P. A. Sabbaton,

Furnace Door & Frame,

No. 24,493, Patented June 21, 1859.

Fig. 3.

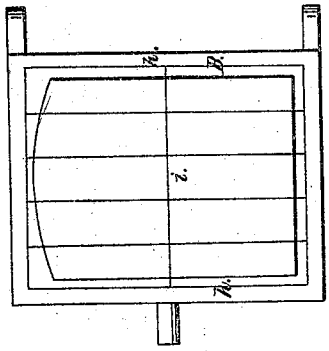


Fig. 2.

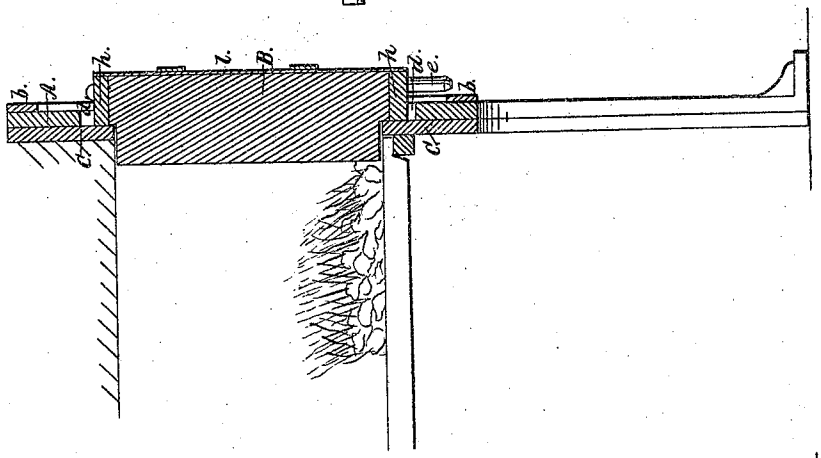
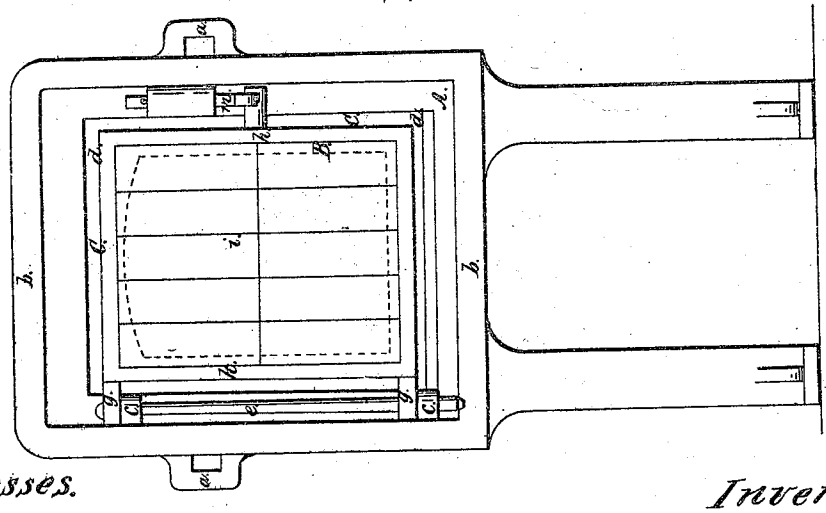


Fig. 1.



Witnesses.

Wm Tusch

C. Hauff

Inventor.

Paul A. Sabbaton

UNITED STATES PATENT OFFICE.

PAUL A. SABBATON, OF ALBANY, NEW YORK.

DOOR-FRAME FOR FURNACES.

Specification of Letters Patent No. 24,493, dated June 21, 1859.

To all whom it may concern:

Be it known that I, PAUL A. SABBATON, of Albany, in the county of Albany and State of New York, have invented a new and Improved Furnace Door and Frame; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1, represents a face view of my door and frame, the outside or protecting plate of the door having been removed. Fig. 2, is a transverse vertical section of the same showing its application to a furnace, and Fig. 3, is an inside face view of the door.

Similar letters in the three views indicate corresponding parts of my invention.

To enable others skilled in the art to fully understand, use and construct my invention I will proceed to describe it.

A is the frame which is constructed of cast iron and which is attached to the brick-work of the furnace by means of ears *a*, *a*, in the usual manner. The plate which constitutes the frame, is strengthened by a rib or rim *b*, in order to keep it from warping and the ears *c*, which support the door are cast with or otherwise rigidly attached to the frame. The opening *d*, of this frame is considerably larger than the furnace mouth, as clearly represented in Fig. 2, where the furnace is indicated by red outlines so that the fire can by no means come in contact with the frame.

B, is the door which is hinged to the frame by means of the ears *c*, and by a pin *e*, in the usual manner. The hinges *g*, are attached to the door frame *h*, which is constructed of wrought iron and considerably smaller all around than the opening *d* in the frame, so that the door when shut, closes in contact with the brick work or with a false frame, the object of which will be presently explained. This door-frame is filled in with fire bricks with their edges to the fire and well wedged in, and the strength of this frame must be such, that it will stand this operation and its width is considerably smaller than the width of the bricks so that the latter project beyond the door frame as clearly represented in Fig. 2. This projection *i*, is cut down around the edges, (see Fig. 3) so as to assume the shape of the furnace mouth and so that the door closes easily, and that part of the projection which remains, has the effect of keeping the coke or fuel from coming in contact with the iron work. I prefer filling the door with brick instead of tiles as the latter are easily cracked, but bricks soon glaze and become solid after being exposed to the fire, and thus fixed will last as long or any part of the furnace.

In order to preserve the door frame still more from injury and also to protect the brick jambs from the action of the clinkering bar, I have adopted a shield C, of cast iron, which I call a false frame, and which consists of a plain casting of the same shape on the outside as the frame proper, but the opening is exactly of the shape of the furnace mouth, so that when the same is in its place the door will shut against this false frame instead of shutting against the brick work, as clearly shown in Fig. 2. When this false frame is injured it can be replaced by a new one easily, and at a trifling cost as it is a plain and light casting.

To protect the filling of the door from all injury from the outside I attach to it a shield or protecting plate *l*, which is fastened to the outside of the door frame and the door is kept shut by a fall or catch *m*, in the usual manner.

What I claim as new and desire to secure by Letters Patent, is—

The combination with the mouth of the furnace of the door frame A, and door B, when the said door frame is provided with an opening larger than the door into which the door shuts so as to close against the furnace or against a shield or false frame C, as and for the purposes herein set forth and described.

PAUL A. SABBATON.

Witnesses:
WM. TUSCH,
M. HAUPT.