(No Model.)

W. C. BAKER.

RAILWAY CAR HEATER.

No. 473,721. Patented Apr. 26, 1892.

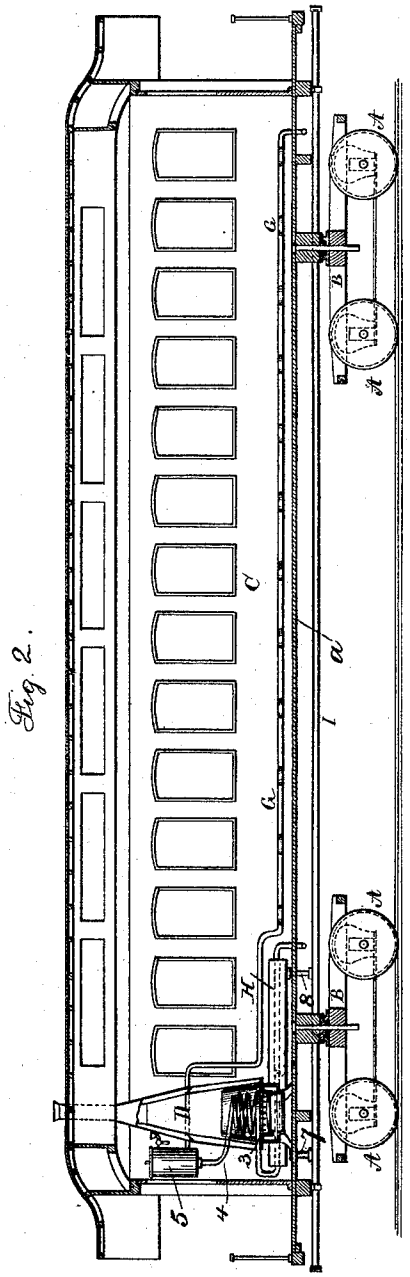

Fig. 2.

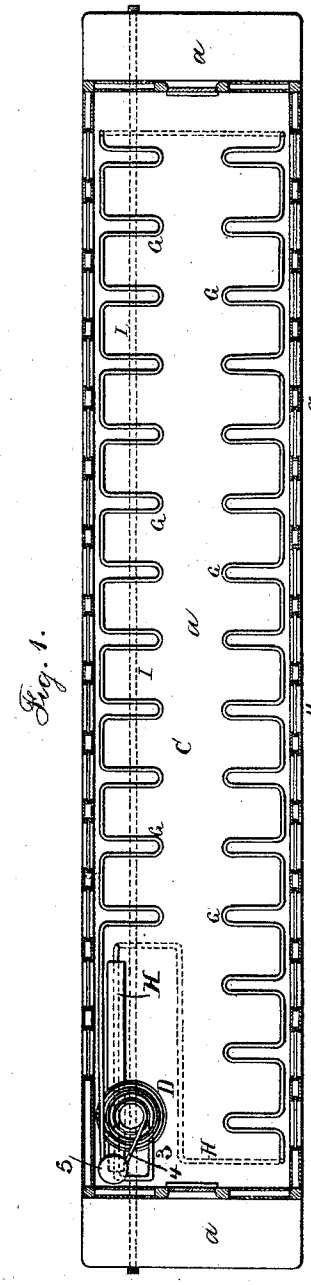

Fig. 1.

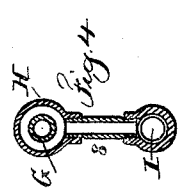

Fig. 4.

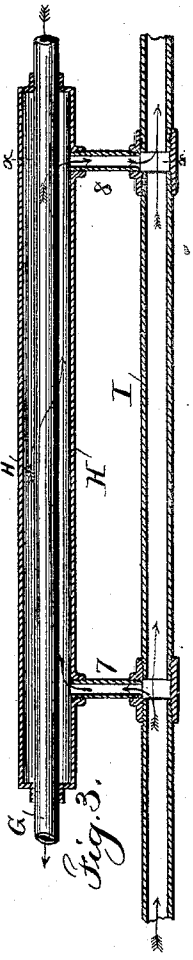

Fig. 3.

Witnesses:
J. Stair
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Inventor:
William C. Baker
per Lemuel W. Serrell
atty

UNITED STATES PATENT OFFICE.

WILLIAM C. BAKER, OF NEW YORK, N. Y., ASSIGNOR TO THE BAKER HEATER COMPANY, OF SAME PLACE.

RAILWAY-CAR HEATER.

SPECIFICATION forming part of Letters Patent No. 473,721, dated April 26, 1892.

Application filed June 24, 1887. Serial No. 242,340. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM C. BAKER, of the city and State of New York, have invented an Improvement in Railway-Car Heaters, of which the following is a specification.

The object of this invention is to convert the "Baker" or any other hot-water heating apparatus made use of in railway-cars into a heater in which steam from the locomotive-boiler or other source is made use of. In the Baker car-heater there is a fire-chamber with a coil which becomes heated by the fuel and the heated water rises into an expansion-vessel and then descends and flows through the radiating-pipes within the car and returns to the bottom of the coil within the fire-chamber.

By my present improvements I am enabled to employ steam heat instead of direct fire and to make very little change in the present connections, and the heater is allowed to remain, so that in cases of emergency or before starting the train the car may be warmed by a fire built in the heater.

In the drawings, Figure 1 is a sectional plan view of a car, illustrating the mode in which my improvements are made use of. Fig. 2 is a sectional view of the car. Fig. 3 is a longitudinal section through the steam-heating portion of the apparatus; and Fig. 4 is a section at the line *x x*, Fig. 3.

The car C, truck B, and wheels A are of any desired character, and the coils of pipe G are to be led around the car in any ordinary or desired manner, those that are shown in the drawings serving to illustrate a well-known way of leading such coils. In one corner of the car the heater D is usually placed, and one end of the heating-coil is connected at 3 to the bottom of the coil within the furnace, and a pipe 4 passes out from the top of the coil to the expansion-vessel 5, as usual.

I make use of a steam-pipe I, running longitudinally beneath the car floor or platform *a* or within the car-body, and to the ends of this pipe I couplings are connected, so that steam may be brought from the locomotive or other source and used to heat all the cars of a train.

In order to transform the ordinary car-heating apparatus into one adapted to heating by steam, I surround one of the radiating-pipes with a jacket H in the form of a tube, there being a steam-space between the outside of the tube containing the circulating water and the inside of the surrounding tube containing steam, and there are branch pipes 7 and 8, leading up from the steam-supply tube I to this jacket, near the ends thereof. This jacket is shown around one of the radiating-pipes adjacent to the lower end of the coil in the fire-chamber, in order that the heat imparted to water or brine may cause it to circulate upwardly through the coil in the heater to the expansion-vessel and thence back through the radiators in the car. This jacket around the pipe containing the hot water can usually be applied near one end of the car and close down upon the floor, so that the whole force of the heat is exerted to advantage in causing the water to expand and become lighter and to circulate rapidly up through the coil in the fire-chamber to the expansion-vessel and then through the radiators in the car. In this way steam heat is made use of, and it is not necessary to remove or to alter the ordinary heater or to provide any cocks or valves. Hence there is nothing to be done except to turn on the steam, which will rise into the jacket and fill the same as it reaches each of the cars of a train in succession and drives before it the air, as well as any water of condensation, and the same is finally discharged at the rear of the train or at any convenient place.

I am aware that steam has been used to heat cars, and also that both steam from the locomotive or heat from a fire have been used in connection with car-heating, and that two sources of heat have been used in connection with the same circulating fluid in pipes. Therefore I do not herein lay claim to either of these devices. In my present improvement, there being two branch pipes to the jacket, one near each end, the steam heat can pass in at the front end and the air and water of condensation go off at the rear end, regardless of the direction in which the train may be moving or in which the steam-supply may pass in the pipe I.

I claim as my invention—

The combination, in a car-heater, with the

heating-pipes containing water, of a fire-chamber, a coil of pipe within the same connected at its ends to the heating-pipes and to an expansion-vessel, respectively, a jacket surrounding a portion of the heating-pipe, a steam-pipe extending along the car and adapted to receive steam from the locomotive, and two branch pipes from such steam-pipe to the jacket and near the ends thereof, substantially as specified.

Signed by me this 21st day of June, 1887.

W. C. BAKER.

Witnesses:
GEO. T. PINCKNEY,
WILLIAM G. MOTT.