

W. P. & R. P. THOMPSON.

STEAM RADIATOR.

No. 179,371.

Patented June 27, 1876

FIG. 1.

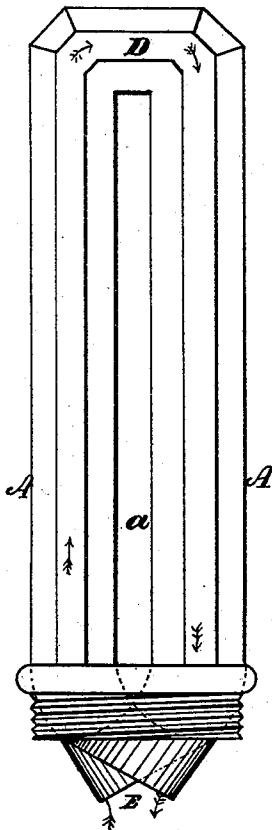
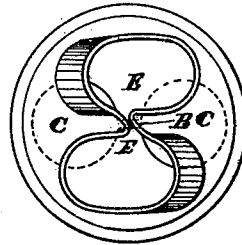


FIG. 2.



WITNESSES

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Fig. 3

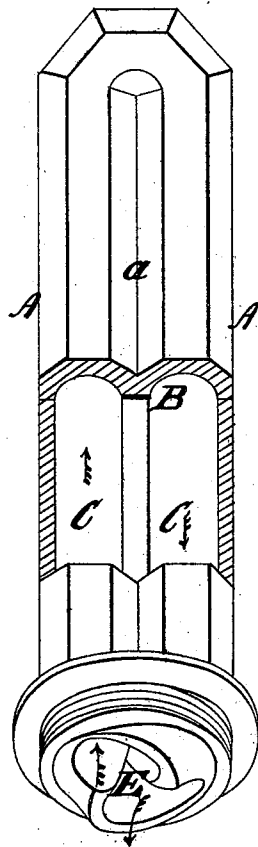
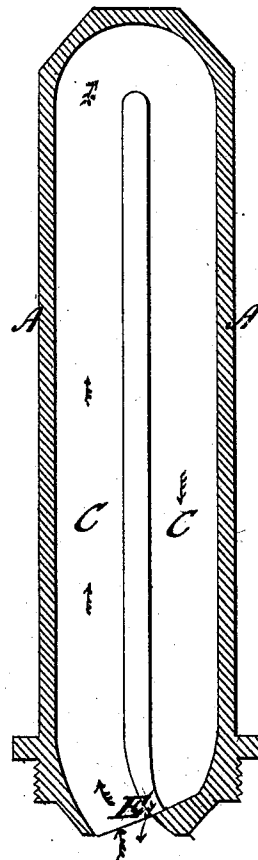


Fig. 4



Witnesses

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UNITED STATES PATENT OFFICE.

WILLIAM P. THOMPSON AND ROBERT P. THOMPSON, OF PHILADELPHIA, PA.

IMPROVEMENT IN STEAM-RADIATORS.

Specification forming part of Letters Patent No. **179,371**, dated June 27, 1876; application filed April 12, 1876.

To all whom it may concern:

Be it known that we, WILLIAM P. THOMPSON and ROBERT P. THOMPSON, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Steam-Radiators; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification, in which—

Figure 1 is an elevation of a tube constructed with our improvements. Fig. 2 is an inverted plan view of one of the tubes constructed with our improvements. Fig. 3 is a perspective, and Fig. 4 is a vertical central section, of one of the radiator-tubes.

Our invention relates to that form of steam-heaters for buildings in which the radiators are constructed of a number of tubes attached to a common base or supply pipe; and our improvements consist in a certain construction of the tubes and their apertures, whereby the heating-surface is increased and free circulation of the steam secured throughout, as hereinafter more fully set forth.

Referring to the accompanying drawings, A A are tubes, having indentations *a a* made longitudinally on opposite sides, so that their inner surfaces nearly, but not quite, meet, forming a space, B, connecting the channels C C, which are also joined together at the top of the tube, as shown at D. At the lower end of the tube these channels are given a spiral twist, which provides an auger-like aperture, E, to the tube. This spiral arrangement of the channels continued the entire length of the tube is one modification of this invention that it occurs to us to mention. Another is where the spiral is omitted and the space B continued down to the end of the tube.

We shall now proceed to describe the operation of our invention. The tubes, of which any number may be used, are screwed by their lower ends into a common base or supply pipe of the usual or any suitable construction, and therefore not deemed necessary to be illustrated in the drawing. At one end of this pipe there is an opening for the introduction

of steam, at the other an outlet for the discharge of condensation, and near the top of the tube, farthest from the opening at which the steam enters, a third opening, through which the air in the base or supply pipe is expelled by the pressure of the incoming steam, which, as it passes along the base across the mouths of the tubes, has the effect of suction upon the contents of one channel, C, and, being caught by the other lip of the aperture E, is turned up, the tube thereby forcing upward the contents of the other channel C, which, returning over at the top, descends and passes out at E in the direction indicated by the arrows.

The office of the space B is to allow the steam to eddy across the tube, and, mingling with the air, descend and pass out of the mouth E sooner than it would if compelled to rise to the top D of the tube before being allowed to return, thus providing for the expulsion of the heavier or condensed particles of steam from the ascending column in the channel.

We are aware that radiators constructed with upright tubes and a base or supply pipe are not new, and that there have been tubes made of a loop or inverted-U shape, whose one leg was projected below the other, and provided with a deflection at the end, and which, it is evident, is operative only when placed in one certain position with reference to the current of steam passing across its mouth, all of which we distinctly disclaim.

What we claim as our invention is as follows:

1. A radiator-tube, with a spiral arrangement of channels, C C, forming the auger-like aperture E, as hereinbefore set forth.

2. A radiator-tube, with indentations *a*, forming channels, C C, and communicating chamber B, made as and for the purpose set forth and shown.

In testimony that we claim the foregoing we have hereunto set our hands this 11th day of April, 1876.

WM. P. THOMPSON.
ROBT. P. THOMPSON.

Witnesses:

W. W. DOUGHERTY,
JOHN B. CAHILL.