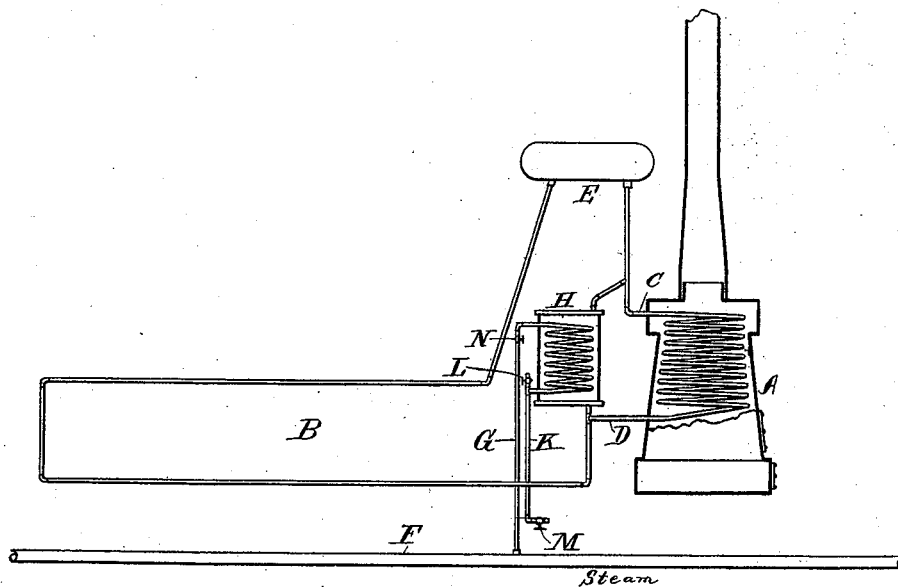


(No Model.)

J. F. McELROY.  
APPARATUS FOR HEATING CARS.

No. 523,588.

Patented July 24, 1894.



WITNESSES:

*C. C. Burdine*  
*L. S. Bacon*

INVENTOR

*James F. McElroy*  
BY  
*Thos. Sprague & Co.*  
ATTORNEYS

# UNITED STATES PATENT OFFICE.

JAMES F. McELROY, OF LANSING, MICHIGAN, ASSIGNOR TO THE CONSOLIDATED CAR-HEATING COMPANY, OF WHEELING, WEST VIRGINIA.

## APPARATUS FOR HEATING CARS.

SPECIFICATION forming part of Letters Patent No. 523,588, dated July 24, 1894.

Application filed November 12, 1887. Serial No. 254,980. (No model.)

### *To all whom it may concern:*

Be it known that I, JAMES F. McELROY, a citizen of the United States, residing at Lansing, in the county of Ingham and State of Michigan, have invented certain new and useful Improvements in Apparatus for Heating Cars, of which the following is a specification, reference being had therein to the accompanying drawing.

10 This invention relates to new and useful improvements in apparatus for heating cars, and the invention consists in combining a circulating hot water apparatus, provided with a stove and a system of circulating pipes adapted for independent operation; with a steam heater in operative contact with said system and adapted to impart heat thereto independently of the stove or conjointly therewith all as more fully hereinafter described.

20 In the drawing which accompanies this specification, the figure is a diagram showing the application of my invention for heating railroad cars.

A represents a stove or heater of a circulating hot-water system as ordinarily used for heating cars; B, represents the circulating pipes in the car, C the outgoing connection, D, the return connection with said system of pipes and heater, and E, the usual expansion drum, all the parts being arranged and operating in the usual manner.

F, is a steam pipe preferably supported underneath the car floor, and said pipe is intended to convey steam from the locomotive or from any other generator which it may be advisable to place on the train for the purpose of supplying steam for heating. From this steam pipe I provide the supply connection G, which leads into the heater H. This heater consists of a drum through which the steam pipe G circulates, and in which it is placed in operative contact with the water of circulation in the circulating system. To this end I place the steam drum and the stove so that the water of circulation may be brought into operative contact with either, alone or

both conjointly through the separate branches in which they are located. The supply pipe G is provided with a suitable valve N, to control the admission of steam into the heater, 50 and the lower end of the steam coil in the heater is connected to the escape pipe K, which at its upper end is provided with a suitable air valve L; and at its lower end with a suitable trap for the escape of the water of condensation, or with a temperature trap M, which retains such water of condensation until it has parted with its heat.

In practice it will be seen that the hot water circulation may be maintained in the system by the use of either heater, or if desired by the joint operation of both. Thus the system is adapted to furnish heat in the absence of steam by maintaining a fire in the stove as will be necessary when the train of cars is disconnected from the source of steam; but when such source of steam is available, the fire in the stove may be dispensed with and the heat obtained in the heater by the admission of steam when the valve N is open. 70

What I claim as my invention is—

1. In a heating apparatus, the combination with a system of steam supply pipes, and a system of water circulating pipes, of a heating apparatus containing two nests of heating pipes or two water receptacles, a steam or transfer chamber and a combustion chamber, substantially as described. 75

2. The combination with a system of hot water circulating pipes and its stove, of a branch in said system, a heater having a steam transfer chamber in operative contact with the water in said branch, and a system of steam supply pipes connecting with said chamber, substantially as described. 85

In testimony whereof I affix my signature, in presence of two witnesses, this 3d day of November, 1887.

JAMES F. McELROY.

Witnesses:

H. S. SPRAGUE,  
WM. P. SPALDING.