

(No Model.)

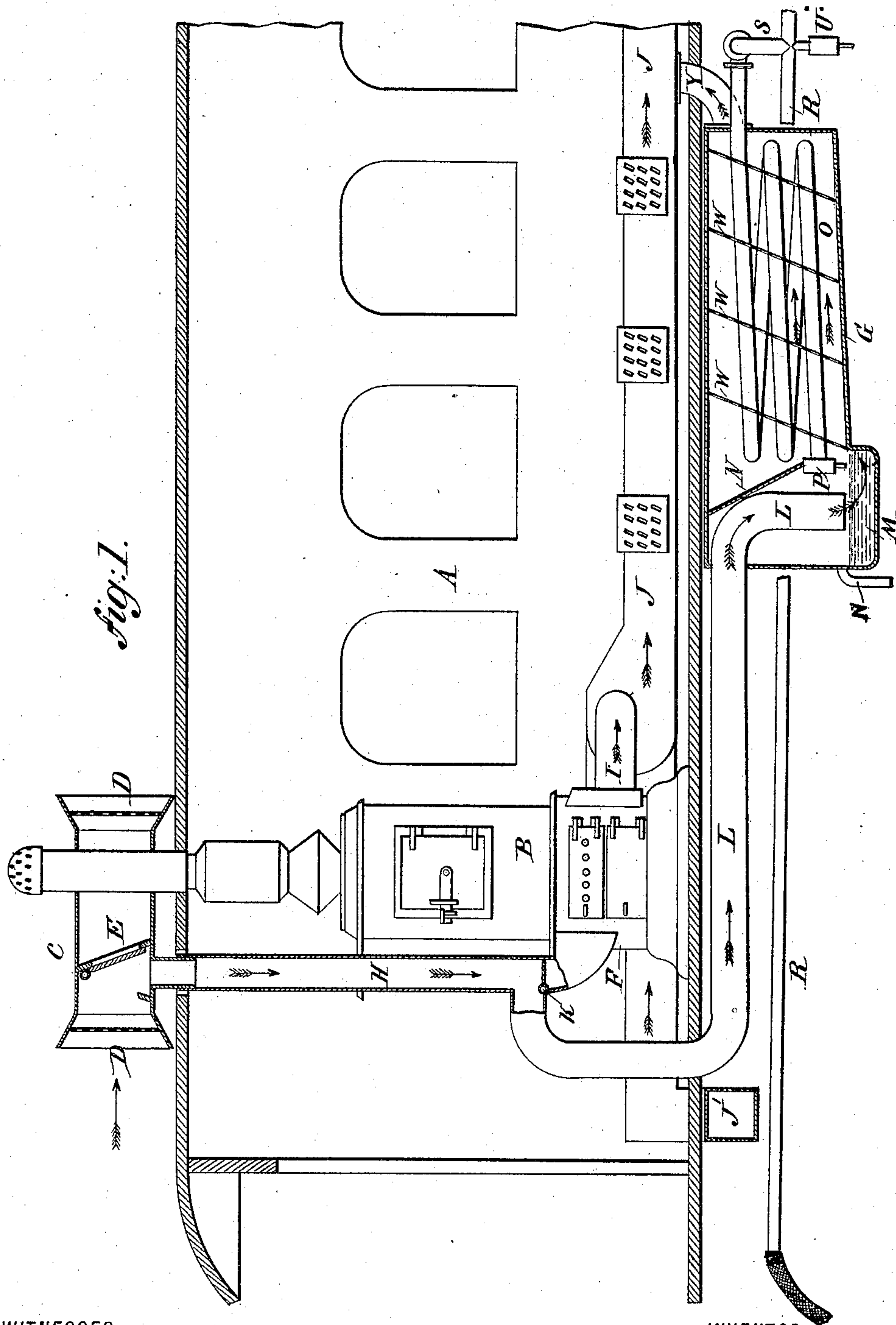
2 Sheets—Sheet 1.

F. M. WILDER.

APPARATUS FOR HEATING CARS.

No. 365,715.

Patented June 28, 1887.



WITNESSES:

Trajano G. Torres
James F. Fogarty

INVENTOR

Francis Milton Wilder

BY

Geo. V. Jennings
ATTORNEY

(No Model.)

2 Sheets—Sheet 2.

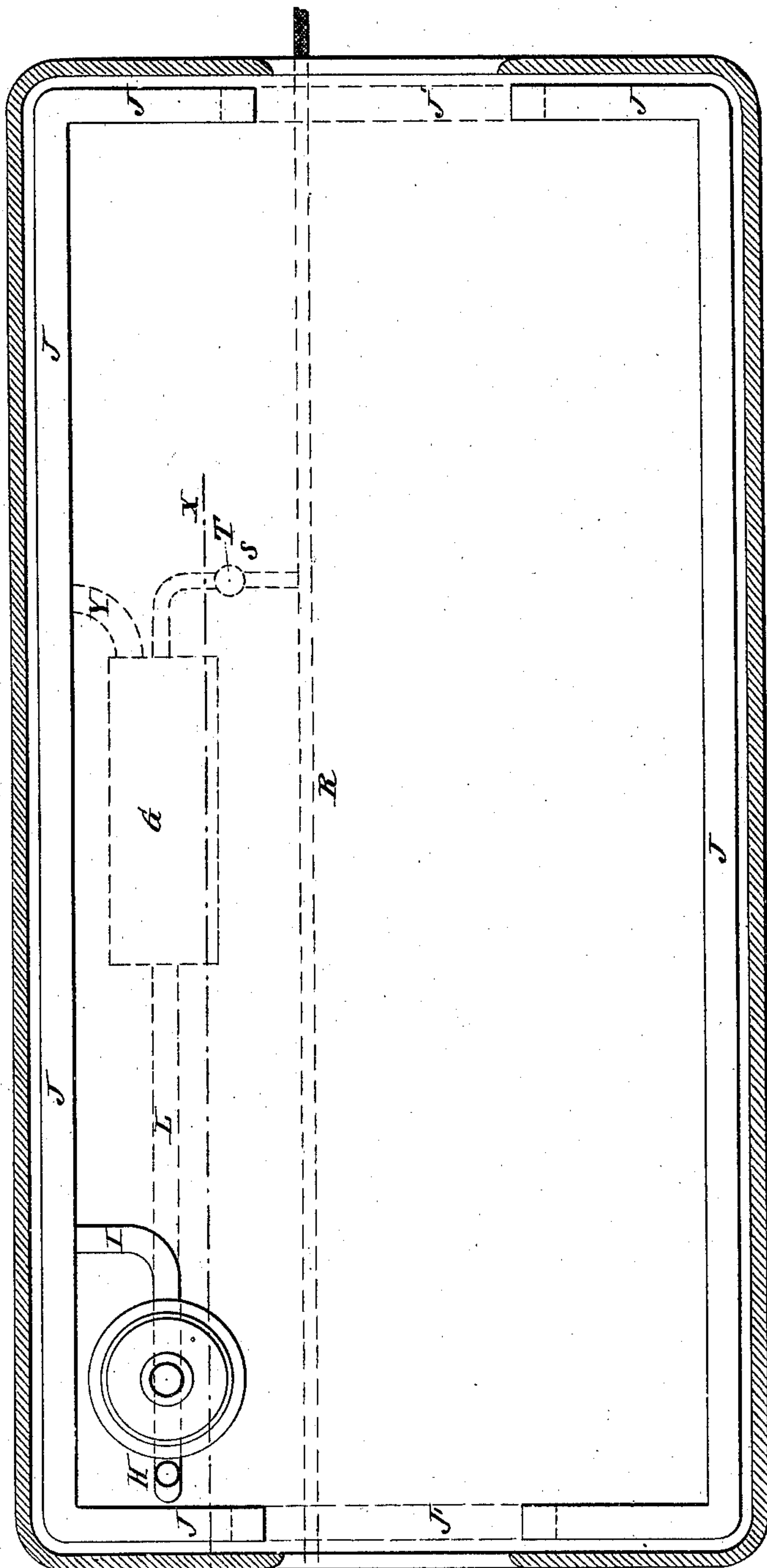
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Fig. 2.



WITNESSES:

Francis G. Porter
James H. Fogarty

INVENTOR

Francis M. Wilder

BY

Geo. H. Ferguson

ATTORNEY

UNITED STATES PATENT OFFICE.

FRANCIS MILTON WILDER, OF BINGHAMTON, NEW YORK.

APPARATUS FOR HEATING CARS.

SPECIFICATION forming part of Letters Patent No. 365,715, dated June 28, 1887.

Application filed May 16, 1887. Serial No. 238,423. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS MILTON WILDER, of Binghamton, in the county of Broome, State of New York, have invented
5 certain new and useful Improvements in Apparatus for Heating Railway-Cars, of which the following is a specification.

My invention comprehends the employment of steam derived from any suitable source external to the car to be heated as the primary
10 source of heat, and of air heated by such steam and transmitted to the interior of the car as the secondary or indirect source of heat.

My invention consists of an ordinary heater
15 and of a drum or vessel arranged under a car and containing a pipe or pipes connected to the source of steam-supply, the said drum in communication with the air through a suitable pipe, whereby the air is brought into the drum,
20 heated therein, and disseminated through a system of pipes, as required, throughout the car to be heated.

In the accompanying drawings, which illustrate my invention, similar letters of reference
25 indicate like parts.

Figure 1 is a vertical longitudinal section of a railway-car, and shows an air-heating drum under the car and the means by which the air and steam are brought to the drum and the
30 heated air therefrom carried to the interior of the car. Fig. 2 is a plan view showing the position of the drum under the car, relative to the stove and the body of the car.

In the drawings, A indicates a car; B, a heater therein, which may be of any type designed to heat air taken from the exterior of the car, and when heated transmitted through passages arranged along the sides of the car. The heater shown in the drawings is substantially
40 similar to that shown and described in the United States Letters Patent granted to James Spear, numbered 17,756, and dated July 7, 1857.

On the top of the car is a hood, C, through
45 which the air-induction currents are received.

D are screens in the hood for the interception of dust and cinders.

E is a pendent valve in the hood C, which acts automatically to direct the incoming currents of air into the warming-chamber F of
50 the stove B, the currents of air entering the

hood C, passing down the pipe H to the warming-chamber F, and thence by the pipe I to the pipes J, arranged along the sides of the car. This is the ordinary method of operation of
55 the device when the car-stove B is in operation. When, however, the stove is not in use, the valve K in the pipe H is turned into the position shown. The currents of air are then directed down the pipe H to the pipe L, and
60 from thence into the drum G, impinging at the point of entrance into the drum upon a body of water, M, contained in the drum G. The object of having the air impinge upon the
65 water is for the purpose of depositing in the air.

N is an overflow-pipe, connected to the drum G.

In order to heat the incoming air in the
70 drum G, I provide a coil of pipe, O. I wish it understood, however, that I do not limit myself to a coil of pipe, or to any particular arrangement of the steam-pipes within the steam-drum. Any system of piping which will
75 serve to heat the air will comply fully with the intent of my invention.

At the end of the coil of pipe O is a steam-trap, P, by means of which any condensed water in the coil O will be deposited in the end
80 of the drum. The coil O is carried out at the end of the drum, and is connected to the main steam-pipe R from the source of steam-supply by the branch pipe S, within which is a cut-off valve, T, which may be so arranged as
85 to be operated from within the car by hand or by means of any thermo-electric device. The pipe R is preferably arranged to incline from the ends of the car to the point of junction with the pipe S, and at this point I place a
90 steam-trap, U, by means of which the pipe R is drained.

V represents a deflector, arranged over the pipe L in the drum, thereby compelling the air entering by the pipe L to pass under the coil O.
95

W are screens of wire-cloth, which serve to break up the currents of air and retard it in its passage through the drum.

Y is an eduction-pipe for the air heated from the drum, and it is connected with the
100 pipe J within the car. The pipe J is continuous around all the sides of the car, and is car-

ried under the ends of the car by the pipes J'.

The stove B, it will be understood, is not intended for general use, but merely as an auxiliary source of heat to be put into use when required, as by the failure of the steam-supply.

I wish it understood that I do not limit myself to the specific devices shown, as many modifications can be made therein without departing from the intent of my invention.

I claim as my invention—

1. A car-heating apparatus comprising a stove within a car, a drum containing a steam pipe or pipes connected to a source of steam-supply without the car, a pipe or conduit for conveying air to said stove or drum, and an air-circulating pipe within the car connected to said stove and drum, substantially as described.

2. The combination, with a car-heater and with a separate and independent air heating drum without the car, of a steam pipe or pipes within said drum, and an air-induction pipe connected to said drum and heater and so arranged relatively to the said steam-pipes that the incoming currents of air shall be discharged under said steam-pipes, substantially as described.

3. The combination, with a car-heater and with a separate and independent air-heating drum below the same, provided with an independent source of heat, of an air-induction pipe connected to the heater and drum, a hood on the end of said pipe, and a pendent valve in said hood, substantially as described.

4. The combination, in a car-heater and with the air-heating drum thereof, of a steam pipe

or pipes within said drum, a steam-trap adapted to discharge the condensed steam from said pipe within the drum, and an air-induction pipe adapted to direct the air conveyed thereby upon the body of water so discharged, substantially as described.

5. The combination, in a car-heater, of a stove within the car, an air-heating drum without the car, an air-induction pipe connected to said heater and drum, and a valve in said pipe, whereby the incoming body of air may be directed either to the stove or to the drum, substantially as described.

6. A car-heater comprising a drum located under a car, a steam pipe or pipes within said drum, a steam-trap connected to said pipe, adapted to discharge within the drum, an induction air-conduit connected to said drum, and an eduction hot-air conduit connected to said drum and to a pipe or pipes within the car, and through which the heated air is adapted to circulate, substantially as described.

7. The combination, in a car-heater, and with an air-heating drum thereof having a closed bottom, of one or more steam-conveying pipes within said drum, one or more wire screens surrounding said steam-pipes, an induction-pipe adapted to discharge near the bottom of said drum, and an eduction-pipe connected to said drum and discharging within the car, substantially as described.

In witness whereof I have hereunto set my hand this 11th day of May, 1887.

FRANCIS MILTON WILDER.

Witnesses:

TRAJANO G. TORRES,
JAMES F. FOGERTY.