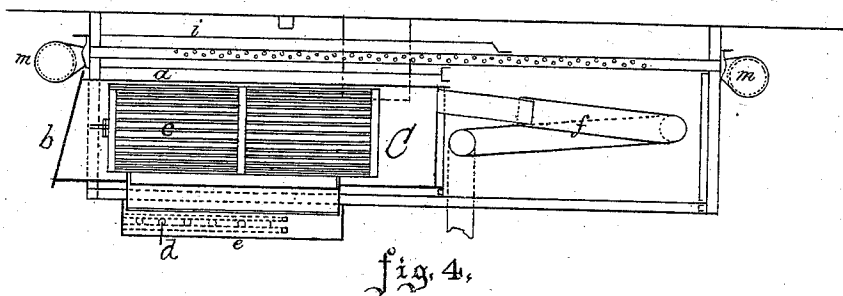
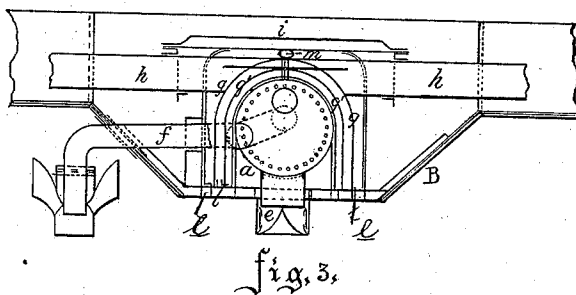
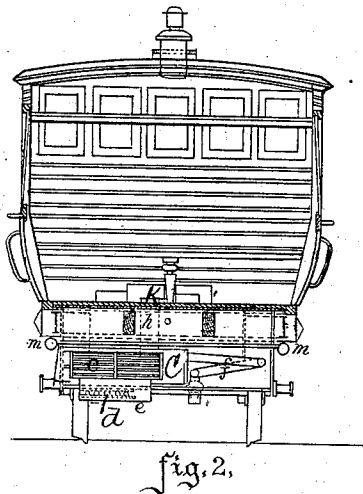
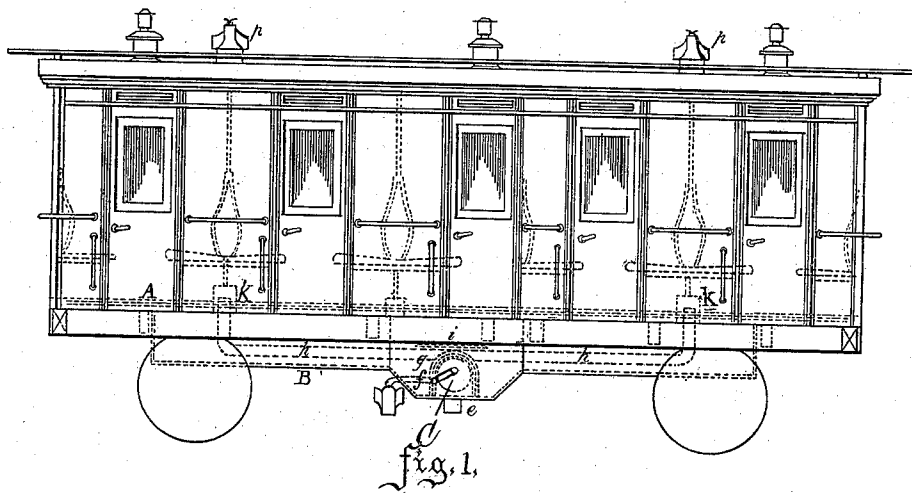


W. THAMM.
Apparatus for Heating Cars.
 No. 147,706. Patented Feb. 17, 1874.



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UNITED STATES PATENT OFFICE.

WILHELM THAMM, OF VIENNA, AUSTRIA.

IMPROVEMENT IN APPARATUS FOR HEATING CARS.

Specification forming part of Letters Patent No. 147,706, dated February 17, 1874; application filed April 24, 1873.

To all whom it may concern:

Be it known that I, WILHELM THAMM, of Vienna, Empire of Austria, have invented certain Improvements in Warming, Cooling, and Ventilating Railway-Cars, of which the following is a specification:

This invention relates to apparatus for heating railroad-cars; and consists in arranging beneath the car-body a chamber in which is located a cylinder carrying a fuel-basket, and communicating with pipes and air-openings, in such a manner that air is heated and carried into the car for heating the same, as will be fully hereinafter described.

In the drawings, Figure 1 represents a side elevation of a car provided with my heating attachment; Fig. 2, a transverse section of the same; Fig. 3, a detached view of the front of the heating apparatus; Fig. 4, a longitudinal section thereof.

The car to be warmed is provided with a chamber, B, beneath the floor A of the car. This chamber is composed, preferably, of boards, which can be covered on their interior surface with felt, pasteboard, and plates. In the middle of the body of the car, within the chamber B, is located a hollow wrought-iron cylinder, *a*, carrying a basket, *c*, which is preferably composed of iron bars and of a cylindrical shape, and into which is placed the fuel for warming the car. This basket is introduced into the cylinder *a* through an opening in the end of the same, which opening is closed by a door, *b*. The air required for the combustion of the fuel enters through openings *d* in the ash-pit *e*, and passes from there into the fuel-chamber. The gases evolved pass off through a bent pipe, *f*, one end of which communicates with the fuel-chamber and the other end with the external atmosphere, and on this end an exhausting device is fixed, to create a draft

through the combustion-chamber. The cylinder *a* is surrounded by an iron-plate jacket, *g*, on which the hot-air pipes *h*, passing into the car, are fixed, the object of said jacket being to form a fire-proof casing. Above the apparatus may be arranged a jacket, *i*, composed of two iron plates, with a non-conducting material between them, by which means the wooden parts are protected from any radiation of heat not prevented by the jacket *g*.

When the apparatus is to be put in operation, the fuel-basket *c* is removed from the cylinder *a* and filled with fuel, and it is then inserted in the cylinder, the door *b* closed, and the fire lighted. The heated air ascends through the pipes *h* into the car, thus warming the same. If the temperature in the car rises too high, the openings *d* are closed by a slide, which will regulate the draft.

Ventilators *p* are arranged at the top of the car for the escape of the respired air in the apartment.

In order to constantly admit fresh air to be heated, I arrange beneath the car air pipes or catches *m*, which communicate with the fuel-chamber and external atmosphere, by means of which the air entering through the same is heated and carried by the pipes *h* into the car, thus greatly increasing the heating capacity of the apparatus.

I claim as my invention—

In combination with a railroad-car, the chamber B, located beneath the car-body, cylinder *a*, fuel-basket *c*, pipes *f*, air-openings *d*, and hot-air pipes *h*, all arranged to operate substantially as and for the purpose described.

WILHELM THAMM.

Witnesses:

I. MILLWARD,
T. DAVIDSON.