(No Model.)

L. M. RUMSEY.

FIRE PLACE.

No. 413,561. Patented Oct. 22, 1889.

Fig. I.

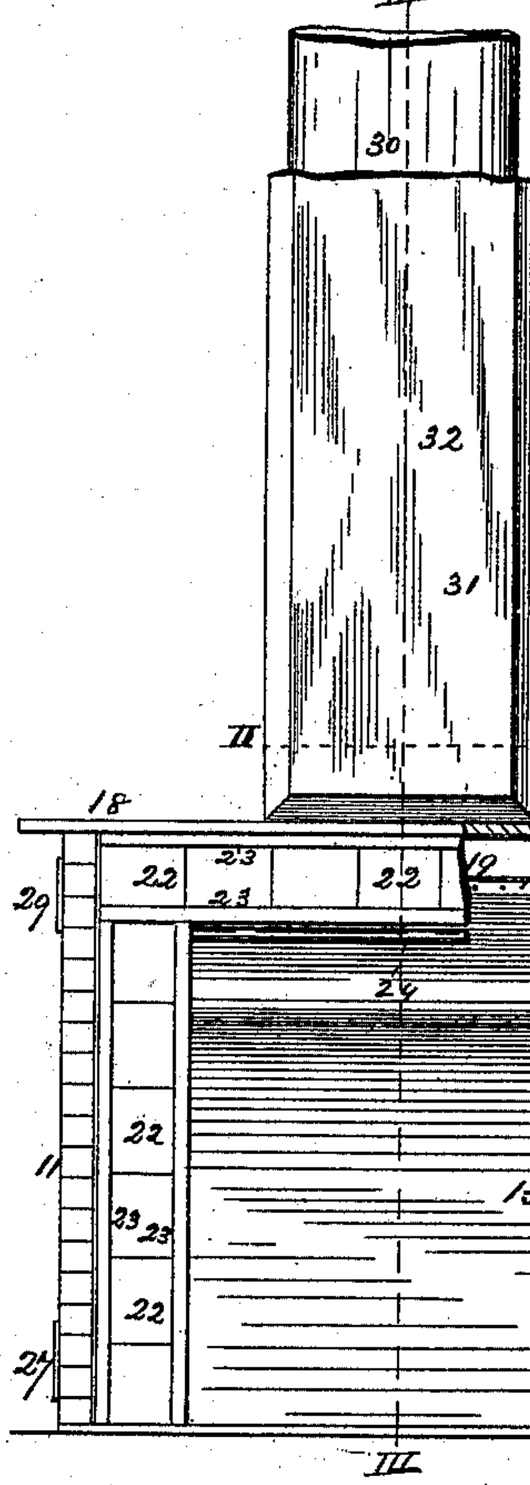

Fig. II.

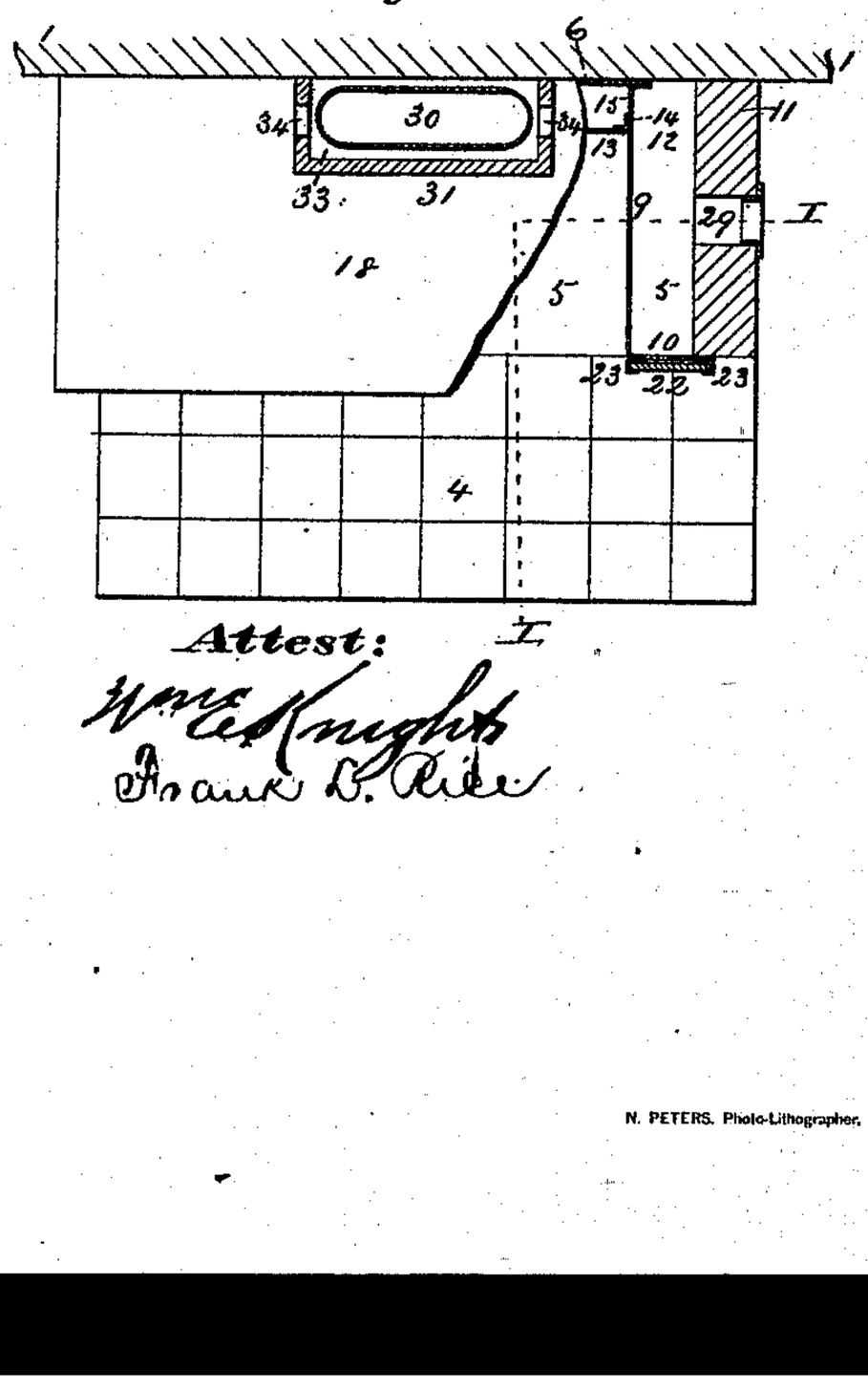

Fig. III.

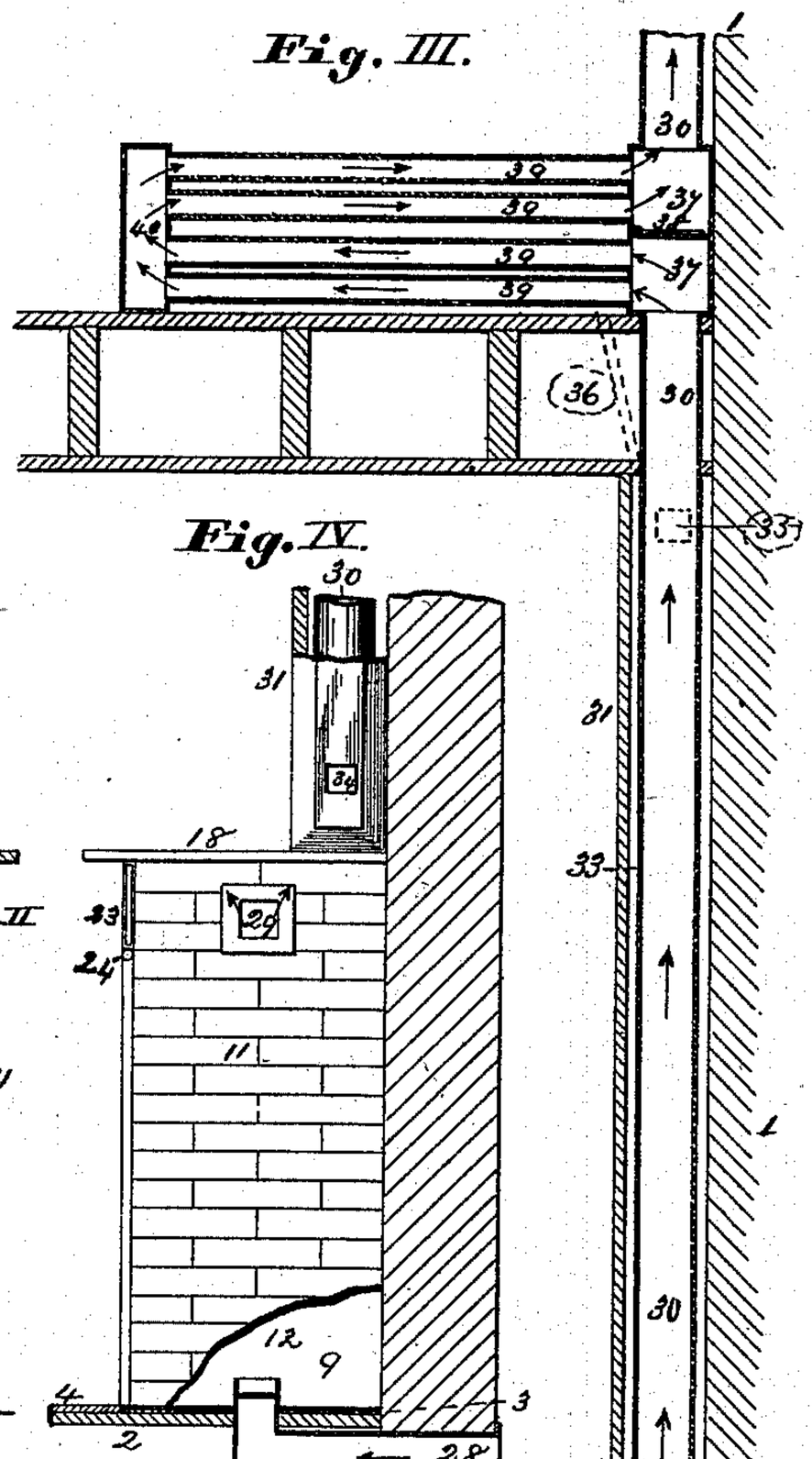

Fig. IV.

Attest:

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FIRE-PLACE.

SPECIFICATION forming part of Letters Patent No. 413,561, dated October 22, 1889.

Application filed May 3, 1888. Serial No. 272,666. (No model.)

To all whom it may concern:

Be it known that I, LEWIS M. RUMSEY, of Spring Park, in the county of Hennepin and State of Minnesota, have invented a certain new and useful Improvement in Fire-Places, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

This fire-place is shown with an open hearth; but the improvement is equally applicable to fire-places having a grate for burning coal. It is constructed to heat air by contact with the side, crown, and back plates and discharge the heated air into the room. It may be erected in any room where no fire-place has been provided in building the house.

Figure I is a front view, with part in section at line I I, Fig. II. Fig. II is a plan view, with part in section at line II II, Fig. I. Fig. III is a section at III III, Fig. I, showing the means for heating a room above that having the fire-place. Fig. IV is a side elevation with part broken away.

1 is the wall of a house. This may be an outer or inner wall. 2 is the floor of the room in which the fire-place is located. Over the floor may be put a layer of plaster-of-paris or any suitable cement or other material, and over this may be laid a sheet of asbestus or other suitable non-combustible and non-conducting material; or a single layer of non-conducting material 3 may be used. The purpose is to prevent the objectionable heating of the floor.

The hearth-tiles are shown at 4.

5 is a sheet or plate of metal—steel or iron preferred—which is laid flat on the asbestus or other non-conducting material 3.

6 is a metal sheet or plate extending from the inner edge of the sheet 5 up the wall of the house. The sheets 5 and 6 are preferably made in one piece. 7 is a sheet of metal which is above the fire-space 8. The rear edge of this sheet is flanged and riveted to the sheet 6 near the top of the latter.

At 9 are upright metal sheets or plates, fastened at their bottom, top, and rear edges to the sheets or plates 5, 7, and 6, respectively. The outer edges 10 of the sheets 9 are turned at an angle and extend to the side walls 11, which may be built of bricks or other suitable material, and which are set at a distance from the side sheets 9, so as to leave a space 12 between the sheet 9 and wall 11 at each side of the fire-place.

13 is an imperforate fire-sheet, which is bent in a suitable manner, (see Fig. III,) and whose sides are attached to the side plates 9 by strips 14, of angle-iron, riveted to the sheets. The fire-sheet is riveted at top and bottom to the wall-sheet 6. It will be seen that there will be a chamber 15, of which the fire-sheet 13 forms the front, the wall-sheet 6 the back, and the side sheets 9 the sides. To enable the air to pass from the chamber 15 to the chambers 12, and vice versa, upon each side, holes or apertures 16 are made in the side sheets. The wall-sheet 6 and side sheets 9 extend above the crown-sheet 7, and are at their upper edges riveted to a horizontal sheet 17, upon which the mantel 18 may be placed. The mantel extends also over the walls 11, and may form the top of the side chambers 12, the walls 11, the side sheets 9, and the wall-sheet 6 being of equal level at top. Riveted to the front edge of the horizontal sheets 7 and 17 is a sheet or plate 19, that forms the front of a chamber 20 above the fire-place, of which chamber the sheet 17 forms the top, the sheet 7 the bottom, and the sheets 9 the sides. To allow the air to pass to and fro between the chamber 20 and the chamber 12 upon each side, the side plates have apertures or holes 21. The tiles 22 may be held by brass or other grooved strips 23, which are riveted or otherwise attached to the flanges 10 and to the front sheet 19.

24 is a bar extending across the fire-place just beneath the lower edge of the cleat 23 at the lower edge of the sheet 19. To this bar is connected the blower-sheet of plate 25 by means of hooks 26, which are attached to the sheet and engage on the bar. The blower may be used when first lighting the fire.

Air enters the chambers 12 either through openings 27, made through the walls 11, (see Fig. I,) or through a passage 28, which extends from the lower part of the chamber 12 to the outer air or any preferred place. (See Fig. IV.) The heated air leaves the chambers 12 through apertures 29, made through the walls

11 at their upper parts. The air passages or apertures may be controlled by any suitable dampers.

The chimney 30 may consist of a sheet-metal pipe, preferably much flattened, as seen in Fig. II, so that it will not project far from the face of the wall. The chimney may be inclosed in a case or trunk 31, extending up to the ceiling. The trunk may be made ornamental in any manner—for instance, by the insertion of a mirror 32. The chimney extends through the mantel 18 and the sheets 17 and 7 to the fire-space 8. There will be a space 33 between the chimney and the trunk or casing 31. Air may be allowed to enter the lower part of this space 33 through orifices 34 at the lower part of the trunk, (see Figs. II and VI,) and to leave the same at the upper part, either into the same room, as by an orifice 35, or into another room through a passage 36, the positions of the apertures and passage being indicated by dotted lines in Fig. III.

The chimney, for the purpose of heating another room, discharges the products of combustion into a chamber 37, divided midway by a horizontal diaphragm or damper 38 and connected by flues or tubes 39 with another chamber 40. The chimney connects with both the bottom and top of the chamber 37, and it will be seen, when the diaphragm 38 is closed, that the products of combustion will be forced to travel through the tubes 39, below the level of the damper, to the chamber 40, and then return to the upper part of the chamber 37 through the tubes above the level of the damper 38. The tubes would of course become heated, and would radiate the heat into the room. No novelty is claimed in the heating device last mentioned.

I claim—

1. A fire-place comprising the imperforate fire-sheet 13, bent substantially as shown, having the chamber 15, the side sheets 9, having the holes 16 in the chamber portions, and the crown-sheet 7.

2. A fire-place comprising the imperforate fire-sheet 13, bent substantially as shown, having the chamber 15, the side sheets 9, having the outturned edges 10 and the holes 16 in the chamber portions, the side walls 11, forming the side chambers 12, and the crown-sheet 7.

3. A fire-place comprising the imperforate fire-sheet 13, bent substantially as shown, having the chamber 15, the crown-sheet 7, the horizontal sheet 17, the front sheet 19, forming the chamber 20 in connection with the crown-sheet and the horizontal sheet, and the side sheets 9, having the holes 16 into the chamber 15 and holes 21 into the chamber 20.

4. A fire-place comprising the imperforate fire-sheet 13, bent substantially as shown, having the chamber 15, the crown-sheet 7, the horizontal sheet 17, the front sheet 19, forming a chamber 20 in connection with the crown-sheet and the horizontal sheet, the side sheets 9, having the outturned edges 10, the holes 16 into the chamber 15, and the holes 21 into the chamber 20, and the side walls 11, forming the side chambers 12.

5. A fire-place comprising the fire-sheet 13, having a chamber 15, the crown-sheet 7, the horizontal sheet 17, the front sheet 19, forming the chamber 20 in connection with the crown-sheet and the horizontal sheet, the side sheets 9, having the outturned edges 10 and the holes 16 and 21, and side walls 11, forming the side chambers, the side chambers having induction and eduction openings, substantially as described.

6. A fire-place having air-spaces at the sides separated from the fire-space by sheets 9, and having openings for entrance and exit of air, and chambers 15 and 20 at the rear and top of the fire-space, respectively, communicating with the side spaces through apertures in the side sheets 9.

LEWIS M. RUMSEY.

In presence of—
JOS. WAHLE,
EDWD. S. KNIGHT.