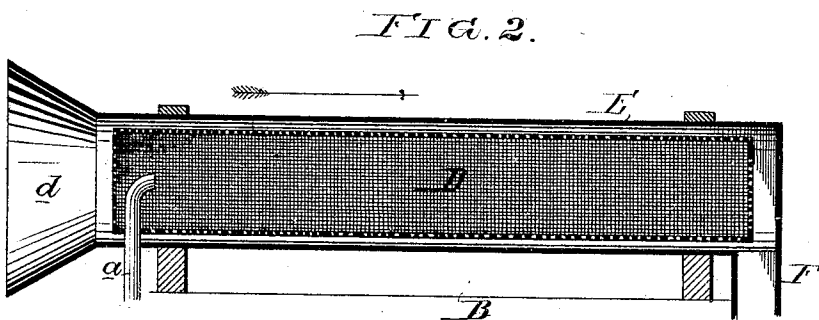
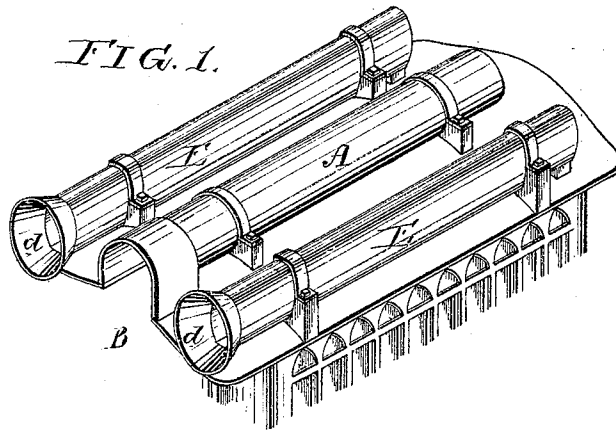


A. G. BUZBY.

Condensers for Steam Cars.

No. 151,353.

Patented May 26, 1874.



Witnesses,

Harry Smith
John K. Rupertus.

Albert G. Buzby
by his Atty.
Housen and Son.

UNITED STATES PATENT OFFICE.

ALBERT G. BUZBY, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN CONDENSERS FOR STEAM-CARS.

Specification forming part of Letters Patent No. 151,353, dated May 26, 1874; application filed January 10, 1874.

To all whom it may concern:

Be it known that I, ALBERT G. BUZBY, of Philadelphia, Pennsylvania, have invented an Improvement in Condensers for Steam-Cars and Locomotives, of which the following is a specification:

The object of my invention is to so dispose of the exhaust steam from the engine of a street-car that it will not, by its noise, be a source of annoyance and danger as the car traverses the street.

I attain this object by causing the exhaust steam to pass into a perforated casing, D, or a casing of wire-gauze contained within a pipe, E, so placed on the roof of a car, as shown in Figure 1 of the accompanying drawing, that the movement of the car will induce a current of air to pass through the pipe, which air will condense the steam as it passes through the perforations of the casing D, the water of condensation being carried off through a pipe, F, at the rear of the car. The boiler A is placed on the arched roof of the car, where it can neither demand any increased length of car-frame nor interfere with the ordinary internal arrangement of the car. The roof, owing to its shape, has considerable supporting-strength, and this strength may be readily increased by a light and simple system of tie-rods. I propose to use petroleum-burners in place of ordinary fuel, sufficient petroleum for each trip of the car being easily stored in a suitable cistern of too small a capacity to interfere materially with the space occupied by passengers or attendants. The exhaust steam is carried up through a pipe, *a*, into the perforated casing D, and escapes through the perforations into the pipe E, the latter having a flaring mouth, *d*, and, if necessary, openings at the sides, covered by hoods, into which the air is induced to enter rapidly by the movement of the car in the direction of the arrow, Fig. 2. This current of air passing through the pipe E is brought into intimate contact with the subdivided jets of steam as they escape through the perforations of the casing D,

and tends to condense the steam, the water of condensation passing off through a pipe, F, either to the ground or to a cistern placed beneath the car, from which the feed-water for the boiler may be taken. The most important object of the perforated casing D, however, is to prevent the disagreeable noise resulting from the violent pulsations of exhaust steam, this noise being entirely obviated by discharging the said exhaust steam into the above-mentioned casing of wire-gauze or perforated sheet metal. There may be two or more of these casings, D, surrounded by pipes, and placed on the top of the car, or at any other convenient point.

The condensing apparatus is applicable not only to street-cars, but to locomotives, steam-carriages, steam fire-engines, &c.

I have found that the exterior pipe E may be dispensed with, for the fine subdivisions of steam escaping through the meshes of the casing D will insure condensation as long as the car is in motion; but I prefer the combination of the said casing with an outer pipe, as insuring more certain results, and as a means of carrying off the water of condensation.

I do not desire to claim, broadly, the passing of exhaust steam through wire-gauze; but I claim as my invention—

1. The combination, with a steam car or carriage, of a perforated or wire-gauze casing for receiving the exhaust steam.

2. The combination, in a steam-car, of a perforated or wire-gauze casing, D, for receiving the exhaust steam, with a pipe through which a current of air is induced to pass by the movement of the car.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ALBERT G. BUZBY.

Witnesses:

WM. A. STEEL,
J. SHERBORNE SINGER.