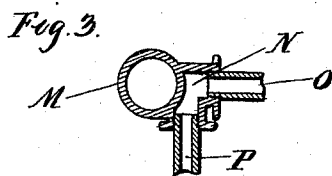
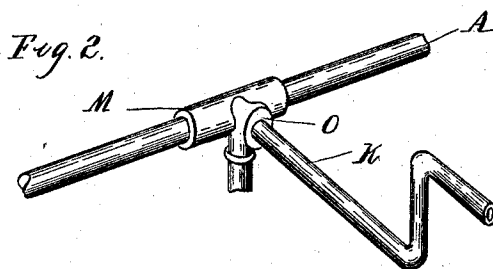
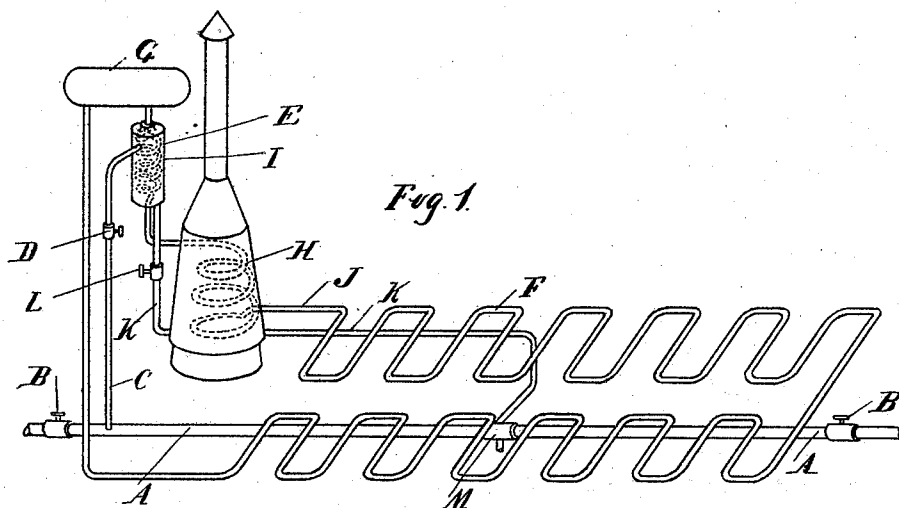


(No Model.)

J. H. SEWALL.
HEATING APPARATUS FOR CARS.

No. 477,464.

Patented June 21, 1892.



Witnesses
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UNITED STATES PATENT OFFICE.

JAMES H. SEWALL, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE CONSOLIDATED CAR HEATING COMPANY, OF ALBANY, NEW YORK.

HEATING APPARATUS FOR CARS.

SPECIFICATION forming part of Letters Patent No. 477,464, dated June 21, 1892.

Application filed March 5, 1891. Serial No. 383,928. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. SEWALL, 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 Car-Heating Apparatus, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to new and useful improvements in car-heating apparatus; and the invention consists in the peculiar construction of the heating-pipes beneath the cars, in combination with the overflow or drip pipe of the radiator within the car, whereby all danger of freezing at the end of this drip-pipe is prevented.

The invention particularly consists in the peculiar means employed in making a metallic contact or connection between this drip-pipe and the train-pipe, all as more fully hereinafter described.

In the drawings, Figure 1 is a diagram perspective view of a car-heating apparatus to which my invention is applied. Fig. 2 is an enlarged perspective view showing the train-pipe connection. Fig. 3 is a vertical cross-section thereof.

A is the train-pipe, controlled by suitable valves B, preferably located at each end.

C is the steam-supply pipe, extending from the train-pipe into the car and controlled by a suitable valve D. This steam-pipe leads into the upper end of the heater E, which is arranged in the circulating-pipes F of the hot-water-circulating apparatus within the car, of which G is the expansion-drum, H the stove, I the coil within the heater located in the upgoing pipe from the stove, and J is the return-pipe.

K is the exit or outlet pipe for the water of condensation, connected at one end to the under side of the heater-case and extending to the outside of the car, preferably near the middle thereof, and having an unobstructed discharge.

L is a valve for controlling the exit of the water of condensation from the heater. I preferably use this valve in place of a trap outside the car. By suitably restricting the exit a sufficient amount of water of condensa-

tion is allowed to escape to free the heater therefrom. In previous constructions this exit-pipe has been allowed to discharge water upon the track at any point where it may leave the car, and it has been found in cold weather that such pipe would freeze up, preventing the escape of the water of condensation, and thus check the operation of the entire system. To overcome this trouble, I have extended the drip-pipe outside the car into direct contact with the steam-supply pipe at or near the end of said exit-pipe, so that the pipe itself is heated by the steam-supply pipe and all danger of freezing is obviated. To accomplish this result in the most economical manner, I preferably employ a coupling M, which couples together two sections of the train-pipe, and in this coupling I form a heating-chamber N, having an inlet-opening O and an outlet-opening P. The drip-pipe K, I secure to the inlet O, and it is evident that the metal forming the walls of the chamber N, being integral with the coupling M, will be heated, and the water of condensation or drip passing from the pipe K will necessarily pass through this heating-chamber in order to be discharged upon the ground.

What I claim as my invention is—

1. In a car-heating apparatus, the combination, with the circulating pipes or radiators within the car and the steam-supply pipe therefor outside of the car, of an overflow or drip pipe extending from the said circulating-pipes outside the car into contact at or near its discharge end with the steam-supply pipe and formed with an unobstructed discharge, substantially as described.

2. In a car-heating apparatus, the combination, with the circulating-pipes within the car, of a steam-supply pipe therefor outside the car, a fitting on said steam-supply pipe, an overflow or drip pipe from said circulating-pipes extending without the car and connected at or near its discharge end into the said fitting on the steam-supply pipe and formed with an unobstructed discharge, substantially as described.

3. In a car-heating apparatus, the combination, with the radiator within the car, of an overflow or drip pipe K, having an unobstructed discharge, the train-pipe A, and coup-

ling M, having the heating-chamber N formed thereon, with inlet-aperture O and exit-aperture P, said drip-pipe K connecting at or near its discharge end into the aperture O, substantially as and for the purpose described.

4. In a car-heating apparatus, the combination, with a system of water-circulating pipes within the car, of a steam-heater for said circulating system located therein, a steam-supply pipe beside the car, a branch pipe extending from said supply-pipe to said heater, and

a drip-pipe from said heater, having an unobstructed discharge leading outside the car and into contact at or near its discharge end with said supply-pipe, the parts being arranged to operate substantially as and for the purpose described.

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

JAMES H. SEWALL.

Witnesses:

S. A. MEDARY,

JOHN W. CARRINGTON, Jr.