

F. SHALLER.  
RAILROAD CAR HEATER.

No. 100,333.

Patented Mar. 1, 1870.

Fig. 1.

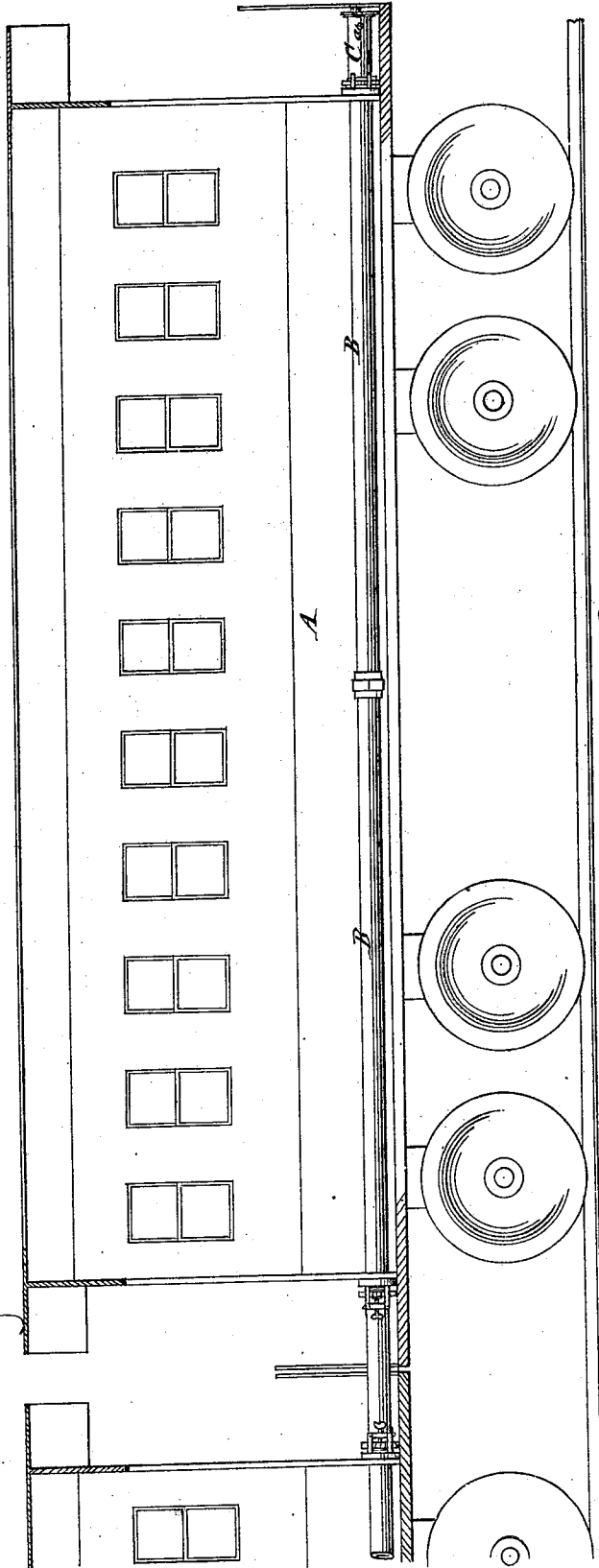
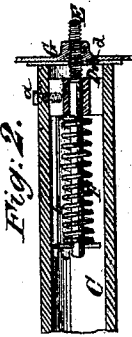


Fig. 2.



Witnesses:

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*per J. M. Coombs & Co.*  
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# United States Patent Office.

FREDERICK SHALLER, OF HUDSON, NEW YORK.

Letters Patent No. 100,333, dated March 1, 1870.

## IMPROVEMENT IN RAILROAD-CAR HEATERS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, FREDERICK SHALLER, of Hudson, in the county of Columbia, and State of New York, have invented a new and useful Improvement in Apparatus for Heating Cars; and I do hereby declare that the following is a full, clear, and exact description, reference being had to the accompanying drawing forming part of this specification, and in which—

Figure 1 represents a side elevation of my invention as applied to a train of railroad cars; and

Figure 2, a longitudinal section of the rear end of one of the heating-pipes with my improvement attached thereto.

Similar letters of reference indicate corresponding parts in both figures.

This invention relates to apparatus for heating cars by means of steam-pipes, which may be arranged along both sides of the cars, or along the centre by one set of pipes.

My improvement consists in a device for regulating the pressure of the steam in the pipes, allowing its escape therefrom, and providing for the safety of the pipes. To this end, the device is secured to the end of the pipes at the rear car.

To enable others skilled in the art to construct my improvement, I will proceed to describe the same, with reference to the drawing.

A is the rear car of a number of cars through or along which the steam-pipes B B are arranged.

At the rear end of said steam-pipes a short piece of pipe, C, which may be a flexible, or metallic pipe; is tightly secured.

Close to the end of pipe C, and inside of the same,

a bearing-block, D, is fastened to it by means of a screw, *a*, or otherwise. This bearing-block D is made with perforations to allow the steam or water of condensation to pass beyond it, and has a guide-bar, *b*, of sufficient length, and projecting along the inside wall of the pipe C formed on or fastened to it.

A rod, E, of proper dimensions, is passed through the centre of the bearing-block D and allowed to project beyond the open end of pipe C, where it is provided with a screw-thread; while, near its inner end, a cross-pin, *c*, is secured to it.

A spiral spring, F, is placed around the rod E, between the bearing-block D and the cross-pin *c*.

A disk-valve, G, on the threaded portion of the rod E, with a washer, *d*, to serve as packing, tightly closes the end of pipe C.

Now, it will be seen that by screwing or unscrewing the valve G, the tension of the spring F will be varied, and more or less force be required to allow the steam or water of condensation to escape through the end of pipe C, thereby enabling a perfect regulation of the pressure of steam inside the pipes, and, consequently, of the heating of the cars as well as provision for the safety of the steam-pipes.

What is here claimed, and desired to be secured by Letters Patent, is—

The combination of the adjustable valve G, the screw-rod E, the bearing-block D, and the spring F, with the pipe C, substantially as and for the purpose herein set forth.

FREDERICK SHALLER.

Witnesses:

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