

(No Model.)

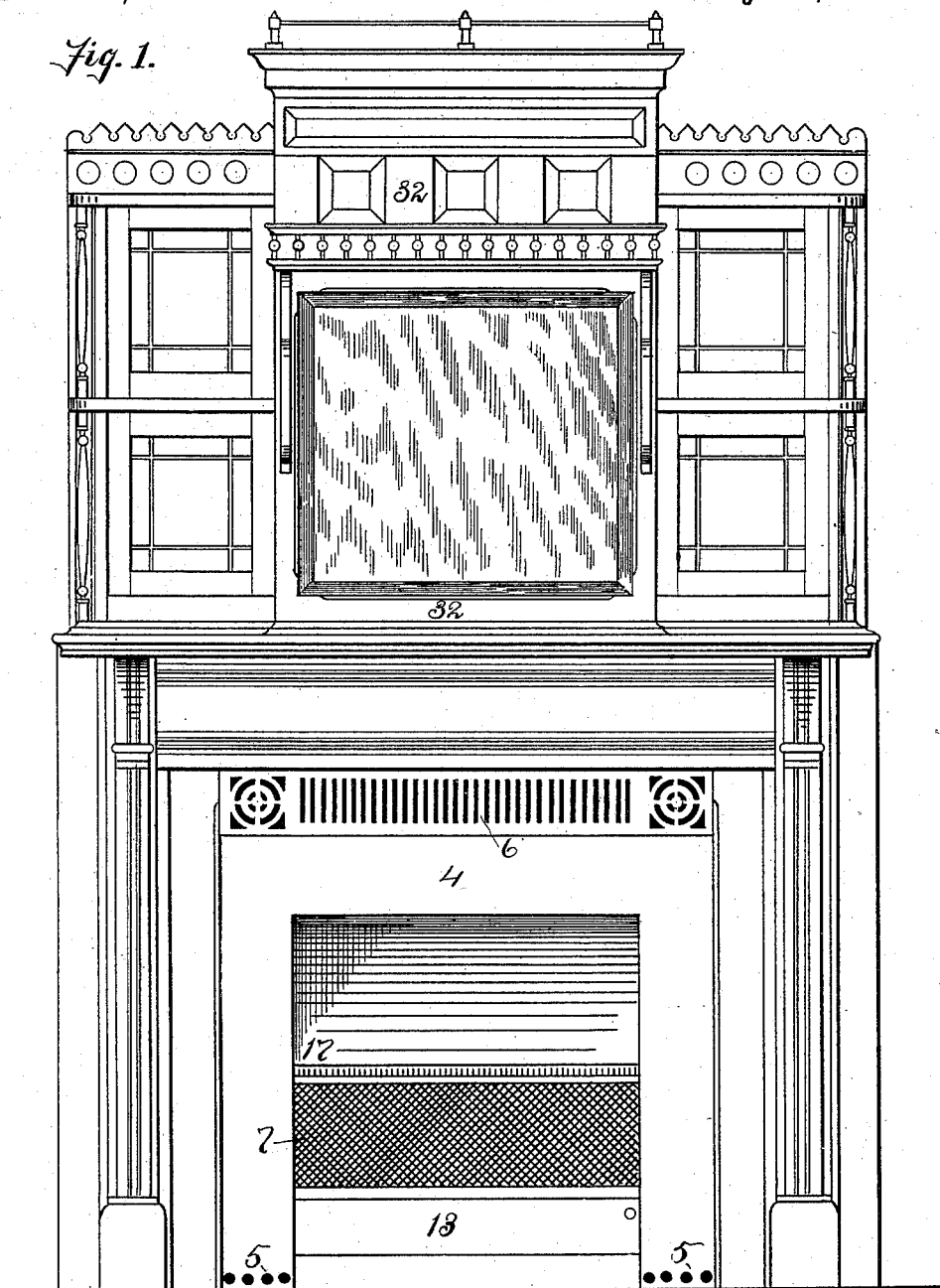
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F. L. HART.
PORTABLE GRATE AND MANTEL.

No. 474,655.

Patented May 10, 1892.

Fig. 1.



WITNESSES:

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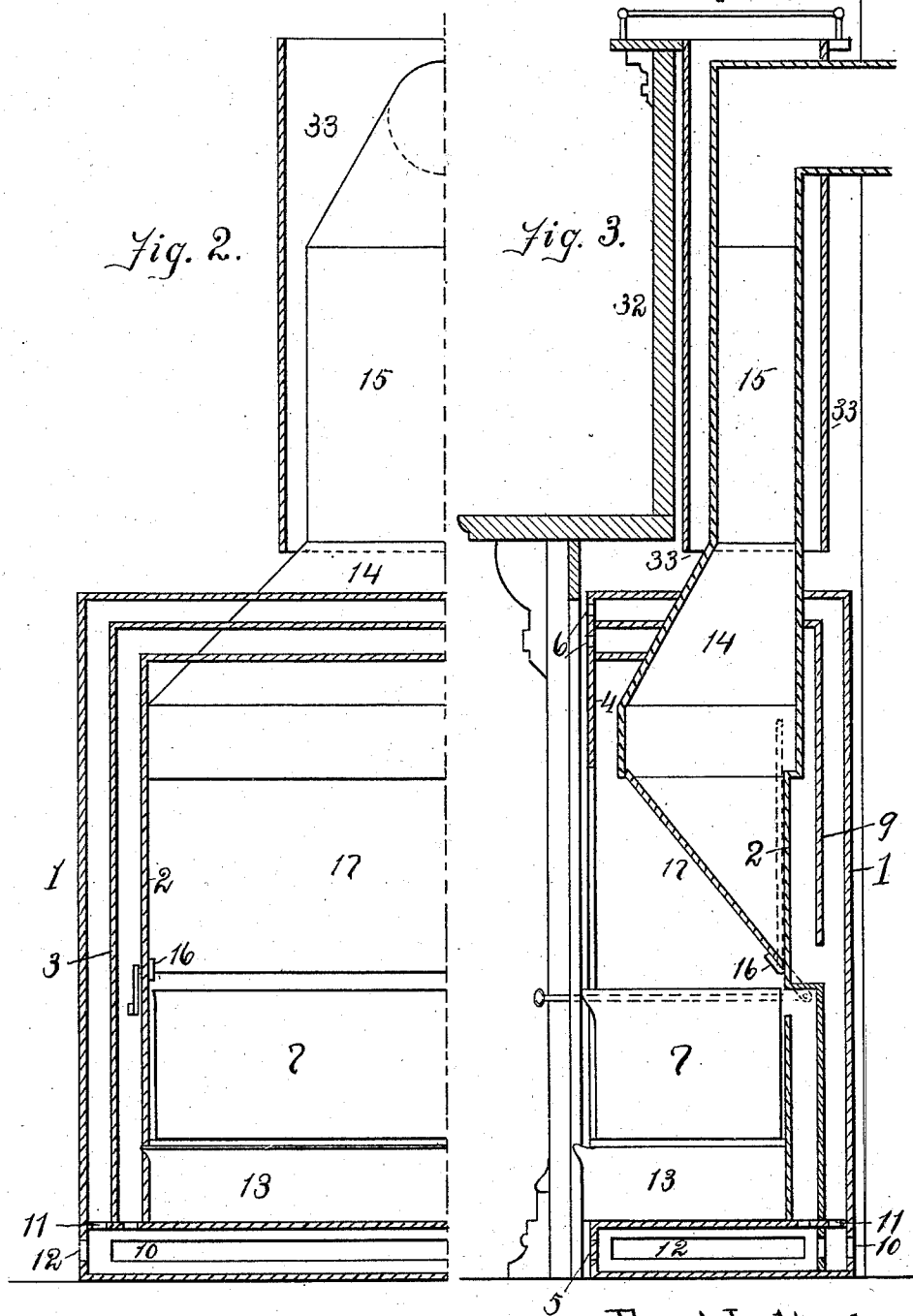
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WITNESSES:

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UNITED STATES PATENT OFFICE.

FRANK L. HART, OF AUGUSTA, WISCONSIN.

PORTABLE GRATE AND MANTEL.

SPECIFICATION forming part of Letters Patent No. 474,655, dated May 10, 1892.

Application filed February 12, 1890. Serial No. 340,200. (No model.)

To all whom it may concern:

Be it known that I, FRANK L. HART, a citizen of the United States, residing at Augusta, in the county of Eau Claire and State of Wisconsin, have invented certain new and useful Improvements in Portable Grates and Mantels; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to grates or fireplaces which are so constructed as to be portable by reason of the walls of the same being complete in themselves and entirely independent of the surrounding masonry.

The object of the invention is to secure a more complete utilization of the heat by bringing the heated air in contact with a large amount of radiating-surface by providing means for reflecting the same into the room; also, in various features of construction in detail, as hereinafter more fully set forth.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 represents a general front elevation of my improved grate with the inclosing mantel; Fig. 2, a similar view, the front wall and mantel being removed; and Fig. 3, a central vertical cross-sectional view.

The casing of the fireplace consists of an outer and inner wall 1 and 2, respectively, inclosing an air-chamber which includes the sides, back, bottom, and top of the fireplace. This chamber is subdivided by one or more partitions 3, which are so arranged as to allow free communication between the several subdivisions of the chamber. The front of the chamber is inclosed by the face 4, which is provided with apertures 5 5 at its base, upon each side and at the back, for the admission of cold air and with a register 6 at the top to allow for the discharge of the air into the room after it has been heated by passing upwardly in contact with the walls of the chamber. The position of the fire-basket is shown at 7. The space at the back of the fire-receptacle is also subdivided by means of one or more partitions 9 for the purpose, in this case,

of protecting the wood-work which may be at the back, as well as to afford a greater area of radiating-surface. A complete circulation of cold air at the base is provided for by the chamber 10, which is in communication with the heating-chambers by means of the apertures 11 in the upper wall thereof and with the outer air by means of the apertures 5 5 in the front and 12 12 at the sides and back.

The fire-basket 7 and the ash-box 13 are wholly removable, the former resting upon the latter or upon brackets formed upon or attached to the inner walls 2, and there is always thus maintained a free space upon all sides of the fire-basket for the free circulation and heating of the air.

The throat 14 begins at a point about halfway between the top of the fire-basket and the top of the chamber in which it is situated, and is regularly contracted upwardly to the flue 15, passing through the several subdivisions of the upper heating-chamber, but with its walls at all points at a distance from the outer walls of the same, so that the air has free circulation upon all sides of the walls of the throat. The damper 17 is so hinged as when thrown forward to wholly or partially close the mouth of the throat and when thrown backward to lie against the rear wall of the same and leave it entirely open. The damper, when partially closed, directs the heat outwardly into the room through the open front of the fire-place.

As the intention of this invention is to provide a fireplace that shall be removable bodily and adapted to be placed in connection with a chimney of ordinary construction, the flue is led up to any required height in the manner of an ordinary stovepipe. To conceal the flue, the mantel is constructed with a flue chamber or passage in the middle of the rear of the upper part, making the mantel of less depth at the middle than upon either side. This flue-passage is thus entirely closed, presenting the appearance of an outwardly-projecting cabinet 32, which may be made in any ornamental pattern. Space is thus left upon each side of the flue-passage for shelves, &c., the whole presenting the appearance of the ordinary grate and mantel, though capable of being set up in any place and connected with the chimney with the same ease as in the case

of an ordinary stove. This construction is shown in Figs. 1 and 2.

Around the flue, and between its walls and the walls of the mantel, is a covering or jacket 33, which protects the mantel and the wall from the heat of the fire. This covering or jacket is left open at both the top and bottom, thus allowing free circulation of air around the exterior of the flue. The current of heated air generated between the jacket and the flue takes the partially-heated air accumulating in the open spaces around the top and outside the walls of the fireplace, carrying the same upward, thus increasing the circulation of the air in the room, and thereby materially aiding in the distribution of heat.

I claim as my invention—

1. In a grate or fireplace, a fire-receptacle having inclosing walls upon the sides, top, bottom, and back thereof independent of the walls or masonry of the building in which the apparatus is set, a smoke-flue connecting said fire-receptacle with a chimney, a mantel forming a casing for the inclosing walls of the fire-receptacle and having its back recessed to form an inclosure for the smoke-flue, and a vertical jacket between the mantel and smoke-flue and arranged around and out of contact with said smoke-flue to form an air-space around the same, which air-space is open at top and bottom, whereby the entire apparatus is portable and may be connected to a chimney in the manner of a stove, substantially as and for the purpose described.

2. In a portable grate or fireplace, a fire-receptacle having the inner and outer walls and partitions around the back, sides, top, and bottom and forming between themselves a series of communicating air-chambers, said air-chambers being in communication with the outside air and the air of the room at the bottom of the fireplace and with the air of the room alone at the top, and a flue having its throat leading from the fire-receptacle through the concentric inner and outer walls at the top thereof, substantially as described.

3. In a portable grate or stove, a fire-receptacle having the inner wall 2 and the outer wall 1 extending around the same at the back, sides, top, and bottom, said walls forming air-chambers which entirely surround the fire-receptacle, except at the open front thereof, which air-chambers are in communication with the surrounding air at the front, sides, and back at the bottom and at the top only at the top, the dividing partitions in the air-chambers at the back, sides, and top of the fire-receptacle, and the smoke-flue having its throat passed through the walls or partitions at the top of the fire-receptacle, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK L. HART.

Witnesses:

IRA B. BRADFORD,
ELBRIDGE BRADFORD.