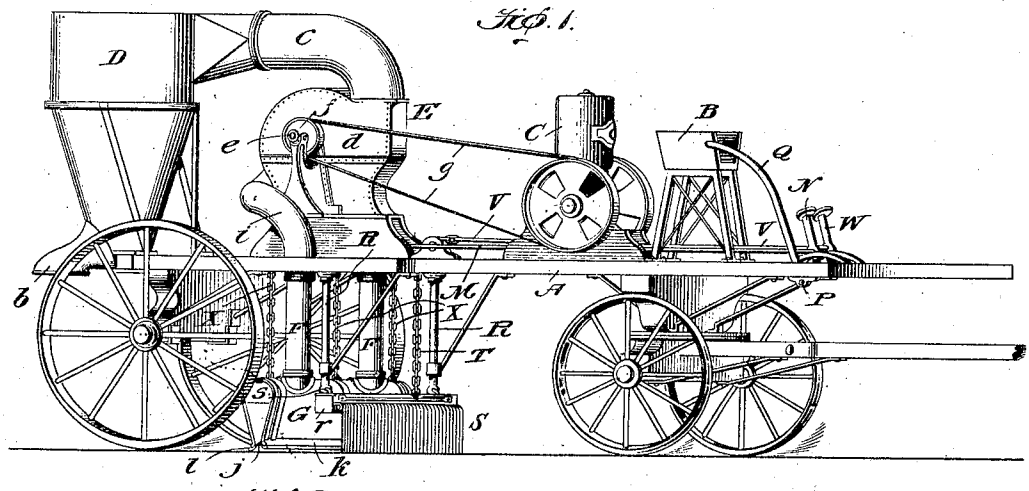



Fig. 2

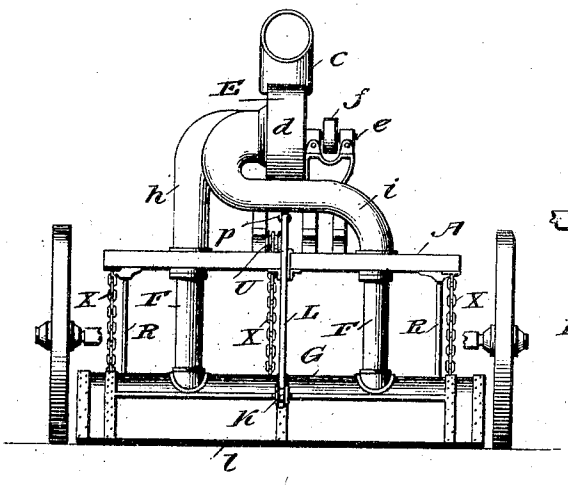



Fig. 3.

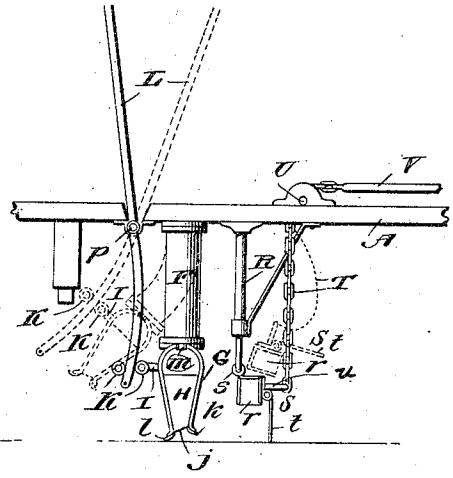



Fig. 4.

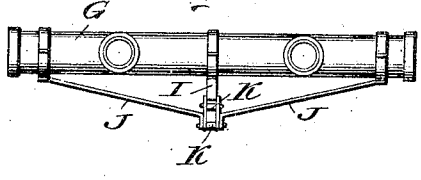



Fig. 6.

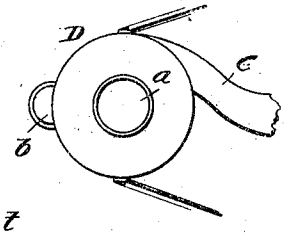
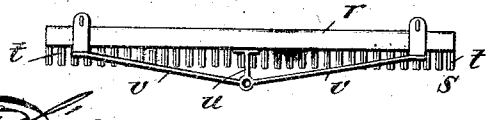



Fig. 5.




Witnesses.

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# UNITED STATES PATENT OFFICE.

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## STREET-CLEANING MACHINE.

No. 922,677. Specification of Letters Patent. Patented May 25, 1909.

Application filed November 12, 1908. Serial No. 462,270.

*To all whom it may concern:*

Be it known that I, FRANK B. DICKASON, citizen of the United States, residing at Shreveport, in the parish of Caddo and State of Louisiana, have invented new and useful Improvements in Street-Cleaning Machines, of which the following is a specification.

My invention relates to street cleaning machines of the type in which dirt and refuse are taken from the street by suction; and it contemplates the provision of a street cleaning machine of said type, which while simple and inexpensive in construction, is possessed of high efficiency and is adapted to be controlled by the driver with but a minimum amount of effort.

Other objects and advantageous features of the invention will be understood from the following description and claims when the same are read in connection with the drawings, accompanying and forming part of this specification, in which:

Figure 1 is a perspective view of the street cleaning machine constituting the best practical embodiment of my invention of which I am cognizant. Fig. 2 is a broken rear elevation of the machine as the same appears with the centrifugal separator and the rear bolster omitted. Fig. 3 is a detail view illustrative of the manner in which the brush and the suction head of the machine are raised in accordance with my invention. Fig. 4 is a detail plan view showing the suction-head and certain appurtenances thereof. Fig. 5 is a similar view of the brush. Fig. 6 is a detail plan view illustrating the tangential arrangement of the induction orifice of the centrifugal separator comprised in the preferred embodiment of my invention.

Similar letters designate corresponding parts in all of the views of the drawings, referring to which:

A is the wheel-supported frame of the machine, which is preferably of the form and construction illustrated, though it might be of any other suitable form and construction without involving departure from the scope of my claimed invention. The said frame A is equipped with a driver's seat B and a motor C, preferably an internal-combustion engine as shown; and on its rear portion is suitably arranged and secured a centrifugal separator D—*i. e.*, an upright receptacle having a contracted opening *a* in its top and a discharge spout *b* at its lower end, and also having a tangentially disposed induction orifice adjacent its upper end, with which communicates the discharge conduit *c* of the suction device E, which latter is located on the main frame between the motor and the centrifugal separator. It will be noted here that the dust drawn from the street will be discharged into the separator D in such manner that the momentum of the dust carries it around near the wall of the separator, and permits it to fall, this being desirable inasmuch as it obviates the objectionable dissemination of dust in the atmosphere during the operation of the machine.

The suction device E is preferably of the ordinary well known type in that it comprises a casing *d*, and a shaft *e*, journaled in suitable bearings, and equipped, within the casing, with a suitable fan, and provided outside the casing with a band pulley *f*, the latter for the belt *g* connecting the motor C and the suction device. In addition to the discharge conduit *c* the casing *d* is provided with two (more or less) intake conduits *h* and *i*, Fig. 2, which extend from one side of the casing to and through the main frame A, as best shown in Fig. 2.

Connected to and depending from the lower ends of the conduits *h* and *i* are flexible conduit sections F, preferably of hose, and connected to and communicating with said sections F is the suction head which is preferably formed in one section, as shown. The said suction head is preferably of metal and is provided in its lower side with a mouth *j* which preferably, though not necessarily, extends throughout its length. The suction head is also provided with front and rear shoes *k* and *l*, of iron or other suitable material, designed to carry the head at the proper distance above the surface of the street. When either section of the head is clogged, it can be cleaned from the rear when the section is raised as in Fig. 3.

In addition to the features named, the suction head G is provided with an arm I, strengthened by braces J and equipped with separated anti-friction rollers K. The said arm I is for the engagement of a lever L which is fulcrumed at *p* on the main frame A and has its lower arm disposed between the anti-friction rollers K, and its upper arm connected through a rod M with a pedal lever N. The said lever N is fixed on a shaft P, journaled in suitable bearings carried by the main frame, and on said shaft P is also fixed a hand lever Q. Thus it will be mani-

fest that when occasion demands, the driver of the machine may, with his foot or hand, quickly raise the suction head to the position shown by dotted lines in Fig. 3, and this with but little effort.

R R are suitably-braced hangers, fixed to the frame A at points in front of the suction head G, and S is a brush which has for its office to break up and loosen cakes or masses of dirt and refuse and in that way facilitate the removal of the same from the street by the before described suction means. The said brush S may be of any construction consonant with the purpose of my invention without involving departure from the spirit thereof, though I prefer to have it comprise a body bar *r*, hinged at *s* to the hangers R, and teeth *t*, of steel, connected to and depending from the body bar and having coils adjacent the body bar, whereby their springiness is increased. From the middle of the body bar *r* an arm *u* extends forwardly, which arm is strengthened by braces *v* and is designed for the connection of cable T. The said cable T extends upwardly and over a sheave U carried by the main frame, and is connected to a rod V which, in turn is connected to a pedal lever W, loosely mounted on the shaft P. Thus it will be manifest that the driver is enabled by pressing forwardly on the lever W to quickly raise the brush S to the position shown by dotted lines in Fig. 3 so as to enable the brush to clear any obstruction that may be in its path.

With a view of preventing the imposition of undue strain on the flexible conduit sections F, I employ the hanger chains or cables X, interposed between the main frame A and the suction head G, as best shown in Fig. 2.

In the practical operation of my novel machine, the motor C is started, and the machine is drawn or otherwise moved forwardly in the street to be cleaned. Incidental to the said moving of the machine, it will be observed that the teeth of the brush S will loosen and break the dirt and refuse, whereupon the same will be drawn through the head G and conduits F, *h* and *i* into the casing of the suction device E from which it will be discharged through the conduit *c* to the separator D. From the said separator D the dirt, dust and refuse will pass through the spout *b* into a receptacle arranged to receive it; and in this connection I would say that I have not illustrated a device placed to receive the dirt, etc., from the spout *b* of the separator D for the reason that a device of any character may be employed without involving departure from my claimed invention. As before stated, the tangential discharge of the blast of air and dirt into the separator D prevents or materially lessens the escape of dust into the atmosphere, and from this it follows that the use of the separator D in combination with the means for taking by suction dirt and refuse from the street is highly advantageous. When during the operation of the machine it is necessary to raise either the suction head G or the brush S the same may be expeditiously and easily accomplished by the driver of the machine, through the medium of the means described.

As before set forth the construction herein illustrated and described constitutes the best practical embodiment of my invention known to me, but it is obvious that in the future practice of the invention such changes or modifications may be made as fairly fall within the scope of my invention as defined in the claims appended.

Having described my invention, what I claim and desire to secure by Letters-Patent, is:

1. The combination in a street cleaning machine, of a wheel-supported main frame, a suction head disposed below the frame and having a lateral arm equipped with spaced anti-friction rollers, a lever fulcrumed at an intermediate point of its length on the frame and having its lower arm curved and disposed between the said anti-friction rollers, and a flexible conduit connection intermediate the frame and the suction head and suspending the latter from the former.

2. The combination in a street cleaning machine, of a wheel-supported main frame, a suction head extending transversely below the frame and having a mouth in its under side and also having a lateral arm at its middle, equipped with spaced anti-friction rollers, and braces J extending from points adjacent its ends to the end of the said arm, flexible conduits extending between the frame and the suction head adjacent the ends of the latter and suspending the head from the frame, and a lever fulcrumed at an intermediate point of its length on the frame, in position to swing vertically, and having its lower arm curved and disposed between the said anti-friction rollers on the arm of the head.

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

FRANK B. DICKASON.

Witnesses:
J. B. SLATTERY,
R. A. SLATTERY.