STARK & FISHER.

Steam Heater.

No. 113,220.

Patented Mar. 28, 1871.

Fig. 1.

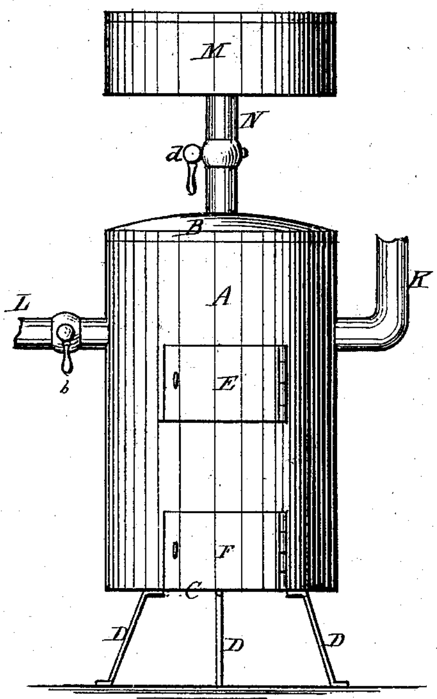
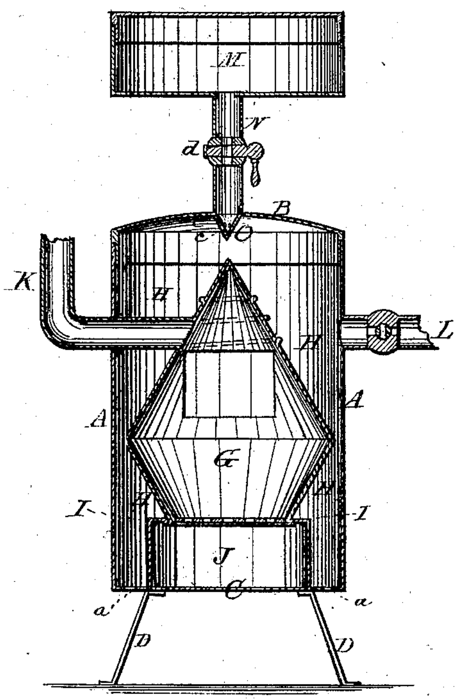


Fig. 2.



Witnesses.

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United States Patent Office.

WILLIAM STARK AND JOSEPH G. FISHER, OF TOLEDO, OHIO.

Letters Patent No. 113,220, dated March 28, 1871.

IMPROVEMENT IN HEATING-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 we, WILLIAM STARK and JOSEPH G. FISHER, of Toledo, in the county of Lucas and in the State of Ohio, have invented certain new and useful Improvements in Heaters; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing making a part of this specification and to the letters of reference marked thereon, in which drawing—

Figure 1 represents a front elevation of our device, and

Figure 2, a vertical cross-section of the same looking from back to front.

Like letters of like kind denote similar parts in each figure.

The object of our invention is the construction of a novel heater for use in dwelling-houses, railroad and street-cars, cabins of vessels, or other places where heaters are used; and

The nature of the invention consists in the application of water falling in drops upon the top of the fire-pot of the heater, for the purpose of making steam in the hot-air chamber of the heater, and in the combination and arrangement of the devices employed.

In the drawing—

A represents the outer case or shell of the heater, made most conveniently of a cylindrical form, of suitable sheet metal, provided with a cover, B, which may be made removable or not, as is most convenient for the particular use to which the heater may be applied, and with a close bottom, C. To this bottom legs D may be attached when desirable.

This shell is also provided with doors E, for placing fuel in the fire-pot, and F, for removing ashes; and this last door may have any suitable arrangement connected with it for regulating the draught.

Within the shell is placed the fire-pot G, so arranged as to leave an air-chamber, H, around it on all sides, from the top to the bottom of said shell.

This fire-pot has a top of conical form, with the point of the cone uppermost, and its base rests upon a plate, I, which covers the ash-box J.

The fire-pot is provided with a suitable apparatus for shaking down the ashes and for emptying out the contents of the fire-pot.

Suitable perforations, *a*, in the bottom of the shell A, admit air to the chamber H.

A smoke-pipe, K, leads out from the top of the fire-pot, and a hot-air pipe, L, leads out from the air-chamber, this last pipe being furnished with a damper, *b*.

A water-reservoir, M, is placed above the shell A, and connected with it by a hollow standard, N, which passes down through the center of the cover B, and terminates in a close conical end, O, with the point of the cone downward, and in line directly over the center of the top of the fire-pot.

This end O has one or more minute perforations, *c*, near its point.

The standard N has a valve, *d*, wherewith to regulate the flow of the water.

In use this heater may be supplied with wood or coal, the fire kindled in the usual way, the reservoir M being first filled with water, and the valve *a* turned, so as to prevent the falling of the water upon the stove.

When the top of the fire-pot has become sufficiently heated the valve *d* is turned so as to admit the passage of a very small supply of water into the end O, through the perforations of which it trickles, drop by drop, upon the top of the fire-pot.

The fall of these drops should be so regulated that each may be converted to steam as it strikes upon the top of the fire-pot.

The result of the conversion to steam of these successive drops of water in the hot-air chamber is to force out the heated air more rapidly, and to impart a certain degree of moisture to such heated air.

It is believed, moreover, as the result of actual experiment, that the quantity of heat is increased by this addition of steam over that obtained from the same amount of fuel burned in this heater without the use of steam, as described.

In the general use of this contrivance it is intended that suitable piping be attached to the hot-air pipe L, so that heat may be conveyed to rooms other than that where the heater is placed, and in its use for railroad or street-cars that piping be attached which should pass entirely around said cars, or back and forth, lengthwise or crosswise.

To this last-named use it is believed that this heater is peculiarly adapted, owing to the force with which the hot air is expelled from the heater, which enables it to traverse long length of pipe rapidly.

Having thus described our invention,

What we claim as new therein is—

1. The application of water in drops to the top of the fire-pot, within a hot-air chamber, substantially as described and shown, for the purpose set forth.

2. The combination of the reservoir M, standard N, hot-air chamber H, and fire-pot G, substantially as described, for the purpose set forth.

In testimony that we claim the foregoing we have hereunto set our hands this 28th day of October, 1870.

WILLIAM STARK.
JOSEPH G. FISHER.

Witnesses as to WILLIAM STARK:
MERRITT KING,
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