J. R. LAMB.

Boiler for Water-Heaters.

No. 161,522. Patented March 30, 1875.

FIG. 1.

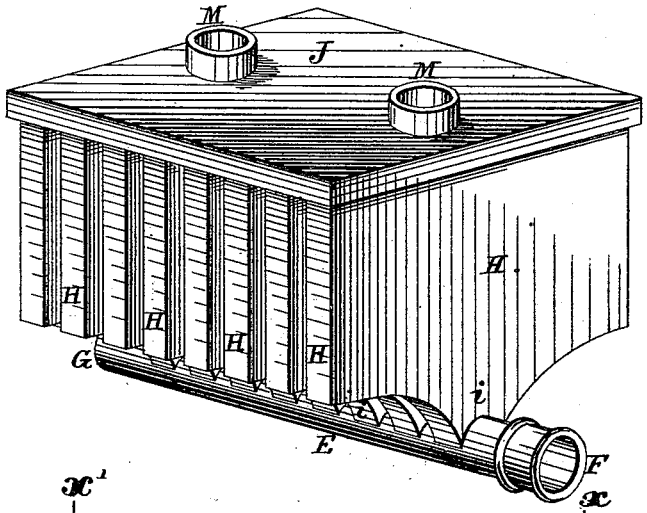


FIG. 2.

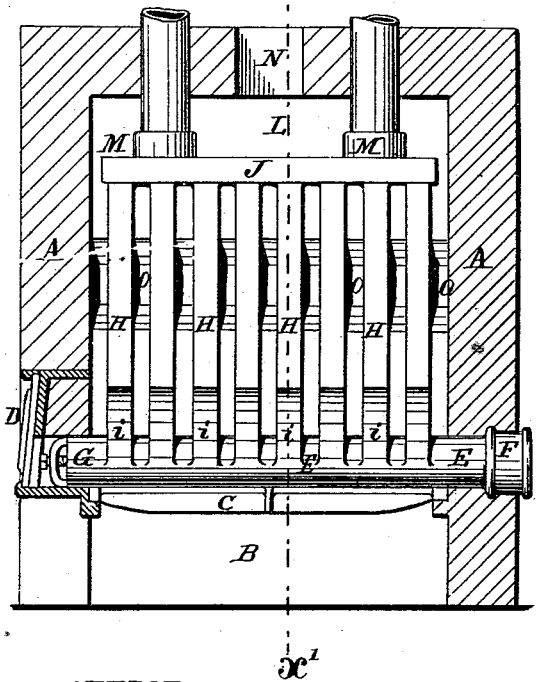
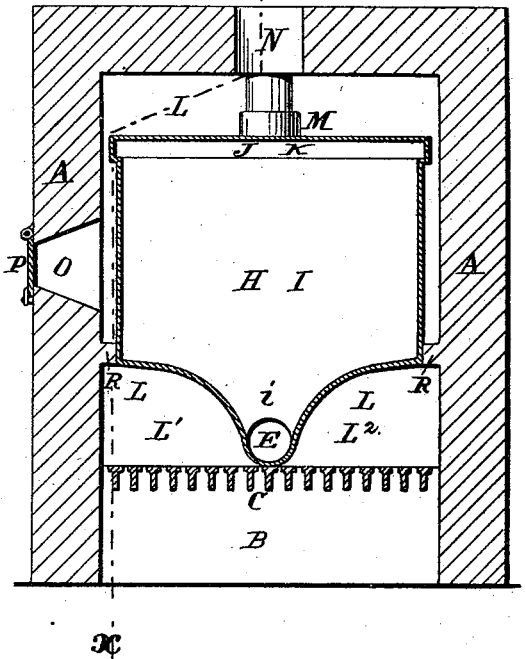


FIG. 3.



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UNITED STATES PATENT OFFICE.

JOSEPH R. LAMB, OF JACKSONVILLE, ILLINOIS, ASSIGNOR TO AMBROSE MARRIOTT, OF ST. LOUIS, MISSOURI.

IMPROVEMENT IN BOILERS FOR WATER-HEATERS.

Specification forming part of Letters Patent No. **161,522**, dated March 30, 1875; application filed March 1, 1875.

To all whom it may concern:

Be it known that I, JOSEPH R. LAMB, of Jacksonville, Morgan county, Illinois, have invented a certain Improvement in Boilers for Water-Heaters, &c., of which the following is a specification:

My improvement consists of a solid casting, having a horizontal upper portion, extending about the whole length and breadth of the furnace, and whose chamber communicates with the interiors of the vertical portions, extending nearly across the fire-chamber, and communicating together at the lower part by a longitudinal pipe, into one end of which the return water from the radiators enters.

In the drawings, Figure 1 is a perspective view of the casting. Fig. 2 is a side view of the boiler with the case, shown in longitudinal section at line *x x*. Fig. 3 is a transverse section at line *x' x'*, Fig. 2.

A is the casing, made of brick or metal. B is the ash-pit; C, the grate. D is a furnace-door, of which there are two, one on each side of the central inflow-pipe E. This pipe has at one end a socket, F, for the attachment of the return water-pipe from the heat-radiators in the building. At the other end of the pipe E is a hand-hole, G, for the removal of scale and sediment from the interior of the boiler.

The doors D, which may be made either to slide or to swing open, are upon each side of this hand-hole G.

The pipe E forms a connection between the lower ends of the vertical portions H of the boiler-casting, whose interiors I connect with the pipe at *i*. These parallel vertical portions may be three inches, more or less, in thickness, and, say, two inches asunder; but said thickness or distance are not material, and may be varied more or less, according to the description of fuel used. J is the top portion of the boiler-casting, which is horizontal, and extends nearly the whole length and breadth of the fire-chamber L. The interior or chamber K communicates with the chambers I, and the water from the boiler escapes from the chamber K through sockets M, with which the outflow-pipes are connected. N is the flue-orifice, through which the smoke, &c., pass off from the fire-chamber L. O is an opening in the side of the case A for the introduction of an instrument to clear away the soot from the sides of the vertical portions H. This opening extends the whole length of the boiler, and is ordinarily closed by a door or doors, P.

The portions E H J of the boiler, together with the sockets F and M, are cast in one piece, so that no joint is required except to make connection with the system of water-pipes connecting with the heat-radiators. These are rust-joints, preferably.

The boiler may be supported in the case in any suitable manner. I show for this purpose the pipe E, resting on the central grate-bar, and side blocks R interposed between the casting and the case. The pipe E may be elevated some distance above the grate, and the vertical support be given by the end walls of the case.

As shown, the fire-space L in immediate proximity to the grate, is divided into two portions, L^1 L^2, by the longitudinal pipe E, and, of course, the fuel is fed into both spaces, a doorway being in front of each.

As a modification, there may be two of these pipes E, one each side of the fire-space, leaving the central part of the grate and fire-space open; but the construction shown I deem much the best, as it causes a more equal distribution of the heat throughout the fire-chamber, the form of the lower sides of the portions H tending to deflect the products of combustion toward the sides.

I claim—

1. The combination of the divisions E H J, which constitute the single casting, substantially as set forth.

2. In combination with the cast boiler E H J, the case A, provided with the opening O, as and for the purpose set forth.

JOSEPH R. LAMB.

Witnesses:

STEPHEN SUTTON,

FRANCIS MCCULLOUGH.