(No Model.)

B. VAN GAASBEEK.

STREET CLEANING MACHINE.

No. 296,488. Patented Apr. 8, 1884.

Fig: 1.

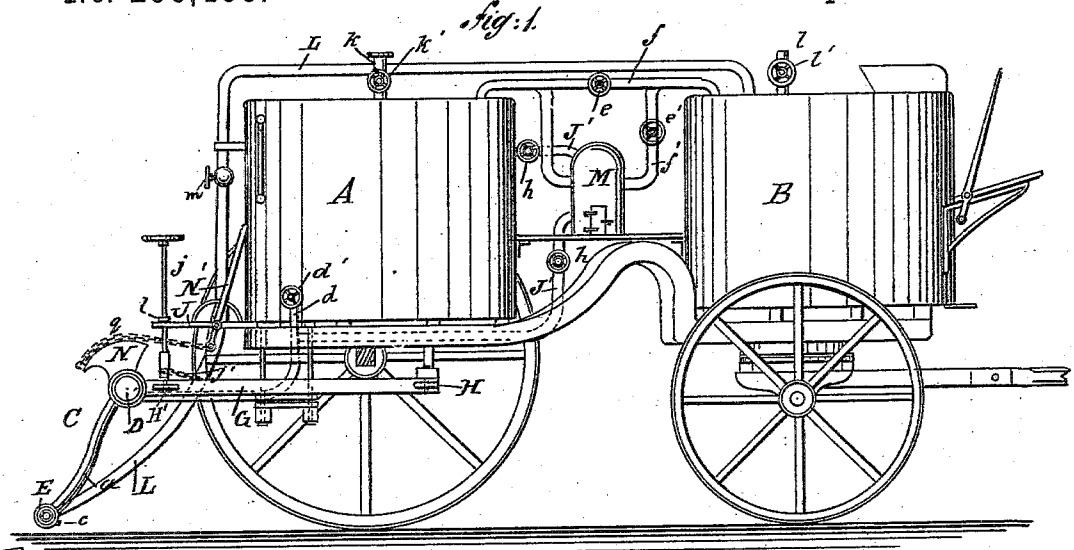


Fig: 2.

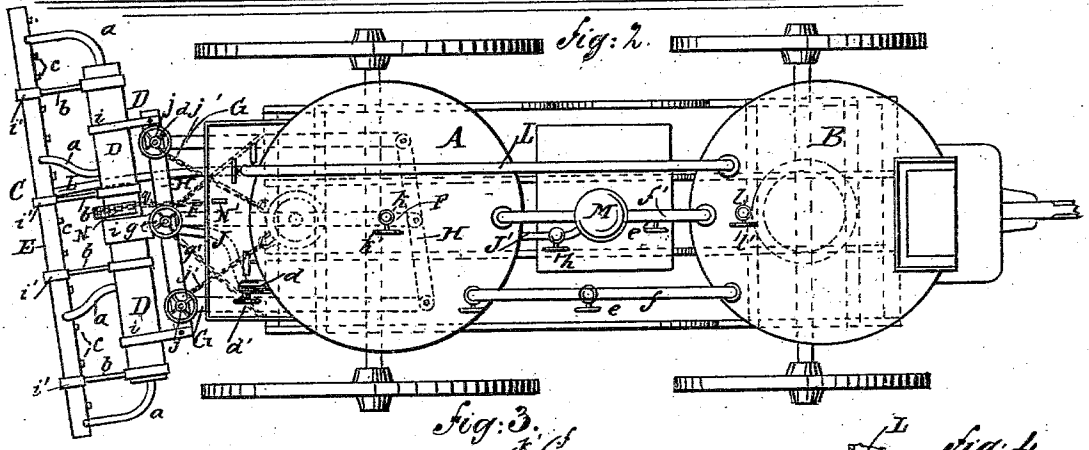


Fig: 3.

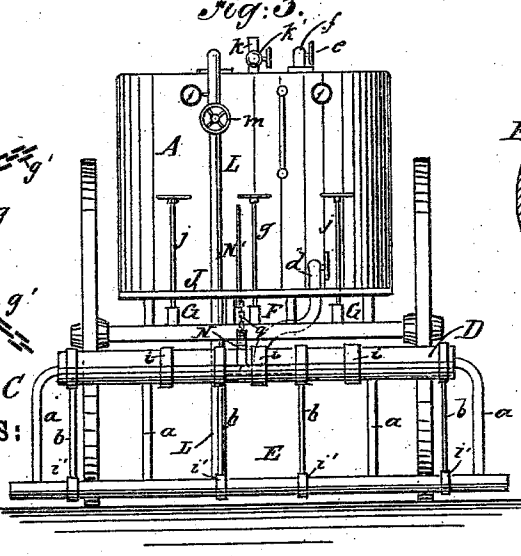


Fig: 4.

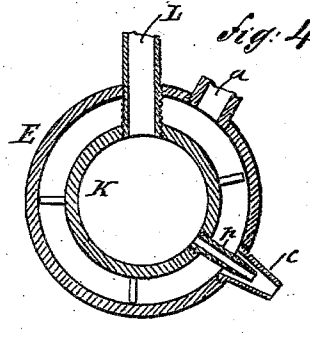
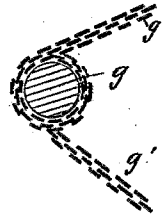


Fig: 5.



WITNESSES:

Chas. Nida.

G. Sedgwick

INVENTOR:

B. Van Gaasbeek

BY Munn & Co

ATTORNEYS.

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

BEEKMAN VAN GAASBEEK, OF MOUNT VERNON, NEW YORK.

STREET-CLEANING MACHINE.

SPECIFICATION forming part of Letters Patent No. 296,488, dated April 8, 1884.

Application filed September 28, 1882. (No model.)

To all whom it may concern:

Be it known that I, BEEKMAN VAN GAASBEEK, of Mount Vernon, in the county of Westchester and State of New York, have invented a new and Improved Street-Cleaning Machine, of which the following is a full, clear, and exact description.

The invention consists of means for heating or keeping the water and air hot, and also of the special construction of the machine, whereby it may be easily controlled, and whereby it is made practical for its purposes.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of my new and improved street-cleaning machine erected on a truck, one of the rear wheels of the truck being removed. Fig. 2 is a plan view of the machine and truck. Fig. 3 is a rear elevation of the machine and truck. Fig. 4 is a detailed sectional elevation of the water and air distributer; and Fig. 5 is a detailed sectional plan view of the central vertical hand-shaft and chains for swinging the distributer to the one side or the other, to avoid obstructions at the sides.

A is the water-tank, here supported upon the rear axle of a suitable carriage or truck. B is the compressed-air tank, supported upon the forward axle of the truck, which tanks are constructed to sustain any required internal pressure; and C is the distributer, here consisting of closed pipes, the large pipe D and smaller final distributing-pipe E, which latter is connected with the pipe D by the pipes or hose *a a* and rods *b b*, and is carried by the latter near the pavement, as shown. The pipe D is connected with the tank A by means of the flexible pipe *d*, valved at *d'*, and the final distributing-pipe E is provided with the series of nipples or apertures *c c*, for dividing the water into small streams as it passes from the tank to the surface of the street. The compressed-air tank B is connected with the water-tank A by means of the pipe *f*, which is provided with the cock *e*, which regulates the flow of compressed air from the tank B to the tank A.

In some cases the machine will be operated with the distributing-pipes D E parallel with the rear axle of the truck, as shown in Fig. 3, while in other cases these pipes will be carried at an angle to the axle, as shown in Fig. 2, for working the dirt of the street toward the curbstone.

In order that the pipes D E may be set at any desired angle for sweeping the dirt toward the curbstone on the right or the left, and be swayed to the one side or the other of the truck, to avoid obstructions on the side, I attach the pipe D to and parallel with the rear cross-bar, H, of a parallel frame, the central bar, F, of which is centrally pivoted to the truck or carriage, and is provided with the winding-shaft *g* and chain *g'*, which is attached at its ends to the sides of the truck, and passed around the said winding-shaft in opposite directions, as shown in Fig. 5.

The side bars, G G, are adapted to slide in the truck or carriage, and are pivoted at their ends to the ends of the cross-bars H H, which cross-bars are centrally pivoted to the ends of the central bar, F. These side bars, G G, are each provided with a winding-shaft, *j j*, and chains *j' j'*, which are fastened to a collar around the center pin, by which the central bar, F, is pivoted in the truck, as shown in Fig. 2. With this construction, to set the distributer at an angle, the pipe D being attached to the rear bar, H, of the parallel frame, it is only necessary for a person standing on the rear platform, J, to turn one of the winding-shafts *j*, thereby shortening the corresponding chain, *j'*, the other chain *j'* being slack, thereby sliding one of the side bars, G, farther under the truck or carriage and the other side bar farther to the rear, thereby securing the angle desired, when the chains *j' j'* are both made taut. They are thus held by a suitable pawl and ratchet applied to the said shafts *j j*.

To bring the pipes D E back in line with the axle of the truck, or to reverse the angle at which they are set, it is only necessary to operate as before, except to turn the other winding-shaft *j*.

In order to swing the pipes D E to the right-hand side or to the left-hand side, to avoid obstructions at the side, it is only necessary for the person standing on the rear platform to turn the shaft *g*, applied to the rear end of the central bar, F, to the right or to the left, as the case may require.

In case cold water alone is to be used for cleaning the street, the tank A will be filled with water through the short pipe *k* and the pipe closed by the cock *k'*, and the tank B will be charged with compressed air up to the required pressure through the short pipe *l*, and the pipe closed by turning the cock *l'*. The machine will then be taken to the work and the cocks *d'* and *e* opened, which will admit the water from the tank A to the pipes D E and the compressed air to the water-tank A, where it will exert a pressure on the surface of the water in the tank, and cause the water to pass out of the nipples *c c* in the pipe E with great force. The nipples *c c* are set at an angle to the plane of the street, as indicated in Figs. 2 and 4, so that the streams of water discharged from the nipples will strike the surface of the street in the most effective way for loosening and removing the dirt, and so that the dirt of the street will be forced along either ahead of the pipe E or carried toward the curbstone in case the pipes D and E are held at an angle to the machine, as above described.

Within the pipe E is held the smaller pipe, K, which is furnished with as many small nipples *p* as there are nipples *c* in the pipe E, which nipples *p* reach into the nipples *c*, as shown in Fig. 4, and this pipe K is connected by means of the pipe L with the compressed-air tank B, and this pipe L is provided with the cock *m*, which cock, in case water and air are to be used in conjunction for cleaning the street, will be opened simultaneously with the opening of the cocks *e* and *d'*.

In case hot water is to be used in the machine for clearing away snow and ice from the streets, the machine will be provided with the furnace M, through which the water from the tank A will pass on its way to the distributer through the pipe J', which leads from the bottom of the inside of the tank through the furnace and connects with the pipe *d*, as shown in Fig. 1. When used in this manner, the cock *d'* will be kept closed, while the cocks *h h* in the pipe J' will be opened, and the compressed air—when the machine is used for melting—instead of being permitted to pass through the pipe *f* to the tank A, will be caused, by closing the cock *e* and opening the cock *e'*, to pass through the pipe *f'*, which passes through the furnace, so that the compressed air will be heated in the furnace before entering the tank A.

The pipe E is adapted to be elevated when the machine is not in use, or while it is being taken to and from work, by means of the arm N, attached to the pipe D, and the lever N', fulcrumed in the platform J, the arm and lever being connected together by means of the chain *g*, (shown in Figs. 1, 2, and 3,) and the pipe D being adapted to turn in the collars *i i i*, by which it is attached to bar H. The pipe E is adapted to be turned in the collars *i' i'*, by which it is attached to the rods *b b*, for changing the position of the nipples *c c*, for varying the angle at which the jets of water or water and air will strike the surface of the street.

In operation, the tank A having been filled with water, and the tank B charged with compressed air up to a pressure, say, of three hundred pounds to the square inch, and the nipple adjusted to suit the work to be done, the proper valves are then opened and the machine is drawn over the street. Now, as the truck moves along, the pipe E is brought up to the work before it, and the jets of water, or water and air, striking forward with great force and at a low angle to the pavement, sweep the dirt before them, and, when the distributer is set at an angle, as shown in Fig. 2, shove the dirt to one side at the same time. When water and air are both expressed from the nipples at the same time, the effect will be the same as when water is used alone, but less water will be required. The tank B will ordinarily be charged with compressed air by an air-compressing machine; but where the water-pressure in the hydrant is sufficient, no compressor need be used, the pressure in the hydrant being utilized in charging the tank and the compressed air conserved so as to charge the air-tank at each filling of the water-tank in this manner—supposing the pressure in the hydrant to be thirty pounds, sufficient to elevate water sixty feet in an open tube, and that fifteen pounds be sufficient to work the machine. The cocks being all closed except the cock *k'*, the hydrant is connected by means of a hose to the pipe *k*. The cock *e* is now to be opened, so that the air in tank A may pass to tank B as tank A becomes filled with water. When the tank A is full of water, the tank B will contain two atmospheres. The cock *e* is now closed and the water in tank A drawn off. The tank A is then again connected with the hydrant, and the cock *e* opened and the water turned on, and when the tank A is full the tank B will contain three atmospheres, when the cock *e* will be again closed, the water again drawn off, and the operation again repeated, and so continued until the pressure in the tank B is equal to the hydrant-pressure, care being taken to turn the cock *e* before stopping the water-flow, and opening this cock after again connecting the hydrant.

Where the deficiency of hydrant-pressure is not too great, the deficiency of pressure in the tank B may be easily made up by the use of an air-pump.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. The water-discharge pipe E, provided with the series of nipples *c*, and the inclosed pipe K, provided with the nipples *p*, in combination with the tank A and tank B, said tanks connected, respectively, with pipes E and K, substantially as and for the purpose set forth.

2. In a street-cleaning machine, the combi-

nation, with a water-tank, pressure-tank, and distributer, of a furnace for heating the water or air, or both, substantially as and for the purposes set forth.

3. The combination, with the tank A, of the connected pipes D and E, the latter being provided with the series of nipples *c* or apertures, substantially as and for the purposes set forth.

4. In a street-sprinkling device, the pipe D, hinged to the rear cross-bar, H, of a stage or parallel frame, in combination with the winding-shafts *g* and *j j* and chains *g'* and *j' j'*, for adjusting the distributer, substantially as and for the purposes set forth.

5. The central bar, F, pivoted in the carriage, in combination with the sliding bars G G, cross-bars H H', winding-shaft *g*, chain *g'*, and pipe D, hinged to the rear cross-bar, substantially as shown, and for the purposes set forth.

6. In a street-sprinkler, the combination, with the water-pipe having nipples and connected to the water-tank, of the air-pipe, with nipples adapted to project into the nipples of the water-pipe, and connected to the compressed-air tank, substantially as and for the purpose set forth.

7. In a street-sprinkler, the combination, with the compressed-air tank and the water-tank, of the air-pipe having nipples and the water-pipe surrounding the air-pipe, and having nipples, into which the nipples of the air-pipe project, said air and water pipes having connection with the compressed-air and water tanks, substantially as and for the purpose set forth.

BEEKMAN VAN GAASBEEK.

Witnesses:
H. A. WEST,
C. SEDGWICK.