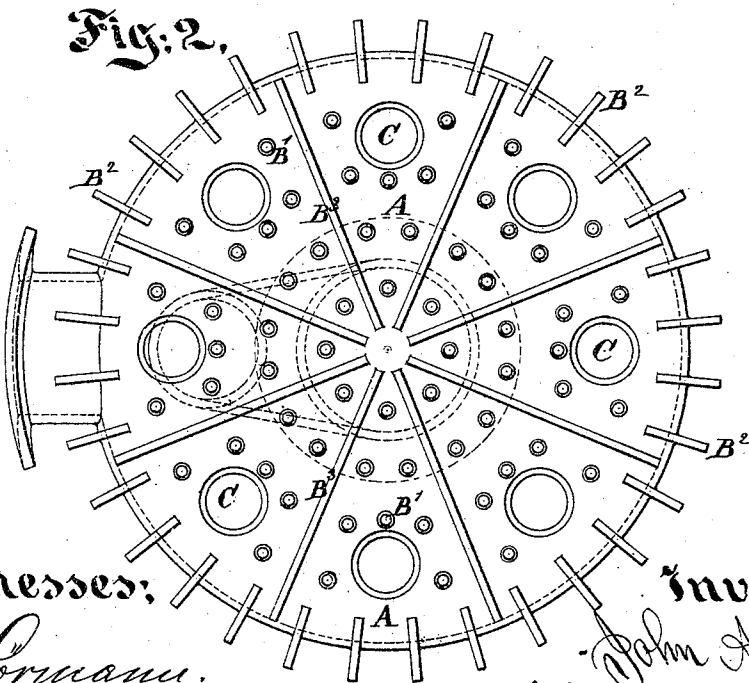
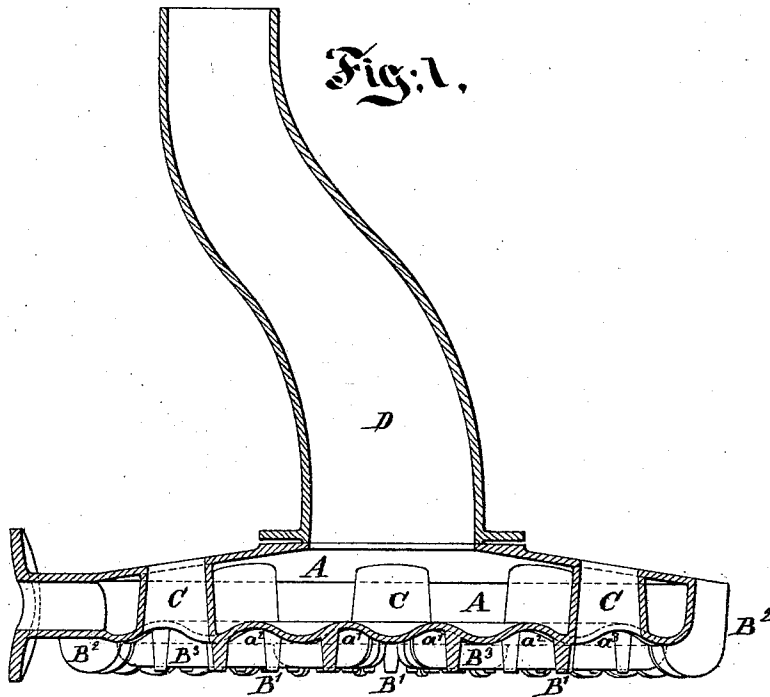


J. A. SCOLLAY.

Improvement in Water-Heaters for Green-Houses, &c.

No. 131,467.

Patented Sep. 17, 1872.



Witnesses:

A. Hornum.

Wm C Dey

Inventor,

John A. Scollay
by his attorney, *J. L. Sutton*

UNITED STATES PATENT OFFICE.

JOHN A. SCOLLAY, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN WATER-HEATERS FOR GREEN-HOUSES, &c.

Specification forming part of Letters Patent No. 131,467, dated September 17, 1872.

To all whom it may concern:

Be it known that I, JOHN A. SCOLLAY, of Brooklyn, Kings county, New York, have invented certain Improvements relating to Water-Heaters, of which the following is a specification:

The device is intended more particularly for heating water for warming green-houses and analogous purposes; but it may be used with success for other purposes.

It will be understood as incased in a water-jacket or brick-work, with the fire on a grate below, and the heated products of combustion passing through it, and also through a narrow space between it and the surrounding water-jacket or brick-work.

It is capable of being constructed entirely by coring. It is strong, and presents an unusually liberal surface for the absorption of the heat from the gases, and allows for any amount of expansion and contraction of either the side exposed to the fire or the one exposed to the flue-heat.

The accompanying drawing forms a part of this specification.

Figure 1 is a vertical section through the heater and connected pipe; and Fig. 2 is a plan view of the same viewed from below.

Similar letters of reference indicate like parts in both the figures.

The entire heater is formed of cast-iron in a single piece. I will designate the main body by the single letter A, using the letters a^1 a^2 , &c., to designate certain parts thereof. B^1 B^2 indicate certain projecting parts, and C certain flues cast therewith. D is a pipe secured around the hole on the upper side by bolts, not represented. The lower face of the main body is formed with circular corrugations, a^1 a^2 , &c. These corrugations allow this face of the casting to expand and contract indefinitely without serious strain. The lower surface of the bottom is thickly studded with slightly-tapered projections, marked B^1 . The edges or vertical sides of the casting are formed with

vertical flanges or wings, marked B^2 . B^3 are radial or nearly radial ribs or flanges extending across the lower face of the heater. They perform the double functions of aiding to absorb heat and strengthening the lower face of the casting. All the re-entering angles should be rounded to reduce the danger of cracking, as will be understood by founders. The pipe D being tightly fitted with a rust-joint or otherwise, and the whole being mounted in a water-jacket or brick-work, not represented, the radiant heat, as also the heat derived from convection, is rapidly transmitted to the water within the heater, and the effect is increased by the projections B^1 and the flanges B^2 , while the entire structure may change its form by the expansion and contraction of the corrugated lower side, as also the beveled upper side, to conform to the varying temperatures.

The construction avoids much of the danger of cracking and distortion experienced with the ordinary forms, and the heating is more efficient with a given amount of fuel than any other form of heater within my knowledge. It gives a free and quick circulation to the water, and experiment indicates that the heating efficiency as compared with the best ordinary heater, is as one hundred and twenty-eight to one hundred.

I claim as my invention—

The heater herein described as a new article of manufacture, the same being formed in one piece with flues, wings, projections, and corrugations, as shown, and adapted to be secured to the connection D, and to serve therewith within the surrounding water-jacket or brick-work, as herein specified.

In testimony whereof I have hereunto set my hand this 26th day of June, 1872, in the presence of two subscribing witnesses.

JOHN A. SCOLLAY.

Witnesses:

WM. C. DEY,
ARNOLD HÖRMANN.