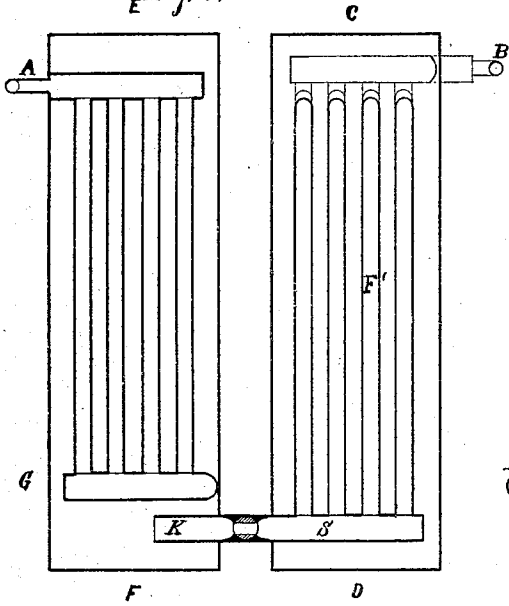


J. H. COREY.
Water-Tanks for Hotels.

No. 144,834.

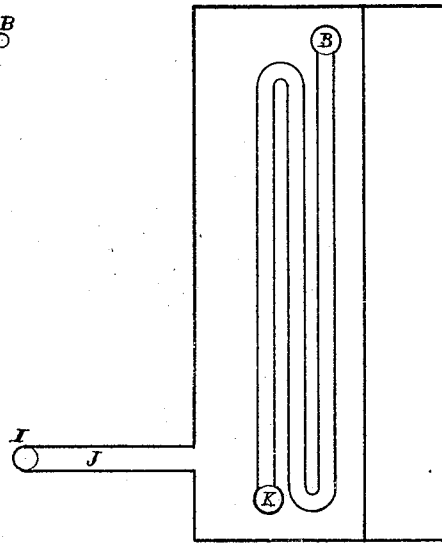
Patented Nov. 25, 1873.

Fig. 1.



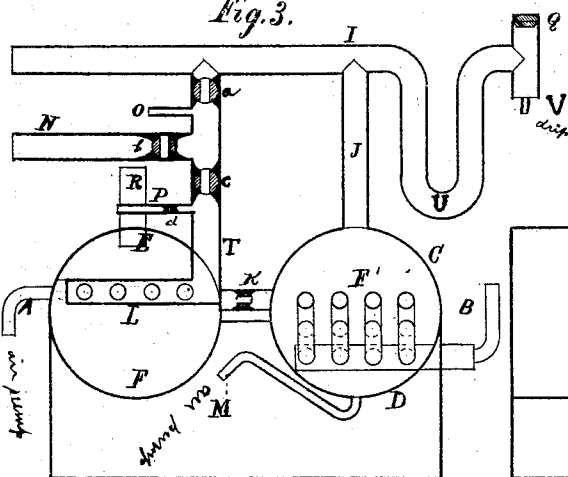
SECTION OF PLAN AT A.B.

Fig. 2.



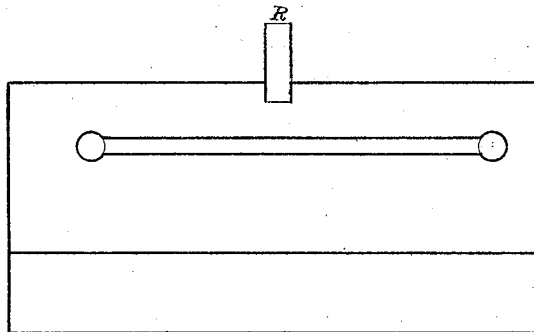
SECTION C.D.

Fig. 3.



CROSS SECTION G.H.

Fig. 4.



SECTION E.F.

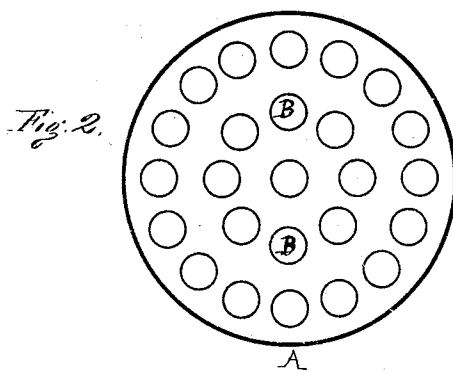
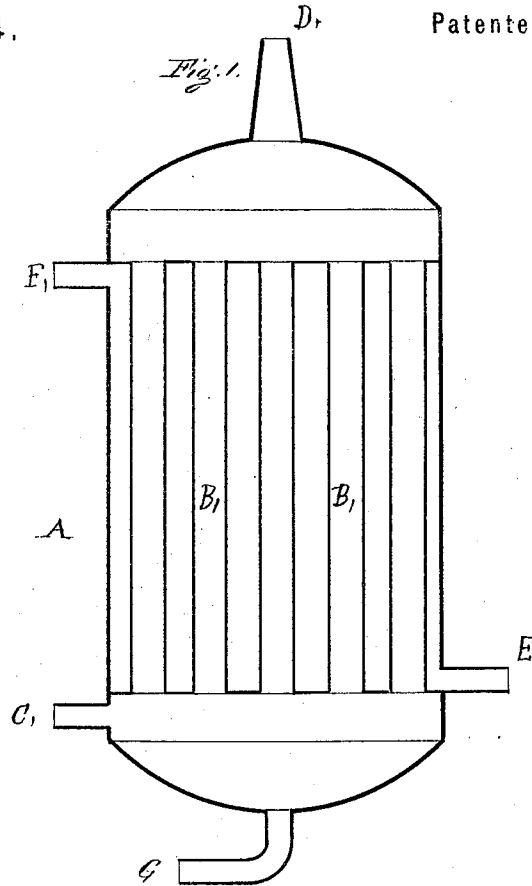
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Patented Nov. 25, 1873.



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UNITED STATES PATENT OFFICE.

JAMES H. COREY, OF NEW YORK, N. Y.

IMPROVEMENT IN WATER-TANKS FOR HOTELS.

Specification forming part of Letters Patent No. **144,834**, dated November 25, 1873; application filed May 29, 1873.

To all whom it may concern:

Be it known that I, JAMES H. COREY, of New York city, county, and State, have invented an Improvement in Water-Tanks for Hotels, of which the following is a specification:

The nature of my invention consists in so constructing the water-tanks of hotels and other buildings as to utilize, as far as possible, all the escape steam from the engines and all the drip from the heaters, kitchen, wash-house, laundry, &c., and thus to economize in the use of fuel.

The following is a description of my invention:

In the drawings, C D, Figs. 1 and 3, is a steam-tank, into which the exhaust steam from the engines is introduced through pipes I and J. F' is a coil of pipe within the tank C D, through which water, entering through B, passes out of tank C D into E F, which is a water-tank, through the pipe K. L is a coil of steam-pipe in said tank, and is connected with suitable pipes N, O, P, and T, in which are valves *a b c d*, for the purpose of changing the direction of steam, as desired, said pipes being connected with the exhaust from the engines and pumps, and with the dripping-pipes from the heaters, kettles, or any other steam heating apparatus. By means of the said pipes and valves, the exhaust steam may be passed into the steam-tank C D, when desired, instead of going into the water-tank E F, thus making the steam-tank and water-tank independent of each other, if desired. U shows a trap or seal, and Q a valve, which are designed to prevent back pressure on the engine. V is a drip-pipe through which to draw off any excess of water which might accumulate in the pipe. The water, passing through B into coil F' in steam-tank C D, is, in its passage through said coil, heated, and then flows into the water-tank E F through pipe K, and is there further heated by means of the coil of steam-pipe L, and is from this tank distributed, as may be desired; and as, by means of the pipes N, O, P, and T and the valves *a b c*, either live steam direct from the boilers or exhaust steam from the engines can be passed, at pleasure, through the coil L, the water in the tank E F can be heated to any desired degree. N represents return-

pipe from kitchen, laundry, or any steam heating apparatus; O, the return-pipe from the steam-coils for heating the building; P, the pipe by which live steam may be let into the coil L when desired. One or more water-tanks may be used, as may be needed, and they may be made interchangeable, so that they may be, at any time, repaired by removing one and replacing it by another without interfering with the necessary supply of warm water needed.

An exhaust-pump may be attached to the discharge-pipe of steam-tank C D at M, and to the steam-coil L of water-tank E F at A, to remove the atmospheric pressure, thus making the engines, pumps, &c., connected thereto act as low-pressure.

On Sheet No. 2 is shown another device for the purpose of heating water. Figure 1 is a vertical section of a tank in which either live or exhaust steam may be used in a single tank. Fig. 2 is a horizontal section of the same.

In these figures, A is the tank; B B, the tubes; C, the induction-pipe for live or exhaust steam; D, the exhaust or escape pipe. E is the ingress water-pipe; F, the egress water-pipe, and G is a pipe by which to draw off the condensed steam or water from the tank.

As the cold water passes into the tank near its bottom, at E, filling it up, surrounding all the pipes B up to the egress-pipe F, near the top, and as the steam passes in at C, going up through the tubes B, escaping at D, the water, surrounding the tubes B and filling up the tank, is rapidly heated, and is conducted, by means of proper pipes connecting with pipe E, to any place required, and used as desired.

This tank I design using, when desired, in connection with the tank E F, and in place or stead of tank C D.

Heretofore the water for use in hotels, laundries, hospitals, &c., has been heated by steam direct from the boilers, and the exhaust steam from all the engines, pumps, steam heaters, and cooking apparatus has been allowed to escape without being utilized, except merely to heat the feed water for the boilers. In my arrangement, all the waste steam, warm water, and heat is made available and useful, and an ample supply of hot water is thus obtained without the use of live steam, although I can

use it with the exhaust steam, if necessary; and thus a great saving of fuel and other expenses is effected.

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

1. The combination of the steam-tank C D with its coil of water-pipe F', water-tank E F with its steam-pipe L, the pipes I J for the induction of exhaust steam from the engine, and connecting-pipe K, constructed and arranged to operate substantially as described.

2. In combination with the steam-tank C D with its coil of water-pipe, the water-tank E F with its coil of steam-pipe, the pipes I, J, and B, and connecting-pipe K, the pipe N for the induction of water from the dripping-pipes, all constructed and arranged to operate substantially as described.

3. In combination with the steam-tank C D and its coil of water-pipe, the water-tank E F and its coil of steam-pipe, the pipes I, J, and

B, and connecting-pipe K, the pipe P for introducing live steam, all constructed, combined, and arranged to operate substantially as described.

4. In combination with the steam-tank C D and its coil of water-pipe, the water-tank E F and its coil of steam-pipe, the pipes I, J, and B, and connecting-pipe K, the pipe O for introducing return steam, all constructed, combined, and arranged to operate substantially as described.

5. In combination with the steam-tank C D and its coil of water-pipe, the water-pipe E F and its coil of steam-pipe, the pipes I, J, and B, and connecting-pipe K, the pipes N, O, P, and T, with valves *a*, *b*, *c*, and *d*, all combined and arranged to operate substantially as described.

JAMES H. COREY.

Witnesses:

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