W. WELLS.

FRICTION HEATERS FOR CARS AND BUILDINGS.

No. 187,242. Patented Feb. 13, 1877.

Fig. 1.

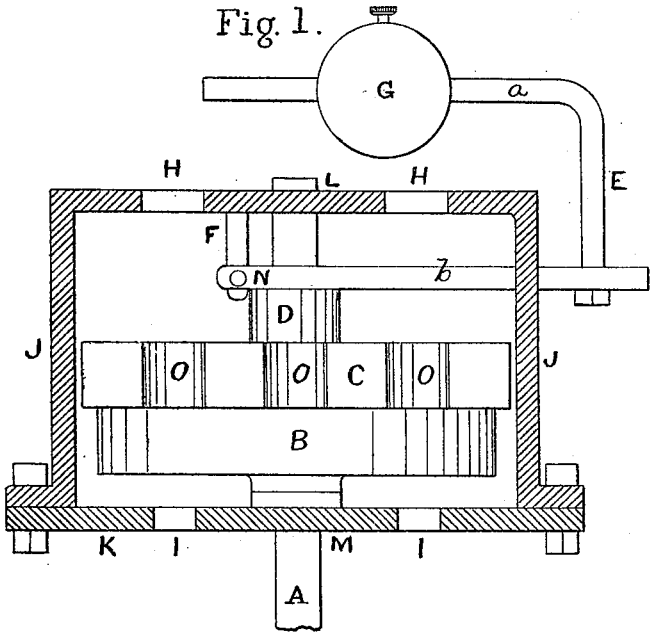


Fig. 2.

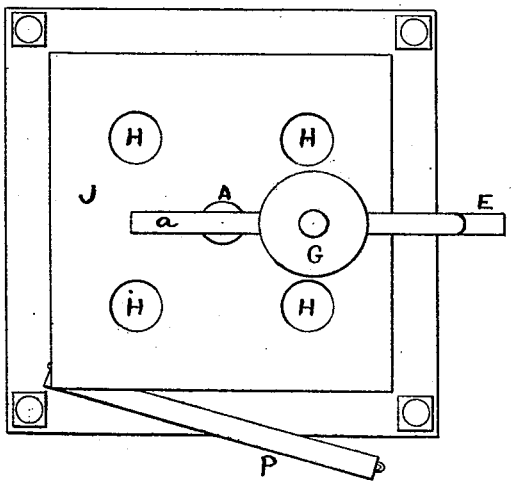
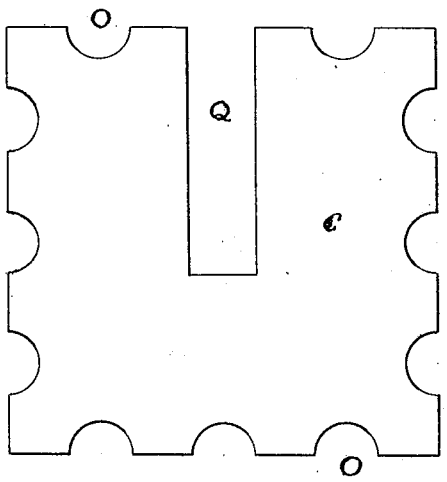


Fig. 3.



Witnesses.
S. N. Piper
L. A. Moller

Webster Wells
by his attorney
R. K. Eddy

UNITED STATES PATENT OFFICE.

WEBSTER WELLS, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN FRICTION-HEATERS FOR CARS AND BUILDINGS.

Specification forming part of Letters Patent No. **187,242**, dated February 13, 1877; application filed January 19, 1877.

To all whom it may concern:

Be it known that I, WEBSTER WELLS, of Boston, of the county of Suffolk and State of Massachusetts, have invented a new and useful Machine for Generating Heat for Warming the Atmosphere of Railway-Cars or Buildings; and do hereby declare the same to be fully described in the following specification, and represented in the accompanying drawings, of which—

Figure 1 is a vertical section, and Fig. 2 a top view of it. Fig. 3 is a top view of its movable friction-plate.

The said heat-generator consists in a perforated case, a rotary disk and shaft, and a stationary plate to co-operate with such disk, such being provided with means of pressing the plate against the disk, and of regulating the amount of the pressure.

In the said drawings, A denotes a rotary shaft arranged in and extended out of a box or case, J, and provided with a disk, B, of metal or other suitable material fixed to it concentrically, and placed within the case in manner as shown. Resting upon the upper surface of the disk B is a plate, C, of iron or other proper material, it being constructed with a slot, Q, and with notches O in its edges, as represented. This plate does not revolve in the case, but remains stationary therein, while the disk may be in revolution, the slot Q admitting of the plate being put in place in or removed from the box or case, as occasion may require. The contiguous surfaces of the plates B and C may be planed smooth, or they may be somewhat rough. The case or box J is to have holes H H in its top, and also corresponding holes I I in its bottom K, the holes in the bottom being for supplying air to the box, which, after having been heated therein by the disk and plate, will be discharged therefrom through the holes H. Heat is to be generated in the disk B and plate C, by revolving the disk rapidly against the said plate C. In order to turn the shaft A and disk B when the apparatus is used for heating a railway-car, I connect the shaft by suitable mechanism with one or more of the axles of the wheels of the said car, or such shaft may be revolved by any proper motive power suitably applied to it. In order to regulate the amount of friction, either to increase or diminish the heat generated, I apply to the case and to the plate C a lever, *b*, to bear upon a collar, D, encompassing the shaft A, and resting on the plate C; such lever being furnished with a bent arm, *a*, provided with a movable weight, G, having a clamp-screw to fix it in place on the arm. The box or case J may have an opening in its side provided with a door, P, such being to enable the plate C to be put in place within the box or to be removed therefrom, as occasion may require.

Among the advantages of the aforesaid heater, the following may be enumerated. There is little, if any, possibility of its setting fire to the car in case of a collision, or the car being overthrown. It is very economical, as no fuel is required for its use. It effects a saving of room within the car, in comparison to that usually required by a stove. The air heated by it is better in a sanitary point of view than when heated by a stove.

I claim as my invention as follows:

1. The heater, substantially as described, composed of the rotary disk B, its shaft A, and the stationary plate C, arranged as set forth.

2. The combination of the perforated case J, the rotary disk B, shaft A, and stationary plate C, arranged and applied substantially as shown and described.

3. The combination of the rotary disk B, and the stationary plate C, with mechanism for varying the pressure of the said plate C against the disk B, such mechanism, as described, consisting of the lever *b*, and the adjustable weight G, applied to it, as set forth.

4. The combination of the perforated case J, the rotary disk B, shaft A, stationary plate C, and the mechanism for varying the pressure of the plate C against the disk B, all being arranged, applied, and to operate substantially as set forth.

WEBSTER WELLS.

Witnesses:
R. H. EDDY,
J. R. SNOW.