(No Model.) 3 Sheets—Sheet 1.

T. HOLLAND.

MANTEL HOT WATER HEATER.

No. 491,108. Patented Feb. 7, 1893.

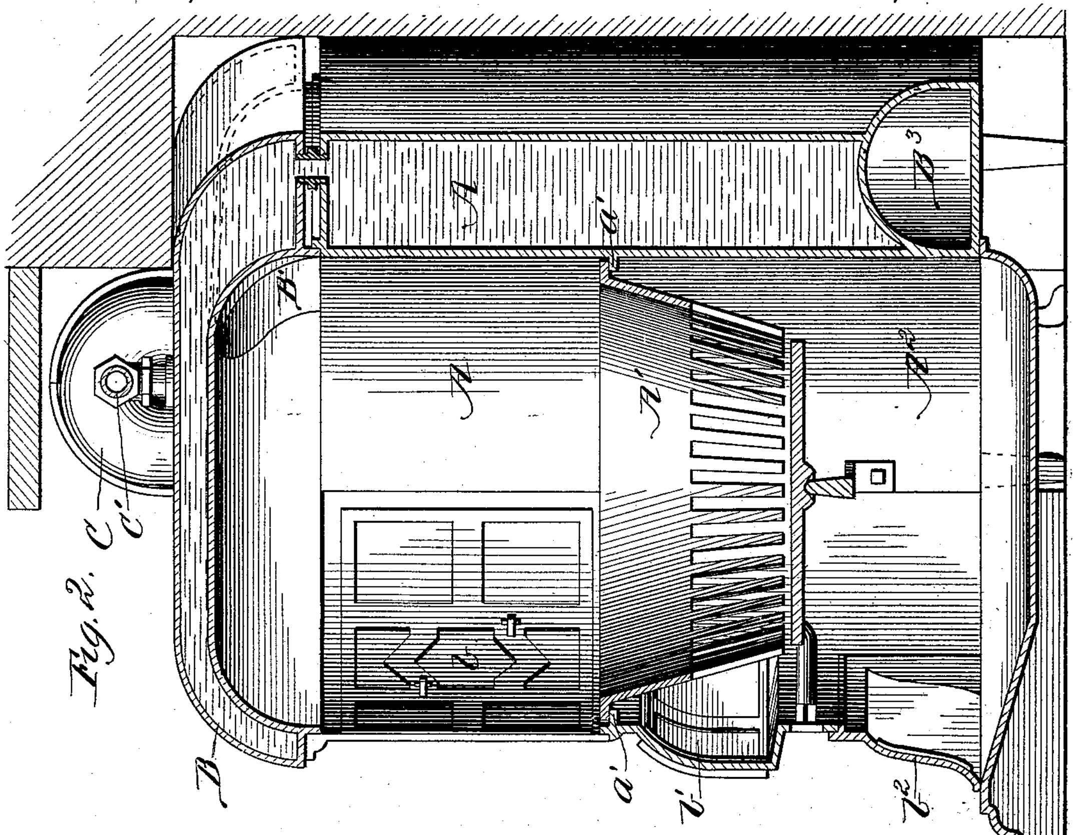

Fig. 2.

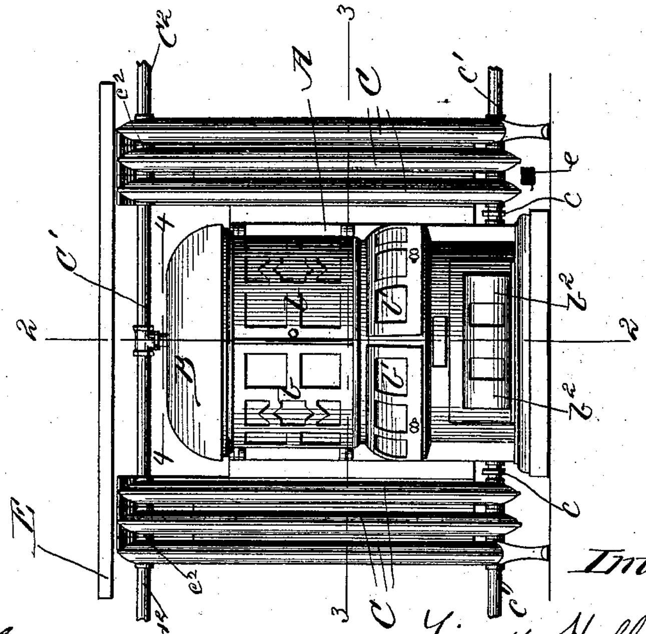

Fig. 1.

Witnesses.
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By Jno H Whipple
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.)

3 Sheets—Sheet 2.

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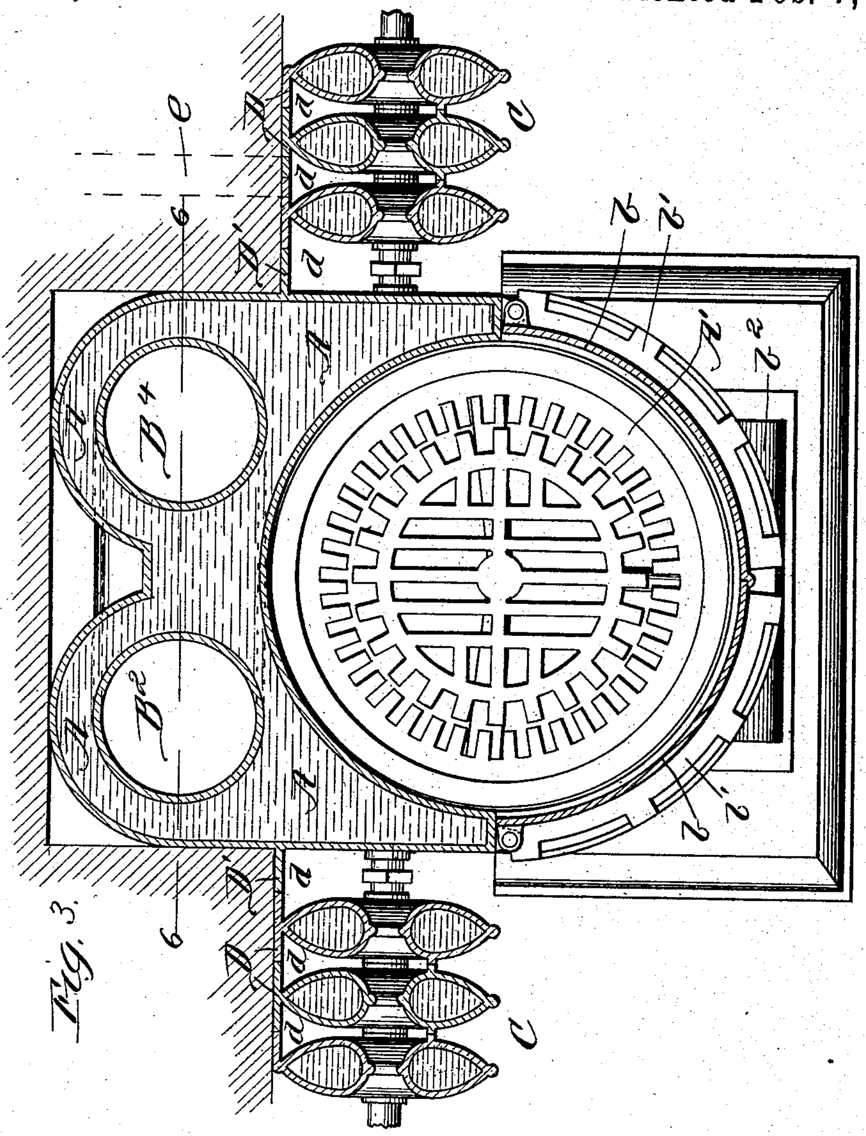

Fig. 3.

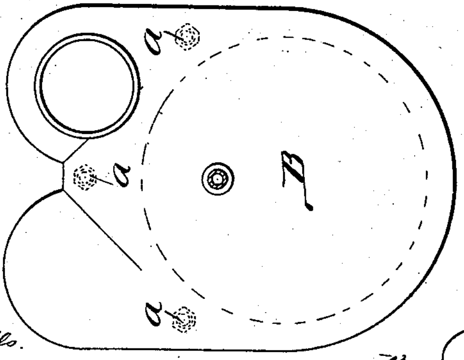

Fig. 4.

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(No Model.) 3 Sheets—Sheet 3.

T. HOLLAND.

MANTEL HOT WATER HEATER.

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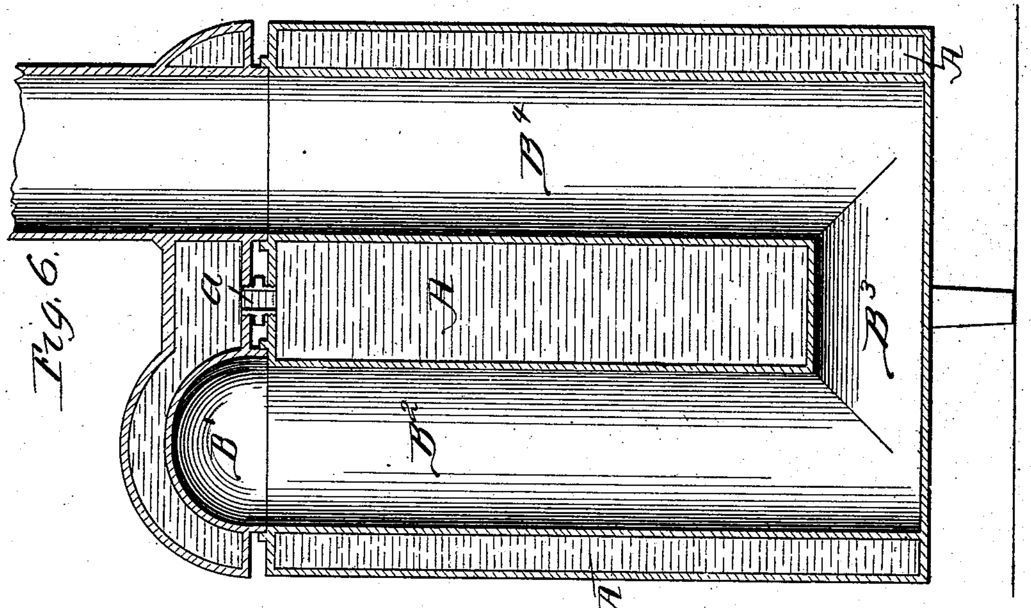

Fig. 6.

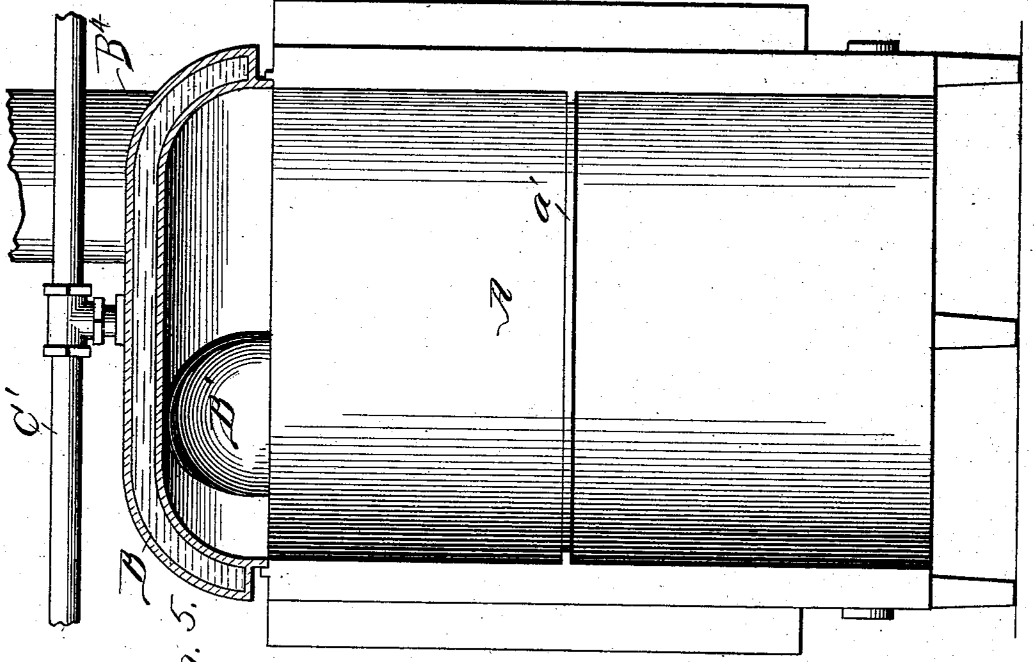

Fig. 5.

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UNITED STATES PATENT OFFICE.

TIMOTHY HOLLAND, OF CHICAGO, ILLINOIS.

MANTEL HOT-WATER HEATER.

SPECIFICATION forming part of Letters Patent No. 491,108, dated February 7, 1893.

Application filed April 23, 1892. Serial No. 430,292. (No model.)

To all whom it may concern:

Be it known that I, TIMOTHY HOLLAND, of Chicago, in the State of Illinois, have invented certain new and useful Improvements in Mantel Hot-Water Heaters, of which the following is a specification.

My invention relates to warming apparatus for residences; and the object of my improvements is to adapt a hot water heater to a fire place in conjunction with a pair of loop radiators serving as the jambs thereto and as a support for the mantel piece, the whole constituting an ornamental, convenient and economic warming apparatus. I attain this object by the means illustrated in the accompanying drawings, in which

Figure 1 is a front elevation of an apparatus of the class named, embodying my invention. Fig. 2 is an enlarged vertical section taken on the line 2—2 of Fig. 1. Fig. 3 is an enlarged horizontal section taken on the line 3—3, of Fig. 1. Fig. 4 is a detail showing an enlarged horizontal section taken on the line 4—4 of Fig. 1. Fig. 5 is a front elevation of the water back with the fire grate and front wall removed, the hood or cover over the fire place being in vertical section. Fig. 6 is a vertical section through the flues, it being taken on the line 6—6 of Fig. 3.

In the drawings, A designates the water-back, which is surmounted by a water dome or hood, B. Said back and hood are hollow, and preferably cast separately and connected by nipples a (shown in dotted lines, Fig. 4), so that the water can freely circulate from the back to and through the hood.

The interior face-side of the water back is concave, and provided with a flange a', or equivalent device for supporting the fire basket A', and grate A^2 in connection therewith, as seen in Fig. 2; and the front which forms the complement to the water back, and incloses the fire basket A', is provided with doors b b for introducing the fuel, doors or openings b' b' for affording access to clean and shake the grate, and sliding dampers b^2 b^2 for regulating the draft, the doors being provided with mica panels and being similar in construction and general appearance to the corresponding parts of a base burner heating stove.

The rear of the hood is provided with a flue opening B' at one side, which communicates with a down-flue B^2 and the latter connects through an opening B^3 at the bottom, with an up-flue B^4 which enters the chimney. The rear part of the hood and water back containing the flues, is adapted to be set back in the fire place and under the shelf of a mantel with the up-flue B^4 corresponding in position with the chimney leaving the front of the hood and the part inclosing the fire basket and doors for introducing fuel to project out into the room to be warmed, so that the radiation from the front will be out in the room somewhat more than the heat from a fireplace.

At the sides of the water back A, next to the wall of the room and in place of the jambs of a fire place, I arrange two loop radiators C, composed of a series of loops, which are connected with one another and with the water back at the bottom, by nipples c, so that water from the supply pipe c' can enter the loops and water back. The top of the radiator loops is similarly connected one with the other by nipples c^2 and with the hood B by means of a pipe C'. The heated water rises to the hood and thence through pipe C' to the top of the radiator loops, causing a circulation of the cooler water from the bottom or lower part upward, and away through circulating pipes C^2 to other radiators (not shown) which are to be located in other rooms of the same building and connected in the ordinary manner so as to include them with radiators C in one connected system for warming the different rooms.

The radiator loops are provided with vertical fins D cast on the rear side of the loops; and the water back also has a similar fin D' on each side. Said fins come together when the parts are connected and form vertical flues d at the back of the radiators through which the air is drawn from the floor and deflected outward by the mantel shelf E, made of a marble slab, which is placed on the top of the radiator. By providing an opening e in the wall of the building, a supply of fresh air may be admitted from the outside just under the radiators so that it will be warmed and discharged into the room, thus introducing a fresh supply of warm air for ventilation. The front part of the water back projects in-side of the line of the wall, against which the fins D come when the apparatus is in place, and the space intermediate this part of the water back and the radiator loops can give off radiation of heat in the same manner that an ordinary stove would if placed close to the wall; so that the warmth produced from this part of the apparatus is comparatively greater than that which could be produced from the consumption of a given amount of fuel in a fire place. By deflecting the products of combustion through the down flue B^2 and through the up-flue B^4, which are surrounded by the water space A, a further saving of heat is effected without in the least interfering with the draft, which will be required to be checked by closing the dampers b^2 as soon as the apparatus has become warm. The heat thus saved is utilized by means of the radiator loops and goes to augment that which would be saved and used for warming the room by the heater alone.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is

1. In a mantel hot water heater, the combination with an inclosed fire pot, of a concave water back, a hollow water hood over the water back, a down flue in the water back communicating through the hood with the fire pot, an up-flue in the water back communicating with the down-flue at the bottom, nipples connecting the water back and hood, a loop radiator on each side of the water back, connected by nipples with the bottom portion of the water back and by nipples and a pipe with the top of the hood, and a mantel shelf supported on the top of said loop radiators substantially as specified.

2. In a mantel hot water heater, the combination with an inclosed fire pot provided in front with a door and draft regulator and in the rear with a concave water back, of a water hood over the fire pot and connected by nipples with the water back, a down flue and an up flue in the water back communicating with one another at the bottom and with the fire pot under the hood at the top of the up-flue, a loop radiator on each side of the water back, connected therewith at the bottom and with the hood at the top, for causing a circulation of water through said loops, water back and hood, substantially as specified.

3. In a mantel hot water heater, the combination with an inclosed fire pot, of a water back, a water hood over the fire pot, a loop radiator on each side of the water back, and a mantel shelf surmounting the same, the loops of said radiators being connected with said water back and water hood so as to afford a circulation of water therein, substantially as specified.

4. In a mantel hot water heater, and in combination, an inclosed fire pot, a water hood over said fire pot, flues communicating with said fire pot, and having a meandering course through said water back, a radiator composed of a series of separate vertical loops on each side of said water back, extending above the said hood and surmounted by a mantel shelf, said radiator loops, water back, and hood, being connected so as to afford a circulation through the same, substantially as specified.

5. In a mantel hot water heater of the class described, the water back provided with a fin on each side, a series of separate radiator loops at each side provided with fins adapted to be used in conjunction with one another and the fins on the water back to form air flues behind said loops, and a mantel shelf mounted on said radiator loops and adapted to deflect the heat from said air flues outward from the walls, as specified.

TIMOTHY HOLLAND.

Witnesses:
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