To all whom it may concern:

Be it known that I, Robert W. Furnas, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented a new and useful Gathering-Hood for Pneumatic Street-Sweepers, of which the following is a specification.

It is the object of my invention to provide a gathering hood for pneumatic sweepers which will operate in a closed cycle system without excessive inward leakage from the atmosphere and will effectively remove the street dirt for the full width of the hood.

The various novel features of my invention will appear from the description and drawings, and will be particularly pointed out in the claims.

In the drawings, Figure 1 is a horizontal sectional view through a gathering hood embodying my invention, the view being taken substantially on the line 1—1 of Fig. 2, but some of the parts, such as the cross bars on one side and the supporting rollers, being removed; and Fig. 2 is a vertical section on the line 2—2 of Fig. 1.

The hood is suspended from a supporting frame 10 hung by suitable lifting wires or chains 11 from the vehicle frame 12, on which the pneumatic apparatus is carried. The hood frame 13 is suitably hung, as by wires or chains 14, from the supporting frame 13, and may be connected by tension rods or chains 15 to a suitable part of the frame 12, the cross bars 13' of the frame 13 furnishing mountings for the rollers 14, and the cross bars 15' of such frame furnishing convenient connecting means for the rods or chains 13 and the wires or chains 11.

The hood proper is provided with an outer chamber 20 and an inner chamber 21. The outer chamber is formed by rigid front and rear transverse walls 22 and rigid side or end walls 23, the latter extending downward to the street surface and being shod with shoes 25', while the lower edges of the former are some distance above the street surface and are provided with flexible, depending, street-engaging walls 24, preferably made of canvas weighted in some suitable manner, as by plates 25. The walls 22 are preferably formed in sections hinged together at 26 on horizontal axes to allow the hood to shape itself to the street surface.

From the upper edges of the walls 22 and 23, an outer flexible tube 26 extends upward to the sweeper frame 12, where it is suitably attached and opens to the discharge side of the pneumatic system. The inner chamber is formed by transverse front and rear walls 30 and 31 which extend the full width of the hood and are formed in sections hinged together at 34 to the sections of the walls 22. The ends 32 and 33 of the walls 30 and 31 are inclined backward and forward, respectively, to meet at points 34 touching the ends walls 23 of the outer chamber. The front wall 30 is substantially similar to the walls 24, but is weighted somewhat more heavily for reasons hereinafter apparent. The rear wall 31 is made of sheet steel or sheet iron, and is preferably provided at its lower end with a horizontal backwardly extending flange 35 spaced slightly from the street surface.

The chamber formed by the walls 30 and 31 is provided with a roof 36, from the center of which rises a chimney 37 opening at its upper end into an inner flexible tube 38, in turn attached at its upper end to the suction tube 39 of the pneumatic system carried by the sweeper frame 12. The suction created in the tube 39 causes air to pass inwardly under the rear wall 31, and to a slight extent under the front wall 30, to the inner chamber 21, and thence up through the chimney 37, the tube 38, and the tube 39 to the pneumatic system. This air carries with it the dirt on the street surface. The air entering the inner chamber 21 under the walls 30 and 31 necessarily comes from the surrounding outer chamber 20, thus tending to reduce the pressure in such chamber. By means forming no part of this invention, this diminished pressure in the outer chamber 20 is maintained at a value nearly equal to but not exceeding that of the atmosphere, so that any leakage under the walls 22 and 24 will be inward, the light weighting of the front wall 23 permitting such wall to pass over the dirt on the street while still remaining substantially in contact therewith sufficiently to prevent any great leakage. By reason of the shape of the walls of the inner chamber 21, no air passes directly from the atmosphere into such chamber to increase the quantity of air in the system, and by reason of the small difference in pressure between 110
the air in the outer chamber and the atmosphere, there is but a very small inward leakage from the atmosphere to said outer chamber; and yet the inner chamber covers the full width of the hood so that throughout such full width it is operative to remove dirt from the street surface. The flange 35 causes the air passing under the rear wall 31 of the inner chamber 21 to travel, with a sweeping action, for some little distance along the street surface, thus giving it a better opportunity to pick up the dirt from such surface. The weights on the front wall 30 are sufficiently heavy to hold such wall in engagement with the street surface against the difference in pressure between the two chambers of the hood, which difference is greater than that between the outer chamber and the atmosphere, while still allowing such wall 30 to ride over the dirt; by this arrangement, the sweeping action on the street surface by the air passing into the inner chamber is nearly all under the rear wall 31 or in the direction of travel of the machine.

My invention is not limited to the precise arrangement illustrated, but may be varied to a considerable extent in its details. I aim to cover all modifications which come within the spirit and scope of my invention as set forth in the following claims.

What I claim as new is:

1. A pneumatic sweeper hood having an inner and an outer chamber, the ends of the front and rear walls of the inner chamber being inclined toward each other and meeting substantially at the end walls of the outer chamber.

2. A hood for pneumatic sweepers, having an inner chamber and an outer chamber, the inner chamber extending the full width of the sweeper hood and yet being substantially surrounded by the outer chamber.

3. A sweeper hood for pneumatic sweepers, having an outer chamber formed by front, rear, and side walls, and an inner chamber located within the outer chamber and formed by front and rear walls the ends of which converge to a meeting point substantially in the plane of the side walls of the outer chamber.

4. A hood for pneumatic sweepers, having an outer chamber and an inner chamber, the walls of the outer chamber and the front wall of the inner chamber being arranged to engage the street surface to be cleaned and the rear wall of the inner chamber approaching nearly to such surface, such rear wall of the inner chamber being provided at its lower edge with a horizontal rearwardly extending flange.

5. A hood for pneumatic sweepers, having an outer chamber and an inner chamber, the walls of the outer chamber and the front wall of the inner chamber being arranged to engage the street surface to be cleaned and the rear wall of the inner chamber approaching nearly to such surface, such rear wall of the inner chamber being provided at its lower edge with a horizontal flange.

In witness whereof, I have hereunto set my hand and seal at Indianapolis, Indiana, this 20th day of July, A. D. one thousand nine hundred and twelve.

ROBERT W. FURNAS. [L. s.]

Witnesses:
FRANK A. FAHLE,
G. B. SCHLEY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."