(No Model.)

2 Sheets—Sheet 1.

H. W. LIBBEY.

FIRE PLACE.

No. 438,319. Patented Oct. 14, 1890.

Fig. 1.

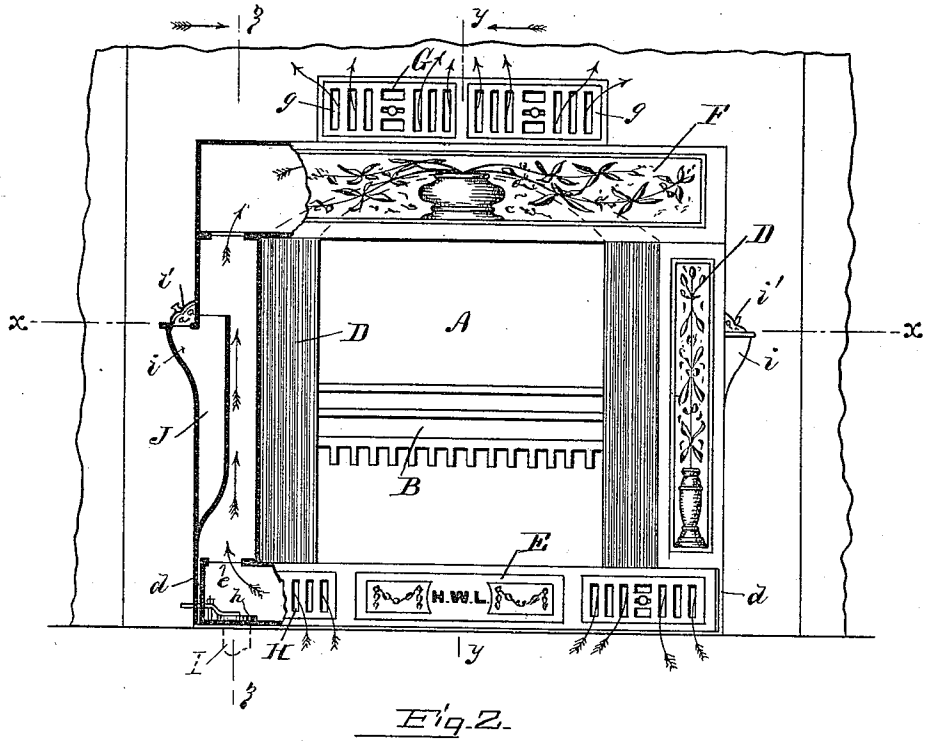
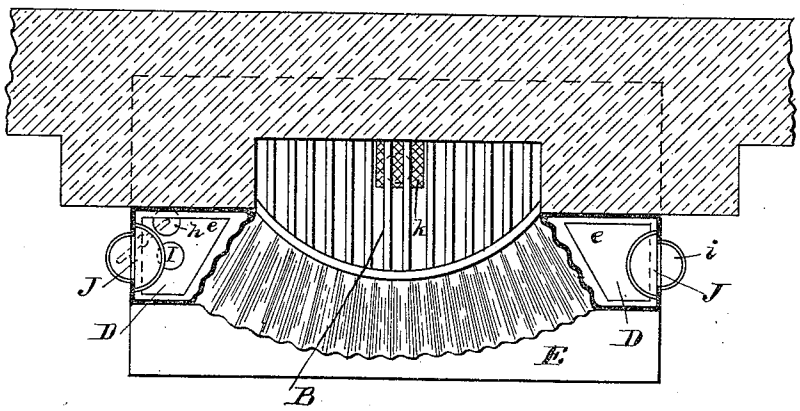


Fig. 2.



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(No Model.) 2 Sheets—Sheet 2.

H. W. LIBBEY.

FIRE PLACE.

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Fig. 3.

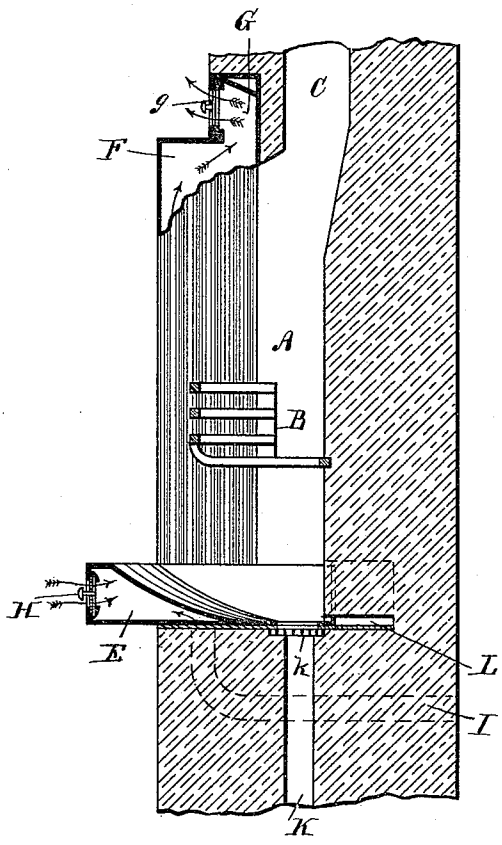
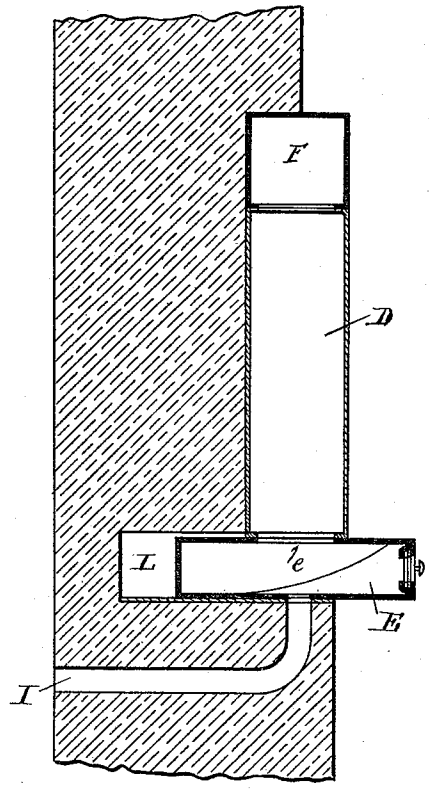


Fig. 4.



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UNITED STATES PATENT OFFICE.

HOSEA W. LIBBEY, OF BOSTON, MASSACHUSETTS.

FIRE-PLACE.

SPECIFICATION forming part of Letters Patent No. 438,319, dated October 14, 1890.

Application filed September 23, 1889. Serial No. 324,850. (No model.)

To all whom it may concern:

Be it known that I, HOSEA W. LIBBEY, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Fire-Places, of which the following, taken in connection with the accompanying drawings, is a specification.

The object of my invention is to produce a heater and ventilator for fire-places which can be readily set in any fire-place with the common grate, and in which heater there will be a constant circulation of air, so that warm air will be distributed to every part of the room; and the invention consists in the particular construction, as hereinafter fully described, and pointed out in the claims.

Referring to the accompanying drawings, Figure 1 represents a front elevation, partly in section. Fig. 2 is a longitudinal section taken on line *x x* of Fig. 1. Fig. 3 is a vertical section taken on line *y y* of Fig. 1. Fig. 4 is a similar section taken on line *z z* of Fig. 1.

A represents the fire-place, B the grate, and C the chimney, all of ordinary construction.

D D are hollow jambs that are each supported by a leg *d*, the main portion of the jambs being a few inches above the floor-level, so as to admit of a sliding hearth-box E passing beneath them. On the top of the jambs D is secured a hollow lintel F, that is in communication with the hollow jambs D. Above the hollow lintel is an air-receiver or concentrating-chamber G.

The sliding hearth E fits snugly between the two legs *d*, and its upper side is in close contact with the bottom of the jambs D, with which it communicates by suitable openings *e*. The front of the hearth-box E is provided with registers H, through which the cold air is admitted or drawn from the room. Air from the outside of the building may also be admitted to this sliding hearth E by means of an opening or air-flue I, the amount of air admitted from the outside being regulated by a damper *h*.

The hollow hearth E is adapted to slide in and out, so that in hot weather or when a fire is not required it can be slid in flush with the front of the jambs D; but when in use is drawn out, as shown. Its inner surface is concaved and corrugated, so as to catch and concentrate the heat from the under side of the fire. A small opening L is formed in the outer wall to receive the end of the hearth-box when pushed in.

The jambs D are made flaring, the flaring surface being corrugated, so as to effectively attract and concentrate the heat, and each jamb is provided with a water-reservoir J, which can be filled with water by a lip or nozzle *i*, that projects on the outer side of each jamb, which lip or nozzle may be covered by an ornamental cap *i'*.

The hollow lintel F is in communication at each end with the jambs D, and also communicates with an air receiver or concentrator G, which is in front fitted with registers *g g* to regulate the amount of hot air admitted to the room. The hollow lintel F is flat at each end, so as to fit onto the jambs D; but between the jambs it is of an arch form, as shown in Fig. 3, and it is corrugated, so as to catch and retain as much as possible of the heat that may arise from the fire.

The cold air from the room enters the sliding hearth E through the registers H and passes through the hearth-box up the jambs D into the lintel F, and thence to the hot-air or concentrating chamber G, (it having been heated in its passage,) from which it is delivered in a heated state into the room through registers *g*, thereby forming a perfect circulation of air through the room and the heater, the corrugated surfaces of which cause it to be heated to a very high degree. Should the room become too warm or the air vitiated, then a fresh supply of air may be admitted through the air-flue I into the hollow hearth E, which then commingles with the air drawn from the room and passes through the heater and out into the room, as before described. By means of the damper *h* in the hearth-box the opening to the air-flue I can be regulated to admit only the required amount of air from the outside of the building.

K is an ash-dump pipe that is covered by a small grating *k*.

It will be seen that by means of the corrugated surfaces of the jambs, the arched cor-

rugated surface of the lintel, and the concave corrugated surface of the hearth-box the greatest possible amount of heat from the fire is utilized, as it is held by the corrugated surfaces and will not readily escape, therefore making a most efficient heater, and not only the air from the room is drawn in, heated, and discharged, but fresh air can be caused to commingle therewith, thereby giving much more pure air in the room than if the same air were heated over and over again; and the heated air in passing up the jambs takes up a certain amount of water from the reservoirs J, thereby rendering the heated air moist, and when the stove is not required for use the hearth-box can be pushed back, so as to be flush with the side jambs, thus giving additional space in the room.

What I claim as my invention is—

1. A fire-place formed of a sliding hearth, flaring corrugated jambs, the sliding hearth having openings communicating with the jambs, a lintel arched and corrugated, and an air-concentrating chamber, substantially as described.

2. The sliding hearth, in combination with the hollow jambs and lintel, the sliding hearth having openings communicating with the jambs, substantially as set forth.

3. A fire-place formed of a hollow hearth having a concaved corrugated surface, hollow flaring jambs having their sloping surfaces corrugated, said jambs communicating with the hollow hearth by suitable openings, a lintel the under side of which is flat at each end and its central portion arched and corrugated, and an air-concentrating chamber, all arranged substantially as shown and described.

4. In a fire-place of the character described, hollow jambs having water-reservoirs J, and projecting lips or nozzles *i*, substantially as and for the purposes set forth.

5. In combination, the hollow jambs and lintel, an air-concentrating chamber provided with registers, a hollow sliding hearth having openings communicating with the hollow jambs and registers in front and communicating with an air-flue, and a damper for regulating the supply of air admitted by said flue, substantially as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 26th day of July, A. D. 1889.

HOSEA W. LIBBEY.

Witnesses:

CHAS. STEERE,

EDWIN PLANTA.