

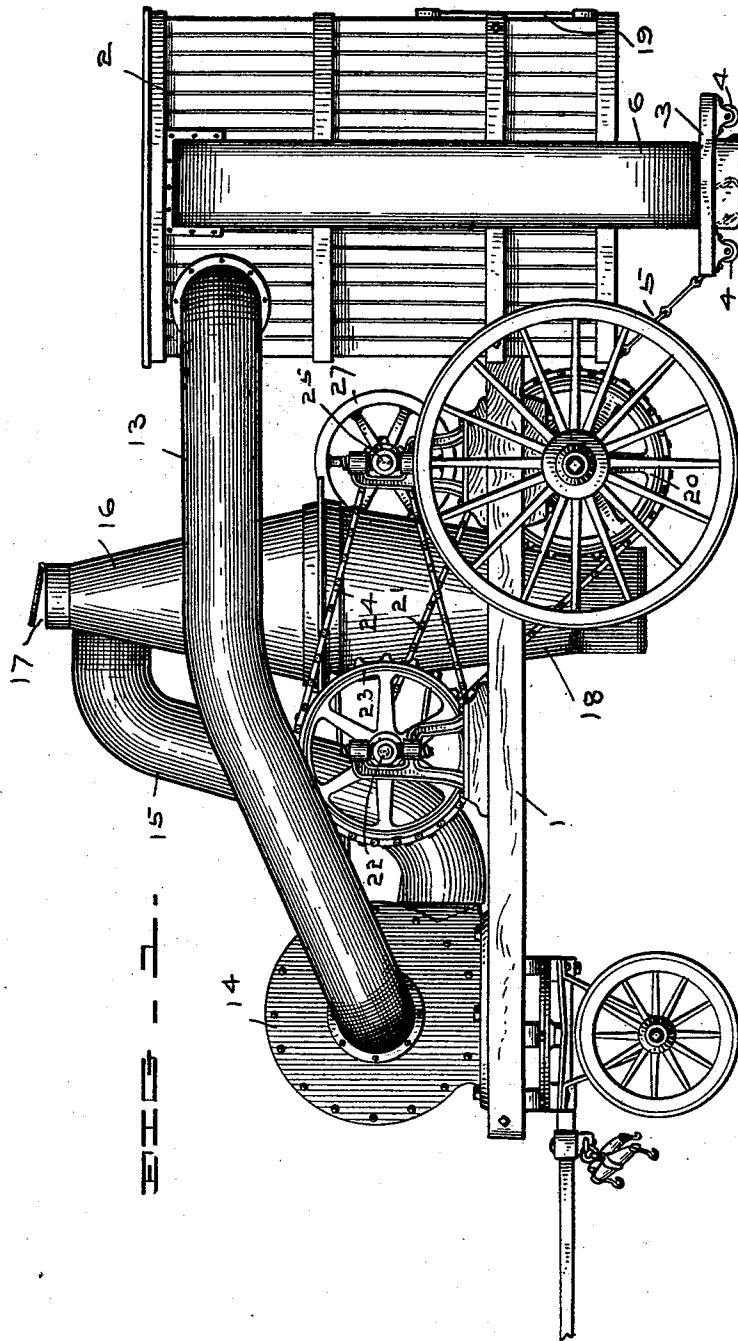
(No Model.)

4 Sheets—Sheet 1.

R. W. FURNAS.
STREET SWEEPER.

No. 514,677.

Patented Feb. 13, 1894.



WITNESSES:

H. S. Nealy.
O. D. Tilford.

Robert W. Furnas. INVENTOR

BY
V. H. Lockwood
ATTORNEY.

(No Model.)

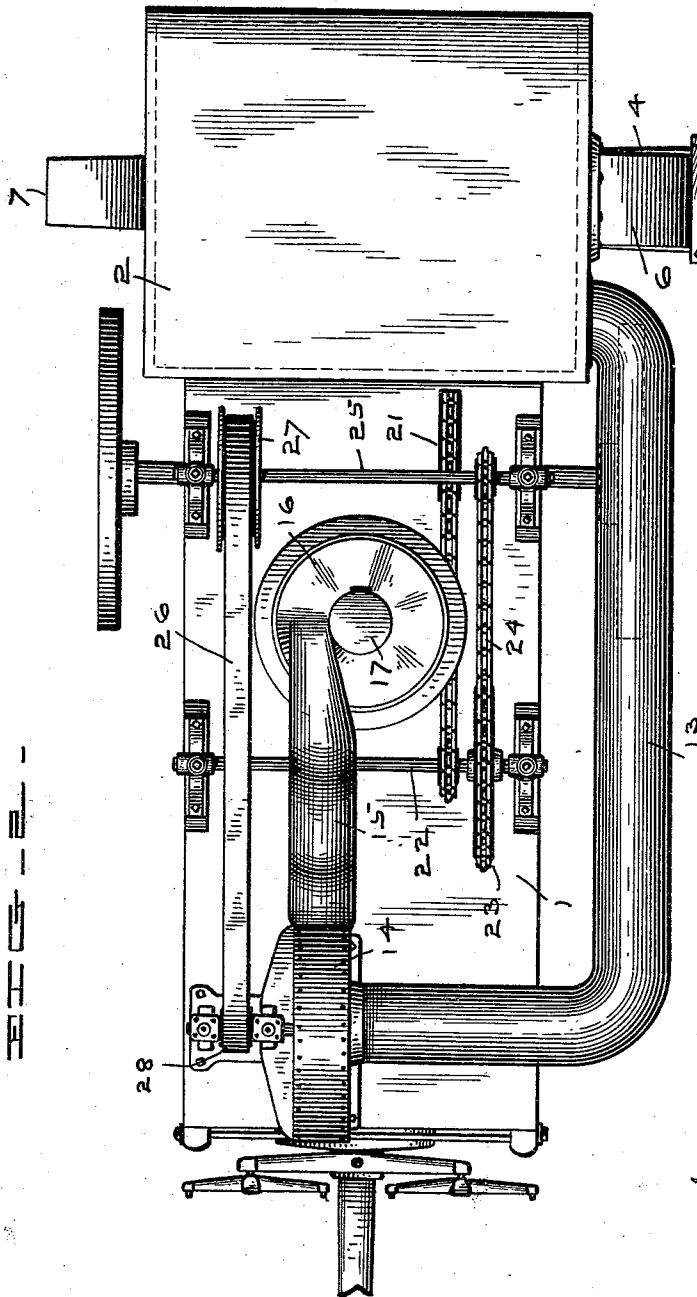
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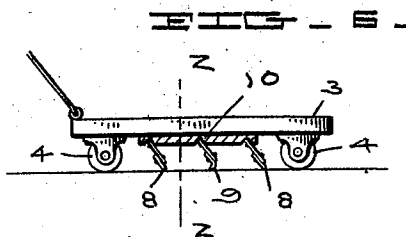
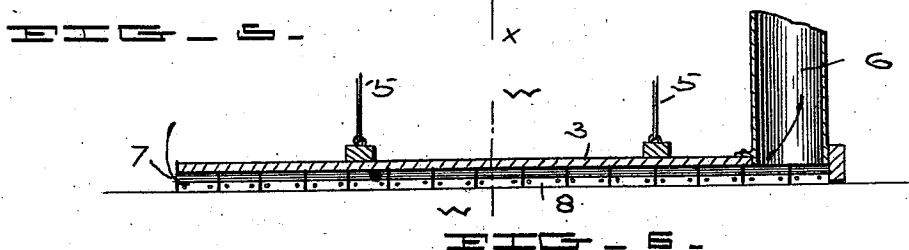
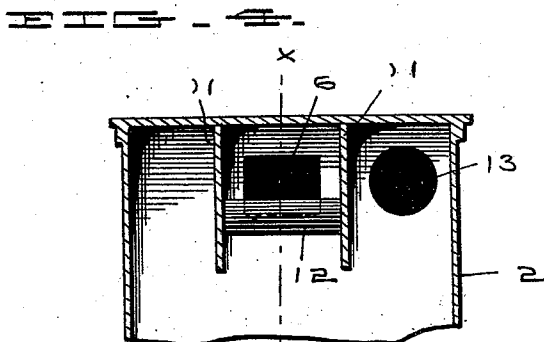
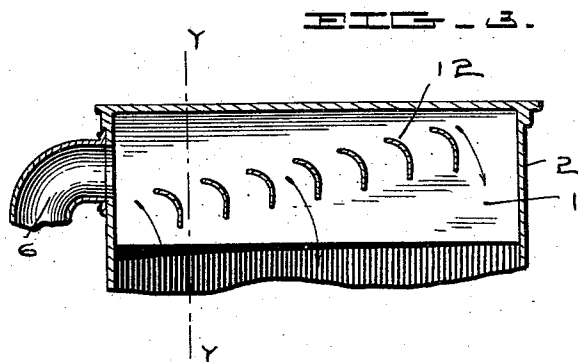
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WITNESSES:

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(No Model.)

4 Sheets—Sheet 4.

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FIG - 7-

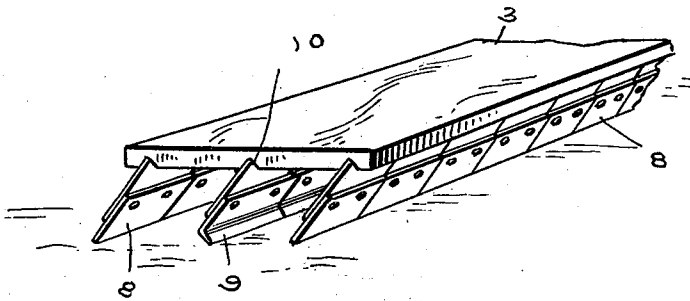
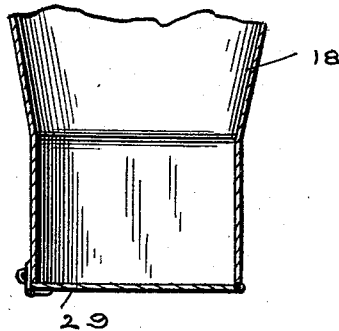


FIG - 8-



Witnesses

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A. D. Filford.

Inventor

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UNITED STATES PATENT OFFICE.

ROBERT W. FURNAS, OF INDIANAPOLIS, INDIANA.

STREET-SWEEPER.

SPECIFICATION forming part of Letters Patent No. 514,677, dated February 13, 1894.

Application filed October 16, 1893. Serial No. 488,223. (No model.)

To all whom it may concern:

Be it known that I, ROBERT W. FURNAS, of Indianapolis, county of Marion, and State of Indiana, have invented certain new and useful Improvements in Street-Cleaning Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which like figures refer to like parts.

My invention relates to a pneumatic street cleaning machine, and has for its object a machine which will operate more successfully to clean streets of dirt and dust without causing the dust to fly away from the machine, than any street cleaning machine heretofore known.

The features of my invention will fully appear from the drawings, specification and claims herein.

Figure 1 is a side elevation of my improved street cleaning machine. Fig. 2 is a plan view of the same. Fig. 3 is a section of the upper part of the dirt box on the line $x-x$, Fig. 4. Fig. 4 is a section of the same on the line $y-y$, Fig. 3. Fig. 5 is a central longitudinal section of the hood and lower portion of the pipe leading from it, on the line $z-z$ Fig. 6, and Fig. 6 is an end view of such hood. Fig. 7 is a perspective view of one end of the hood, the other end being broken away, and showing the scratchers, and Fig. 8 is a sectional view of the lower end of the dust box 18, showing the door.

In detail 1 is a carriage frame mounted on suitable wheels. 2 is a dirt box mounted on the rear end of such carriage.

3 is a gathering hood suspended below the dirt box 2 by any suitable means. It is here mounted on caster wheels 4 and held in place by the chains 5. 6 is a pipe leading from one end of such hood to the upper end of the dirt box 2. The other end 7 of the hood is open and is made only about three-fifths of the width of the end from which the pipe 6 extends. It is observed that some of the air exhausted from the hood will necessarily enter from the sides. Therefore in order to have a stiff current at the end 7 of the hood, I make that end smaller than where the air is exhausted.

8 are the flexible depending sides of the

hood made preferably of leather with metal plates secured to each, to give wear and weight. It is observed that the top of the hood is parallel with the surface of the street longitudinally and that it is close to the street surface in order that the current of air shall be held close to the surface of the street and be swept transversely across the path of the machine.

9 are scratchers located within the hood and may be made in any desired form. The form herein shown consists of pieces of leather secured to the top of the hood and having attached to their lower end an L-shaped piece of metal, whose point is adapted to contact with the street surface and is made sharp enough to scratch up the hard dirt when held down by the weight of the scratchers. The object of this scratcher is to scratch up the hard dirt and agitate it within the hood. The pipe enters the side of the box 2 near the top, as seen in Figs. 1 and 4. In Fig. 4 there will be observed two partitions 11, one on each side of the entrance of the pipe 6 and both extending across the top of the box 2 laterally. These partitions 11 are about eighteen inches wide and between them are secured air-deflectors 12 arranged in a series one behind the other, each one being placed a little higher than the preceding one and preferably curved downwardly, as shown in Fig. 3. The object of these air deflectors is to turn the current gradually downward toward the bottom of the box as it enters and enable the heavier dirt to drop to the bottom of the box before the current is drawn through the pipe 13 to the fan 14. The air which enters the pipe 13 is only dust laden. It passes through the fan 14 which in turn propels the air through the pipe 15 into the centrifugal dust arrester 16. Here the air is separated from the dust, the purified air passing out at the top 17 and the dust passing into the dust box 18. A door 29 is provided in the bottom of this dust box for the removal of the dust. There is also a door 19 for the same purpose in the box 2.

The fan 14 is propelled by power received from the rear axle of the carriage. On that axle I have mounted a sprocket wheel 20 over which the sprocket chain 21 passes to a small sprocket wheel on the shaft 22. The power is transmitted from that shaft by the sprocket

wheel 23 and the chain 24 to the shaft 25, and from the shaft 25 it is transmitted by means of a belt 26 passing around the wheel 27 to the pulley 28 on the fan shaft.

5 What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a pneumatic street cleaning machine, a gathering hood adapted to convey a current of air transversely with the line of movement
10 of the machine and whose top is parallel with and close to the surface of the street, a dirt box, an exhaust fan, and a pipe leading from the hood to the upper end of the box and another from the box to the exhaust fan, substantially as shown and described.

2. In a pneumatic street cleaning machine, a gathering hood, a dirt box, a centrifugal dust arrester provided with a dust box on its lower end, and means of exhausting the air from
20 the hood through the upper end of the dirt box and blowing it into the dust arrester tangentially, substantially as shown and described.

3. In a pneumatic street cleaning machine,
25 a gathering hood, a dirt box, an exhaust fan, a pipe leading from the hood to the box and another from the box to the exhaust fan, and means of deflecting the air as it enters the

dirt box consisting of a partition on each side of the opening through which the air enters
30 extending laterally across the box, and a series of air deflectors between such partitions and opposite such opening, each deflector being slightly higher than the one preceding it, substantially as shown and described.

4. In a pneumatic street cleaning machine, a gathering hood adapted to convey a current of air transversely with the line of movement of the machine, and means of exhausting the air from the hood, such hood being gradually
40 increased in dimensions from the point where the air enters it to the exit opening, substantially as shown and described.

5. In a pneumatic street cleaning machine, a gathering hood extended transversely with
45 the line of movement of the machine, and an exhaust pipe leading from one end of the hood, the other end of the hood being open and smaller than the exit end, substantially as shown and described.

In witness whereof I have hereunto set my hand this 13th day of October, 1893.

ROBERT W. FURNAS.

Witnesses:

V. H. LOCKWOOD,
N. D. TILFORD.

icc