J. OLIPHANT.

Car Heater.

No. 109,143. Patented Nov 8, 1870.

Fig. 2.

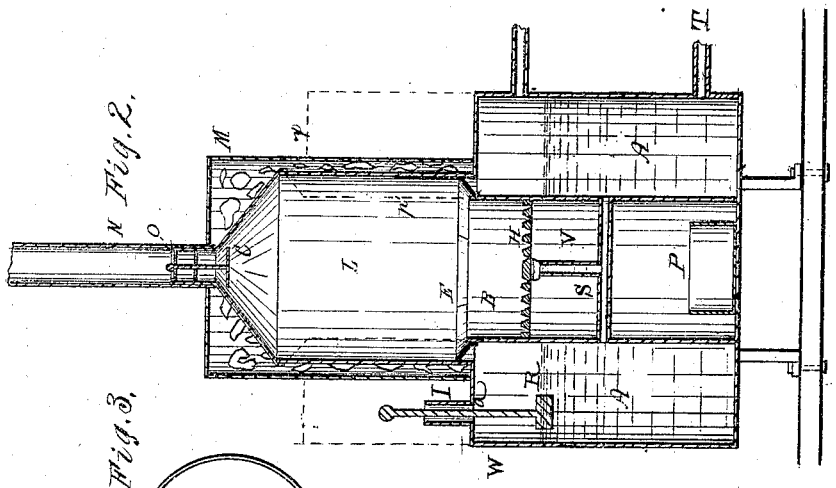

Fig. 3.

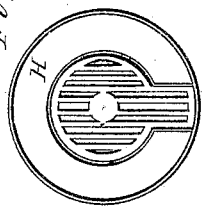

Fig. 1.

Witnesses:
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JOHN OLIPHANT, OF SPRING HILL FURNACE, PENNSYLVANIA, ASSIGNOR TO F. H. OLIPHANT, JR., OF SAME PLACE.

Letters Patent No. 109,143, dated November 8, 1870.

IMPROVEMENT IN RAILROAD-CAR STOVES.

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, JOHN OLIPHANT, of Spring Hill Furnace, in the county of Fayette and State of Pennsylvania, have invented new and useful Improvements in Railroad-Stoves and Regulators; and I do hereby declare the following to be a full, clear, and exact description thereof, sufficient to enable others skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1 is a front view of my improved railroad-stove and regulators.

Figure 2 is a section of the same, showing the construction of the water-chamber, sectional-ring, fire-chamber, and valve arrangements.

Figure 3 is a detached view of the grate.

Nature and Objects of the Invention.

This invention relates to that class of stoves designed for use on railroad-cars; and

It consists—

First, of a reservoir adapted to contain a quantity of water or other liquid, surrounding a metallic cylinder or lining below the fire-chamber, so constructed as to communicate with the interior thereof, when the stove is upset through the medium of a movable ring and a pipe located beneath the grate.

Second, in a valve or float connecting with the reservoir, and acting as indicator, for a purpose hereinafter mentioned.

Description.

L represents the top, and W the lower portion or base of the stove, formed either of wrought or cast-iron, or other suitable metal, and are made preferably of a cylindrical form.

The upper portion of the top part of the stove is funnel-shaped, and terminates in an opening or pipe, N, for the reception of suitable pipe or pipes to allow the smoke or cinders to escape.

Within the opening or pipe N is located or formed a guide-plate or frog, O, provided with an opening which supports and directs a rod carrying a valve, C, for a purpose hereinafter mentioned.

P is a metallic cylinder or other shaped lining, preferably of cast-iron, constructed within the interior of the lower portion or base W of the stove, and extends up to a point about where the parts L and W unite.

B is the fire-chamber, located within the upper portion of the metallic lining P, and which is provided with a grate, H.

F is an opening in the lower portion or base W of the stove, which permits the fire in the fire-chamber to be easily stirred.

E is a movable ring formed in sections, (although it may be made in one piece,) having its bearings upon the top part of or flanges formed upon the side of the iron cylinder or lining P, its sides fitting closely upon the inner circumference of the top part of the stove L, so as to prevent any ashes from falling or passing into a chamber or reservoir, A, at the same time preventing water from being dashed into the fire-chamber, caused by the jerks and jars to which cars are subjected. This ring is made preferably in sections, so that one or more of the pieces will easily and surely be displaced should the stove be upset; they being held in their proper place by the pressure of the fuel upon them when the stove is in an upright or vertical position.

A is the water-chamber or reservoir, formed by the inner metallic cylinder or lining P and the outer casing of the stove W. This chamber or reservoir is provided with suitable opening for cleansing it, should it by any means receive in it foreign substances.

An orifice, *a*, and pipe, I, are formed with this chamber or reservoir A, for filling the same with water and permitting vapor to escape.

Within this orifice *a* and pipe I is located, and freely moves up and down, a valve or float, R, made of cork, wood, or suitable material, and is attached to a rod extending some distance above the top of the pipe, so that, as the water becomes low in the chamber or reservoir, the descent of the rod will indicate to the attendant in charge, or passengers, that the chamber or reservoir needs replenishing.

This valve or float R performs another important function; that is, when the stove by accident is upset, securely closing orifice *a* and supply-pipe I, thus preventing the water from escaping through it, causing the same to pass the space from which the movable ring has fallen, and immerse the fire which has fallen in the upper part of the stove L, the valve C in the pipe N being closed by the fuel falling upon it.

S is a pipe located beneath the grate H in the metallic cylinders or lining connecting with the chamber or reservoir A, and has formed with it or otherwise secured, an upright orifice or pipe, V, at or near its center, so as to facilitate the immediate action of the water on every portion of the fire when the stove is upset. This tube or outlet V is covered by a plate attached to the grate H.

M is an outside fender or jacket covering the upper portion of the stove, to prevent combustible material from coming in contact with the hot surface of the stove, and also, to give, by its various configurations, a neat appearance to the stove. This jacket is provided with an opening corresponding to the door in the stove through which the fuel is fed to the fire-chamber.

If it be desired to carry more water and effectually guard against accident and its dashing out, the metallic lining may be extended up nearly to the top of the stove, as indicated by *p'*, dotted lines, in which case the outer casing of the lower part of the stove is extended up to a point about as high as the extended part of the metallic cylinder or lining *p'*, indicated by the letter X.

The movable ring E is then placed upon the top of the metallic lining, in a similar manner, as before described.

When the water-chamber or reservoir is extended, as shown in the dotted lines indicated by X, the connecting pipe S with its appendage may be dispensed with.

In either state, it will readily be observed that in case of the stove being upset, the water in the chamor reservoir A, forces the valve or float R close against the orifice or supply-pipe, the fire in the fire-chamber falls forward into the funneled portion of the top part of the stove, and closes the valve C in the pipe N, and the movable ring falling from its proper position, the entire contents of the chamber or reservoir A are poured upon and effectually extinguish the fire.

When the stove is thus constructed, it is mounted upon or secured to suitable feet.

T T are pipes connected with the lower portion of the stove, which are designed to extend along the sides of the car in a chamber, or recess if desired, for the purpose of conveying heated steam or water, thus more uniformly distributing the heat. These pipes will be connected with automatic valves or cocks of the usual construction, so as to close should an accident occur. A register may be provided at each seat in the car, if desired, or if used as a stationary regulator, the pipes may be extended into other rooms.

It will also be understood that this device may also be applied to locomotives by dispensing with the lower portion of the ash-box, and using it as a reservoir or chamber for containing water, to be brought in contact with the fire should the stove be upset.

Having thus described my invention,

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

1. The reservoir A surrounding the fire-chamber, and made to communicate with the interior thereof by means of the removable plate E, substantially as described.

2. The ring E in the fire-chamber, applied to operate substantially as described.

3. The float-valve R in connection with the reservoir A.

4. The tube S, communicating with the reservoir A and the fire-chamber, substantially as and for the purpose described.

To the above I have signed my name this 19th day of May, 1870.

JNO. OLIPHANT.

Witnesses:

JOSEPH M. HADDEN,

MARSHALL N. LEWIS.