

W. C. BAKER. Steam-Heating Apparatus.

No. 129,082.

Patented July 16, 1872.

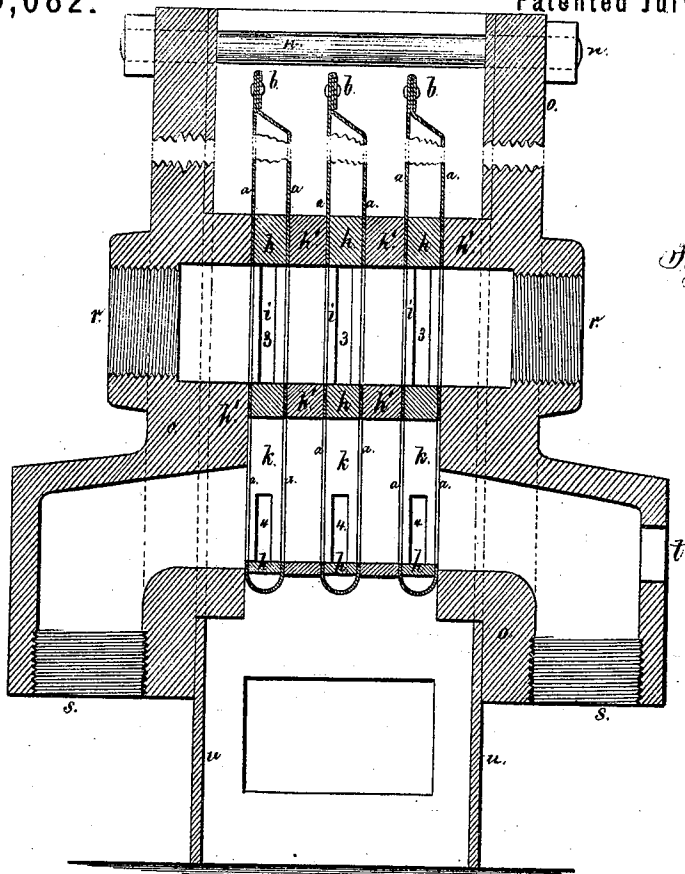


Fig. 2.

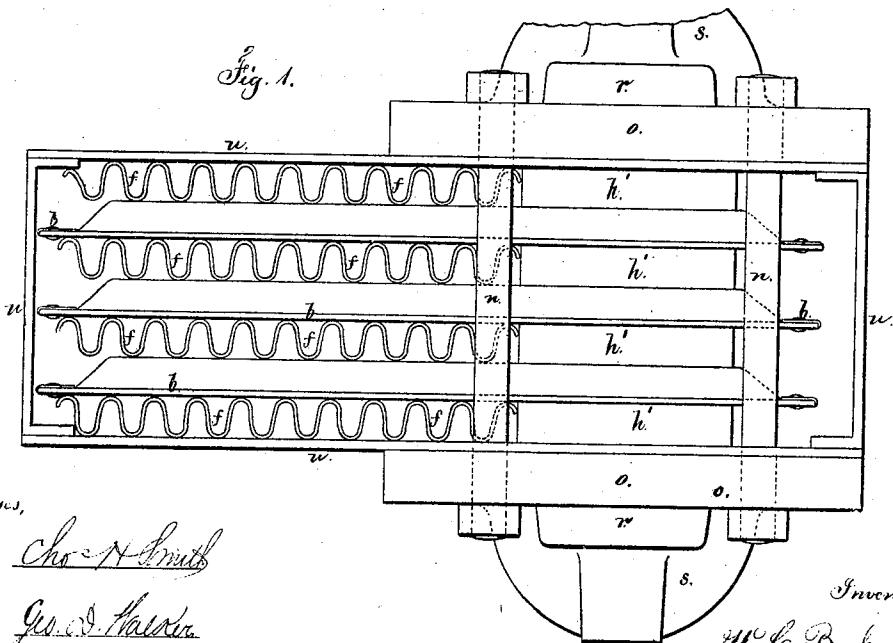


Fig. 1.

Witnesses,

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Geo. D. Baker

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Fig. 3.

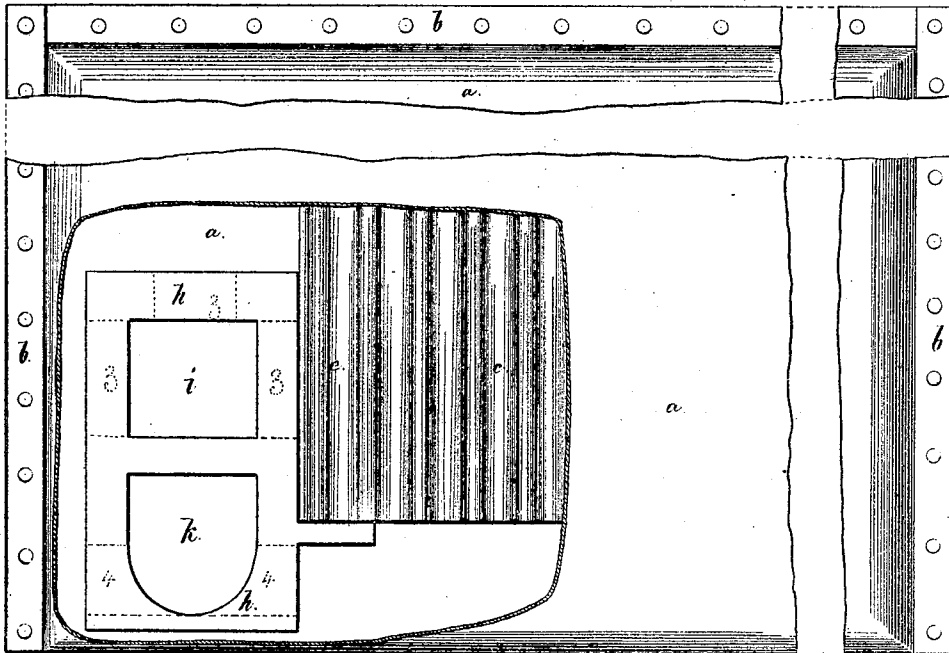
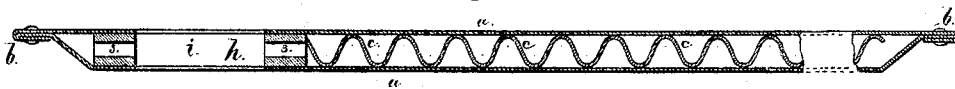


Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM C. BAKER, OF NEW YORK, N. Y.

IMPROVEMENT IN STEAM HEATING APPARATUS.

Specification forming part of Letters Patent No. 129,082, dated July 16, 1872.

To all whom it may concern:

Be it known that I, WILLIAM C. BAKER, of the city and State of New York, have invented an Improvement in Steam Heating Apparatus; and the following is declared to be a correct description of the same.

In Letters Patent No. 105,886, granted to me August 20, 1870, steam-chambers are shown connected together and supported by an exterior case.

My present invention is an improvement upon the said apparatus; and consists in a heating apparatus made of sheet-metal radiators, secured together and supported by metallic septums applied where the steam is admitted and the water of condensation removed; thereby the respective joints are made perfectly tight by clamping the parts together, with or without red lead or suitable packing material between the surfaces.

In the drawing, Figure 1 is a plan of the apparatus. Fig. 2 is a vertical cross-section, and Fig. 3 is an elevation, of one of the radiator-chambers, with the casing shown as partially removed; and Fig. 4 is a sectional plan of the same.

The radiator-chambers are each made of sheet metal of the desired size and shape, the sheet being preferably folded, riveted, and soldered, or otherwise fastened around the three edges, as shown in Fig. 3 at *b*. The desired space is left in the chamber between the two sheet-metal sides *a a*, and a plate of metal having vertical or longitudinal corrugations *c c* is introduced within the said chamber. This plate answers the two purposes of preventing the sheets *a* collapsing or bucking under change of pressure or vacuum, and of compelling the steam that rises in the upper part of the radiating-chamber to pass downward in numerous small jets through the corrugations of the plate. The corrugated plates *f* between the respective steam-chambers are similar to those in aforesaid patent. The sheet metal of the sides *a a* is cut away at the place where steam is introduced and the water drawn off. It is preferable that the steam should be introduced near one end of the radiators, and

they should be sufficiently inclined to cause water to discharge freely. Septums *h* are introduced in the steam-chamber between the sides *a a*. They are of a thickness to extend across such chamber, and each septum has flat parallel sides, steam-openings *i*, and water-openings *k*, with lateral channels 3 and 4; and septums *h'* are employed, corresponding generally to the septums *h*, but without the lateral channels 3 and 4. It will now be apparent that the sheets of metal forming the sides *a a* of the radiating-chambers are confined between the septums *h* and *h'*, and that the joints will be rendered steam-tight by red lead or suitable material upon the sides of the septums *h'*. The pressure to clamp these parts together is applied by means of bolts *n n* passing through the end plates *o o*; and I remark that these bolts are shown as entirely outside the steam-radiating chambers, or one or more bolts may pass through the openings *i* or *k*. The steam-pipe is connected at *r*, and the escape-water pipe at *s*; or there may be one of these at each end plate *o*, and an air-pipe, *t*, should also be provided, these parts being of any desired character.

It will be apparent that the steam passes freely into the openings *i*, and thence goes, by the lateral openings 3 in the septums *h*, into the steam-chambers, and, displacing any air, drives the same out through the openings 4, *k*, and pipe *t*, and as the steam condenses the water runs away through 4, *k*, and *s*.

In case of injury to any radiator it can be easily removed and another introduced; the parts are durable and cheaply constructed.

The radiator, constructed as aforesaid, is to be inclosed in any suitable case, *u*, with inlet and discharge air openings and pipes to convey the heated air to the respective rooms.

I claim as my invention—

1. A radiating-chamber made of sheet metal, and provided with a corrugated plate of metal within such chamber to keep the sheet-metal sides at the proper distance apart, substantially as set forth.

2. The septums *h* and *h'*, constructed sub-

stantially as specified, and introduced between sheet-metal sides *a* of the radiating-chambers, and clamped by means of bolts, substantially as and for the purposes set forth.

3. The end plates *o*, provided with connections for the steam and water pipes, in combination with the steam-radiating chambers,

septums, and clamping-bolts, substantially as set forth.

Signed by me this 6th day of May, A. D. 1872.

Witnesses:

GEO. T. PINCKNEY
CHAS. H. SMITH.

W. C. BAKER.