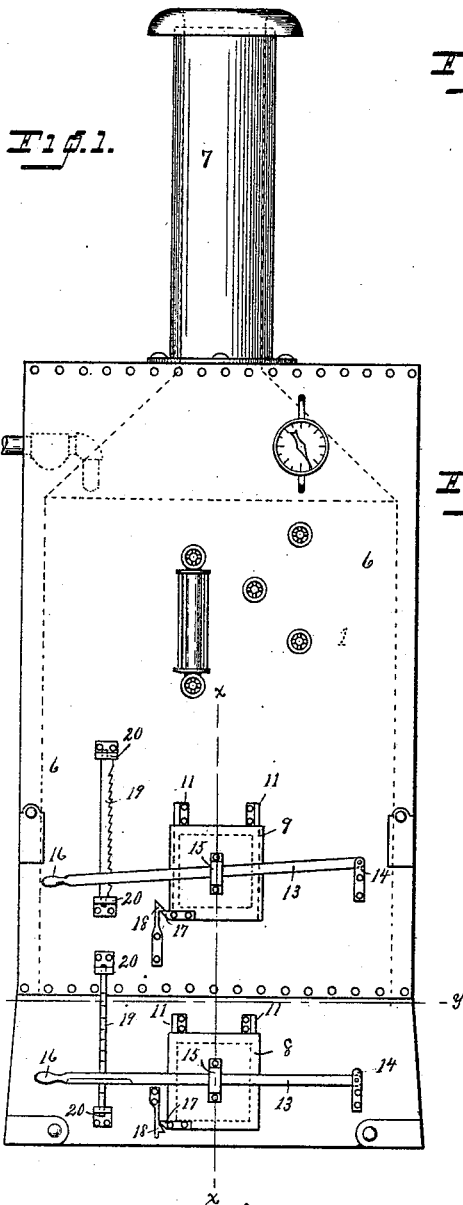


(No Model.)

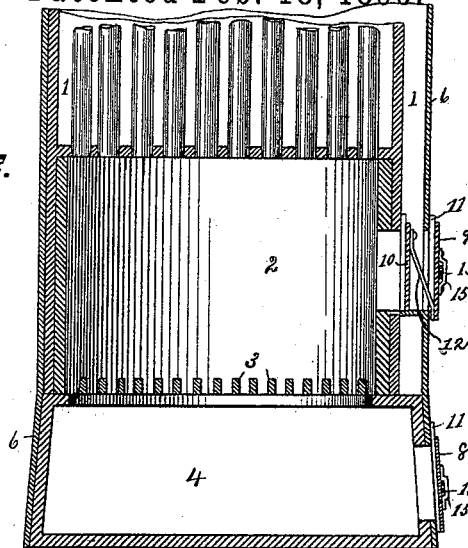
T. S. GLOVER.  
CAR HEATER.

No. 421,697.

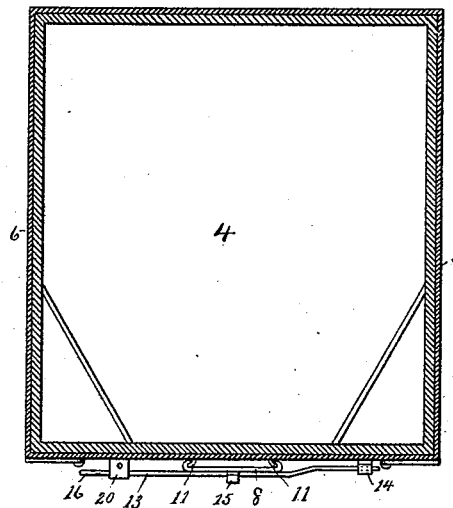
Patented Feb. 18, 1890.



**Fig. 2.**



**Fig. 3.**



**WITNESSES**

C. M. Newman,  
Etta F. Pettit

**INVENTOR**  
Theodore S. Glover  
By A. M. Wooster  
Att'y.

# UNITED STATES PATENT OFFICE.

THEODORE S. GLOVER, OF SOUTH NORWALK, CONNECTICUT.

## CAR-HEATER.

SPECIFICATION forming part of Letters Patent No. 421,697, dated February 18, 1890.

Original application filed February 27, 1889, Serial No. 301,317. Divided and this application filed May 10, 1889. Serial No. 310,257. (No model.)

*To all whom it may concern:*

Be it known that I, THEODORE S. GLOVER, a citizen of the United States, residing at South Norwalk, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Car-Heaters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to the heating of railway-cars, and has for its object to provide a safety-casing adapted for use in connection with any of the various heating devices employed upon railway-cars—that is to say, it is equally applicable either to steam, hot-water, or hot-air heaters. In the present instance I have shown my novel improvements as applied in connection with an ordinary steam-heater, the object being to prevent coals from the fire-box from getting outside of the heater from any circumstances whatever—as, for example, in the case of derailment and the throwing of the cars upon their sides, or even bottom upward. With these ends in view I have devised the simple and novel construction of which the following description, in connection with the accompanying drawings, is a specification, numbers being used to denote the several parts.

Figure 1 is an elevation of the heater-case, the position of the heater within the case being indicated by dotted lines; Fig. 2, a partial vertical section through the fire-box, grate, ash-pit, &c., the line being indicated by  $x x$  in Fig. 1; and Fig. 3 is a cross-section of the heater-case at the ash-pit, the section-line being indicated by  $y y$  in Fig. 1.

1 denotes the shell of the heater; 2, the fire-box; 3, the grate, and 4 the ash-pit. These parts may all be of the ordinary or any preferred construction.

As the special style of furnace or heater is not an essential feature of my invention, the details of construction of the furnace or heater are not deemed to require illustration.

6 denotes a casing, of heavy boiler-iron, within which the entire heater is inclosed.

7 denotes the smoke-pipe, which is made

double, as indicated in dotted lines in Fig. 1, so as to increase the strength of construction, and also to afford an independent passage-way out from the casing, in the event of an accident, for steam and the vapor of chemicals, should my novel construction be used in connection with fire-extinguishing devices.

8 denotes a sliding door leading through the casing and into the ash-pit, and 9 a similar door through the casing, which registers with an inner door 10, leading through the shell of the heater itself and into the fire-box. Doors 8, 9, and 10 are all sliding doors and move on vertical ways 11, the ways for the outer doors being clearly shown in Figs. 1 and 3. Doors 9 and 10, which lead to the fire-box, are rigidly connected by a brace or braces 12, riveted to the bottom of door 9 and to the top of door 10, or vice versa, as clearly shown in Fig. 2, so that said doors move together. The doors are operated by means of levers 13, pivoted to brackets 14 on the front of the case and extending through metallic straps 15 on the doors, the free ends of said levers being provided with handles 16, as clearly shown. At the bottom of each of the outer doors I provide a rigid bevel-nosed catch 17, which is straight upon its upper side.

18 denotes spring-latches, which are beveled upon the upper side and straight upon the lower side, so as to engage with and lock catches 17 when the doors are allowed to slide down far enough.

19 denotes vertical racks whose ends are pivoted in brackets 20, so as to permit them to turn freely in either direction. In ordinary use these racks stand edgewise, as at the bottom in Fig. 1, and levers 13 engage one of the teeth of said rack to hold the door in the closed position, but to retain the catch out of engagement with the spring-latch, as is shown at door 8 in Fig. 1. In the event of the overturning of the car or of any shock or unusual movement, the racks will swing one way or the other, as shown at door 9 in Fig. 1. The instant the rack is turned the lever is of course disengaged, and the weight of the lever and the door—in the case of the fire-box the two doors—will instantly cause the doors to drop to their lowest position, so that catches

17 will be locked by the spring-latches, as clearly shown by door 9 in Fig. 1. It will thus be seen that I provide a double guard to prevent the coals in the fire-box from getting out, door 10 acting to prevent them from getting out of the fire-box into the casing and door 9 preventing them from getting outside of the casing even should any get outside of the fire-box from any cause whatever. The contents of the ash-pit likewise are prevented from getting outside of the casing by means of door 8. Reference is hereby made to my pending application, Serial No. 301,317, filed February 27, 1889, of which this is a division. I do not claim herein matter covered by my said application.

Having thus described my invention, I claim—

1. The combination, with the casing and a vertically-sliding door having a strap 15, of a lever pivoted to said casing and extending through said strap, and a swinging rack adapted in one position to be engaged by said lever to hold the door at any desired position and in another position to release the door.

2. The casing and a vertically-sliding door

having a catch 17, in combination with a spring-latch adapted to engage said catch, a lever engaging the door, whereby it may be raised or lowered, and a swinging rack, which is adapted in one position to be engaged by said lever and when swung out of said position allows the door to drop and to be locked by the engagement of the catch and latch.

3. The casing and a rack pivoted thereto and swinging in the horizontal plane, in combination with a vertically-sliding door having a bevel-nosed catch, a spring-latch adapted to engage said catch, and a lever for raising and lowering the door, which is adapted to engage said rack to hold the door in the opened or closed position under ordinary circumstances, and which, when swung to the right or left, allows the door to drop and be locked by the engagement of the latch and catch.

In testimony whereof I affix my signature in presence of two witnesses

THEODORE S. GLOVER.

Witnesses:

WM. S. KNAPP,  
JOSEPH TAYLOR.