Le R. CAPRON.

CAR-HEATER.

No. 190,002. Patented April 24, 1877.

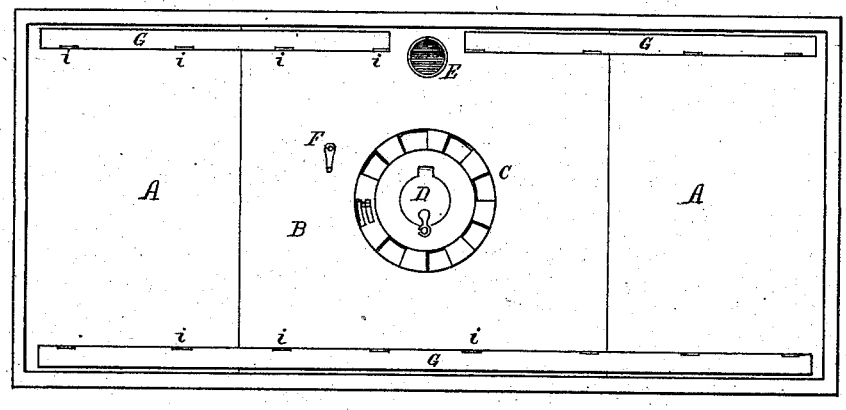

Fig. 1.

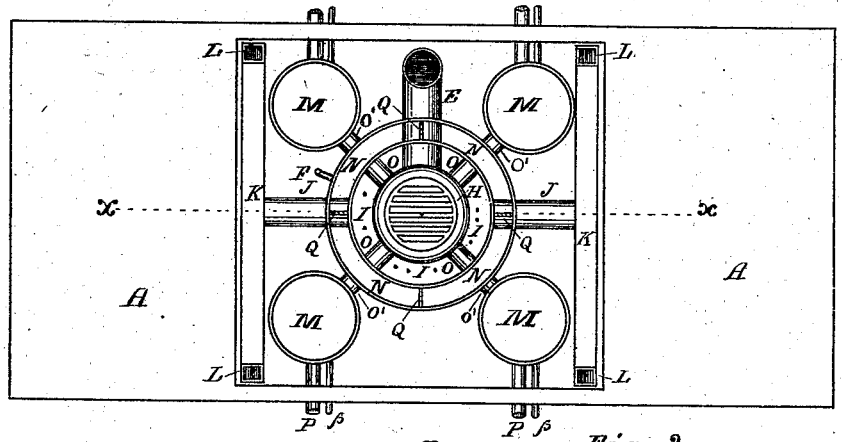

Fig. 2.

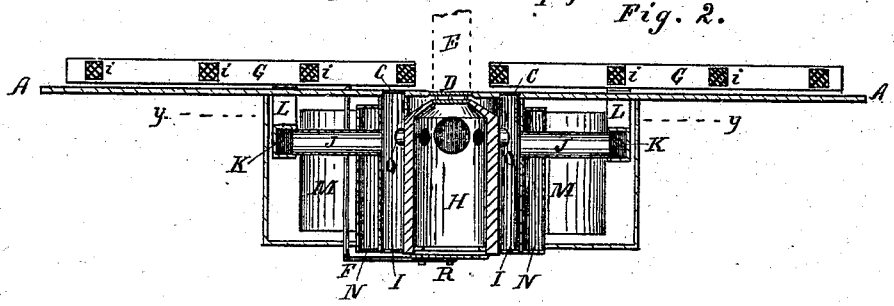

Fig. 3

Witnesses:

Geo. H. Wright

Chas F. Wagoner

Inventor:

Leroy Capron

by Humphrey & Stuart

his attys.

UNITED STATES PATENT OFFICE.

LE ROY CAPRON, OF AKRON, OHIO.

IMPROVEMENT IN CAR-HEATERS.

Specification forming part of Letters Patent No. **190,002**, dated April 24, 1877; application filed February 20, 1877.

To all whom it may concern:

Be it known that I, LE ROY CAPRON, of Akron, in the county of Summit and State of Ohio, have invented an Improvement in Safety Car-Heaters for Railway Passenger-Cars, of which the following is a specification:

My invention has relation to that class of car-heaters which consist of a furnace situated beneath the floor of the car; and it has for its objects to avoid the necessity of frequent attention to the fires; to secure the greatest neat from the fuel consumed; and to avoid all danger of fire in the event of accident.

My invention consists of a novel combination and arrangement of parts, which will be fully hereinafter described and specifically pointed out in the claims. A preliminary explanation is deemed unnecessary.

In the accompanying drawings, Figure 1 is a plan of a car-floor provided with my heating apparatus; Fig. 2, a plan of the same with the central metallic floor (hereinafter mentioned) removed, and showing a sectional plan of the furnace and tanks at the line *y y*, Fig. 3; and Fig. 3, a section of Figs. 1 and 2 at the line *x x*.

H is an upright cast-iron cylinder, which forms the combustion-chamber, at the bottom of which is a grate, and from which, intermedially between the bottom and top, issues the smoke-flue E, passing thence up through and out at the top of the car.

Fuel is introduced into the cylinder H at the top, which is made converging, and is closed by the door D, which can be securely locked down, and the top whereof is flush with the floor of the car.

At the bottom of this cylinder is a damper, R, regulated by the rod F, which enters the interior of the car, and by which the combustion of fuel may be regulated.

By this arrangement the furnace may be easily charged before starting with sufficient fuel to run for several hours.

I I is the hot-air chamber surrounding the cylinder H, and into which air enters through suitable apertures at or near the bottom. C, Figs. 1 and 3, is a large register on top of the chamber I, through which hot air can be admitted to the car, when desired.

Hot air is also conveyed from this chamber through the pipes J J, cross-pipes K K, elbows L L, and side pipes G G, whence it enters the car through small registers *i i*.

Around the chamber I is a water-tank, N, divided into compartments by means of the webs or partitions Q Q, Fig. 2. These compartments N N are connected with the cylinder H by pipes O O, in such manner that as long as the car maintains its proper position the water remains in said tanks below the pipes O; but if the car is excessively inclined, the water rushes through the said pipes into the combustion-chamber, and extinguishes the fire.

M M are auxiliary water-tanks, connected with the tanks N N by pipes O′ O′. These tanks are provided with feeding-pipes P P, and overflow-pipes *p p*, so they can be filled from the outside of the car.

The whole is incased in a suitable compartment under the car, and the entire covering B of the furnace and attachments is of iron, by which arrangement no inflammable substance is brought in contact with heated surfaces.

When in use, the tanks N N and M M are filled with water to the overflow-pipe. As long as the car maintains its proper position the water remains in these tanks; but when excessively inclined in any direction, the water is discharged from some of them directly upon the fire, and extinguishes it at once.

I am aware that furnaces under cars, the heat of which is distributed through registers, are not new; but such of itself is not my invention.

I claim as my invention—

1. The combination of the tanks M and N, the cylindrical fire-chamber H, and the intervening annular hot-air chamber I, having openings for the admission of air, substantially as and for the purpose described.

2. The combination, with the cylindrical fire-chamber H, of the annular tanks N N, pipes O O, auxiliary tanks M, and pipes O′ O′, substantially as and for the purpose described.

LE ROY CAPRON.

Witnesses:

C. P. HUMPHREY,

J. M. FRAZE.