

A. C. GOODELL, Jr.

APPARATUS FOR HEATING VEHICLES.

No. 192,067.

Patented June 19, 1877.

Fig. 1.

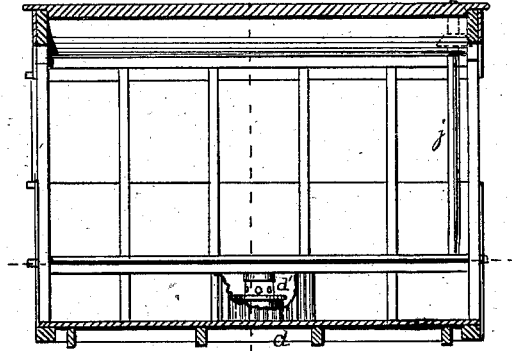


Fig. 2.

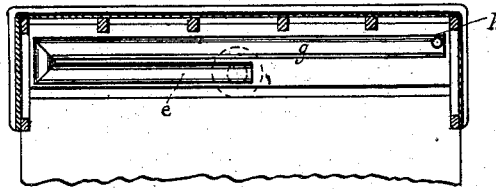


Fig. 3.

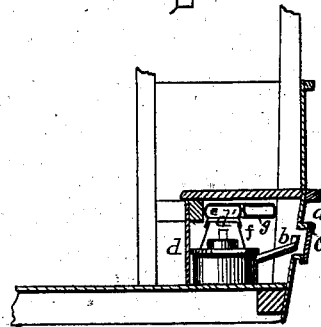
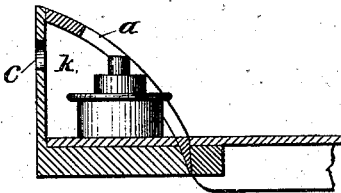


Fig. 4.



WITNESSES  
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## IMPROVEMENT IN APPARATUS FOR HEATING VEHICLES.

Specification forming part of Letters Patent No. 192,067, dated June 19, 1877; application filed January 9, 1877.

*To all whom it may concern:*

Be it known that I, ABNER C. GOODELL, Jr., of Salem, Essex county, Massachusetts, have invented an Improvement in Apparatus for Heating Vehicles, of which the following is a specification:

This invention relates to the heating of cars, omnibuses, and like vehicles; and relates to the combination therewith of a stove-lamp, in such a manner that there shall be a very complete abstraction of the heat from the fuel, a complete combustion, a circulation of all the air of the vehicle past the heater-surfaces, and a control of the lamp-stove from the outside.

The seats of cars and omnibuses are usually made as a shelf, projecting from the side of the car and held up in front by posts. Sometimes, as in Fig. 3 of the drawings, the side below the seat of the vehicle is nearly perpendicular, as at *a'*. Sometimes it is strongly drawn in, as shown by the inwardly-curved lines at *a* in Fig. 4, in which case, it will be observed, there would be scant room for the stove between the side of the vehicle and the posts supporting the seats, or a line coincident with the same. I therefore form a boxing, *k*, upon the outside of the vehicle, below the seat, and connect it with the interior of the vehicle to form a suitable compartment in which to set the lamp. Where the former is the case, a part of the concave is cut out, and a boxing, *k*, set in for the lamp, as shown in Fig. 4.

The vehicle being thus prepared, I take a lamp-stove of any of the usual kinds and apply to it a filling-tube, *b*. A hole is cut in the side of the car, into which this filling-tube projects, and which is fitted with a removable cap, *c*. Through this hole the lamp can be filled, lighted, and extinguished from outside the car. On the inside of the car a corrugated iron, *d*, or other suitable screen, shields the front of the lamp.

The lamp is further protected by embedding in plaster or other suitable means, if desired, and is to be firmly fixed to the floor of the car.

Above the chimney of the lamp (shown at

*d'*, Figs. 1 and 3) is a horizontal flue, *e g*, provided with a flange, *f*, into which the chimney *d'* enters. This flue is shown in plan, Fig. 2. It is hung close under the seat, and has a flanged projection, *h*, at its extremity, upon which the flue *j* fits, which carries off the products of combustion through the roof.

The seat in this arrangement acts as a diaphragm to divert and create currents, and a very thorough circulation is effected.

The whole value of the heat is obtained, owing to the length of the flue. The apparatus is light and readily managed.

I claim and desire to secure by Letters Patent—

1. In combination with the seat of a vehicle, a lamp-stove, placed between the seat and the floor, provided with a filling-tube, *b*, and with longitudinal flues *e g*, hung near the seat, substantially as and for the purpose described.

2. In combination with the lamp-stove, placed between the seat and the floor of a vehicle, and provided with a filling-tube, *b*, the aperture through the side of the car surrounding said filling-tube *b*, and provided with the removable cap *c*, substantially as and for the purpose described.

3. In combination with a street-car or omnibus, a lamp-stove placed between the seat and the floor, flues *e g* and *j*, and screen *d*, substantially as described.

4. In combination with the body of a car or omnibus, a seat having heating-flues *e g* hung between it and the floor, a lamp also placed beneath it, and discharging its products of combustion into said flues, and a discharging-flue, *j*, communicating with the atmosphere, substantially as described.

5. In combination with the seat of a vehicle, a lamp-stove, the boxing *k*, projecting from the side of the vehicle and opening into the vehicle beneath the seat, and designed to partially surround the lamp-stove, substantially as and for the purpose described.

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Witnesses:

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