

W. H. SHOCK.
Steam-Radiators.

No. 155,986.

Patented Oct. 13, 1874.

Fig. 1.

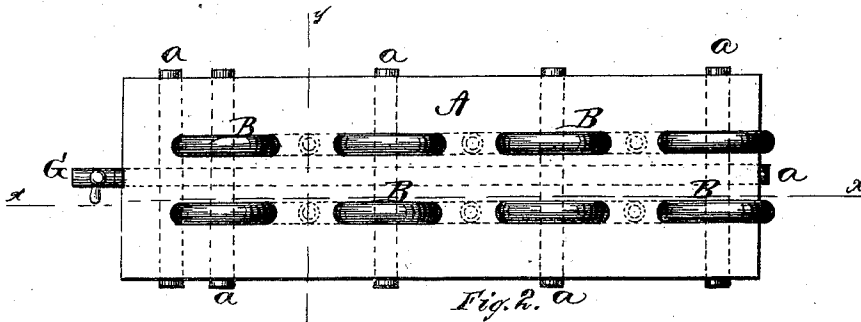


Fig. 2.

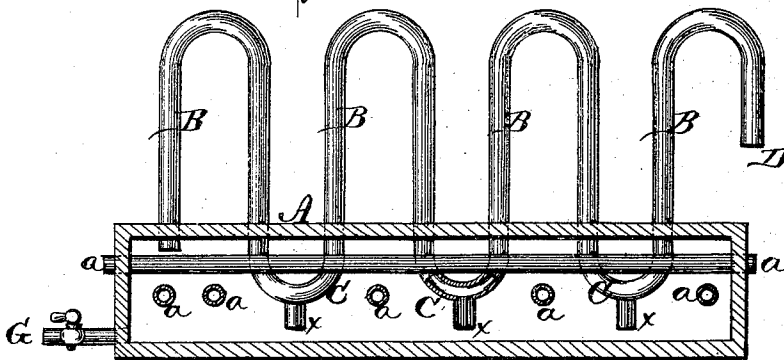
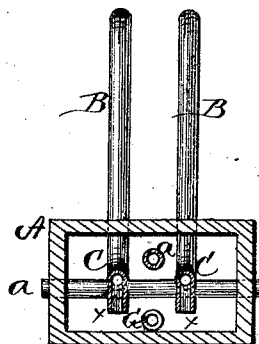


Fig. 3.



WITNESSES:
P. C. Dietrich
H. C. Scott

INVENTOR:
Wm H. Shock

per. C. H. Watson & Co.
ATTORNEYS.

UNITED STATES PATENT OFFICE.

WILLIAM H. SHOCK, OF BALTIMORE, MARYLAND.

IMPROVEMENT IN STEAM-RADIATORS.

Specification forming part of Letters Patent No. **155,986**, dated October 13, 1874; application filed August 6, 1874.

To all whom it may concern:

Be it known that I, WILLIAM H. SHOCK, of Baltimore, in the county of Baltimore and State of Maryland, have invented certain new and useful Improvements in Steam-Radiators; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to that class of radiators in or through which steam is allowed to pass to radiate heat; and the nature of my invention consists in one or more series of U-shaped perforated pipes or connections, cast in or otherwise secured to and inside of the foundation box or casing, in which the condensed steam or water of condensation is collected. At the lower end of the U-shaped pipes a small pipe, *x*, is attached, and a series of pipes passing through the foundation-box, as will be hereinafter more fully described.

In the accompanying drawing, Figure 1 is a plan view of my steam-radiator. Fig. 2 is a longitudinal vertical section through the line *x x*, Fig. 1; and Fig. 3 is a transverse vertical section through the line *y y*, Fig. 1, of the same.

A represents a box or casing of any suitable design and dimensions, in the top of which, and in connections with the U-shaped perforated pipes or connections hereinafter described, are secured one or more series of radiating tubes or pipes, B B, of the usual design. The radiating pipes or tubes B B of each series are arranged in a row, as shown in the drawing, the adjacent ends of each pair being connected one to the other by means of U-shaped pipes or connections C C, thereby securing an uninterrupted flow of steam through each row or series, as may be required. D represents the end of the first pipe in the series through which steam is conveyed from the boiler. Each series of pipes is provided with one of these steam-inlets D, and in the pipes from the boiler are to be suitable stop-cocks or valves. The end of the last pipe in each series opens into the box or casing A, and from this end of the casing a pipe, G, conveys the water of condensation back to the boiler.

In the operation of this radiator, the steam may be allowed to pass through as many, or as few, of the series of pipes as required by shutting off the stop-cocks or valves in the inlet-pipes leading to the series not to be used, and opening them in those leading to the series to be used.

The steam, entering (in each series) into the first pipe B, passes through the same into the first connection, C; from thence to the second pipe, B, and so on, to and through the last pipe in the series, into the box A, where it is condensed, and, as water, returns through the pipe G to the boiler.

Any steam that may condense in either of the pipes B will drop into the connections C, and from thence, through the perforations or pipes *x*, into the foundation box or casing.

It will readily be seen that there is no liability of any water collecting in either of the pipes, connections, or tubes, to become frozen. It all returns directly to the boiler, or to any other suitable place, at the option of the persons using the same.

In the ordinary radiators much of the heat is wasted by the steam passing through the tubes uncondensed. I utilize this heat by introducing tubes *a a* in the foundation box or casing A, as shown, being low down and in the coldest part of the room, and exposed to the action of the coldest air. The steam in the box or casing is therefore readily condensed, and the heat that would be otherwise lost is saved.

These tubes *a a* act as braces, which admit of great simplification in the construction of the foundation box or casing, being placed at right angles to each other in the box.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The box A, provided with the series of pipes B, the lower parts of which are provided with small pipes *x*, in combination with a series of hot-air pipes, *a*, passing, at right angles to each other, through the box A, serving the purpose of utilizing the heat, and as braces for the box, as and for the purpose specified.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

Witnesses: WILLIAM H. SHOCK.
C. H. WATSON,
H. C. SCOTT.