J. R. WORSWICK.

Steam-Radiator.

No. 161,085. Patented March 23, 1875.

Fig. 1.

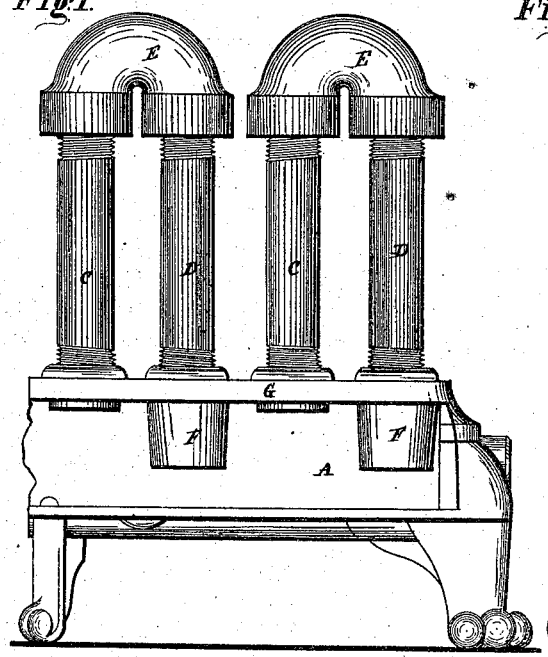


Fig. 2.

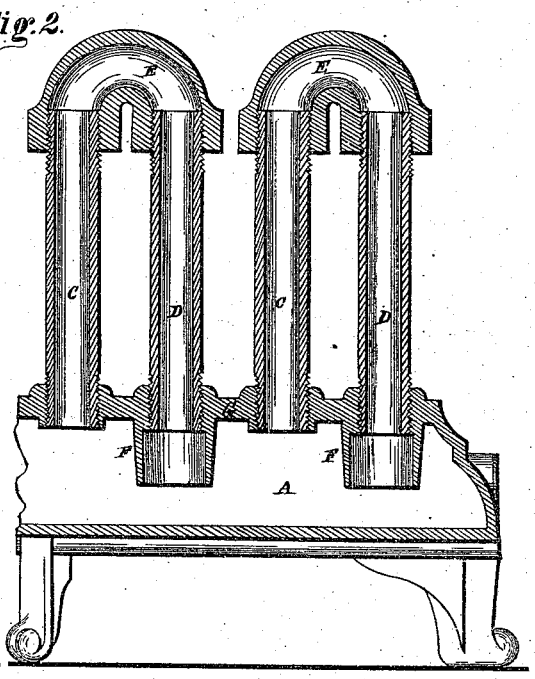


Fig. 3.

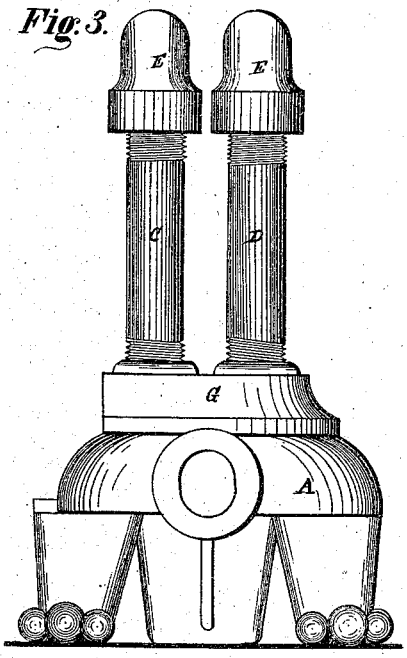
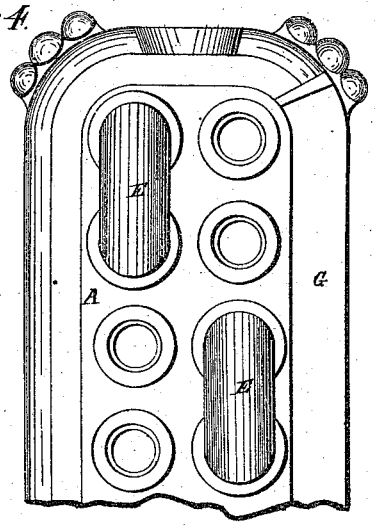


Fig. 4.



Witnesses.

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UNITED STATES PATENT OFFICE.

JAMES R. WORSWICK, OF CLEVELAND, OHIO.

IMPROVEMENT IN STEAM-RADIATORS.

Specification forming part of Letters Patent No. **161,085**, dated March 23, 1875; application filed January 11, 1875.

To all whom it may concern:

Be it known that I, JAMES R. WORSWICK, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and Improved Steam-Radiator, of which the following is a full, clear, and complete description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a side view of a section of a steam-radiator. Fig. 2 is a vertical section of the same. Fig. 3 is an end view. Fig. 4 is a plan view.

Like letters of reference refer to like parts in the several views.

The nature of this invention relates to a steam-radiator; and the object thereof is to so construct the base of the radiator that certain of the pipe-holes in the top of said base have formed around them on the inner side of the base a projection, whereby said holes are made to open into the chamber below the holes around which there are no projections, for the purpose of causing the steam to ascend in the pipes whose holes have no projections before it ascends the pipes having projections, the object of which is to drive the air quickly from the pipes, and thereby cause a quicker heating up of the radiator, by establishing a more immediate and perfect circulation of steam throughout the pipes connected to the base.

I am aware that, to accomplish the same end, certain of the pipes of a steam-radiator are screwed into the top of the base, and allowed to descend into the chamber of the base, thereby causing one leg of the pipe within the chamber to be longer than its companion leg in connection therewith, and also that auxiliary pipes have been used in connection with the steam-pipes for the same purpose. Such devices are practically and otherwise objectionable, in view of the great trouble and labor required to construct them and keep them steam-tight. They are also expensive. These objections are avoided by casting the projections referred to around the holes, as above specified.

In the drawings, A represents the base of the radiator, or rather a section of one, in the top of which are screwed the pipes C D. Said pipes are connected to each other by a return-bend coupling, E, into which the pipes are screwed, as shown in Fig. 2.

It will be seen that the screws on the lower end of the pipes are left-handed, whereas the screws on the upper end are right-handed. In thus using left and right handed screws the pipes C D can be screwed simultaneously into the base and into the return bend, thereby making a steam-tight joint, avoiding, by this means, the use of packing or cement.

It is found to be important, in this class of steam-radiator, to have one leg of a U-shaped pipe communicate with the chamber of the base lower down therein than the other. To accomplish this end, and at the same time have all the pipes C D of an equal length, is the purpose of forming around the holes of the pipe D the projections F, making a part of the base, as will be seen in Figs. 1 and 2.

It will be obvious that, on screwing the pipes C D into the base, one of them, C, will open directly into the chamber of the base, whereas the pipe D opens into the projection, and thereby is put into communication with the chamber at a point below that of the pipe C; hence both of the pipes C D terminate in the top of the base, as will be seen in Fig. 2, and which are of about equal length, as will be seen in the said figure. The diameter of the inside of the projection is made larger than the diameter of the pipe; hence no obstruction is offered by it in cutting the thread in the hole, and screwing in the pipe.

On the admission of steam into the chamber of the base it will naturally ascend into the pipe C a little before it does into the pipe D. The consequence will be, the air in the return bend will be driven out by the steam through the pipe D, thereby allowing a free admission of steam into the pipes at once, and an immediate heating up of the radiator, which would not be the case did the steam, when admitted into the chamber, ascend the two pipes C D at the same time. The pressure of steam being alike on both pipes, the air therein could not readily escape; hence would result a delay in heating up, and a straining and cracking of the radiator; but in having the steam pass up into the pipe C a little in advance of its ascent into the pipe D, a more

rapid and perfect circulation of heat is established throughout the entire radiator.

I do not claim a U-shaped pipe having one leg longer than the other, in combination with a base, for such pipes are objectionable, for the reason that the legs of said pipes cannot be screwed into the base, but which have to be secured therein by a packing or cement, in which event they are very liable to become leaky, in consequence of the contraction and expansion of the metal; but that which distinguishes my invention from others consists in providing certain of the holes in the base for the admission of the pipes with the projections referred to, and which holes, as well as the holes having no projections around them, are threaded, and into which the pipes are screwed at the same time that they are screwed into the return bend. By this means the connection of the pipes with the base is made secure against leakage.

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

The projection F, in combination with the base A and the pipes, substantially as and for the purpose set forth.

JAMES R. WORSWICK.

Witnesses:

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