

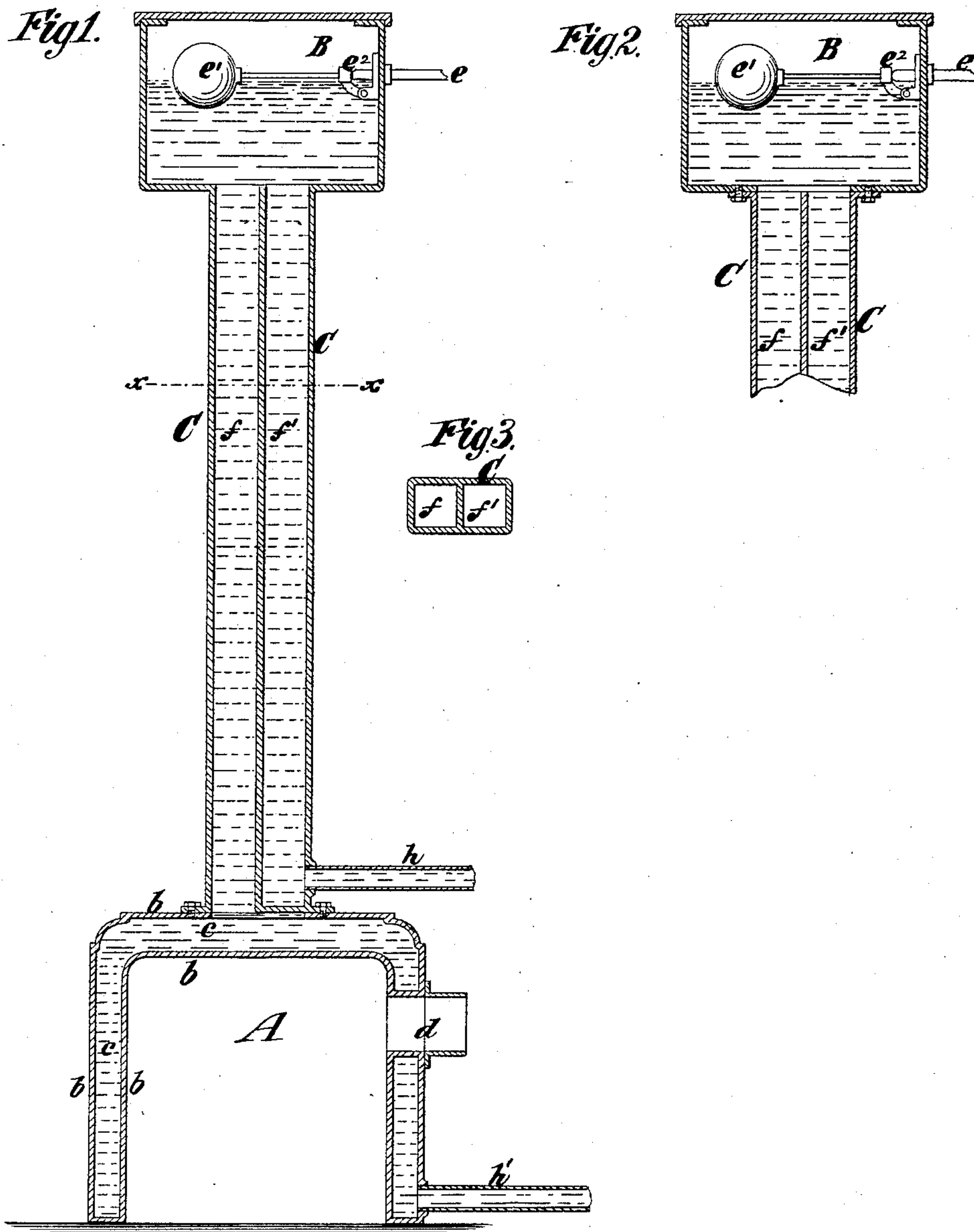
(No Model.)

C. E. HITCHINGS.

HOT WATER HEATING APPARATUS.

No. 353,138.

Patented Nov. 23, 1886.



Witnesses.

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UNITED STATES PATENT OFFICE.

CHARLES E. HITCHINGS, OF NEW YORK, N. Y.

HOT-WATER HEATING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 353,138, dated November 23, 1886.

Application filed April 15, 1886. Serial No. 198,927. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. HITCHINGS, of the city and county of New York, in the State of New York, have invented a new and useful Improvement in Hot-Water Heating Apparatus, of which the following is a specification.

My invention relates to heating apparatus for warming dwellings, greenhouses, or other buildings or apartments, and in which is employed a water-heater connected with a system of circulating-pipes, and a supply and expansion tank from which the water-heater and system of pipes are supplied, and which serves to permit the expansion of the water in the heater and system when raised in temperature.

The invention consists in novel combinations of parts, which are hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a sectional elevation of a water-heater and expansion and supply tank, and the hollow column supporting the elevated tank and embodying my invention, the hollow column and tank being represented as formed in one casting. Fig. 2 is a sectional elevation of the tank and the upper part of the hollow column, showing the two as made separate from each other and bolted together; and Fig. 3 is a transverse section of the hollow column on the plane of the dotted line *x x*, Fig. 1.

Similar letters of reference designate corresponding parts in the several figures.

A designates the water-heater, which has double walls *b b*, forming between them at the sides and top of the heater a water-space, *c*. This heater, with its double walls, may be made in one casting, and *d* is the smoke-outlet therefrom. The water in the space *c* may be heated by a gas or other flame within the heater. I have not shown the burners or means for heating the water, as they in themselves form no part of my invention.

B designates an expansion and supply tank, to which water may be admitted by a pipe, *e*, under control of a float, *e'*, and a valve, *e''*. Whenever the level of water in said tank falls in any material degree, the float will descend and open the valve *e''*, so as to admit water from the pipe *e* to maintain the required supply.

C designates a hollow column which is erected upon the heater A, and which serves to support the elevated tank B. This column may be formed of cast-iron, and has two passages, *f f'*, both of which communicate at their upper ends with the tank B. The passage *f* at its lower end communicates with the water-space of the heater A, while the passage *f'* at its lower end is closed to the water-space of the heater and is connected with the pipe *h*, which communicates with the system of heating pipes or radiators. (Not here shown.) The pipe *h'*, leading from the system of heating pipes or radiators, communicates with the water-space *c* of the heater A. The passages *f f'* in the hollow column C provide for the free circulation of water, and they may be of circular form, or of rectangular form, as shown in Fig. 3.

The hollow column C may be made in a casting, or otherwise formed separate from the expansion and supply tank B, and bolted to the tank, as shown in Fig. 2, or I may form the tank B and the hollow column C in one casting, as shown in Fig. 1.

From the above description it will be understood that the single hollow column, which is erected on the heater for the support of the elevated tank B, combines within it both the passages *f* and *f'* for circulation between the water-heater and the expansion and supply tank. The tank B should be arranged at such a height as to maintain the heater A and the hot-water pipes of the system full of water, as is usual in apparatus of this class, which comprises a supply and expansion tank.

It is obvious that the number of passages in the column need not be limited to two, but that more than one passage may be used for the ascending currents and more than one for the descending currents of water.

In all systems of hot-water heating apparatus where a supply or expansion tank, B, is arranged above the heater, it is usual to employ two pipes, through one of which the water may flow upward from the water-space of the heater to the tank, and through the other of which the water may descend from the tank and pass to the system of radiators. A single pipe would not adequately serve the purpose, because the circulation through it would not be positive. By bringing the two passages *f*

f' into one structure, or by combining them in the form of a hollow column of considerable size, the tank B may be supported without other means, and simplicity of construction is secured. Such an arrangement is also advantageous because the number of joints which must be packed tightly is very much reduced over what would be necessary if two pipes were substituted for the hollow column having the passages $f f'$. In the operation of the apparatus the flow is upward through the passage f , thence downward through the passage f' , thence outward through the pipe h to the system of radiators, (not shown,) and thence back to the water-space of the heater A through the pipe h' , thereby including in the circulation all the water which may at any time be within the tank B.

What I claim as my invention, and desire to secure by Letters Patent, is--

1. The combination, with a water-heater, the pipe h' , and an elevated expansion and supply tank, of a hollow column extending upward from the heater for supporting the said tank, and comprising two passages for circulation,

one passage, f , communicating at its upper and lower ends, respectively, with the tank and water-space of the heater, and the other passage, f' , communicating at its upper end with the tank and having its lower end communicating with the pipe h and closed to the water-space of the heater, substantially as herein described.

2. The combination, with a water-heater and a pipe, h' , of a hollow cast-metal column erected on the heater, and supporting at the upper end an expansion and supply tank, B, made integral therewith, said column containing one passage, f , open at the ends to the water-space of the heater and the tank, and another passage, f' , open at the upper end to the tank and closed at its lower end to the water-space of the heater and communicating with the pipe h , substantially as herein described.

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Witnesses:

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