

L. S. DANIELS.
Steam-Radiators.

No. 135,633.

Patented Feb. 11, 1873.

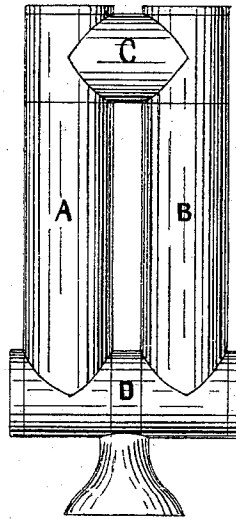


Fig. 1

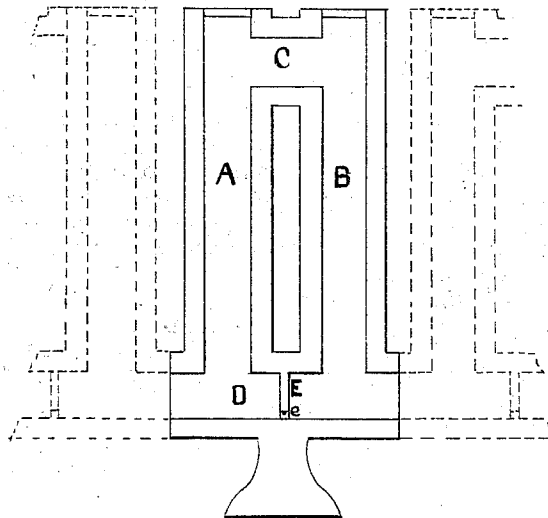


Fig. 2

WITNESSES

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LEWIS S. DANIELS, OF FOXBOROUGH, MASSACHUSETTS.

IMPROVEMENT IN STEAM-RADIATORS.

Specification forming part of Letters Patent No. 135,633, dated February 11, 1873.

To all whom it may concern:

Be it known that I, LEWIS S. DANIELS, of Foxborough, in the county of Norfolk and State of Massachusetts, have invented certain Improvements in Radiators, of which the following is a specification:

The nature of my invention consists in a device for a radiator, in which are a series of hollow vertical pipes, having a clear internal space, connected together at the top by tubes, also free internally, and having the lower ends of the said vertical pipes united to a horizontal pipe, which is provided with perforated diaphragms located between each pair of vertical pipes or columns, so as to cause a circuitous flow of steam. The object of this arrangement is to get a free flow of steam, and yet provide for the return of the water of condensation. The free circuitous flow of steam is obtained by the arrangement of open pipes and the diaphragms in the horizontal pipe, while the direct flow of the water of condensation is secured by the system of perforations in the lower part of the diaphragm.

Figure 1 is an elevation illustrating my invention. Fig. 2 is a section of the same, also showing, by dotted lines, additional pipes of the series.

Let D represent the horizontal pipe, to which the vertical pipes A and B are united at the

lower ends. C represents a short horizontal pipe that serves to unite the pair of vertical pipes at the upper end. E, Fig. 2, is a diaphragm, so located in the lower horizontal pipe as to separate the pairs of vertical pipes. Inspection of the drawing will show that the diaphragms E and connecting-pipes C together cause a circulation of steam through all of the pipes, and, as there is no division-plate or other obstructions in the pipes themselves, the flow of steam will be unimpeded. The diaphragms E are each provided with a small hole on a level with the bottom of the caliber of the lower pipe, so that the water may flow freely. This hole *e* through the diaphragm may be so small as not to allow any perceptible flow of steam, and yet allow the water to pass freely.

I claim as my invention—

The radiator described, consisting of the vertical pipes A B united at the top by the pipe C and at the bottom by the pipe D, the pipe D being provided with the separating-diaphragm E provided at its lower edge with an opening, *e*, for the passage of the water.

LEWIS S. DANIELS.

Witnesses:

FRANK G. PARKER,
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