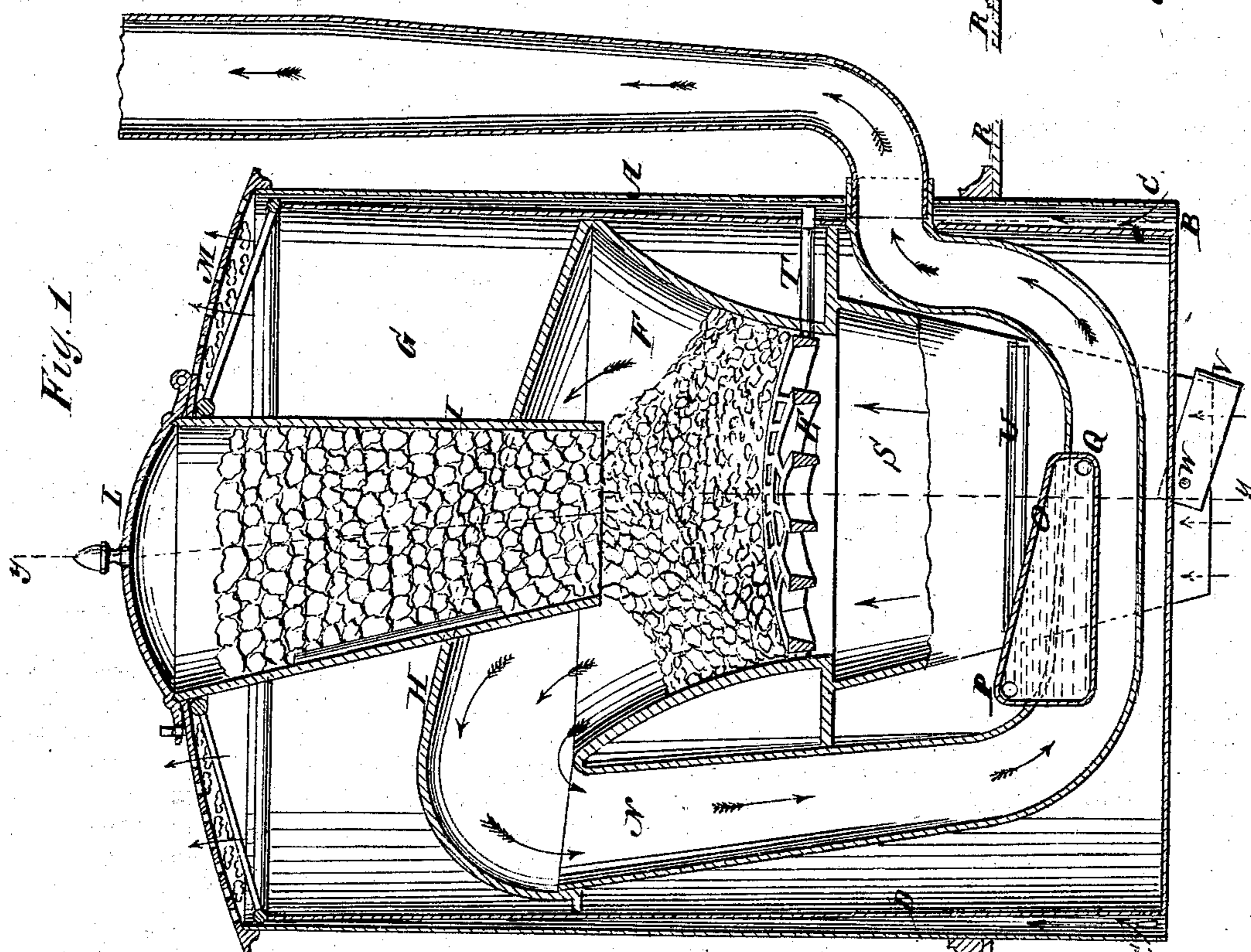
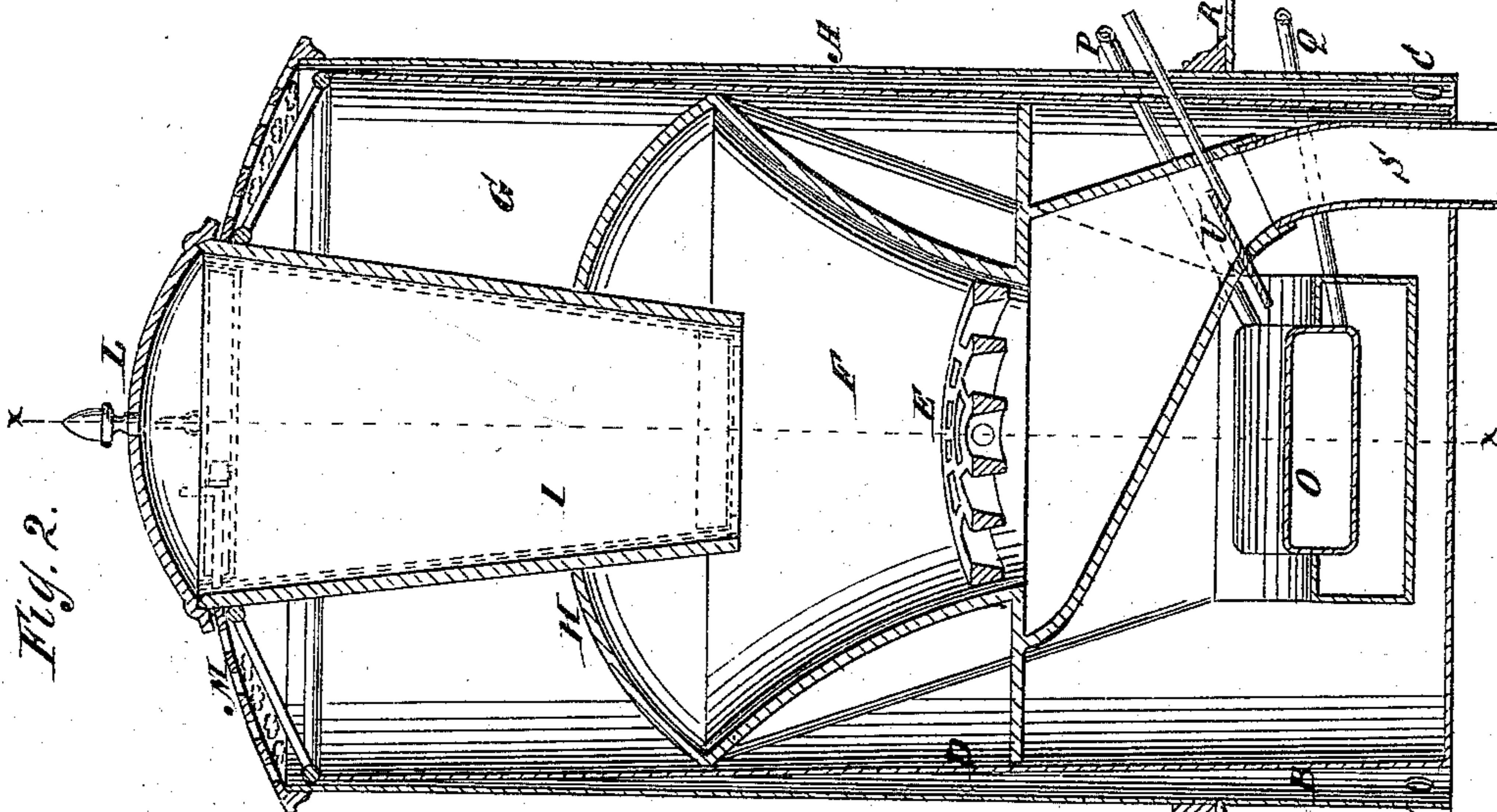


J. MAHRENHOLZ.  
Railroad-Car Stoves.

No. 152,566.

Patented June 30, 1874.



Witnesses:

E. Wolff.  
Alex J. Roberts

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# UNITED STATES PATENT OFFICE.

JOHN H. MAHRENHOLZ, OF NEW YORK, N. Y.

## IMPROVEMENT IN RAILROAD-CAR STOVES.

Specification forming part of Letters Patent No. **152,566**, dated June 30, 1874; application filed December 29, 1873.

*To all whom it may concern:*

Be it known that I, JOHN H. MAHRENHOLZ, of New York city, in the county and State of New York, have invented a new and useful Improvement in Railroad-Car Stoves, of which the following is a specification:

Railroad-car stoves are usually so constructed and arranged that when the car upsets or the stove is displaced by a violent collision or other cause, the car is frequently set on fire, and the roasting of the helpless passengers is added to the other horrors of a railroad accident.

My invention has for its object to provide an improved railroad-car heater. To this end I arrange a closed-top fire-pot and drop-flue in a cylinder or casing having an open-work top, so as to present a large area of heating-surface, and allow the air free access to the pot and flue on all sides, and like escape through the top of the cylinder; and I arrange a water-reservoir and steam-generator beneath the grate or fire-pot, and beneath the floor of the car, as hereinafter described.

Figure 1 represents a vertical section of the stove, taken on the line *xx* of Fig. 2. Fig. 2 is a vertical section of Fig. 1, taken on the line *yy*.

A is an outer casing or jacket, which surrounds the stove, having an air-space between it and the stove for the admission of cold air through the orifice C near the bottom. D represents the inner casing of the stove. E is the grate. F is the fire-chamber, having a closed top, H, which separates it from a hot-air chamber, G. I is the magazine, which may be removable, but, as such, will form the subject of another patent. L is the cover of the magazine, which is securely fastened down, and is locked, if considered necessary. M is the perforated cover of the stove, through which the heated air from the hot-air chamber is discharged. N is the fire-flue, which passes out through the side, and conducts off the smoke and gaseous products of combustion. This flue it will be seen drops down beneath the grate, and contains the steam-generator O. To the upper part of this boiler or generator a pipe, P, is attached to conduct steam, or steam and water, from the boiler along beneath the seats of the car, and, returning, dis-

charge its contents into the lower part of the boiler at the point Q. A constant current of steam, or steam and water, is thus kept up throughout the car by means of the heat which escapes from the fire-chamber.

In practice the generator requires but a small supply of water—say, sufficient to cover the bottom to the depth of one or two inches—since what condenses in the pipes that extend from the generator through the car will flow back into it. The supply will be introduced through a pipe extended out through the side of the stove and up through the floor R. The stove passes through this floor, as seen in the drawing, and the ashes and refuse, or incom-bustible contents, are discharged onto the track through the tube S, into which the grate discharges. The grate is agitated and reversed by means of the shaft T, to which a socket-wrench is applied. U is the damper, by means of which the draft and escape of ashes and cinders is regulated. V is a bonnet on the lower end of the ash-tube, which is hinged to the tube at the point W, so that it may be turned in either direction to suit the direction of motion of the car. The stove is firmly attached to the floor of the car, and cannot be readily displaced. It may be turned over or bottom side up without discharging any fire into the car, and is, therefore, safe for passengers in cases of collision or other accident.

I do not claim a fire-chamber with an imperforate top; but

Having thus described my invention, what I do claim as new, and of my invention, is—

1. In a railroad-car stove, the combination of the fire pot or chamber having a closed top, the flue N leading out of the same downward and horizontally beneath the grate, with a cylinder-casing having a hot-air chamber above the fire-pot and an open-work top, as shown and described.

2. The steam-generator O, arranged beneath the grate E and floor R, combined with the flue N, as shown and described, as and for the purpose specified.

JOHN H. MAHRENHOLZ.

Witnesses:

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