

R. KEARNS.
COKE OVEN DOOR.
APPLICATION FILED JULY 27, 1911.

1,013,177.

Patented Jan. 2, 1912.

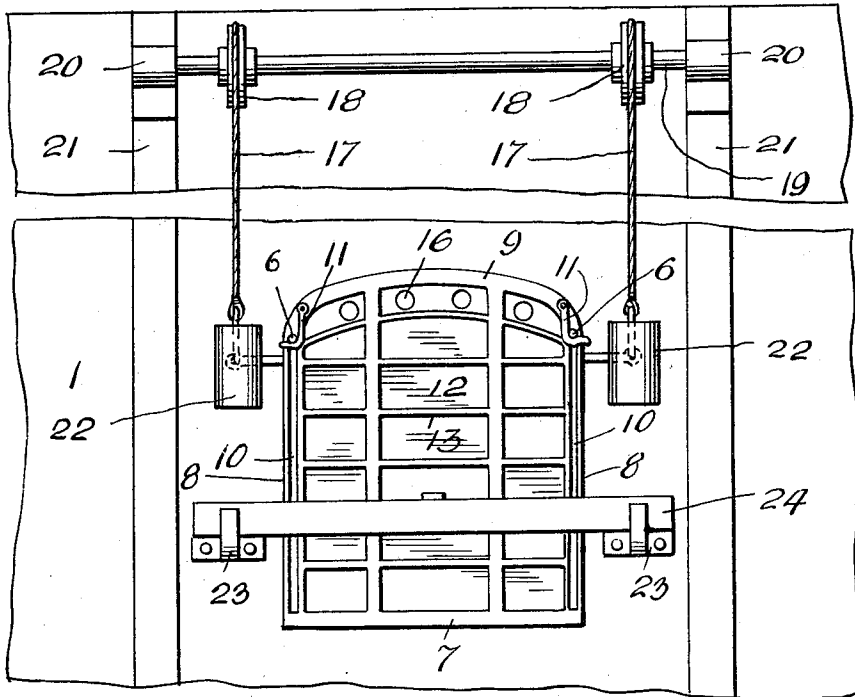
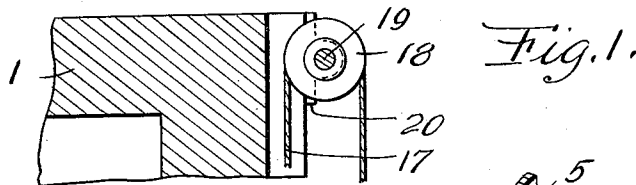


Fig. 2.

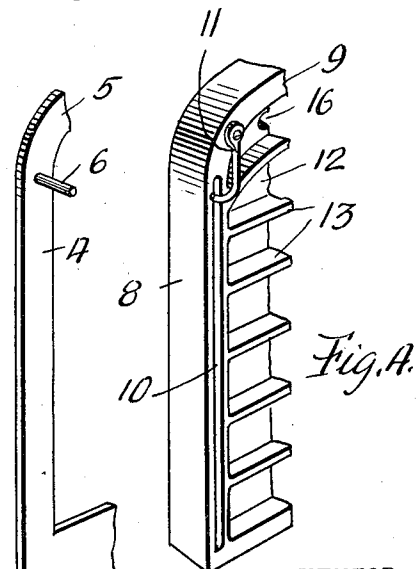


Fig. 3.

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UNITED STATES PATENT OFFICE.

RICHARD KEARNS, OF MAMMOTH, PENNSYLVANIA.

COKE-OVEN DOOR.

1,013,177.

Specification of Letters Patent.

Patented Jan. 2, 1912.

Application filed July 27, 1911. Serial No. 640,866.

To all whom it may concern:

Be it known that I, RICHARD KEARNS, a citizen of the United States of America, residing at Mammoth, in the county of Westmoreland and State of Pennsylvania, have invented certain new and useful Improvements in Coke-Oven Doors, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to coke oven doors, and the object of my invention is to furnish a coke oven with a door that will facilitate the drawing of coke from the oven and insure a proper ventilation within the oven, whereby coke can be expeditiously and economically produced.

My invention aims to provide a fire-proof door that can be easily raised and lowered, and locked in a lowered position against lateral or vertical movement. To this end, I have devised a door made of metal and constructed whereby it will slide against an oven door plate. Counter balance weights are used to facilitate the raising of the door and simple and effective means are resorted to for holding the door in a lowered closed position.

These and such other objects as may hereinafter appear are attained by a mechanical construction that will be hereinafter specifically described and then claimed, and reference will now be had to the drawing, wherein:—

Figure 1 is a front elevation of an oven door in accordance with this invention. Fig. 2 is a vertical sectional view of the same. Fig. 3 is a perspective view of a portion of an oven door face plate, and Fig. 4 is a perspective view of a portion of the door.

The reference numeral 1 denotes a portion of an oven having a doorway 2 and the material bordering upon the outer edges of this doorway is cut away to provide a seat 3 for a metallic face plate 4. The upper end of the plate is arched, as at 5 to conform to the arch of the doorway 2, and the upper end of the plate, at the sides thereof, has forwardly projecting pins 6.

The reference numeral 7 denotes a door including a frame having side rails 8 and an arched top 9. The side rails 8 are longitudinal slotted, as at 10 to receive the guide pins, 6 and the front face of the frame, at the top of the sides thereof, has pivoted hooks 11 adapted to be swung under the pro-

truding ends of the pins 6 to lock the door in a lowered position and to prevent the accidental opening of the door.

The side rails 8 and the arched top 9 are connected by a web 12 located intermediate the front and rear sides of the door, and the web has vertical and transverse ribs 13 upon both sides thereof, with the outer edges of the ribs flush with the outer edges of the rails 8. The ribs upon the inner sides of the web serve functionally as supports for blocks or plates 14 of non-fusible material set in the inner side of the door, these blocks being preferably made of fireclay or other analogous material. The uppermost blocks are provided with openings 15 registering with openings 16 in the web 12, and these openings allow a sufficient quantity of air to enter the oven to insure a proper combustion for the production of coke.

Suitably connected to the upper ends of the side rails 8 of the door frame are cables 17 which extend upwardly over grooved sheaves or pulleys 18 mounted upon a shaft 19, journaled in bearings 20, carried by the vertical frames 21 of the oven. The opposite ends of the cables are attached to counter balance weights 22.

To positively lock the door in a lowered position, the outer side of the oven, at each side of the doorway 2, is provided with brackets 23 adapted to support a transverse bar 24. This bar is detachably mounted in the brackets and a wedge 25 is driven between the bar and the door frame to lock the door against lateral displacement.

The side rails 8 of the door frame extend below the lower edge of the web 12 a sufficient distance, whereby the web 12 can be elevated sufficient to clear the arch of the doorway 2 without the pin 6 leaving the slots 10, thereby permitting of the coke being easily drawn from the oven.

It is thought that the manner of opening and closing the oven door will be apparent without further description, and while in the drawing there is illustrated a preferred embodiment of the invention, it is to be understood that the structural elements thereof are susceptible to such changes as fall within the scope of the appended claims.

What I claim is:—

1. The combination with an oven having a doorway provided with a face plate and outwardly projecting pins, of a door including a frame having longitudinal slotted side

rails for the reception of said pins, hooks
carried by said door frame and adapted to
engage said pins to retain said door in a
lowered position, a non-fusible material car-
ried by the inner side of said door frame,
5 and counter balance means connected with
the door.

2. The combination with an oven having
a doorway provided with a face plate and
10 outwardly projecting pins, of a door includ-
ing a frame having longitudinally slotted
side rails for the reception of said pins,
hooks carried by said door frame and adapt-
ed to engage said pins to retain said door in
15 a lowered position, a non-fusible material
carried by the inner side of said door frame,
counter balance means connected to the door,
and means including a transverse bar adapt-

ed to lock said door in a closed lowered posi-
tion.

3. In an oven door, a face plate provided
with outwardly projecting pins, a door
including a frame having longitudinally
slotted rails for the reception of said pins,
ribs carried by said door frame non-fusible
material supported by said ribs upon the
inner side of said door, counter balance
weights for said door, and means including
a bar for locking said door in a closed low-
ered position.

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

RICHARD KEARNS.

Witnesses:

MAX H. SROLOVITZ,
CHRISTINA T. HOOD.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."