A. M. Rodgers,

Car Heater.

No. 113,348. Patented Apr. 4, 1871.

Fig. 1.

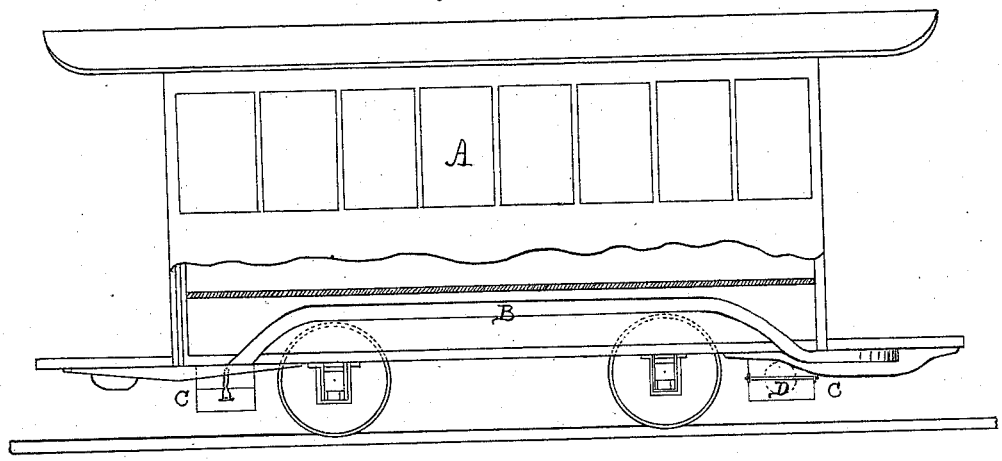


Fig. 2.

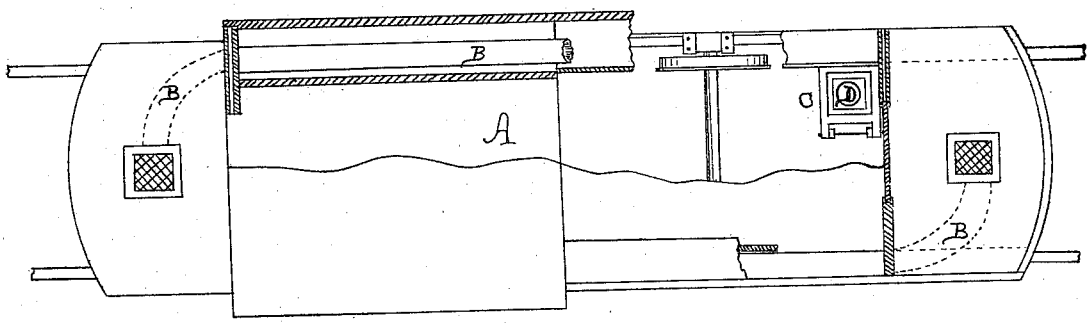


Fig. 3.

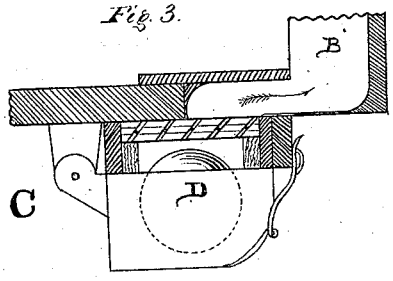
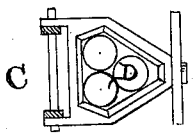


Fig. 4.



Witnesses.
Jacob E. Schiedt
Percy P. Kneass.

Inventor.
Augusta M. Rodgers.
by John A. Wiedersheim.
Atty.

UNITED STATES PATENT OFFICE.

AUGUSTA M. RODGERS, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN RAILROAD-CAR HEATERS.

Specification forming part of Letters Patent No. 113,348, *dated April* 4, 1871.

To all whom it may concern:

Be it known that I, AUGUSTA M. RODGERS, of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Apparatus for Heating Cars; and I do hereby declare the following to be a clear and exact description of the nature thereof, sufficient to enable others skilled in the art to which my invention appertains to fully understand and use the same, reference being had to the accompanying drawing, making part of this specification, in which—

Figure 1 is a side view, partly broken away, of a car and the heating apparatus. Fig. 2 is a similar top view. Fig. 2 is a detached view. Fig. 4 shows a modification.

Similar letters of reference indicate corresponding parts in the several figures.

My invention has for its object a mode and means for heating cars; and consists in the employment of balls, bars, or pieces of metal, which are to be heated (preferably to what is known as red hot) in a suitable furnace located in the depot or elsewhere, and then placed in one or more boxes or receptacles at the center or ends of the car. Flues or pipes extend under the seats or floor of the car and communicate with the receiving-chamber, whereby the heat that passes from the heating objects will radiate through the flues or pipes and heat the cars, and finally escape at the platforms or elsewhere; and, if the invention is applied to street-railway cars, conducted under the feet of the conductor and driver.

Referring to the drawing, A represents a car of usual form and construction for either horse or steam railway purposes. B represents flues or tubes, which are arranged beneath the seats or the floor of the car, and communicate with boxes, drawers, or other receptacles, C, located near the ends or at the center of the main body of the car. The boxes C are made to open or be drawn out in order to receive the means for heating the car, and constructed of or lined with non-conducting material to prevent the escape of heat from the bottom or sides of the boxes. The means for heating consist of one or more balls, bars, blocks, or pieces, D, of metal, which are to be highly heated, say to a red heat, in a suitable furnace at the principal depot or elsewhere, where they can be heated in sufficient quantities to supply the entire line of cars, so that when the cars start some of the heated objects are placed in the boxes and the heat passing thereform is utilized for heating the cars. The heat cannot escape through the sides or bottom of the boxes, or only can escape at the points of communication between the boxes and flues, and thus ascends into the flues B and radiates therethrough, whence it diffuses itself in the cars. The flues extend to the platforms of the cars and terminate at or about the centers thereof, thus directing some of the heat to the places occupied by the conductor and driver for warming their feet.

In steam-cars the latter arrangement will be for the benefit of the brakemen; but, if desired, the flues may terminate within the cars, in order to confine the heat therein.

A register may be arranged with the boxes to regulate the amount of heat, and should be placed under control of the conductor or brakeman.

When the floor of the car is not sufficiently high, a number of balls or pieces may be employed; but it is advisable to use large ones, since they retain the heat longer.

The flues may be arranged to extend across the car or under an open-work floor thereof, with registers suitably arranged for the usual purposes. If covered seats are in use, they may be perforated for the escape of heat.

In addition, hot sand can be introduced into the flues and serve to increase the heating surface and power; and, in fact, various other modes could be suggested for carrying the invention into practice.

It has been found that a ten (10) inch shot will retain its heat sufficiently long that it need only be reheated once each day to produce the proper and ample amount of heat for the car.

It will be seen that no fire-box or steam-generator is necessary for each car, and consequently one person and one furnace or oven for each line will meet the requirements of this mode of heating, as set forth, and dangers of fire and explosion are avoided.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The mode of heating cars by means of a heating medium, consisting of metallic balls

or bars heated prior to application to the car, substantially as described.

2. The boxes C receiving the heated objects D, substantially as and for the purpose described.

3. The combination, with the heating apparatus of the car, of the receiving-boxes C, made non-conductible, for the purpose described.

The above specification of my invention signed by me this 18th day of February, 1871.

Witnesses: A. M. RODGERS.

G. K. RODGERS,

F. A. RODGERS.