

No. 690,372.

Patented Dec. 31, 1901.

C. E. LLOYD.

MEANS FOR SETTLING DUST FROM COAL, &c.

(Application filed Apr. 17, 1901.)

(No Model.)

FIG. 1.

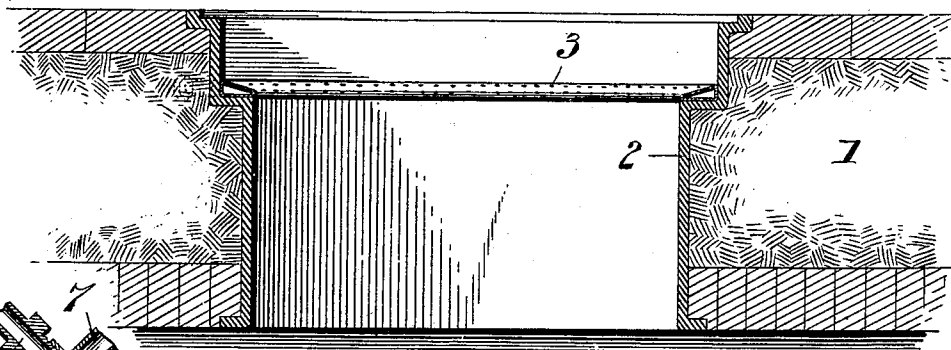
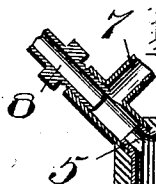
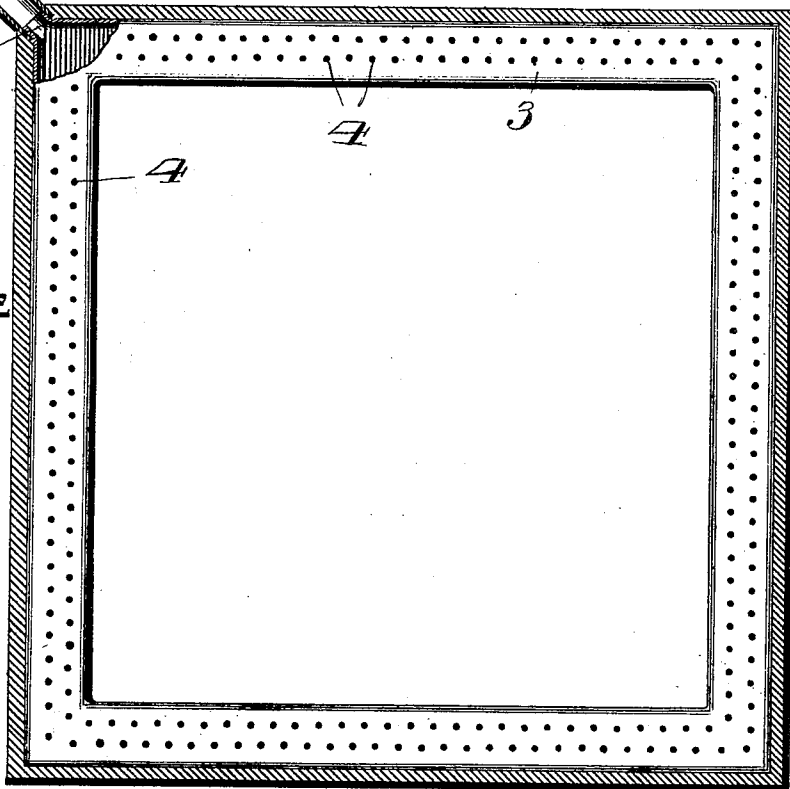


FIG. 2.



WITNESSES:

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FIG. 3.



BY

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MEANS FOR SETTLING DUST FROM COAL, &c.

SPECIFICATION forming part of Letters Patent No. 690,372, dated December 31, 1901.

Application filed April 17, 1901. Serial No. 56,278. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. LLOYD, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Means for Settling Dust from Coal, &c.; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to and has for its object the settling of dust or fine particles of coal which usually float in the air in unloading or dumping coal, more particularly soft coal.

It is well known that in unloading coal and in delivering the same into vaults through vault-openings formed in streets much of the coal in the form of dust or minute particles floats in the air either about the vault-opening or in the vault which receives the coal, and this not only proves a source of great annoyance and inconvenience, but also causes a waste of coal in that condition to a greater or less extent. My invention seeks to avoid this annoyance and waste and to keep pure or free from these fine particles the atmosphere about the vault where the coal is being dumped or delivered.

To the accomplishment of the foregoing and such other objects as may hereinafter appear the invention consists in projecting across or about the area through which the coal is dumped or delivered a spray or mist of an agent of such character as will dampen or moisten the atmosphere or the fine particles of dust which otherwise would float freely in the atmosphere about the point of delivery of the coal, and thus by dampening or moistening the same prevent the small particles from floating about.

In carrying into effect my invention I find that it can be satisfactorily accomplished by employing a hollow tube or frame formed with a number of perforations through which the moistening agent may be discharged in

a fine spray or mist, said perforated tube or frame being connected with the agent's source of supply, and I will now proceed to give an illustration of the way in which I have applied the invention, reference being had to the accompanying drawings, forming a part hereof, and in which—

Figure 1 is a vertical section through a vault-opening, such as is ordinarily made in a street, and showing the spray-applying device applied thereto. Fig. 2 is a horizontal section through the vault-opening, showing the spray device in plan with a part broken away and showing in section the means for supplying the moistening agent to the spraying device; and Fig. 3 is a cross-section through a part of the spray tube or frame.

In the drawings the numeral 1 may represent a streetway provided with a vault-opening 2, leading into the vault, which may be below the sidewalk or other part of the streetway and which vault-opening may be of any approved form. Within this vault-opening is placed the spraying device, which may be of any suitable shape or form and dimensions, but which will consist of a tube or hollow member 3, formed with perforations 4 and having an inlet-opening 5 for the agent which is to be sprayed. I prefer to make this tubular member 3 of such shape that it will be in the form of a frame which may fit around the wall of the vault-opening and with the perforations so arranged that the moistening agent will be impelled from opposite sides toward the middle portion of the vault-openings and so that the agent thus issuing from the perforations in the form of a spray or mist will meet at or about the middle portion of the vault-opening; but I do not mean to confine myself to that arrangement or construction except as the same may be particularly specified in the claims. This tubular or hollow member 3 is illustrated as made with an inclined face or wall 6, in which the perforations are formed, so that as the moistening agent issues from the perforations it will be projected inwardly and upwardly or at an angle to a perpendicular line. The agent which I prefer to employ is water, and in order to give impetus to the same as it passes through the

hollow member 3 and also for the purpose of breaking up the body of the water I introduce back of the water a steam-jet, and for such purposes I connect a water-pipe 7 with
 5 a source of water-supply, which may be the city main, so that it will deliver into the inlet-opening 5 of the hollow member, and back of the water-supply pipe I connect a steam-pipe 8, which may lead from a source of steam-
 10 supply, which may be the steam-dome of a boiler. The water entering through the pipe 7 and into the hollow member 3 has its force or pressure increased by the pressure of the steam from the pipe 8, which gives increased
 15 impetus to the flow of the water and at the same time tends to break up the body of the water, so that the moistening agent will be forced out of the perforations to the hollow member in a fine spray or mist, which coming
 20 in contact with the fine particles of dust of the falling coal will moisten the same and prevent the particles from floating in the air. This also causes a downward suction through the manhole, so that the fine particles of coal-
 25 dust are caused to descend with the main body of coal and be prevented from escaping through the top of the manhole and also from floating about in the vault, and thus the inconveniences and annoyances otherwise experienced are obviated and the fine particles
 30 of coal-dust are saved and utilized with the main body of the coal.

I have illustrated the perforations as being on the four sides of the hollow frame; but I
 35 am not restricted to that arrangement nor to the hollow frame being made in the form of a frame nor to the particular shape shown; but such construction is illustrated as the preferred form in which to apply the invention.
 40 I have illustrated the hollow spray member as supported upon a ledge formed in the vault-opening; but it may be supported in any other suitable manner.

Having described my invention and set forth its merits, what I claim is—

1. The combination with a vault or other receiving-chamber opening, of a spraying device formed for the escape of a moistening agent in the form of a fine spray or mist, and means for impelling a moistening agent
 50 through the device, substantially as described.

2. The combination with a vault or other receiving-chamber opening, of a spray device having an inclined perforated face and formed
 55 for the escape of a moistening agent in the form of a fine spray or mist, and means for impelling a moistening agent through the device, substantially as described.

3. The combination with a vault or other receiving-chamber opening, of a spray device comprising a hollow member formed with perforations arranged to direct a fine spray or mist in opposing directions, and means for
 60 impelling a moistening agent through the device, substantially as described.

4. The combination with a vault or other receiving-chamber opening, of a spray device comprising a hollow member having a plurality of sides perforated to direct a fine spray
 70 or mist in opposing directions, and means for impelling a moistening agent through the device, substantially as described.

5. The combination with a vault or other receiving-chamber opening, of a spray device
 75 formed for the escape of a moistening agent in the form of a fine spray or mist, and means for admitting water and steam to said device, substantially as described.

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

CHARLES E. LLOYD.

Witnesses:

WILLIAM HAYTHORN,
 MARTIN D. SMALLEY.