

(No Model.)

J. HUSSEY.
RANGE BOILER.

No. 546,737.

Patented Sept. 24, 1895.

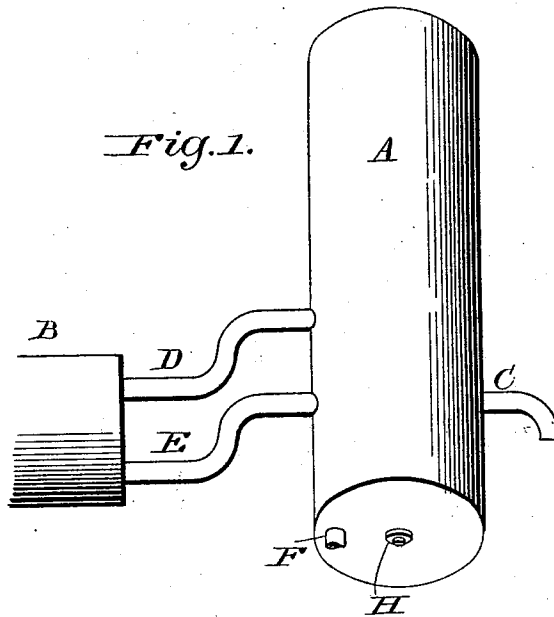
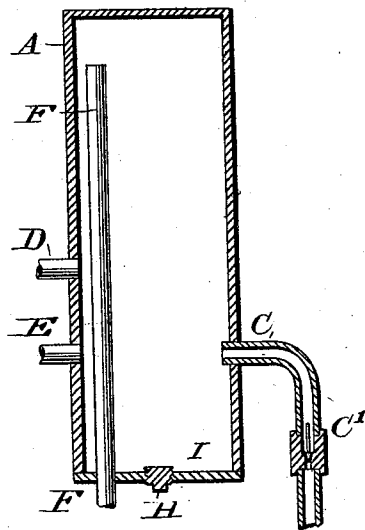


Fig. 2.



Witnesses

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RANGE-BOILER.

SPECIFICATION forming part of Letters Patent No. 546,737, dated September 24, 1895.

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To all whom it may concern:

Be it known that I, JOSEPH HUSSEY, a citizen of the United States, residing at Madison, in the county of Dane and State of Wisconsin, have invented a new and useful Range-Boiler, of which the following is a description.

The invention relates to that class of boilers designed for the distribution of hot water through the apartments of dwellings and other buildings and commonly known as "range-boilers" or "stand-boilers," in which water, primarily introduced into the boiler from a street main or like source, is heated in the water-back of a stove or range to which it is conducted, and from which it is returned to the boiler by means of connecting-pipes between the two, the connecting-pipes being arranged at different elevations to insure an active flow of water in one direction through one of them and in the opposite direction through the other.

One of the objects of this invention is the production of a boiler at small cost, in which, in its practical operation, the sedimentary deposits which unavoidably collect in the bottom of the boiler shall be but slightly, if at all, disturbed, thus avoiding intermingling of the same with the water and their discharge therewith into bath-tubs and other receptacles in the various apartments of the building in which the boiler is placed.

With these and other general and incidental objects in view the invention consists in various novel elements and combinations of elements, as will first be described with particularity, and then distinctly summarized in the concluding clauses of this specification.

In the accompanying drawings, which constitute a part of this specification, Figure 1 represents a side elevation of the boiler and its exterior connections, the boiler being tilted slightly backward upon its base to show the location of the bottom attachments. Fig. 2 represents a central vertical section from side to side of the construction shown in Fig. 1.

A designates the body or shell of the boiler proper, which, for the purposes of this invention, may be of galvanized iron, as is common, or of other suitable material.

B is a water-back; D, the upper connecting-pipe, through which hot water is conducted

from the water-back to the boiler, and E is the lower connecting-pipe, through which water of a lower temperature is conducted from the boiler to the water-back.

C is the service-pipe leading from the street-main or other source of supply and connected to the boiler, as shown, at one side thereof at a distance above the bottom sufficient to avoid agitation by the discharge of the inflowing current of any sedimentary matter which may have accumulated therein. This pipe C is provided, as shown, with a suitable check-valve C', which operates to permit inflow from the street-main at all times, and also, when for any purpose the flow from such source has been cut off, acts automatically to prevent outflow of the water contained in the boiler and its heating and distributing connections.

F is the hot-water-supply or distributing pipe, which communicates, either directly or by means of suitable branch pipes, with the several apartments which are to be supplied. This pipe, secured in an orifice in the bottom of the boiler at a point near the side thereof, and, by preference, directly opposite the point of connection of the cold-water-inflow pipe C, extends vertically upward to a point within a few inches of the upper extremity of the boiler, its remaining or outer portion extending, as already set forth, to the various apartments in which the hot-water supply is to be utilized.

At the center of the boiler, in the bottom thereof, is a clearing-opening or hand-hole, which is closed by an imperforate readily-removable screw-plug. If desired, a flanged interior cap, as in an ordinary manhole, may be employed instead of the screw-plug for closing the hand-hole.

Upon reference to the drawings and from the foregoing description it will be apparent that in the operation of the apparatus water discharged into the boiler from the service-pipe at a point directly opposite the lower circulating-pipe E, as shown, will be facilitated in its movement to the water-back by this coincidence of position; that the upward flow from the mouth of the upper circulating-pipe or return-pipe D will tend to cause a like movement of such portions of the water received from the service-pipe as do not upon their entrance pass at once to the water-back,

and that, as a consequence, little or no agitation of the sedimentary substance which may have accumulated in the bottom of the boiler will be produced. It will also be apparent that by reason of the remoteness of the sediment-space I in the lower extremity of the boiler, from the mouth of the distributing or hot-water-supply pipe in the upper extremity of the same, little if any portion of the solid matters which may be introduced through the service-pipe will find their way into such distributing-pipe. Besides, the location of the receiving end of the distributing-pipe at the upper extremity of the boiler—the point of highest temperature within it—is of great practical advantage, in that it insures a quick supply to the apartments of water which has been heated to a high degree.

The provision of the check-valve in the service-pipe operates as a safeguard against explosions and against possible burning out and destruction of the water-back when the supply of water from the street-main has for any purpose been cut off.

The provision of the hand-hole in the bottom of the boiler makes practicable a quick and easy clearance of the same from sedimentary deposits, since no detachment or uncoupling of pipes is necessary, as when a sediment-discharge pipe is employed at this point.

It will furthermore be perceived that the described construction is in a high degree economical of labor and of material, since no interior connections are employed, and but one of the pipes projects within the chamber or shell of the boiler.

The invention having been thus described, what is claimed is—

1. In a range-boiler which is provided in the bottom thereof with a readily accessible screw-plug and hand-hole, for the removal of sedimentary deposits, a service-pipe which is connected to the boiler at one side, and at a point a considerable distance above the bottom thereof; combined with a circulating or water-back pipe, which is connected to the boiler at a point opposite the mouth of the service-pipe; a water-back; an upper circulating or return-pipe which leads from the water-back, and is connected to the boiler at a point directly above the receiving extremity of the lower circulating pipe; and a hot-water supply or distributing-pipe which extends from

a point near the upper extremity of the boiler, directly downward through the bottom of the same; whereby an active circulation of the contents of the boiler, in the lower portion thereof, is avoided; and whereby a rapid flow of the heated currents, from the return-pipe to the distributing-pipe, is assured.

2. In a range-boiler which is provided, in the bottom thereof, with a hand-hole and screw-plug, for wiping the sediment-chamber, and for discharging deposits therefrom, a service-pipe which is connected to the boiler at one side of the vertical body, and at a considerable distance above the bottom thereof; a circulation-pipe which is connected to the boiler at a point directly opposite the mouth of the service-pipe, and which leads to the water-back of the range; a water-back; and a return-pipe which leads from the water-back, and discharges into the boiler at a point directly above the receiving extremity of the circulation-pipe; combined with a hot-water supply or distributing-pipe, which extends from a point near the upper extremity of the boiler, directly downward, through the bottom of the same,—the boiler being unprovided with any other interior pipe.

3. The herein-described range-boiler, consisting of the ordinary vertical cylindrical body or shell A; the service-pipe C, discharging directly into the boiler, at a point a considerable distance above the bottom thereof, and provided with automatically-closing check-valve C', to prevent outflow through such service-pipe; a heating-circuit, consisting of the lower pipe E, the water-back B, and the return-pipe D;—the pipe E being connected to the boiler at a point directly opposite the mouth of the inflow or service-pipe C, and the return-pipe D discharging into the boiler at a point directly above the receiving extremity of the pipe E; the clearing-opening and closing-plug, in the bottom of the boiler; and the hot-water supply or distributing-pipe F, at the heating-circuit side of the boiler, and extending directly downward, from a point near the upper extremity of the boiler, to and through the bottom thereof; substantially as and for the purposes set forth.

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Witnesses:

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