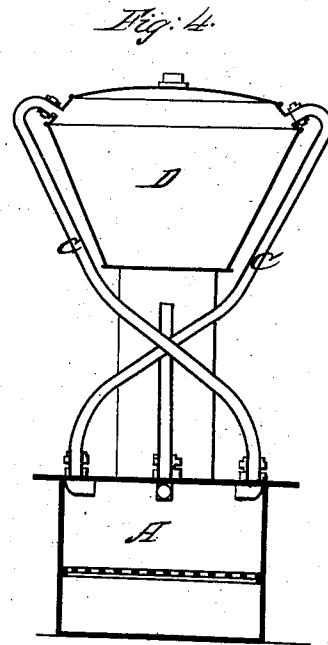
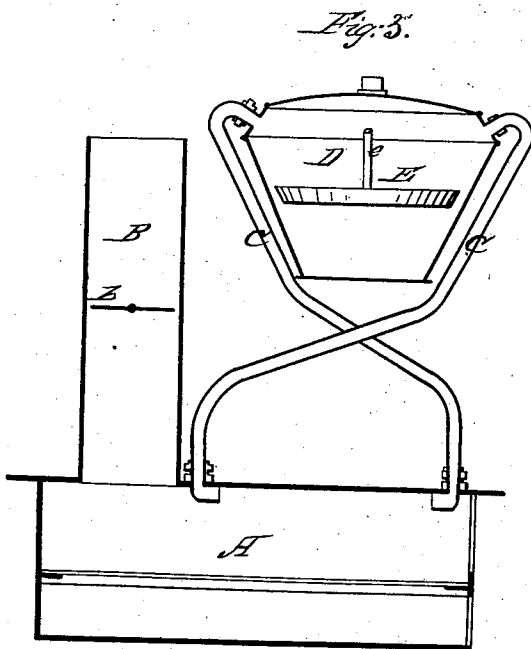
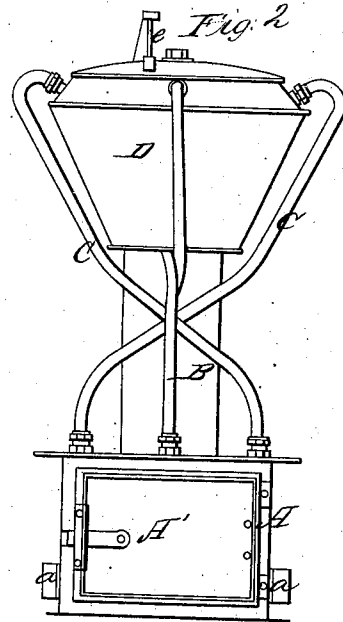
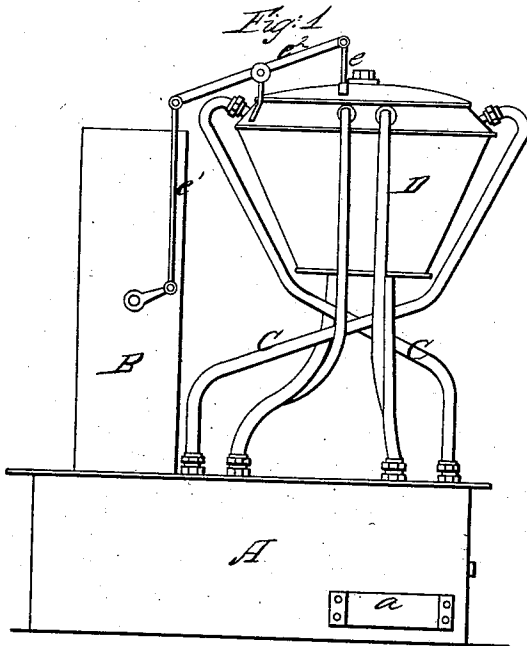


E. Sanger.

Car Heater.

N^o 84,308.

Patented Nov. 24, 1868.



Witnesses:

Robert Burns
Wm. H. Hertel

Inventor:

E. Sanger by his attys
W. Randolph & Co

United States Patent Office.

ETHIEL SANGER, OF ALTON, ILLINOIS.

Letters Patent No. 84,308, dated November 24, 1868.

CAR-HEATING STOVE.

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, ETHIEL SANGER, of Alton, in the county of Madison, and State of Illinois, have made certain new and useful Improvements in Car-Heating Stoves; and I do hereby declare that the following is a full and clear description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The object of this invention is to construct a stove for heating railroad-cars, and other similar public conveyances, in such a manner as to preclude the possibility of fire escaping from the stove in cases of casualty by the overturning of the vehicle; and, furthermore, the stove is supplied with a water-reservoir, which is connected with the fire-box of the stove in such a manner that, should the stove be overturned, the water from the reservoir will instantly enter the said fire-box and put out the fire therein, thus wholly avoiding the danger of setting the vehicle on fire by this means.

To enable those skilled in the art to make and use my improved stoves, I will proceed to describe their construction and operation.

Figure 1, of the drawings, is a side elevation of the improved stove;

Figure 2 is a front-end elevation of the same;

Figure 3 is a longitudinal sectional elevation; and

Figure 4 is a transverse sectional elevation.

The stove proper, or fire-box A, should be a strong iron box, the door, A', of which should be arranged to close air-tight, and only such air-apertures, as at *a*, should be allowed as are absolutely necessary to admit the required amount of air to support the combustion.

The stove A has a smoke-pipe, B, in the usual manner, and in this is placed an automatic valve or damper at *b*, which is to be operated in the manner hereinafter described.

On top of the stove, and connected with it by means of tubes or pipes C, is a water-tank or reservoir, D. The tubes C are connected with the top part of the water-tank, and are so curved and constructed that their bottom ends are attached to the opposite side of the stove, or opposite end of the stove, as the case may be, as is clearly shown in the drawings.

The object of this arrangement of the tubes is to convey the water from that side of the reservoir which may be lowest, when the said reservoir should, by accident, be tipped over to one side, to that side of the fire-box which would, at the same movement of the stove, be turned uppermost, thereby causing the water from the reservoir to descend through the tube C, which would thus be placed at the bottom of the series, and fall directly upon the top of the fire, thereby effectually extinguishing the whole of the fire in the stove, and thus precluding the possibility of setting fire to the vehicle by the overturned stove.

A float, E, is placed within the reservoir D, and is connected with the valve or damper *b* in the smoke-pipe, by means of the rods *e* and *e'* and the walking-beam *e''*. The arrangement of these parts is such that while the water in the reservoir stands at a sufficient height to be beneficial in putting out the fire in the stove in case of accident, the damper *b* will be held in such a position as to permit the fire to burn, but so soon as the float should fall below a certain fixed height, the damper would be turned so as to prevent the fire from burning, thus compelling the water to be retained in the reservoir at a certain fixed height, and thereby making this damper arrangement a valuable part of this life-saving apparatus, for such, in fact, it would become.

Having described my invention,

What I claim, is—

1. The stove A, tubes C, and reservoir D, when arranged as herein described, and for the purpose set forth.

2. The arrangement of the float E, valve or damper *b*, and the connecting-devices *e* *e'* *e''*, as and for the purpose set forth.

In testimony of which invention, I hereunto set my hand, in presence of—

ETHIEL SANGER.

Witnesses:

M. RANDOLPH,
GEO. P. HERTHEL, Jr.