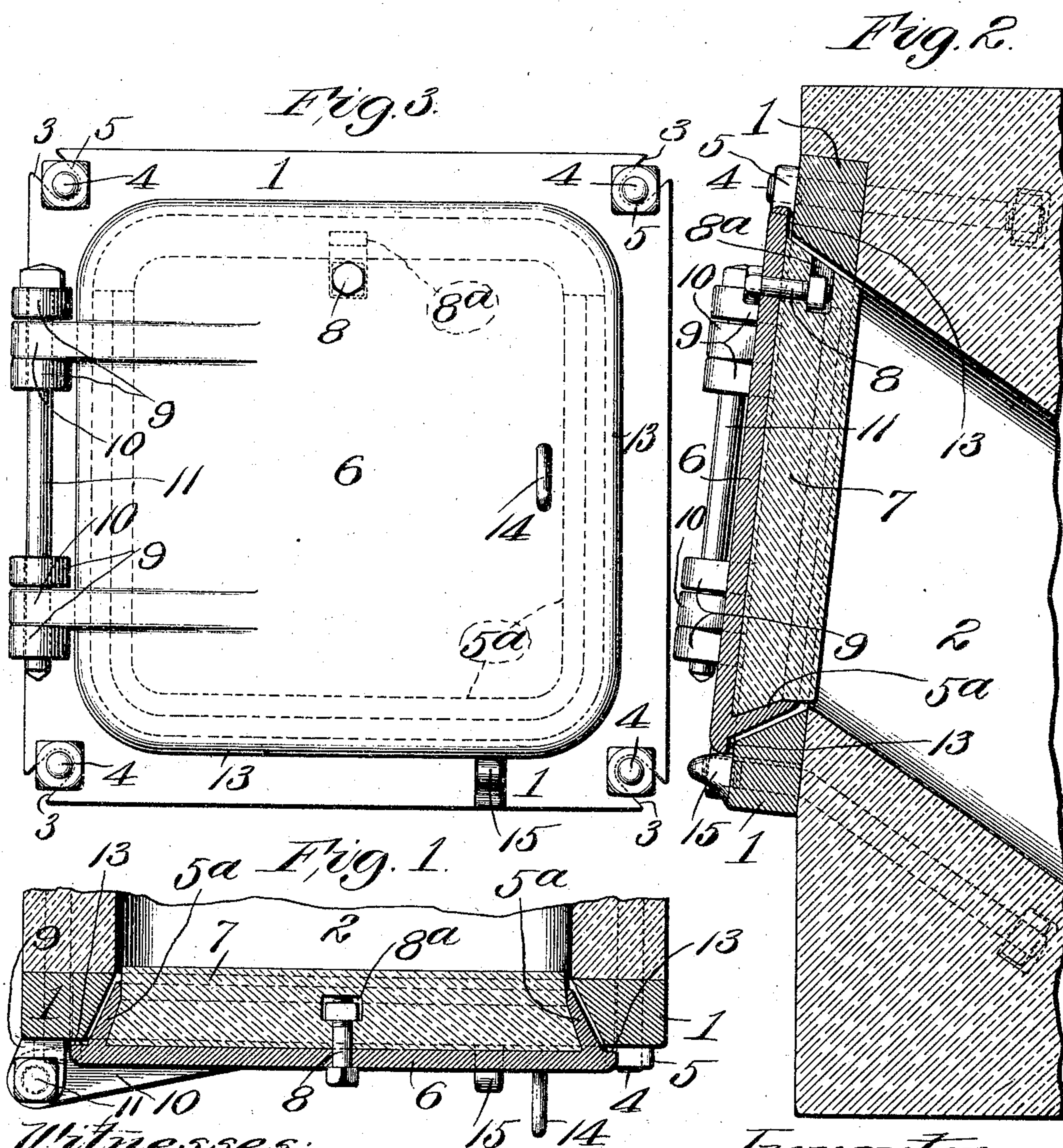


No. 782,626.

PATENTED FEB. 14, 1905.

F. R. SELLMAN.
DOOR FOR GAS FURNACES.
APPLICATION FILED AUG. 29, 1904



Witnesses:

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UNITED STATES PATENT OFFICE.

FREDERICK R. SELLMAN, OF ST. LOUIS, MISSOURI.

DOOR FOR GAS-FURNACES.

SPECIFICATION forming part of Letters Patent No. 782,626, dated February 14, 1905.

Application filed August 29, 1904. Serial No. 222,579.

To all whom it may concern:

Be it known that I, FREDERICK R. SELLMAN, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Doors for Gas-Furnaces, of which the following is a full, clear, and exact description, 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, forming part of this specification, in which—

Figure 1 is a cross-sectional view through the door. Fig. 2 is a vertical sectional view through the door, and Fig. 3 is a front elevational view of the same.

This invention relates to a new and useful improvement in furnace-doors; but it is particularly designed for use in connection with gas-making furnaces.

The object of the invention is to construct a door in such a manner that the metallic parts of the casing and frame will not be exposed to the direct action of the heat.

The objection to the general construction of doors for gas-making furnaces is that repairs are constantly needed, and in addition the coke and cinders which frequently back against the door will when the door is opened fall into the rabbeted edges of the door-frame and prevent the door from being closed. This necessitates frequent cleaning.

It is the purpose of my invention to overcome these serious defects; and to this end the invention consists in the novel construction, arrangement, and combination of the several parts, all as will hereinafter be described, and afterward pointed out in the claims.

In carrying out my invention or one form thereof, as illustrated in Figs. 1, 2, and 3 of the drawings, the door-frame 1, which surrounds the inlet-opening at the end of the feed-chute 2, is set on an incline, so that the gravity of the door due to the angle of inclination of this frame will have a tendency to maintain the door in closed position. The door-frame is illustrated as having diverging slots 3, one at each corner, for the reception of bolts 4, on the threaded ends of which are the nuts 5, whereby the frame may be easily attached to the furnace-front. The inner edge of

the door-frame 1 is chamfered or inclined for the reception of the inclined inwardly-projecting flanges 5^a, carried by the door 6. The angles of inclination of the flanges 5^a correspond to the angles of inclination of the edges of the door-frame, so that when the door is in place a slight clearance is provided between the flange and the inner edge of frame. The flanges 5^a are on the bottom and the sides of the door, the upper portion of the door not being provided with a flange to permit the insertion of the tile 7, which snugly fits in the pocket formed by the flanges on the three edges and which is held in place by means of the fastening device, illustrated as a bolt. The tile is provided with a nut-pocket 8^a, having an opening in its top edge and communicating with a bolt-opening for the reception of the bolt 8, which bolt passes through the door and tile into the pocket and is screwed into the nut non-rotatably held in said pocket and protected against deterioration due to excessive heat. The hinge-lugs 9, formed on the door-frame, are provided with alining openings which are adapted to aline with openings in the hinge-lugs 10 on the door 6, 11 being the pintle which passes through the alining openings to hinge the door to the frame.

By reference to Figs. 2 and 3 it will be observed that while the flanges 5^a of the door are spaced away from the inclined edges of the door-frame when the door is closed they do not project into the feed-chute, but terminate short of the inner edge of the door-frame, so that the tile, which is also provided with inclined edges, will project beyond the door-frame and insulate all of the metal from the action of excessive heat.

In order to limit the movement of the flanges 5^a into the openings surrounded by the door-frame and to exclude the entrance of air in the chute 2, I provide an edge flange 13 on the door 6, which is adapted to abut against the outer face of the door-frame.

14 designates a suitable knob or handle whereby the door may be opened.

15 designates a guide-lug which is positioned on the door-frame below the door and serves to guide the door centrally into the frame, whereby a uniform clearance will be maintained between

tween the inner edges of the door-frame and the flanges 5 6 to provide for expansion and contraction of the flanges 5 and door-frame 1.

From the above description it will be apparent that when the door is closed the tile will fit the opening surrounded by the walls of the feed-chute 3, so that the metal parts of the door will be insulated from direct contact with the flames. Another advantage of this construction of door is that the tile which forms the inner facing of the door may readily be applied to and removed from the door simply by disconnecting the bolt 8 when the door is open.

Attention is directed to the fact that owing to the efficient manner in which the metal parts are insulated they will not become warped or deteriorate except in the usual manner due to ordinary wear on metal parts of a similar character.

It will be observed that owing to the fact that the edge of the door-frame is inclined in an outward direction from the feed-chute, so that the lower edge of the door-frame is inclined downwardly, any liability of the coke or ashes congesting or clogging the space between the door-frame and the door will be avoided.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. The combination with a door-frame surrounding an opening in the furnace and having inclined inner edges, an incline-edged door

carried by the door-frame, the inclined edges of said door being of less depth than the thickness of the door-frame, a tile carried by the door and projecting beyond the edge of the door and beyond the edge of the door-frame, and a stop-flange carried by the door to limit the movement thereof with respect to the door-frame; substantially as described.

2. In a gas-furnace having a door-opening, the combination with a door-frame, a door having flanges to project partially through the door-frame, an insulating-tile carried by the flanges, and a lug carried by the frame against which the lower edge of the door is adapted to rest to space the inner flanges of the door from the inner edges of the door-frame; substantially as described.

3. A furnace-door having inclined edges at its bottom and sides, said flanges forming a pocket, a tile having inclined edges and seated in said pocket, which tile is introduced from above and said tile also having a nut-pocket and bolt-opening, a nut non-rotatably arranged in said pocket, and a bolt which projects through the door and is screwed into the nut; substantially as described.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, this 27th day of August, 1904.

FREDERICK R. SELLMAN.

Witnesses:

B. F. FUNK,
WM. H. SCOTT.