J. S. LLOYD.

Smoke and Cinder Conveyer for Locomotives.

No. 227,550. Patented May 11, 1880.

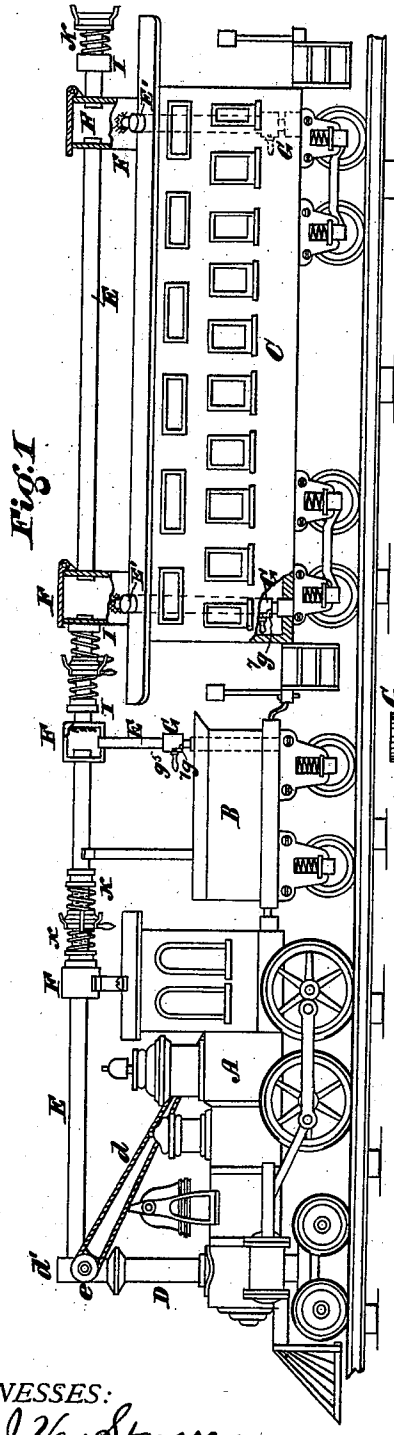


Fig. 1

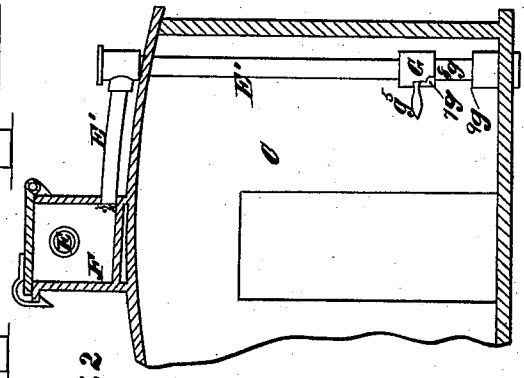


Fig. 2

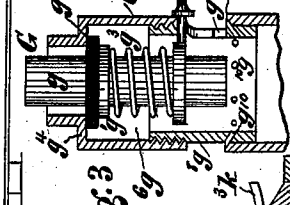


Fig. 3

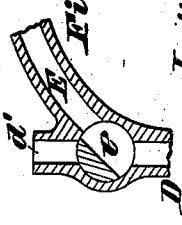


Fig. 4

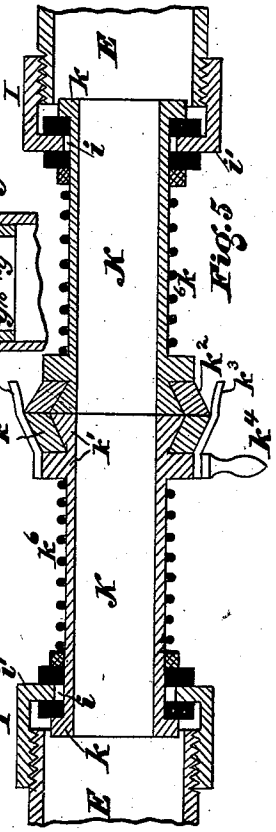


Fig. 5

WITNESSES:

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UNITED STATES PATENT OFFICE.

JOHN S. LLOYD, OF FLEMINGTON, NEW JERSEY.

SMOKE AND CINDER CONVEYER FOR LOCOMOTIVES.

SPECIFICATION forming part of Letters Patent No. 227,550, dated May 11, 1880.

Application filed October 4, 1879.

To all whom it may concern:

Be it known that I, JOHN S. LLOYD, of Flemington, in the county of Hunterdon and State of New Jersey, have invented certain new and useful Improvements in Smoke and Cinder Conveyers for Locomotives; and I do hereby 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification, in which—

Figure 1 is a side elevation of a train of cars, partly in section, with my improvements illustrated as applied thereto. Fig. 2 is a broken transverse vertical section of a car and my improvements. Fig. 3 is a sectional view of water-valve. Fig. 4 is a sectional detail view of damper in the uptake, and Fig. 5 is a longitudinal vertical section of the couplings for smoke-conducting pipe.

My invention has for its object to provide means for preventing the admission of smoke, cinders, &c., from the engine to the cars attached thereto; and my improvements consist in the peculiar construction and combination of parts, as hereinafter set forth.

Referring to the accompanying drawings, A indicates the engine, B the tender, and C a car, of a train to which my improvements are applied.

D represents the uptake on the engine, with which connects a pipe, E, extending rearwardly over the tender and car, having coupling-connections between each, as hereinafter described.

e is a valve controlled by the engineer from the cab through the medium of a rope, *d*, so that the issue from said uptake may pass out the top opening, *d'*, or be directed back through said pipe E.

In the path of the pipe E are boxes F F, which collect cinders and other solid matter, which may be removed from time to time as it accumulates. Valves G G are also placed in the path of said pipe to permit the escape of the water of condensation at various points. Said valves are fully shown in Fig. 3, consisting of stem *g*, with disk *g'*, washer g^2, and spring g^3, said washer seating on the shoulder g^4 in the shell or casing G'. When the water of condensation from the steam collects in sufficient quantities it will open the valve and relieve itself. g^5 represents a handle whereby said valve may be opened by hand, permitting water to flow down and find its exit through port g^6. The valve G may be kept open any length of time by fastening the handle g^5 in a notch, g^7, in the case G', and said valve may be (and on the cars should be) not in the direct path of the smoke-pipe E, but in a branch, E'. Two cinder-boxes, F F, and two valves, G G, are designed to be located on each car.

In order to prevent freezing of the water of condensation in the pipe E and cinder-boxes F F, said pipe may pass and the boxes be located beneath the roof of the car.

The couplings for the pipe E between the engine, tender, and cars are constructed as follows, as shown in Fig. 5: The pipe E, at the ends of the tender and of each car and at the rear end of the engine, is provided with a screw-cap, I, through an opening, *i*, in the head *i'* of which passes a pipe, K, having a shoulder, *k*, said pipe being of less diameter than said opening *i*, while its shoulder *k* is of greater diameter. This allows the pipe K to be deflected to accommodate the coupling to curves without pulling the sections apart or straining the pipes, at the same time permitting the latter to be of rigid metal, a fire-proof connection being necessary for the purpose of my invention. Said pipe K has a shoulder, *k'*, on its outer extremity, forming a seat for a packing-ring, k^2, and a base for the attachment and connection of the flaring spring-arms k^3, which act as guides and form grapples for directing the ends of the couplings toward each other when the cars approach, and for holding said cylinders or couplings together when in contact.

Operation: If, by reason of the wind being against the train, or for other cause, the cinders, smoke, &c., be carried backwardly, as is usually the case, the valve *e* is opened, so that the smoke, &c., will pass through the pipe E and find egress at the rear of the train, the cinders being collected in the boxes F and the water of condensation in the valves G. If the wind be with the train or crossing its direction of motion, so that the smoke, if allowed to escape directly from the uptake, will not pass back over the train, the damper *e* may be turned, closing the entrance to pipe E and permitting the issue from the uptake to pass out through

opening d'. The pipe g^8 may be inserted into the pipe G′, so that the upper edge of the latter will form a shoulder, g^9, and openings g^{10} g^{10}, formed therein, will permit the water of condensation or any drip therefrom to flow back into said pipe and be carried off through the same.

k^4 k^4 show handles attached to couplings K K, to assist in adjusting said couplings in making up the train, so as to prevent contact of the spring-arms k^3 k^3.

What I claim as my invention is—

1. In combination with smoke-conveying pipe E, the cinder-boxes F, substantially as and for the purpose set forth.

2. In a smoke and cinder conveyer for locomotives, the spring-valves K, having stems k, with handles k^4, substantially as shown and described.

3. In combination with smoke and steam pipe E, valve G in branches, arranged to open under weight of water of condensation, and provided with handles g^5, whereby said valves may be kept open when desired, substantially as shown and described.

4. In a smoke and cinder conveyer for locomotives, the combination, with the pipe E, of cap I, pipe K, having shoulders k, spring-arms k^3, packing-ring k^2, and spiral spring k^6, forming an automatic coupling, substantially as shown and described.

In testimony that I claim the foregoing I have hereunto set my hand this 24th day of July, 1879.

JOHN S. LLOYD.

Witnesses:

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M. D. CONNOLLY.