

J. S. POST.
Heaters for Railroad Cars.

No. 147,788.

Patented Feb. 24, 1874.

Fig. 1.

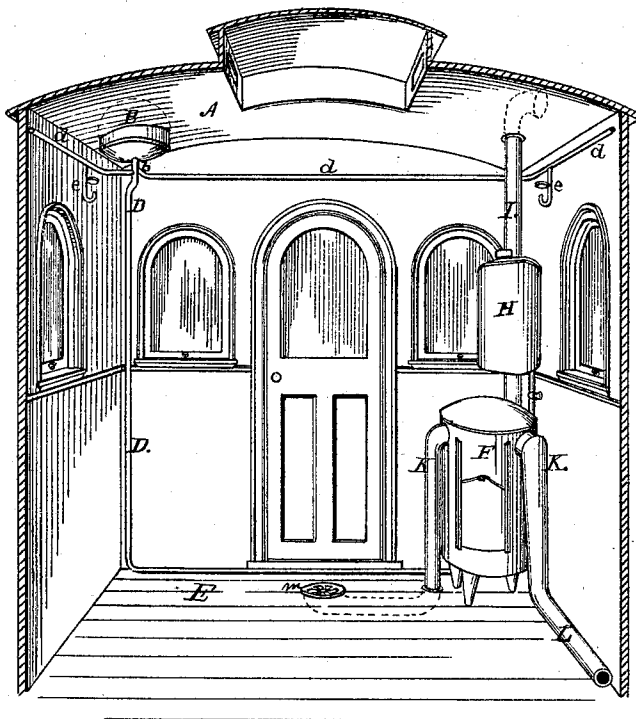
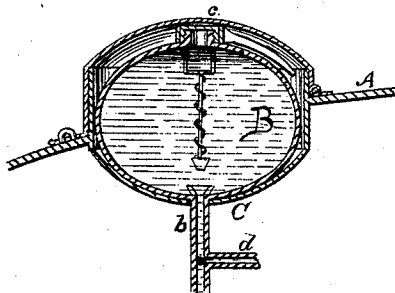


Fig. 2.



Witnesses:~

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Fig. 3.

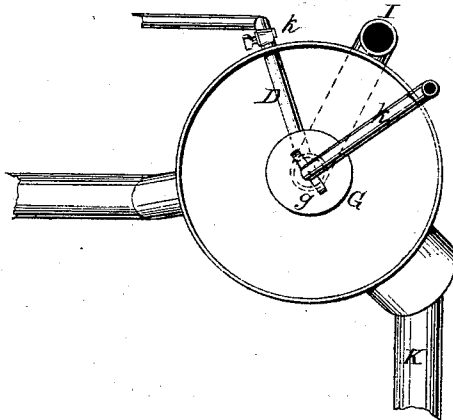
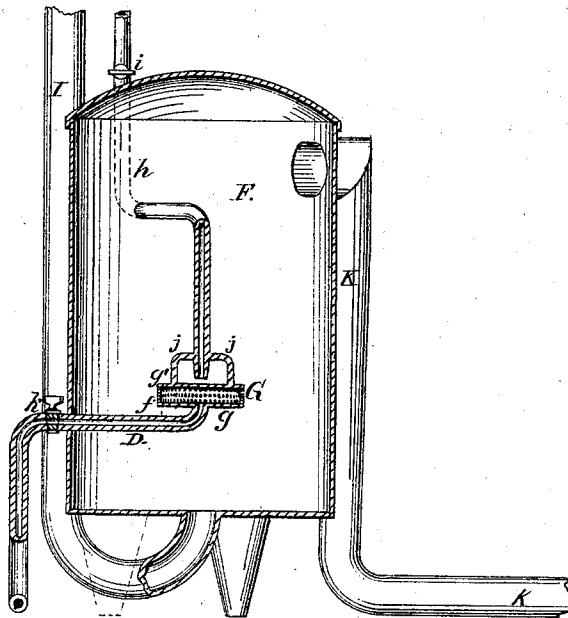


Fig. 4.



Witnesses:~

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UNITED STATES PATENT OFFICE.

JUDSON S. POST, OF NEW YORK, N. Y.

IMPROVEMENT IN HEATERS FOR RAILROAD-CARS.

Specification forming part of Letters Patent No. 147,788, dated February 24, 1874; application filed November 7, 1873.

To all whom it may concern:

Be it known that I, JUDSON S. POST, of the city of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Heating Street and Railway Cars, and other conveyances; and the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings making a part of this specification, in which—

Figure 1, Plate I, represents an internal perspective view of one end of a street or railway car, showing the globe-shaped reservoir, as arranged for supplying the hydrocarbon oil, or other liquid, for generating the gas for the fuel for heating the car or conveyance. Fig. 2 shows an enlarged sectional view of the reservoir for supplying the liquid for making the heat. Fig. 3, Plate II, shows a plan or top sectional view of the heating device, with the induction and eduction pipes, as arranged, in broken-off sections. Fig. 4 is a side sectional elevation of the heating-cylinder, showing the perforated-edged iron disk in the drum for generating gas from naphtha, gasoline, or other fluid flowing into it through a pipe connecting with the globe-reservoir in the top of the car; also, the pipe for emitting drops of water upon the top of the heated iron disk for decomposing the water and liberating the oxygen to give increased flame and heat within the drum or heater.

My invention relates to heating cars and other conveyances, and has for its object the safety and non-liability of setting fire to the car in case of collision or other accident to the carriage or train; and it consists in the globe-shaped reservoir, as arranged, and placed in the top of the car for containing naphtha, gasoline, or other hydrocarbon fluids for generating gas for the drum or heater, and its pipe connections for conveying the fluid to the gas generators and burners; and, also, the arrangement and combination of the water tank and pipe into the drum or heater, to admit of water dropping onto the heated plate of the gas generator and burner, thereby decomposing it and liberating the oxygen from the water to mix with the carbureted hydrogen, materially increasing combustion and heat within the drum, which is supplied with a constant

flow of fresh air, conveyed through a wind-sail pipe, extending down from above the top of the car to the under side of the drum, which becomes heated, and is conveyed through flat pipes or conductors to the registers placed in any desirable position on, or under, the floor of the car.

Referring to the drawings, in one corner of the top of the car A, or at any other convenient place, I locate a globe-shaped reservoir, B, which is made of either wrought or cast metal, of sufficient strength and capacity to contain a quantity of naphtha, gasoline, or other hydrocarbon oils, for supplying the fuel for generating gas to heat the car or conveyance. The reservoir B is supported in a sunken socket, C, made in the roof of the car to fit it, and is secured in its place by a hinged cover, c, and lock, and is only required to be opened to be replenished with the fluid, which is poured in through the hole in the top, made for that purpose. In the center of the bottom of the reservoir B is a small eduction-pipe, b, which connects with the main pipe D; the same, connecting with the reservoir B, passes down to the bottom of the car and extends along, either above or beneath, the floor E to the drum or heater F, where it rises perpendicularly from one to two feet, and then passes horizontally into the center of the drum F and connects with the device G for generating the gas, which consists of two metal plates, g g', placed parallel a short distance from each other, having a rim or edge, f, perforated with many small holes, through which the gas is emitted and takes flame, it being generated at this point by the heated iron disks g g' acting on the naphtha or other fluid flowing into it. In the corner of the car, above the drum or heater F, I place a water-tank, H, having a small discharge-pipe, h, with a cock, i, to stop or regulate the flow of water, the pipe h passing into the heater F, the lower point being directly over and near the center of the disk or top plate g' of the gas-generating device G, so that drops of the water falling upon the heated disk immediately decompose and liberate the oxygen to commingle with the carbureted hydrogen, which greatly increases the flame and heat, the device G being supported on the pipe D centrally, and held in its position by

two or more arm supports, *j j*, connecting with the top plate *g'*. The pipe *D* is provided with a stop-cock, *k*, near where it enters the drum or heater *F*, to regulate the flow of fluid to the burner *G*, so that the heat may be adjusted as required. One or more strainers of fine wire-gauze may be placed in the fluid-pipe *D*, between the drum and reservoir, so that no flame can be communicated from the burner to the reservoir. In case of the breaking of said pipe by collision or other accident, the flow would be cut off, and immediately the flame would be extinguished. Inside of the globe-shaped reservoir *B* I purpose to have a self-acting valve that will close the outlet *b* to the pipes, and prevent the flow of the fluid should any of the pipes be broken or become detached from the reservoir, and prevent the flowing of the fluid contents. To supply the drum *F* with fresh air from without, I have a wind-sail pipe, *I*, placed vertically in the corner of the car, in the rear of the water-tank *H*, and the drum *F* extending up through and above the top of the car, the same being curved at the bottom, terminating in the central portion of the bottom of the drum, so that the current of air comes directly in contact with the flame of the burners and become heated as it rises in the drum to near the top, where it is conveyed through the broad flat conductors *K* down the sides of the drum to near the floor of the car and carried in pipes *L* or tin conductors along the sides or under the seats, terminating in registers *m* in any desired position, giving thereby a current of fresh, pure, heated air, continually passing through the car upward, out of the ventilators above, and

when there is no fire in the drum *F* the cool air will pass through the car in the same manner.

My object is to prevent or greatly lessen the liability of cars taking fire in case of being thrown from the track, or other accident, and produce a purer and more uniform heat throughout the car, that can be easily managed to increase or diminish, as may be required, and suddenly extinguished or kept low at the end of the route or when the cars are vacated, it being more economical and more cleanly, as there will be no coal, no ashes, and no dust to proceed from any portion of the apparatus.

What I claim as my invention is—

1. The globe-shaped reservoir *B*, for containing naphtha or other suitable material for generating gas for heating cars, said reservoir being incased and secured in the sunken recess or socket *C* in the top of the car, as herein shown and described.

2. In combination with the reservoir *B*, supply-pipe *D*, and gas-generator *G*, constructed as described, the water-drip pipe *h* and water-tank *H*, substantially as and for the purpose set forth.

3. In combination with the drum *F*, gas-burner *G*, and supply-pipe *D*, communicating with an outside reservoir, the water-tank *H*, drip-pipe *h*, and stop-cock *i* to regulate the flow of water upon the top plate *g'*, substantially as and for the purpose set forth.

In testimony whereof I hereunto subscribe my name in the presence of two witnesses.

Witnesses: JUDSON S. POST.

DANIEL O'C. CALLAGHAN,
J. B. WOODRUFF.