

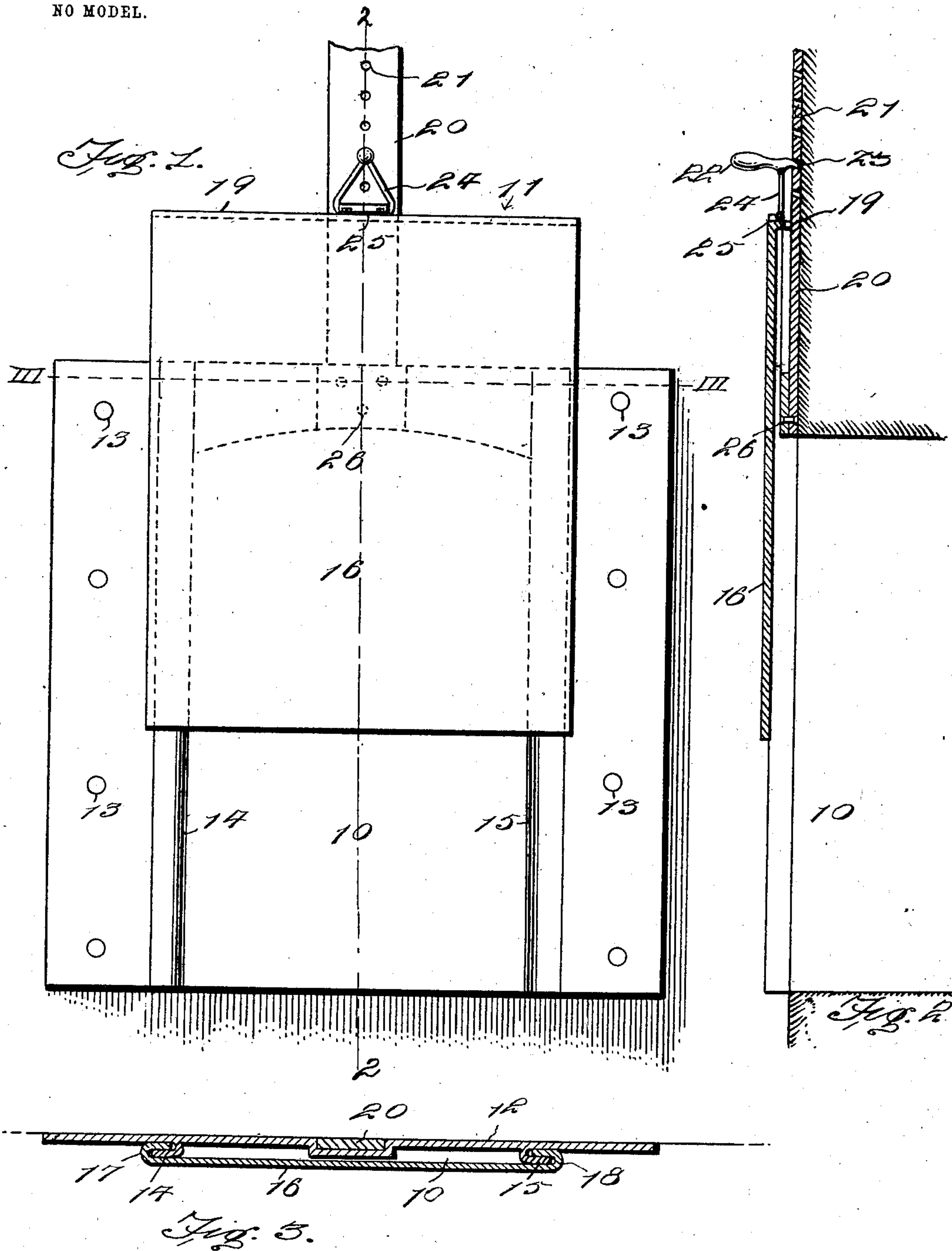
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PATENTED MAY 26, 1903.

S. A. & J. M. WEST.
BRICK KILN DOOR.

APPLICATION FILED JUNE 26, 1902.

NO MODEL.



Witnesses
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UNITED STATES PATENT OFFICE.

SYLVESTER A. WEST AND JOSEPH M. WEST, OF ROCKPORT, MISSOURI.

BRICK-KILN DOOR.

SPECIFICATION forming part of Letters Patent No. 729,026, dated May 26, 1903.

Application filed June 26, 1902. Serial No. 113,345. (No model.)

To all whom it may concern:

Be it known that we, SYLVESTER A. WEST and JOSEPH M. WEST, citizens of the United States, residing at Rockport, in the county of Atchison and State of Missouri, have invented a new and useful Brick-Kiln Door, of which the following is a specification.

This invention relates to the movable doors of brick-kilns and similar structures which require to be frequently opened and closed and adjusted partially open to provide for draft and which require to be so constructed as to exclude the air and retain the heat whether closed or partially open; and the invention has for its object the production of a simple, convenient, and cheap door which will effectually exclude the air and retain the heat and which may be adjusted to any point of elevation, thereby controlling and regulating the draft.

The invention consists in certain novel features of the construction, as hereinafter shown and described, and specified in the claims.

In the drawings illustrative of the invention, Figure 1 is a front elevation of one of the doorway-openings of a kiln with the improvement applied. Fig. 2 is a longitudinal sectional elevation on the line II II of Fig. 1. Fig. 3 is a transverse section on the line III III of Fig. 1.

The device may be applied to any of the various forms of brick-kilns and other similar structures, and for the purpose of illustration the improvement is shown applied to one of the doorway-openings 10 of a brick-kiln, the walls of the kiln surrounding the doorway-opening being represented at 11. Attached to the kiln adjacent to the opening 10 is a frame 12, being secured in place, as by bolts 13 or other suitable means, and with an aperture corresponding to and registering with the doorway-opening. Upon the sides of this frame 12 adjacent to the doorway-opening are outwardly-extended ribs 14 15, the ribs preferably formed integral with the frame and extending in opposite directions, as shown in Fig. 3, forming exterior parallel outwardly-flanged guides for the sliding door now to be described. The door is indicated at 16 and is formed of a plate of sheet metal with the edges folded inward to receive and engage the guides 14 15 on the frame 12, as

shown clearly in Fig. 3. By this means it will be understood that the door 16 may be raised and lowered upon the guides 14 15, the interlocking guides and turned-under edges 17 18 providing a joint between the parts of comparatively extensive area, so that the air is effectually excluded and the heat as effectually retained, and the guides and coacting edges of the door being arranged between the planes of the frame and the door serve to protect the guides from intense heat and form a close joint which excludes obstructing dirt. This form of joint is thus an important feature of the invention and greatly adds to the efficiency of the device. The turned-over edges 17 18 also aid in strengthening and stiffening the door, so that the doors may be constructed of lighter material than could be employed if the edges 17 18 were not formed thereon. At its upper end the door is bent over at right angles and forms a closure between the frame 12 and the door, and thus bridging the gap which would otherwise be formed by the projecting guides 14 15. By this simple means when the door is closed a close joint is formed between the door and the frame at all points, so that the cold air is effectually prevented from entering and the door rendered equally efficacious in retaining the heat. By this arrangement it will be noted the draft enters beneath the door and is thus at the nearest point to the grate at all times and in position to be the most effective upon the fire. The operator can thus perfectly control the heat and conduct it to any desired portion of the kiln, and thus insure an even burning. The door arranged to be operated vertically and opening from the bottom upwardly is much more effective and secures much better results than with a door opening not vertically, either by swinging or sliding, as the influx of the air by the vertically-moving door opening at the bottom insures the retention of the draft at the nearest point to the grate at all times, while the door swinging or sliding horizontally admits the air the full height of the door when opened. This is a most important feature of the construction and adds materially to its efficiency.

An improved and novel means for operating the door and sustaining it at any desired point of elevation is employed in connection

with this device, this improvement consisting in a bar 20, attached to the upper part of the frame 12 and extending upward a distance a little more than equal to the travel 5 of the door and provided with spaced apertures 21, the apertures arranged in vertical alinement and inclined downward and inward toward the kiln or away from the door, as shown in Fig. 2. Attached at or near the 10 upper part of the door, opposite the bar 21, is a catch 22, having a point 23, adapted to engage the perforations 21 consecutively and connected to the door movably by a pivoted arm 24. The catch is in the form of a handle, 15 as shown in Fig. 2, and the arm 24 extends downward therefrom at right angles and is pivoted, as at 25, to the top of the door, so that the device may be employed as a means for moving the door upward and down- 20 ward and also as a means for holding the door at any point of elevation by causing the end 23 to engage the perforations 21, as shown in Fig. 2. By reason of the downward incline of the perforations 21 the end 25 23 is caused to engage the perforations with a hook-like force, which will prevent them from becoming accidentally displaced, so that after the door is elevated to the proper point and the hooked end 23 engaged with 30 the nearest aperture 21 the door will be maintained in the desired position without danger of displacement unless forcibly detached by drawing the handle or catch 22 outward. This makes a very simple and efficient com- 35 bined support and door-operating device, very easily operated, and because of its simplicity not liable to become disarranged or displaced.

The arm 24 of the catch will preferably be formed in two parts diverging from the catch 40 23 downward to the pivotal point 25 and made in the form of a loop with a horizontal lower member, by which it is pivotally connected to the door, as shown. By this means a broad supporting-base is formed to the catch mem- 45 ber, so that it will not be liable to be moved laterally, but will retain the end 23 in proper vertical alinement with the perforations 21. The catch 22 24 may be attached to any part of the door 16, either upon the turned-over 50 edge 19, as shown, or upon the face of the door near its upper part.

The bar 20 will necessarily project from the face of the kiln, and at the point where the bar is attached to the frame 12 the latter is 55 bent outward to embrace the bar, and the turned-over upper edge 19 of the door is formed with a recess to embrace this bar and the portion of the frame 10 which surrounds it, so that no gap will be formed between the 60 door and the frame when the door is closed.

The bar 20 will be attached in any suitable manner to the frame 12, but preferably by rivets or bolts, as indicated by dotted lines at 26 in Fig. 1. The bar 20 may be placed 65 at one side of the center of the door, if required, so as not to interfere with the "peep-holes" sometimes formed through the wall of

the kiln above the arch of the fire-door opening.

The parts may be made of any size or gage 70 of metal to secure the necessary strength, and the door may readily be adapted to any form of kiln or other structure where required and may be adapted to any size or shape of doorway-opening. 75

Having thus described our invention, what we claim is—

1. In a device of the character described, a door movably supported opposite the doorway-opening, a bar having spaced perfora- 80 tions and supported vertically above said doorway-opening, a catch-lever having one end extended and adapted to consecutively engage said perforations, and an arm extending from said catch-lever intermediate of its 85 length and movably connected to said door, substantially as described.

2. In a device of the character described, a frame having an aperture registering with the doorway-opening, guides upon said frame 90 adjacent to said aperture and extending outwardly and in opposite directions therefrom, a door mounted on said guides, a bar having spaced perforations and supported vertically 95 upon said frame, and a catch-lever supported movably upon said door and adapted to be consecutively engaged with said perforations, substantially as described.

3. In a device of the character described, guides adjacent to the opposite sides of the 100 doorway-opening and extending outwardly and in opposite directions therefrom, a door having inwardly-extending guides upon opposite sides adapted to engage said outwardly-extended guides, a bar having spaced perfora- 105 tions and supported vertically above said doorway-opening, a catch-lever adapted to consecutively engage said perforations by one end and with an arm extending therefrom intermediate of its length and movably engaged 110 to said door, whereby said door may be operated and supported at any point of elevation, substantially as described.

4. In a device of the character described, guides adjacent to the opposite sides of the 115 doorway-opening and extending outwardly and in opposite directions therefrom, a door having inwardly-extending guides upon opposite sides adapted to engage said outwardly-extended guides, a bar having spaced perfora- 120 tions and supported vertically above said doorway-opening, a catch-lever movably supported upon said door and having an extended end adapted to be consecutively engaged with 125 said perforations, whereby said door may be operated and supported at any point of elevation, substantially as described.

5. In a device of the character described, a door movably supported opposite the doorway-opening, a bar having spaced perfora- 130 tions downwardly and inwardly inclined and supported vertically above said doorway-opening, a catch-lever having one end extended and downwardly inclined, and adapted to

consecutively engage said inclined perforations, and an arm extending from said catch-lever intermediate of its length and movably connected to said door, substantially as described.

6. In a device of the character described, a door movably supported opposite the doorway-opening, a bar having spaced perforations and supported vertically above said doorway-opening, a catch-lever having one end extended and adapted to consecutively engage said perforations, and an arm formed of diverging members extending from said

catch-lever intermediate of its length and connected by a transverse connecting member movably supported upon said door, substantially as described.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

SYLVESTER A. WEST.
JOSEPH M. WEST.

Witnesses:

F. H. SCHOOLER,
W. W. McDANIEL.