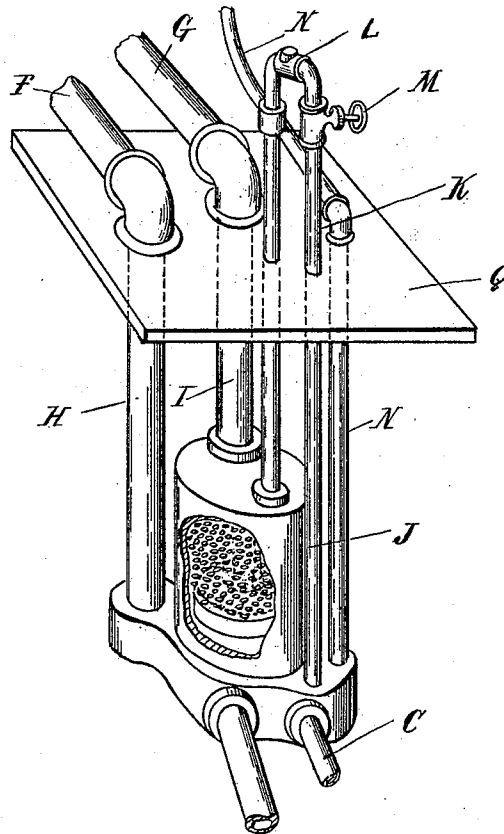
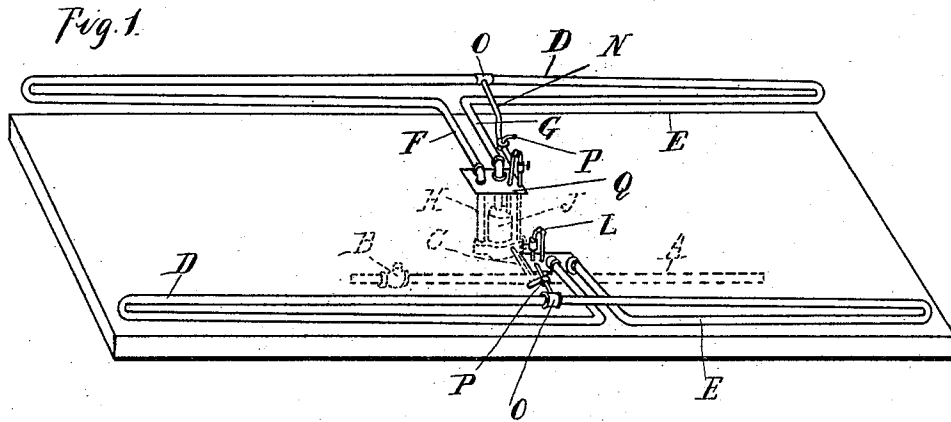


(No Model.)

J. F. McELROY.
CAR HEATING APPARATUS.

No. 471,313.

Patented Mar. 22, 1892.



Witnesses

Mr. Boghert
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Inventor

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UNITED STATES PATENT OFFICE.

JAMES F. McELROY, OF ALBANY, NEW YORK, ASSIGNOR TO THE CONSOLIDATED CAR HEATING COMPANY, OF WHEELING, WEST VIRGINIA.

CAR-HEATING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 471,313, dated March 22, 1892.

Application filed January 22, 1891. Serial No. 373,733. (No model.)

To all whom it may concern:

Be it known that I, JAMES F. McELROY, a citizen of the United States, residing at Albany, in the county of Albany and State of New York, have invented certain new and useful Improvements in Car-Heating Apparatus, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to new and useful improvements in car-heating apparatus; and the invention consists in the peculiar construction, arrangement, and combination of the various parts, all as more fully hereinafter described and claimed.

In the drawings, Figure 1 is a perspective view of a car-floor, showing my heating apparatus applied to one side thereof. Fig. 2 is an enlarged perspective view of the heater, partly in section, with its supporting-plate and connecting-pipes.

A is the train-pipe or main steam-supply, controlled by the valve B.

C is the branch steam-supply pipe.

The radiator within the car consists of the upper pipe D, inclined from its central point downward toward both ends, where it connects into the pipe E, which is inclined from both ends toward the middle, where it is provided with lateral offsets F and G. These offsets extend some distance toward the center of the car, where they are connected by means of suitable elbows with the vertical pipes H and I, respectively. The pipe H at its lower end connects at the base of the heater and forms a return-pipe to the heater, while the pipe I is connected to the upper end of the heater and forms the outgoing pipe.

The heater J is of the construction set forth and described in my application, Serial No. 357,180, filed June 30, 1890, and I do not herein intend to claim the same.

The heater simply forms a means for quietly commingling the steam and water, and the steam-supply pipe C, passing through the lower end thereof, extends upwardly into the car, having a yoke-shaped portion K within the car, which extends above the top of the radiator and is provided, respectively, with a check-valve L and a stop-valve M.

N is an overflow-pipe extending from a suitable coupling O in the middle of the upper pipe D. The overflow-pipe is provided with a suitable shut-off valve P and extends through the lower part of the heater in proximity to the steam-supply pipe C, so that the heat from the steam-supply pipe may be imparted to the end of the overflow-pipe to prevent its freezing up.

The construction thus far described I have made the subject of a concurrently-pending application above referred to.

This system was especially devised for the purpose of utilizing as circulating hot-water pipes systems of similar apparatus which had already been applied to the railway-cars, such steam-heating system comprising a radiator such as shown in the accompanying drawings.

In applying a hot-water heater of this kind to a car it is difficult to properly suspend the heater beneath the car to prevent damage to it from the sway and jarring movement imparted to it in the running of the train. It is also difficult to make the proper connections through the floor of the car without cutting many holes for the various pipes which are passed through, which allows air and dust to enter and is extremely objectionable. To overcome these objections and to put my heater in compact shape for shipment and to place in the car, I connect the vertical pipes H and I to a plate Q, through which also passes the overflow-pipe N and the two vertical portions of the steam-supply pipe K. This plate is fastened in the floor after cutting out a suitably-shaped opening to receive it, and by means of this plate the heater, with all of its connecting-pipes, is rigidly secured in position, and all the fitter has to do is simply to locate it in the proper position and screw in the connecting-pipes F, G, and N, also making the proper connection to the heater with the steam-supply pipe C. As it frequently happens that cars are to be equipped in laying over between runs, by having all these fittings secured to a single plate, whereby the connections may be quickly made, I am enabled to equip a car in a very few hours. It will also be seen that the heater is suspended beneath the car by means of the vertical portions of the piping, and as these pipes are

connected on opposite sides of the heater a rigid support is provided without the necessity of any stay bolts or rods whatsoever.

What I claim as my invention is—

- 5 1. In a car-heating apparatus, the combination, with the floor of the car, of radiator-pipes above the floor, a heater below the floor, two or more pipes connecting the heater with the radiator-pipes, and a perforated supporting-plate secured in the floor of the car and
10 to which said connecting-pipes are rigidly secured, substantially as described.
2. In a car-heating apparatus, the combination, with the floor, a heater below the floor,
15 and a radiator, of two or more pipes connecting the heater with the radiator, and a perforated plate secured to the floor and through which the connecting-pipes lead, substantially as described.
- 20 3. The combination, with a system of water-circulating pipes within the car, having an overflow-pipe, of a plate secured in the car-floor, vertical pipes secured to said plate, connections between said pipes and the cir-
25 culating-pipes, a heater suspended by the

pipes from said plate, a steam-supply pipe and an exit-pipe suspended from said plate, and connections from the steam-supply pipe to the heater and from the overflow-pipe to the exit-pipe, substantially as described. 30

4. The combination of an apertured plate secured in the car-floor, depending circulating-pipes secured thereto, and a heater suspended on said pipes, substantially as described. 35

5. The combination of an apertured plate secured in the car-floor, depending pipe-sections secured to said plate and extending therethrough, a heater suspended on said pipes, and connections from said extensions
40 to the circulating system, substantially as described.

In testimony whereof I affix my signature, in presence of two witnesses, this 30th day of December, 1890.

JAMES F. McELROY.

Witnesses:

EDWIN A. SMITH,
H. J. NODINE.