T. KEECH.

CAR-HEATER.

No. 189,743. Patented April 17, 1877.

Fig. 1

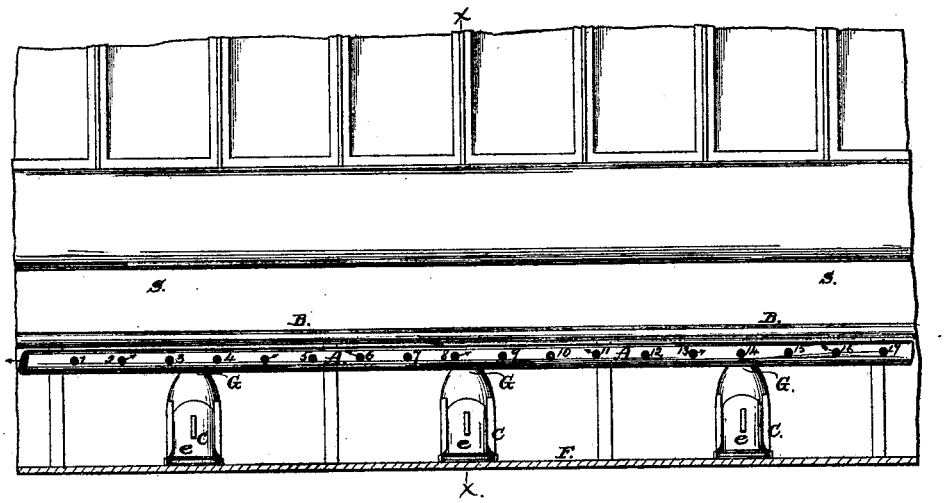
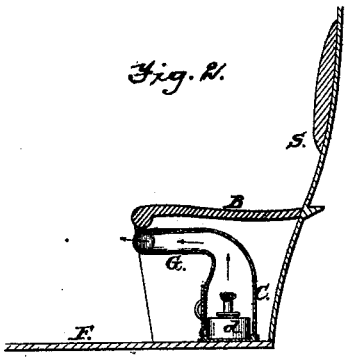


Fig. 2.



Witnesses;

Geo. H. Graham.

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UNITED STATES PATENT OFFICE.

THOMAS KEECH, OF NEW YORK, N. Y.

IMPROVEMENT IN CAR-HEATERS.

Specification forming part of Letters Patent No. **189,743**, dated April 17, 1877; application filed March 14, 1877.

To all whom it may concern:

Be it known that I, THOMAS KEECH, of New York city, in the county of New York and State of New York, have invented an Apparatus for Warming Street-Cars and other Vehicles; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

My invention has for its object a simple, economic, and effectual means for the proper heating of street-cars and other vehicles; and to this end and object consists in the use of a sufficient number of lamps arranged beneath the seats, or in some other suitable position near the bottom of the car, having combined with them pipes or tubes, which conduct the heated air and products of combustion therefrom, and radiating-tubes connected with said conducting tubes, all as will be hereinafter more fully described.

To enable those skilled in the art to make and use my invention, I will proceed to more fully explain its construction and operation, referring by letters to the accompanying drawing, forming part of this specification, in which I have illustrated my invention as applied to an ordinary street or horse car.

Figure 1 is a partial central longitudinal section of an ordinary horse-car, and Fig. 2 is a cross-section of the same, at the line *x x*, Fig. 1.

F is the floor of the car, S the side or seat-back of the same, and B the seats on which the passengers sit. Immediately underneath the seat B, and near its front edge, is located a pipe or tube, A, by preference running the entire length of the seat and car, and having numerous perforations, 1 2 3, &c., and extending downward and backward from said pipe A are three, more or less, tubes or conduit-pipes, G, which, at their lower portions, open into or communicate with the lamp-holder or cylinders C. In each of these cylinders, which has a suitable sliding or other door, *e*, is arranged a lamp, *d*, which I propose to have supplied with alcohol or other burning-fluid, that will not generate during combustion any unpleasant odor or smoke.

The operation and effect of the apparatus thus far described will be readily understood to be as follows:

The lamps *d* being lighted, and the doors or other means of ingress of air to the cylinders C being properly adjusted, the air supplied to the cylinders C, together with the products of combustion, will ascend through the tubes G into the pipe A, as indicated by the arrows at Fig. 2, and, escaping through the apparatus or holes 1 2 3, &c., of pipe A, will comfortably warm the car and the occupants thereof.

Of course, the number and capacity of the lamps may be varied, as experience may dictate and circumstances require, and either all, or fewer than the whole number, of lamps with which the car is supplied may be used at once, according to the weather and other conditions.

The air supplied to the lamps and the cylinders C may be either taken from the interior of the car, or may be supplied from without by openings or air-passages leading directly to the lamp-holders or cylinders C.

What I claim as new, and desire to secure by Letters Patent, is—

A car-heating apparatus, consisting of the radiating perforated tube A, conducting-pipes G, lamp-holders C, and lamps *d*, all arranged substantially in the manner shown, to operate as described.

In testimony whereof I have hereunto set my hand and seal this 28th day of February, 1877.

THOMAS KEECH. [L. S.]

In presence of—

J. N. MCINTIRE,

JACOB FELBEL.