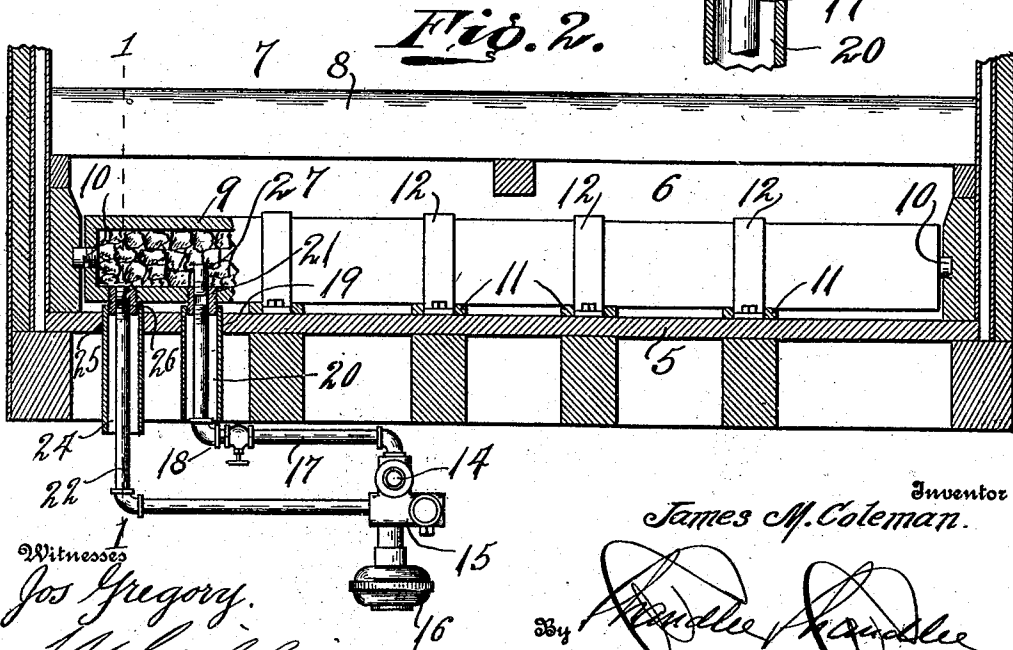
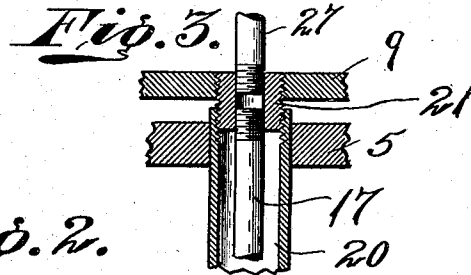
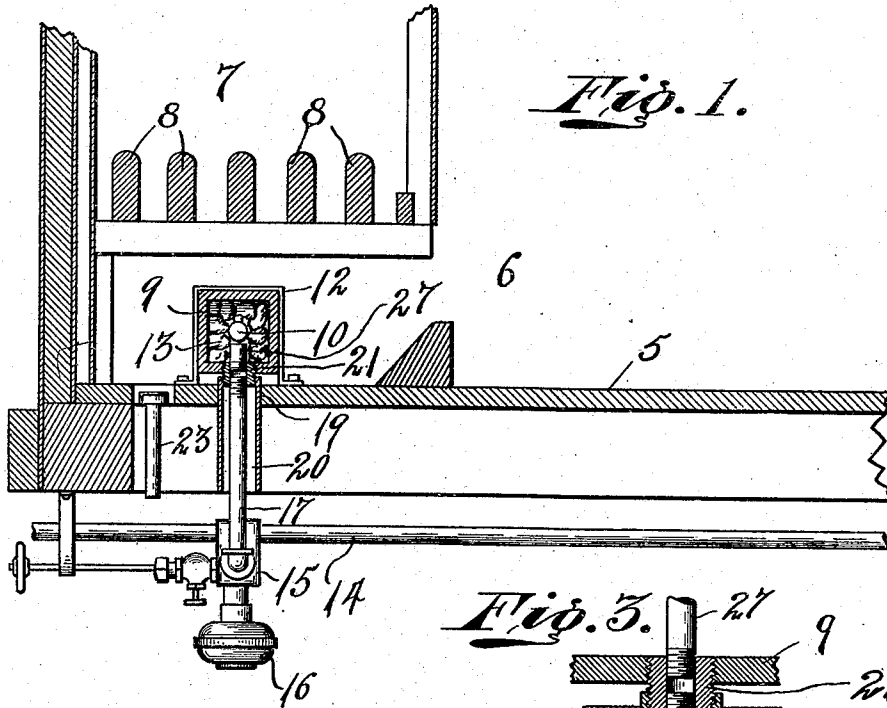


J. M. COLEMAN.
OAR HEATER.
APPLICATION FILED NOV. 27, 1908.

937,361.

Patented Oct. 19, 1909.



Inventor
James M. Coleman.

334 *Handwritten signature*
Attorney

Witnesses
Jos Gregory.
W. Willis.

UNITED STATES PATENT OFFICE.

JAMES M. COLEMAN, OF ST. ALBANS, VERMONT, ASSIGNOR OF ONE-HALF TO CHAUNCEY G. AUSTIN, JR., OF ST. ALBANS, VERMONT.

CAR-HEATER.

937,361.

Specification of Letters Patent.

Patented Oct. 19, 1909.

Application filed November 27, 1908. Serial No. 464,613.

to all whom it may concern:

Be it known that I, JAMES M. COLEMAN, a citizen of the United States, residing at St. Albans, in the county of Franklin, State of Vermont, have invented certain new and useful Improvements in Car-Heaters; 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 appertains to make and use the same.

This invention relates to car heaters, and more particularly to one for refrigerator cars when they are used for carrying fruit and other perishable freight requiring protection from cold.

The object of the present invention is to provide a steam heater of this kind which is simple in construction, and which may be readily installed in any ordinary refrigerator car without altering or modifying the structure thereof.

A further object of the invention is to improve the efficiency of the heater, and to insure its successful operation, and in order to accomplish this, I provide for the admission of fresh air at the bottom of the car adjacent to the heater, to replenish any reduction in pressure that may occur in the car through the absorption of air by the contents of the car or leakage through the car walls or the door. The admission of air through the bottom of the car adjacent to the heater also creates a pressure from the inside of the car and forces warm air through the cracks or openings at the door or in the car walls, whereby cold air is prevented from entering therethrough, and the contents of the car are prevented from freezing at these points.

The invention also has for its object to connect the steam supply to the heater in such a manner that steam cannot enter the car in case said pipes should burst or be accidentally broken.

With the foregoing objects in view, the invention consists in a novel construction and arrangement of parts to be hereinafter described and claimed, and in the accompanying drawings,—Figure 1 is a longitudinal sectional view of a refrigerator car showing the heating apparatus in section on the line 1—1 of Fig. 2. Fig. 2 is a transverse section of the car with the heating apparatus partly broken away. Fig. 3 is an

enlarged sectional view showing the connection between the heater casing and the steam supply pipe.

Referring more particularly to the drawings, 5 denotes the floor of an ordinary refrigerator car 6, and 7 is the usual ice-box at the end of the car having a bottom grating 8.

The heater is mounted on the floor of the car beneath the grating 8, and comprises a rectangular casing 9 closed at its ends to screw plugs 10 in order that access to the interior thereof may be had. The casing extends nearly throughout the entire width of the car, and is spaced a short distance from the floor thereof by means of blocks 11, and is firmly held in place by straps 12 which are bolted or otherwise secured to the floor. The inside of the casing is to be filled with stones 13, or some other heat-retaining substance or material.

The heating medium is steam which is supplied to the heater casing 9 from the steam train-pipe 14 which opens into a casting 15 at the top of a thermostatic trap 16, and connects with the heater casing by a branch pipe 17 leading thereto from said casting. In the branch pipe 17 is a valve 18 to permit steam to be shut off from the heater.

In the floor of the car is an opening 19 in which snugly seats a tube 20, which tube is screwed on the outer end of a nipple 21 which is screwed into or otherwise secured in the wall of the heater casing, said nipple being threaded exteriorly at its outer end to receive the tube. The nipple is also threaded interiorly at its outer end to receive the end of the pipe 17. The tube 20 depends from the opening 19 and incloses the pipe 17, and as the tube fits snugly in said opening, steam is prevented from entering the car if the supply pipe should burst or be accidentally broken.

A drain pipe 22 for removing the water of condensation from the heater casing is also provided. This pipe leads to the trap 16, and is connected to the heater casing in the same manner as the supply pipe 17.

Adjacent the heater casing, on one side thereof, and also under the grating 8, is an air trap 23 through which fresh air is supplied to the interior of the car.

The pipe 22 is surrounded in a manner similar to the pipe 17 by a tube 24 which

passes through an opening 25 in the floor and is screwed upon the end of a nipple 26 which extends above said pipe and is screwed into an opening in the bottom of the heater casing 9.

Within the nipple 21 and extending above the bottom of the heater casing is a short section of pipe 27 arranged to prevent the water of condensation flowing back into the steam pipe 17.

It will be seen from the foregoing that the apparatus is extremely simple in construction and that it can therefore be installed at a low cost, and without altering or modifying the car structure. The heat-retaining substance 13 stores the heat and gives it off gradually, and by taking fresh air from the bottom of the car adjacent to the heater, the air is heated before it reaches the contents of the car, and it is diffused through the car as already described, resulting in an even temperature throughout the entire car.

I have shown and described a heater at one end of the car only, but it will be understood that both ends of the car will be provided with the apparatus herein shown and described.

What is claimed, is:—

1. The combination with a car, of a heater supported on and spaced from the floor thereof, a nipple having one end screwed into said heater and extending downward therefrom, a tube screwed on the outside of the nipple and passing downward through the car floor, and a supply pipe passing through the tube and screwed in the interior of said nipple.

2. The combination with a car, of a heater supported on and spaced from the floor thereof, a nipple having one end screwed into said heater and extending downward therefrom, a tube screwed on the outside of the nipple and passing downward through the car floor, a second nipple similarly arranged, a second tube screwed on the outside of the second nipple, and a waste pipe screwed to the inside of the second nipple and extending down through the second tube.

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

JAMES M. COLEMAN.

Witnesses:

JOHN B. LAURIE,
EDWIN H. RICHARDSON.