

(No Model.)

2 Sheets—Sheet 1.

F. J. SCOTT.

FIRE PLACE AND HOLLOW MANTEL THEREFOR.

No. 426,687.

Patented Apr. 29, 1890.



Witnesses:

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(No Model.)

2 Sheets—Sheet 2.

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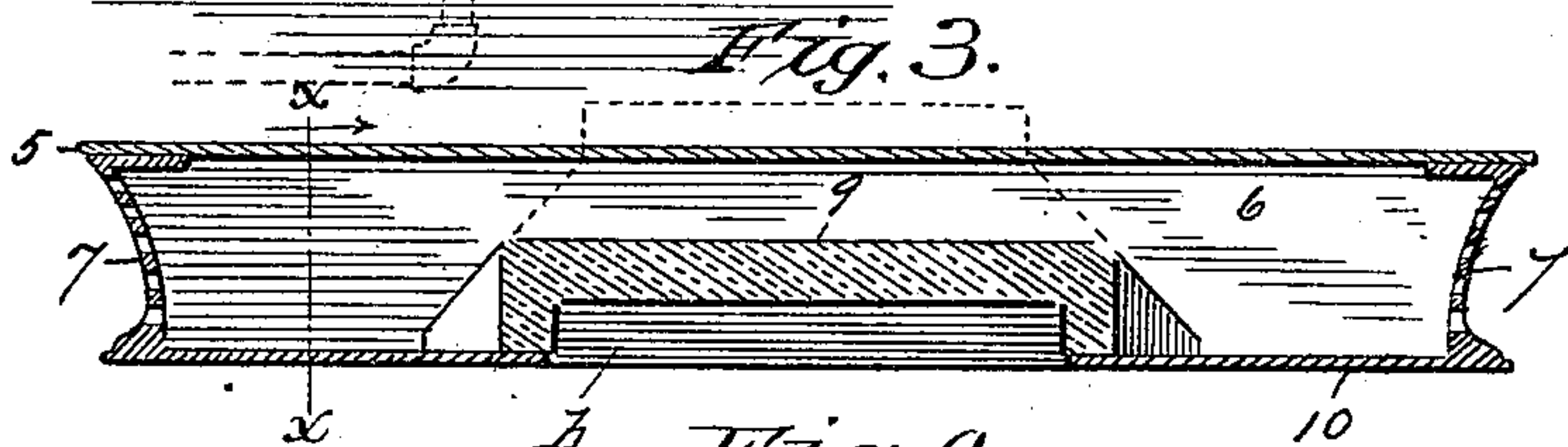
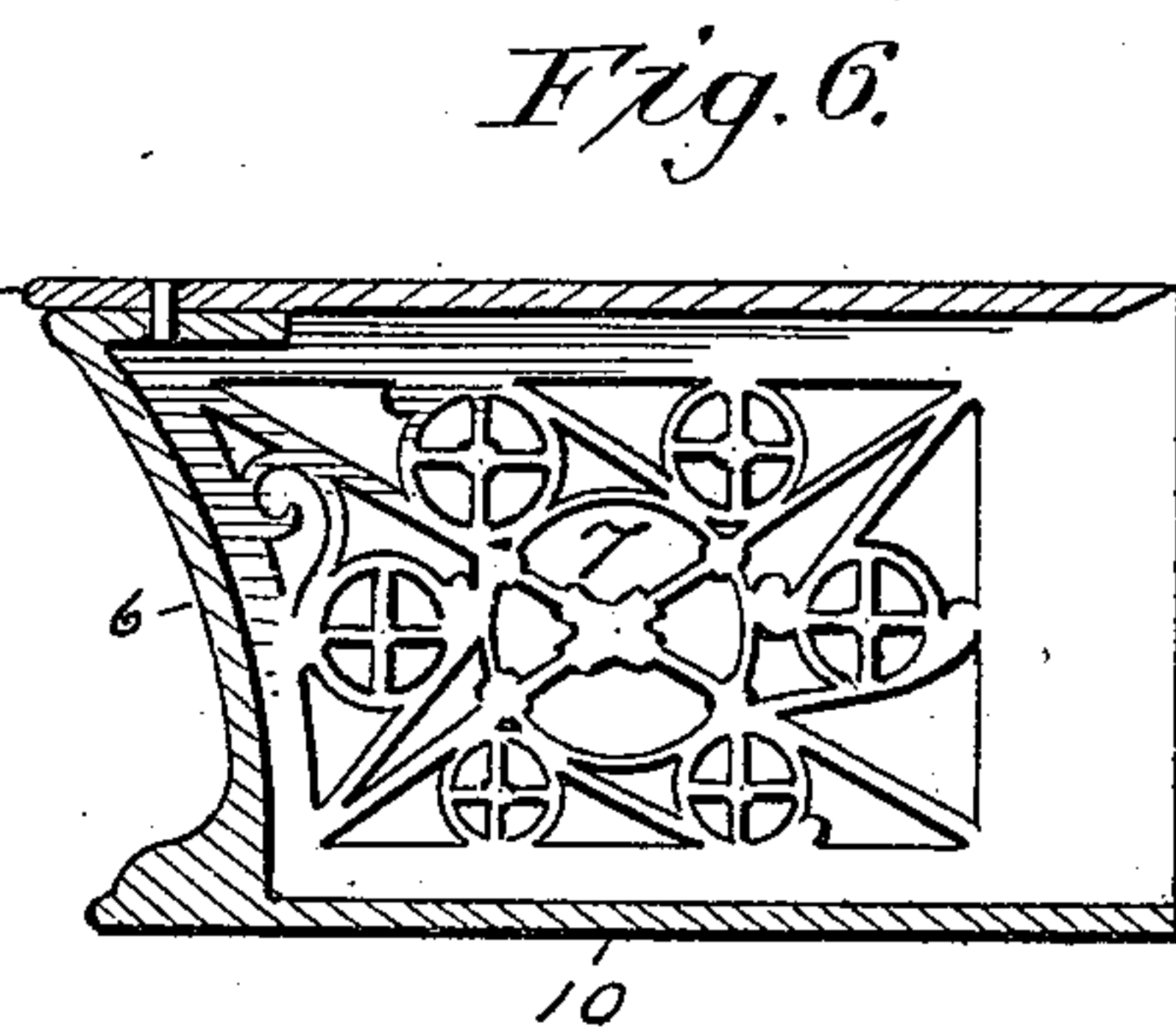
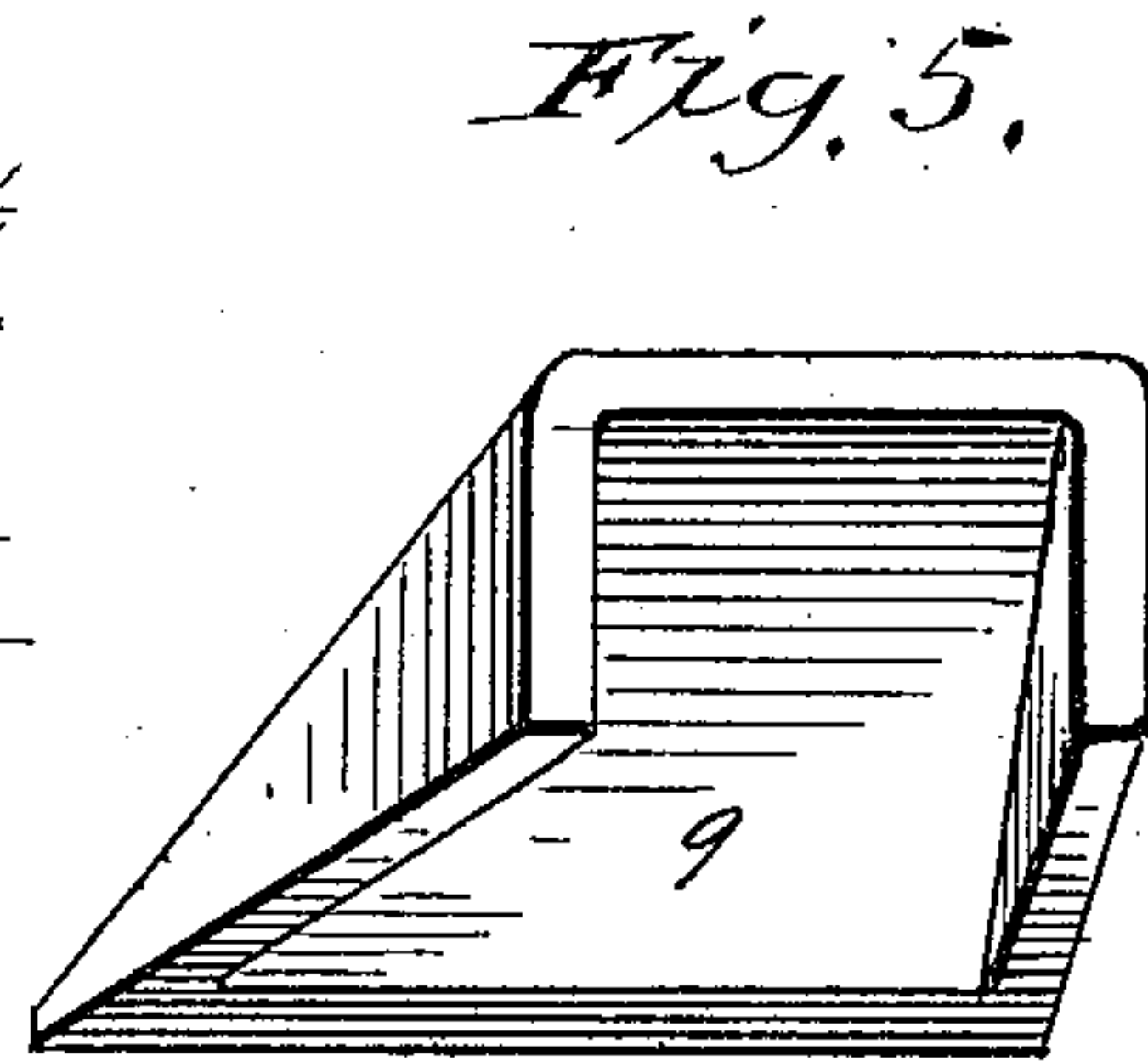
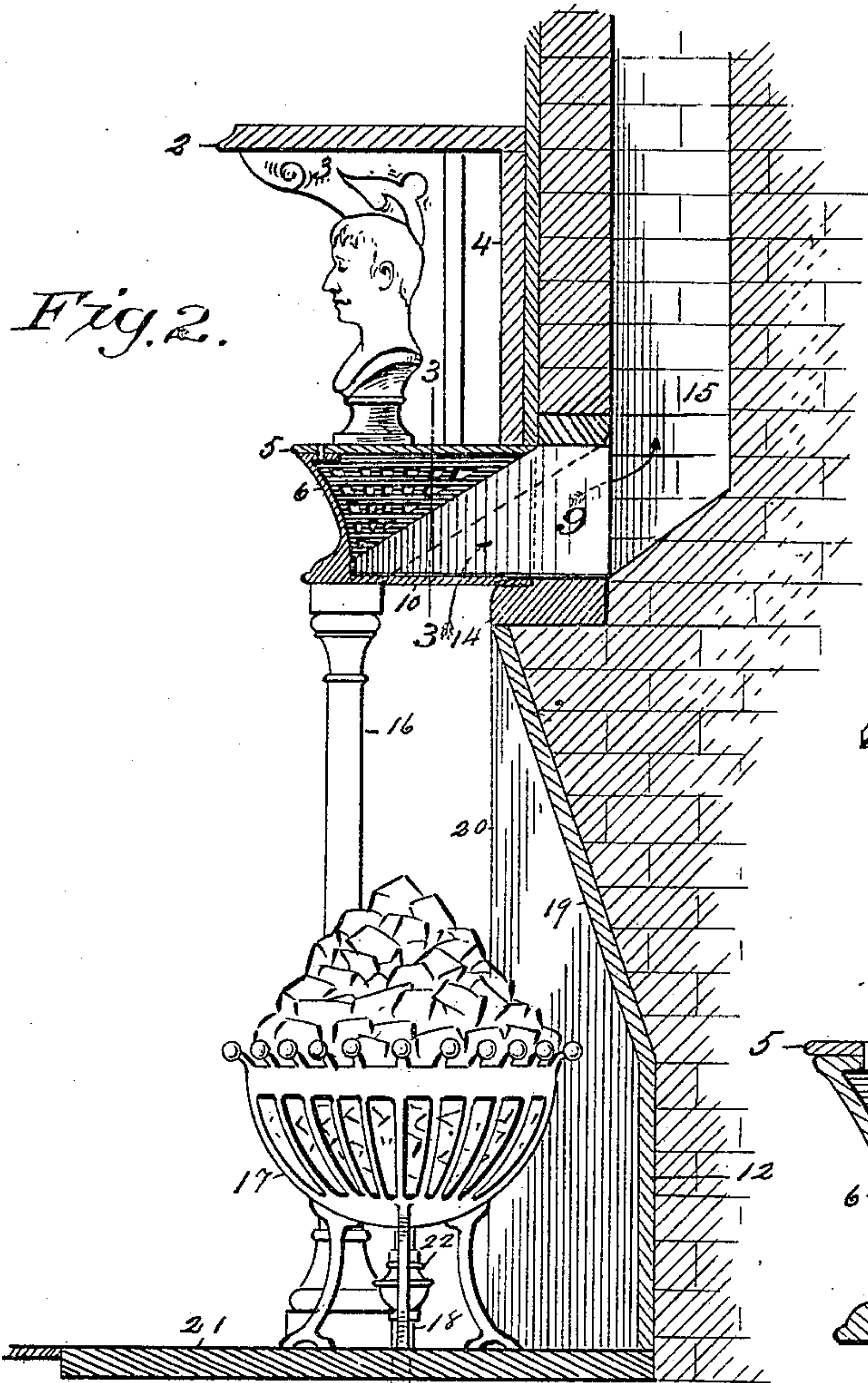
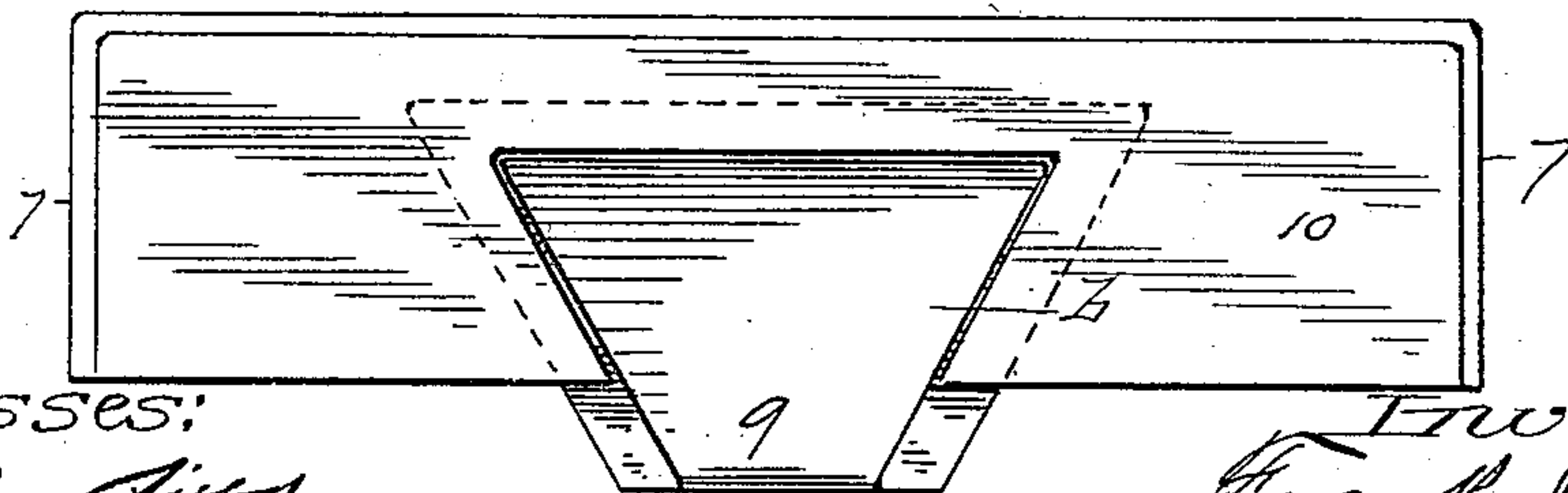


Fig. 4.



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UNITED STATES PATENT OFFICE.

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FIRE-PLACE AND HOLLOW MANTEL THEREFOR.

SPECIFICATION forming part of Letters Patent No. 426,687, dated April 29, 1890.

Application filed December 23, 1889. Serial No. 334,764. (No model.)

To all whom it may concern:

Be it known that I, FRANK J. SCOTT, a citizen of the United States, residing at Toledo, in the county of Lucas and State of Ohio, have invented new and useful Improvements in Fire-Places and Hollow Mantels therefor, of which the following is a specification.

This invention relates to fire-places and mantels therefor, the object being to provide a fire-place and mantel of improved construction which is particularly adapted to the use of a natural-gas fire, but may also be used with equal advantage with coke or other fuel; and the invention consists in the peculiar construction and arrangement of the fire-place and the mantel thereof, all as hereinafter fully described, and more particularly pointed out in the claim.

In the drawings forming part of this specification, Figure 1 is a perspective view, partly in section, of a portion of a room in a house and the chimney-flue leading therefrom having constructed therein a fire-place and a mantel therefor embodying my improvements. Fig. 2 is a vertical sectional view of said chimney-flue and the fire-place and mantel. Fig. 3 is a longitudinal vertical section of the mantel structure about on line 33, Fig. 2. Fig. 4 is an under side plan view of the part shown in Fig. 3. Fig. 5 is a perspective view of the flue of the mantel. Fig. 6 is a transverse section near one end of the part shown in Fig. 3.

The transverse section of the parts 5 and 10 in Fig. 2 is about on the line $x x$, Fig. 3, looking in the direction of the arrow just above said last-named figure.

The principal object of this invention is to provide a fire-place and mantel construction adapted to utilize to the most economical degree the heat produced by a natural or other gas fire, or one in which coke or similar fuel is used and consumed under similar conditions to the fire produced by the use of said gas; and to that end the below-mentioned elements of construction are employed, which elements are assembled together and combined in the manner below described, and they are herein shown as embodied in and applied to a part of a dwelling for the purpose of warming the same.

In the drawings, 21 indicates a portion of

a hearth constructed in that part of the floor of a room in a dwelling adjoining one of the walls thereof where a fire-place is to be constructed. At the rear edge of said hearth is constructed the rear vertical wall 12 of the fire-place, in front of which vertical wall and near to it is located a fuel-basket, in which the above-mentioned materials are burned, as below described. The said vertical wall 12 is preferably faced with glazed tiles 13 or other similar suitable material, which constitutes a heat-reflecting surface, whereby the heat from the fire is projected into the apartment to a much greater degree than is the case when the back of the fire-place is faced with a non-heat-reflecting material. The said rear wall 12 of the fire-place is not necessarily a recess, like an ordinary fire-place, and may rise vertically from the hearth to the lower end of the chimney-flue 15, as shown in Fig. 1; or said wall may be a recessed fire-place constructed as shown in Fig. 2, wherein it rises vertically from the hearth a certain distance, and then is constructed with a forwardly-inclined portion or section 19, the latter being sometimes preferred, so that the heat in its ascent from the said fuel-basket shall be projected rather more forward, and serving more effectually to warm the apartment.

When a smokeless fire is used in the within-described fire-place—such as is produced by the consumption of natural gas under conditions suited to the use thereof in a room of a dwelling-house—the fire-place, provided the chimney with which it is connected has a suitable draft, may be constructed with little or no inset or recess in the wall beneath said flue or in the manner illustrated in Fig. 1; or, if preferred, it may be constructed as shown in the last-named figure, and there may be set up vertically at each end of the fire-place between the pillars c and the fuel-basket a wall 20, preferably of marble or similar material, said wall being shown in Fig. 2 and there applied to a recessed fire-place; but in case it be used with the vertical backed fire-place shown in Fig. 1 the form of said wall may be such as to conform to the contour of the rear wall 12. (Shown in Fig. 1.) The pillar c is only one of a pair which in practice may be ornamentally used in said fire-place construction,

may be of metal or marble or other suitable material not injuriously affected by the heat of the fire, or said mantel may be supported in any other suitable manner.

5 In order to attain the most economical use of the heat from the aforesaid fire and by means additional to those above mentioned causing direct reflection thereof into the apartment, a hollow mantel is constructed di-
10 rectly over the fire and below the usual shelf 2, and said hollow mantel is made and operates, as below described, to take up and disseminate still further the heat of the fire in the apartment, said hollow mantel being here
15 termed a "sub-mantel" to distinguish it from the shelf 2.

A base-plate or slab 10, either of metal, stone, or other suitable material, is fixed in a horizontal position above the fire-place, its
20 rear edge resting upon the masonry construction of the wall, and, extending from thence forward a sufficient distance to wholly, or nearly so, cover the fuel-basket beneath it, has its front edge supported upon suitable
25 metal or marble columns 16. Said base-plate 10, as shown in Figs. 1 and 4, has an opening *b* therethrough centrally between its ends and directly over the fuel-basket 17 therebelow, said opening *b* being opposite the lower end
30 of the chimney-flue 15. A flue 9 of the form shown in Fig. 5 has one end resting on said base-plate around the borders of said opening *b* in the latter, and from thence it extends in an upwardly-inclined direction and
35 has its upper end suitably supported in the masonry adjacent to the said chimney-flue 15, said flue 9 receiving directly therein the products of combustion from a fire made, as aforesaid, in said fuel-basket 17, and serving to
40 conduct the same into said chimney-flue. The said base 10 and flue 9 are shown in the drawings in Figs. 3 and 4 as made of separate parts, it being preferable, if used with a fire of considerable intensity, to make said flue
45 of fire-brick material; but under ordinary conditions of use the said base-plate and flue may be made of cast metal or steel in one piece or plate iron or steel stamped in one piece, or, if the fire-place for which said base
50 be intended be not too large, the base and the flue may be made in one piece of fire-brick material; but it is preferable to make said base of cast metal, and when so made the front 6 of said sub-mantel may be cast of the
55 same piece as the base, thereby economizing the construction of the mantel. The said front 6 extends the whole length of the hollow mantel and may be made substantially of the form shown in Fig. 1. The top 5 of
60 said sub-mantel may be made, preferably, of marble or other suitable material, or may consist of a metallic plate, if preferred, and is laid upon the bracket-formed upper edge of the said front 6 and properly secured
65 thereto by bolts or other suitable means, and extends rearwardly above and not far distant from the outer surface of said flue 9 toward

the wall of the room above the said chimney-flue 15, and has its rear edge suitably supported in the masonry of said wall. The said
70 hollow-mantel construction extends the whole width of the fire-place, and has a column 16 under each end, Fig. 1 showing about one-half of said sub-mantel, but may be otherwise supported. As a result of the above-
75 mentioned construction of said mantel a hollow chamber is produced therein, the lower wall of which consists, as clearly shown in Fig. 3, of the base-plate 10 and the flue 9 combined, the top 5 and the front 6 of said
80 sub-mantel constituting its other walls. Each end of the said sub-mantel chamber is supplied with any suitable open-work construction which will admit of the free ingress and
85 egress of air, one of said open-work constructions being shown in Fig. 2 and another in Fig. 6, and they may be more or less ornamental, according to the taste of the constructor. The
heating effect of the above-described sub-
90 mantel construction upon the apartment containing the same is easily understood. The said flue 9, being in the direct line of the movement of the products of the combustion of the fire or fuel in the fuel-basket 17 as said
95 products move from the fire into the chimney-flue 15, becomes heated to a great degree, and as a consequence the air in said sub-mantel chamber becomes heated and rarefied, and moves out of said chamber through one
100 or both of the open ends thereof into the apartment, and cooler air replaces said heated air by entering said chamber through said open-work ends thereof near the bottom of
said chamber, and thus there is kept up a
105 constant circulation of air through the sub-mantel, whereby the heat from the fire produces a double effect as compared to the effect of similar fires used in fire-places not having said sub-mantel and its air-heating
110 chamber. If desired, the said open-work construction may be omitted from the ends of the hollow mantel. The upper shelf 2 is constructed and supported above said sub-mantel substantially in the manner shown in
115 Fig. 1, any suitable bracket 3 being placed under the ends of said shelf or with any other suitable support to maintain it in a proper horizontal position. The said fuel-basket 17
herein shown is located upon the hearth 21
120 centrally under said sub-mantel, and is illustrated in connection with a gas-pipe 18, which passes through the bottom of the basket, as shown, and is adapted to deliver natural or
other gas into a chamber in the bottom of
125 said basket, whose upper wall is perforated to allow the escape of gas therethrough. An ordinary gas and air mixer 22 is shown to be connected in said gas-pipe under said fuel-basket. In using natural gas as a fuel in
130 conjunction with said basket the latter may be filled with a suitable material, as shown, such as pieces of fire-brick or certain descriptions of slag or other materials which become incandescent after being burned a short time

with said gas, and said incandescent material serves to radiate the heat into the apartment to a greater degree than it would be were the gas burned without it.

5 If desired, the same or a similar fuel basket or grate may be used with the above-described fire-place and hollow mantel using coke, charcoal, or other similar fuel in place of gas.

What I claim as my invention is—

10 A fire-place having a hollow mantel projecting substantially its full width into the room beyond the vertical line of the wall of said room, and having openings through its ends for the ingress and egress of air com-

municating directly with the air of the room, 15 and having an air-heating flue extending from its lower side in an inclined direction and opening to the chimney at the rear side of the mantel, the walls of said flue crossing the chamber of the hollow mantel and heating 20 the air therein, but not dividing said chamber, thereby leaving a free air-space through the mantel from end to end, substantially as set forth.

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Witnesses:

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