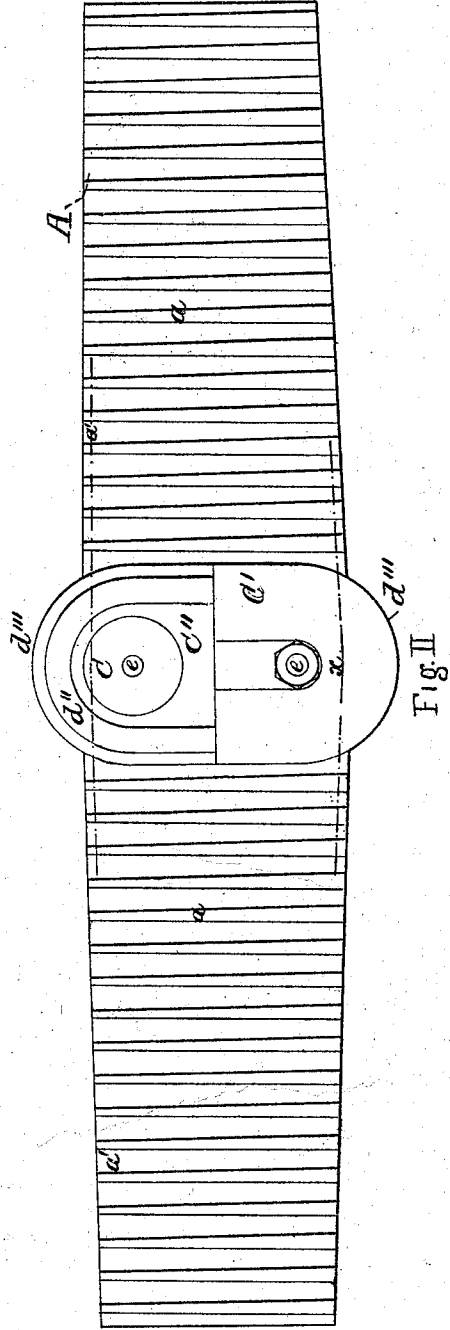
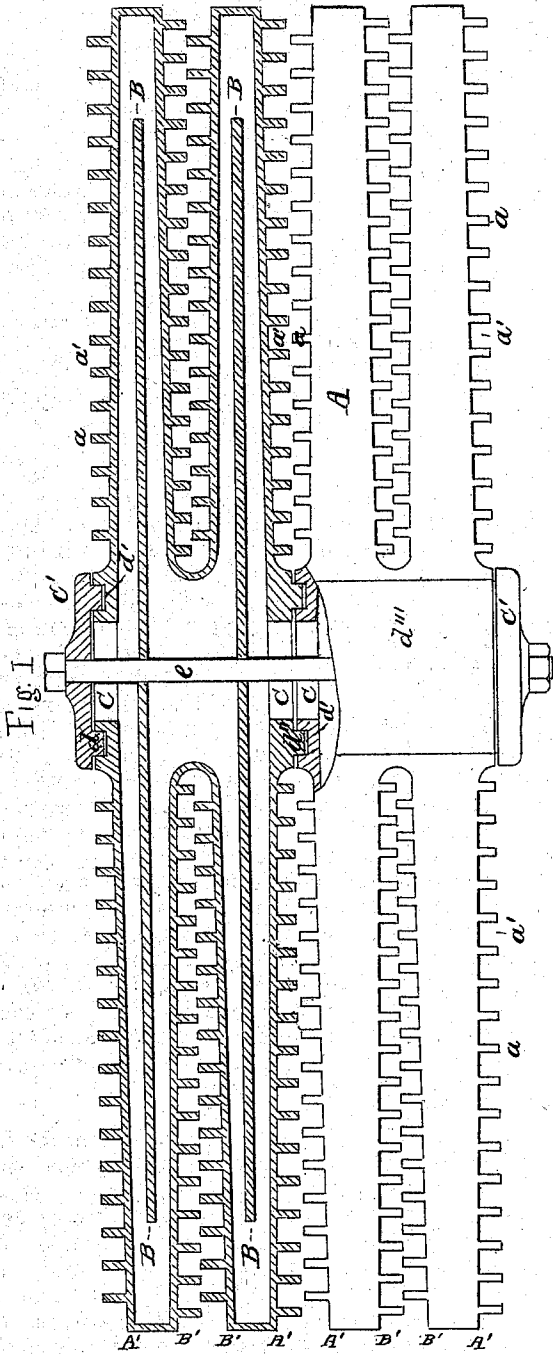


F. BRACKNEY.
Steam-Heater.

No. 131,731.

Patented Oct. 1, 1872.



— WITNESSES —

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— INVENTOR —

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his attys.

UNITED STATES PATENT OFFICE.

FRANCIS BRACKNEY, OF BALTIMORE, MARYLAND.

IMPROVEMENT IN STEAM-HEATERS.

Specification forming part of Letters Patent No. 131,731, dated October 1, 1872.

To all whom it may concern:

Be it known that I, FRANCIS BRACKNEY, of the city of Baltimore and State of Maryland, have invented certain Improvements in Apparatus for Radiating Heat, adapted to the heating of apartments and buildings, of which the following is a specification; and I do hereby declare that the same is a full, clear, and exact description of my said invention, reference being had to the accompanying drawing and to the letters of reference marked thereon.

My invention relates to a steam or hot-water chamber for the purpose of radiating heat, adapted to be used, singly or in benches or gangs, as direct or indirect radiators, having, with a view of procuring great outside heating-surface, two exterior and two interior surfaces upon the outside of the chamber, more fully hereinafter described. These surfaces are provided with tapering projections, those on one surface alternating in their positions with reference to those upon the opposite surface, so that the spaces between one series of these projections are opposed by the similar projections upon the opposite surface. The object of these projections and their alternate positions with reference to each other is to separate or reduce the volume of the current of air in its passage through the spaces formed thereby, that the fluid may the more readily be heated. In order to promote the thorough circulation of the steam around all portions of the interior surfaces of the chamber, and in some degree to oppose the ordinary velocity of its passage through an open duct, I place within the chamber certain diaphragms, around which the steam must circulate in its course through the chamber or series of chambers when they are arranged contiguous to each other in benches or gangs. Means are adopted for securing the chambers together in such series, and for closing the openings in the end chambers of the benches or gangs with suitable bonnets or heads.

In the further description of my invention which follows, due reference must be had to the accompanying drawing, in which—

Figure 1 is a part sectional and part non-sectional plan of two chambers fitted together, and Fig. 2 is a side elevation of a chamber with one-half of the closing-bonnet removed.

Similar letters of reference indicate similar parts of the invention in both figures.

A is the chamber, of which A' A' are the exterior and B' B' the interior surfaces here-

inbefore named. The tapering alternate projections are represented by *a*, and the opposing spaces by *a'*. As shown in Fig. 2, the spaces are narrower at the bottom than at the top, the intention being to provide a greater area for the rising current of air as it expands by the action of the heat. B B are the diaphragms or checks, extending across the entire depth or width of the interior of the chambers and nearly reaching to the ends thereof. C C are the openings through which the steam or hot water is admitted within the chambers. The openings are covered by the bonnets C', having the projection *d* fitted within the recess *d'*, wherein a suitable gasket is inserted. One side of the chamber has the recess *d'*, to which the projection *d''* of the adjacent chamber is fitted with a gasket. The openings C are within the solid center C'', and in the center of each opening is the bolt *e*, extending through the entire series of chambers and connecting them together in benches or gangs. These chambers, singly or in vertical or horizontal gangs, may be used as direct radiators when placed within the rooms or apartments to be heated. When placed in cellars or elsewhere, and provided with external casings and pipes leading to other parts of the building, their use is then as indirect radiators, whether used singly or in contiguous or adjacent series. It will be seen that, when a proper inclination is given to such series, full drainage of the condensed steam or water occurs through the openings C at the lowest point *x*. For this purpose the upper and lower parts *d'''* of the center C'' are solid.

I claim as my invention—

A receptacle for steam or hot water for the purpose of radiating heat, having the diaphragms B situated so as directly to oppose and conduct the steam or water entering centrally at C to the ends of the receptacle, and having as the exterior surfaces thereof the sides A' and B', herein called external and internal, provided with the tapering alternating projections *a*, together with the solid center C'' perforated with the openings C, the lowest point of which openings reaches to *x*, the whole constructed, arranged, and to operate substantially in the manner set forth.

FRANCIS BRACKNEY.

Witnesses:

W. C. DAVIDSON,
THOS. E. MARTIN.