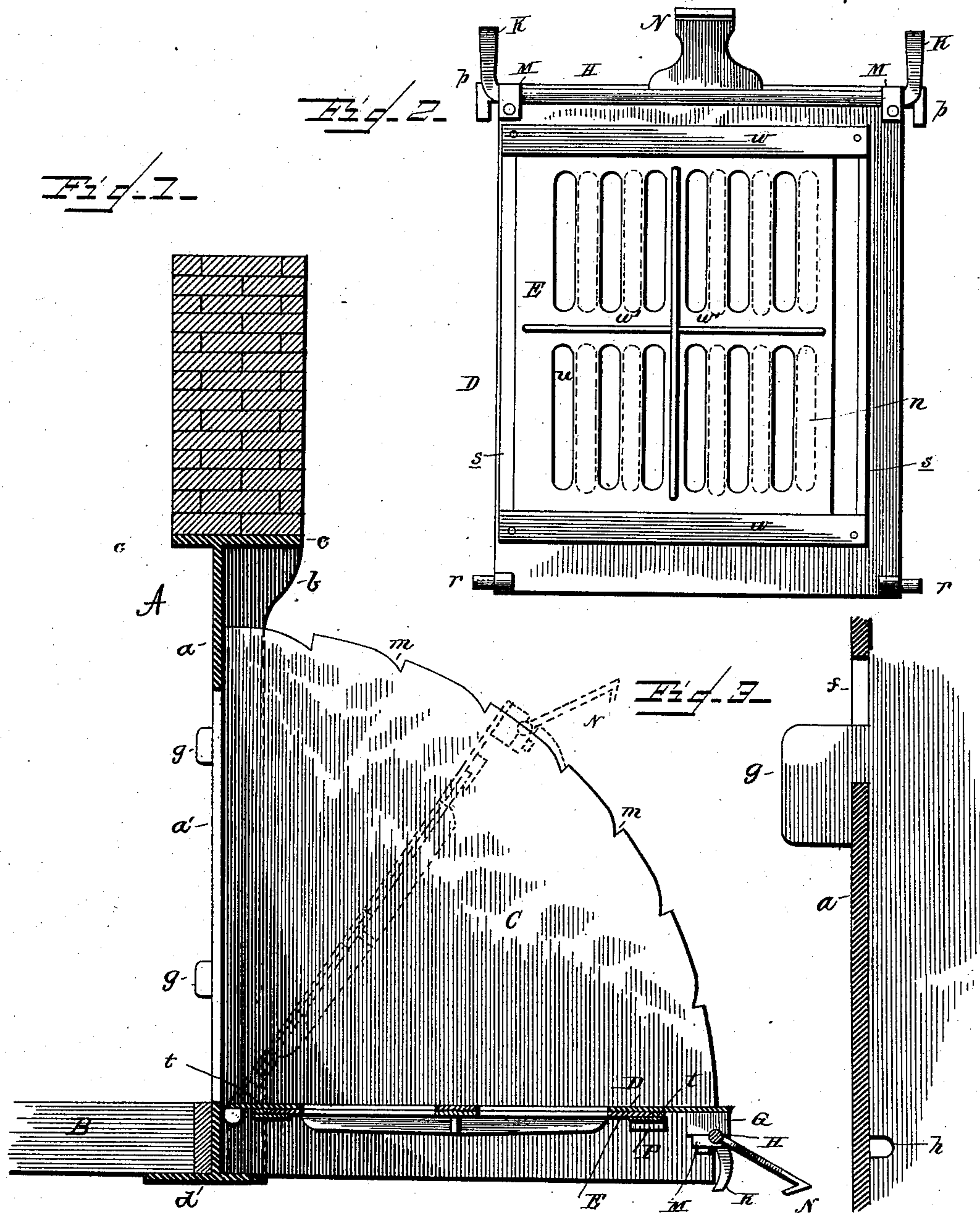


(No Model.)

J. W. READ.
BRICK KILN FIRE BOX.

No. 365,632.

Patented June 28, 1887.



Witnesses
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UNITED STATES PATENT OFFICE.

JOHN WILLIAM READ, OF SAN DIEGO, CALIFORNIA.

BRICK-KILN FIRE-BOX.

SPECIFICATION forming part of Letters Patent No. 365,632, dated June 28, 1887.

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To all whom it may concern:

Be it known that I, JOHN WILLIAM READ, a citizen of the United States, residing at San Diego, in the county of San Diego and State of California, have invented certain a new and useful Improvements in Combined Door and Fire-Box for Kilns; and I do hereby 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.

In the manufacture of bricks, as is well known, great difficulty is found in properly burning what is known as the "head" of the kiln—that is, the outside of the kiln—owing to the fact that the fires are necessarily placed near the center of the kiln, or, if started under the head, the heat is carried by the draft to or toward the center of the kiln, thus burning the middle portion of the kiln first. To obviate this it is the custom to start with small fires first and keep them thus two or three days, so as to burn the head, or at least dry it somewhat, before the center of the kiln is burned. Of course there is necessarily involved in this method a loss of time, if not of fuel, and great danger of spoiling the bricks forming the head by overburning.

Now, my invention has for its object to provide a very simple, durable, and effective device to overcome the above-enumerated objectionable features in the kilns as commonly constructed and enable a kiln to be burned or settled at once without loss of time and with a saving in fuel; and it consists of the parts and combinations of parts hereinafter described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a vertical section through my improved device; Fig. 2, a plan view of the door, and Fig. 3 an enlarged detail view.

Similar letters refer to similar parts throughout the several views.

A represents the main frame, which consists of a central plate, *a*, having an opening, *a'*, therein for the admission of fuel to the grates B, the side flanges, *b*, the shelf *c*, and base *d*, all of which may be and are preferably cast in one piece. The shelf or plate *c* answers the purpose of a rest or support for the brick-

work forming the kiln, and the base *d*, which projects, as does the plate *c*, outwardly on each side of the central plate, *a*, forms a flange on which rest the grates or grate-bars B on the inner side of said plate, while the lower ends of side pieces, C, rest on the opposite flange of said base *d*. These frames will be built in on each side with the brick-work of the kiln opposite each other, and the grate-bars will extend from one side to the other.

In the plate *a*, on each side of the opening *a'*, I form two elongated slots, *f*, one near the top and the other near the bottom of the frame and directly in line with each other, one of which is clearly shown in Fig. 3.

C represents two side pieces of metal which have formed on or cast therewith two hook-shaped lugs, *g*. These lugs are formed on the rear edges of the side pieces and are adapted to enter the slots *f* in the main frame, which are slightly larger and longer than the lugs, so that after they have been inserted the side pieces may be lowered and the lugs catch on the frame to hold said pieces upright on each side of the opening, from which they may easily be removed by simply raising them slightly and then withdrawing.

P is a projection cast with one of the side pieces. Near the bottom of the side pieces on their rear edges, and very nearly, if not quite, on a line with the bottom of the opening *a'*, I form the rounded open slots *h*, and on the sloping edges of the side pieces the notches *m* are formed, for a purpose which will be described.

D is the combined ventilating or draft-regulating door and grate. This consists of a plate of metal having the elongated openings *n* (shown in dotted lines, Fig. 2) formed in the body thereof, and the hook-shaped projections *p* at its upper corners, and journals or pintles *r* at its lower corners. Running lengthwise with the door are two bars, *s*, one on each side, and connecting these two bars at their upper and lower ends are two cross-pieces, *t*, (shown in Fig. 1,) to form a frame for the reception of the ventilating or draft-regulating slide E. This slide has elongated openings *u* formed therein, corresponding in size and number with the openings *n* in the door proper, and it is set in the frame formed of the bars *s t*, and

held therein by the overlapping plates *w*, so that it may be easily moved back and forth by its handles *w'* to increase or decrease the size of the openings *n*. On the outer side of the door at the upper end a projection, G, having a rounded opening therein, is cast at each corner to form bearings for the shaft H of the catches K. The shaft H is held in place by the cap-pieces M, which fit over the same and are screwed or otherwise secured to the projections G.

N is the handle cast with the shaft H for moving the same.

To construct this door or fire-box, for it is both, the main frame is first built in with the wall of the kiln and the door fitted between the side pieces, the projections *p* embracing or fitting over the side pieces, and the journals or pintles *r* being fitted in the openings or slots *h*. The side pieces are then fitted to the frame by inserting the lugs *g* into the slots *f*.

In operation the catches K are released from the notches and the door permitted to slide down between the side pieces until it rests on the projection P on one of the side pieces. The slide is then moved, so as to uncover the openings *n*, and the fire built on the door itself, the openings therein answering the purpose of a grate and kept burning for two or three days, and as the kiln advances raise the door two or three notches, (as shown in dotted lines, Fig. 1,) as high as judgment may suggest. When the outside of the kiln is burned the door is closed or raised completely up and the slide closed, thus forming an air-tight door, while the middle of the kiln is being burned, or it may be opened to increase the draft, if desired. It will be noticed that the door is on a level with the upper surface of the grate-bars, thus giving a through draft for the kiln.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, in a kiln-door, of the frame A, having slots *f*, the side pieces, C, having the hook-shaped lugs *g*, the slots *h*, and projections *p*, the door D, having the elongated openings *n*, and the slide E, having corresponding elongated openings, *u*, substantially as described.

2. The combination, in a kiln-door, of the main frame A, cast in one piece and having the slots *f*, the side pieces, C, having their sloping edges provided with notches *m* and their rear edges with lugs *g* and slots *h*, the door D, having elongated openings *n*, lugs *p*, projections G, shaft H, catches K, and slide E, substantially as described.

3. A combined door and fire-box for kilns, consisting of the side pieces, C, having the sloping edges provided with notches *m*, the metallic plate having elongated openings *n*, the slide E, having corresponding openings, *u*, and the shaft H, having the catches *p*, whereby said plate may be secured at any desired height or inclination and the draft regulated, as set forth.

4. A frame for the opening of a brick or other kiln, consisting of the plate *a*, having the elongated slots *f* and opening *a'* therein, the shelf or plate *c*, the base *d*, and the side flanges, *b*, all cast in one piece, substantially as described.

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

JOHN WILLIAM READ.

Witnesses:

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A. C. YOUNDIN.