

J. & T. A. RAISBECK.

Water Heater.

No. 108,050.

Patented Oct. 4, 1870.

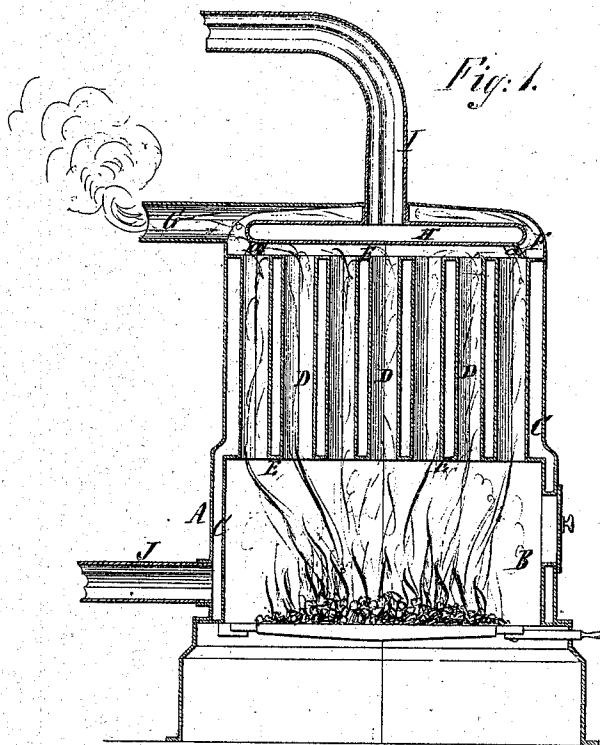
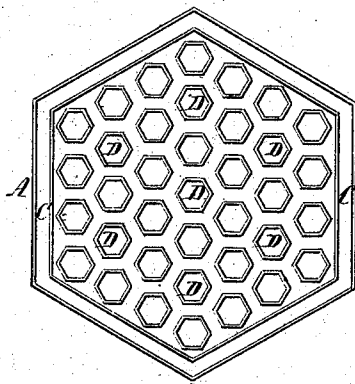


Fig. 1.



Fig. 3.

Fig. 2.



Witnesses:
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JAMES RAISBECK AND THOMAS A. RAISBECK, OF NEW YORK, N. Y.

Letters Patent No. 108,050, dated October 4, 1870.

IMPROVEMENT IN WATER-HEATERS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that we, JAMES RAISBECK and THOMAS A. RAISBECK, both of the city, county, and State of New York, have invented a new and improved Water-Heater; and we do hereby declare the following to be a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which drawing—

Figure 1 represents a vertical section of this invention.

Figure 2 is a horizontal section of the same.

Figure 3 is a transverse section of the heating-pipe.

Similar letters indicate corresponding parts.

This invention relates to a water-heater, which is intended particularly for hot-houses, and which consists essentially of an hexagonal jacket or drum, which is provided in its interior with a fire-place, and with a series of hexagonal or square fire-flues passing through a water-space, formed between the horizontal sheets in the drum, in such a manner that, by giving to said fire-flues an hexagonal or square cross-section, they can be arranged in such relation to each other that the intervening water-spaces are of uniform width throughout, and, consequently, the heat is uniformly distributed throughout the entire mass of water, and the fire-flues are protected on all sides by a body of water, of uniform thickness.

Over the fire-flues is placed a water-crown, which communicates with the water-spaces surrounding said fire-flues by means of two or more passages, and from which emanates a pipe, which, after having passed through the entire green-house, or other space to be heated, is returned to the bottom part of the main drum in such a manner that a continuous circulation of water takes place through the heater, and that said heater can be kept in operation for a long time, without requiring much attention.

The heating-pipe is corrugated, so as to increase its heating-surface, as compared with the quantity of hot water passing through it, and also to form a continuous water-pan between its corrugations, so that, in case the air becomes too dry, the requisite amount of moisture can be supplied by filling said water-pan with water.

In the drawing—

The letter A designates a drum or jacket, which is made hexagonal, as shown in fig. 2 of the drawing, and the lower part of which forms a fire-chamber, B, which is surrounded by the water-space C.

The heated gases and products of combustion which

rise from the fire, rise up through a series of flues, D, which are secured in horizontal sheets E, (see fig. 1,) or which, by preference, are cast in one piece, fitting the inner space of the drum or jacket.

Said flues are hexagonal or square, (see fig. 2,) so that the water-spaces formed between them are of uniform width throughout, whereby a uniform diffusion of heat through the entire body of water is insured.

This purpose can only be effected by making the flues hexagonal or square, since flues of any other form can not be arranged in such relation to each other that the intervening spaces are of uniform width throughout.

After having passed through the fire-flues, the products of combustion escape into the smoke-box F, whence they pass out through the escape-flue G.

In the smoke-box is placed a water-crown, H, which communicates with the water-space below, through two or more pipes, a, and from this water-crown extends a pipe, I, which passes through the green-house or other space, and returns to the jacket A, connecting with the same at J, as seen in fig. 1.

This pipe is, by preference made cross-shaped or corrugated, as shown in fig. 3, so that it offers a large heating-surface to the surrounding air, and, furthermore, if the air becomes dry, water can be poured in the corrugations of said pipe, and, by the evaporation of this water the requisite amount of moisture is supplied.

When the water in the crown is heated, it escapes through the pipe I, and returns to the lower part of the heater, and thereby a continuous circulation is kept up, and the same water is used over and over again, to heat the green-house, or other space.

What we claim as new, and desire to secure by Letters Patent, is—

1. The hexagon jacket A, inclosing a water-space, and a series of fire-flues, and a water-crown, substantially as described.

2. The top and bottom sheets E E, and flues D D, in combination with the surrounding water-space C, smoke-box F, water-crown H, heating-pipe I, and escape-flue G, forming together an improvement in water-heaters, as set forth.

3. The corrugated heating-pipe I, forming receptacles for water, to supply the requisite amount of moisture, substantially as described.

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