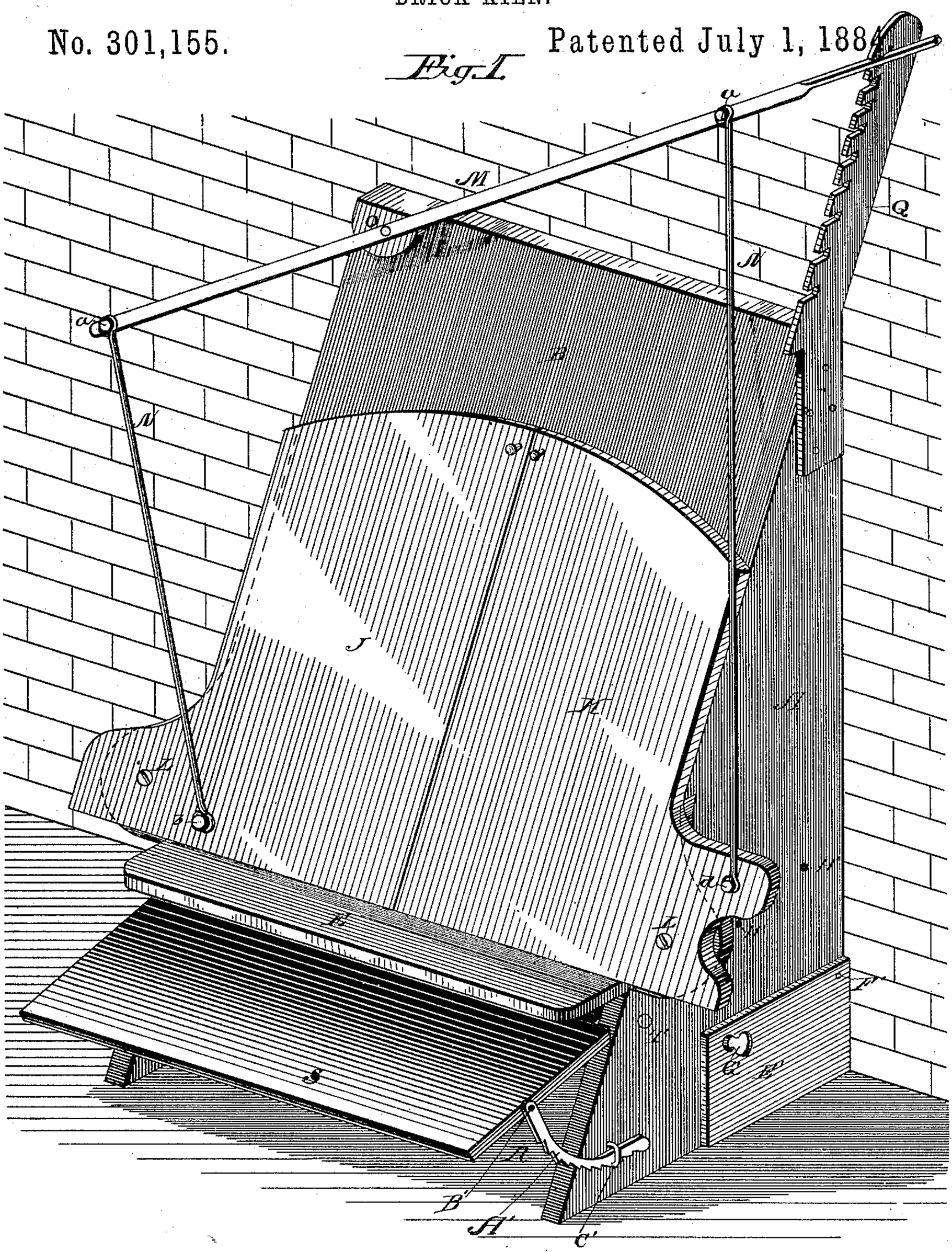
(No Model.) 3 Sheets—Sheet 1.

# J. PUERNER & W. HAUMERSON.

## BRICK KILN.

No. 301,155. Patented July 1, 1884.

Fig. 1.

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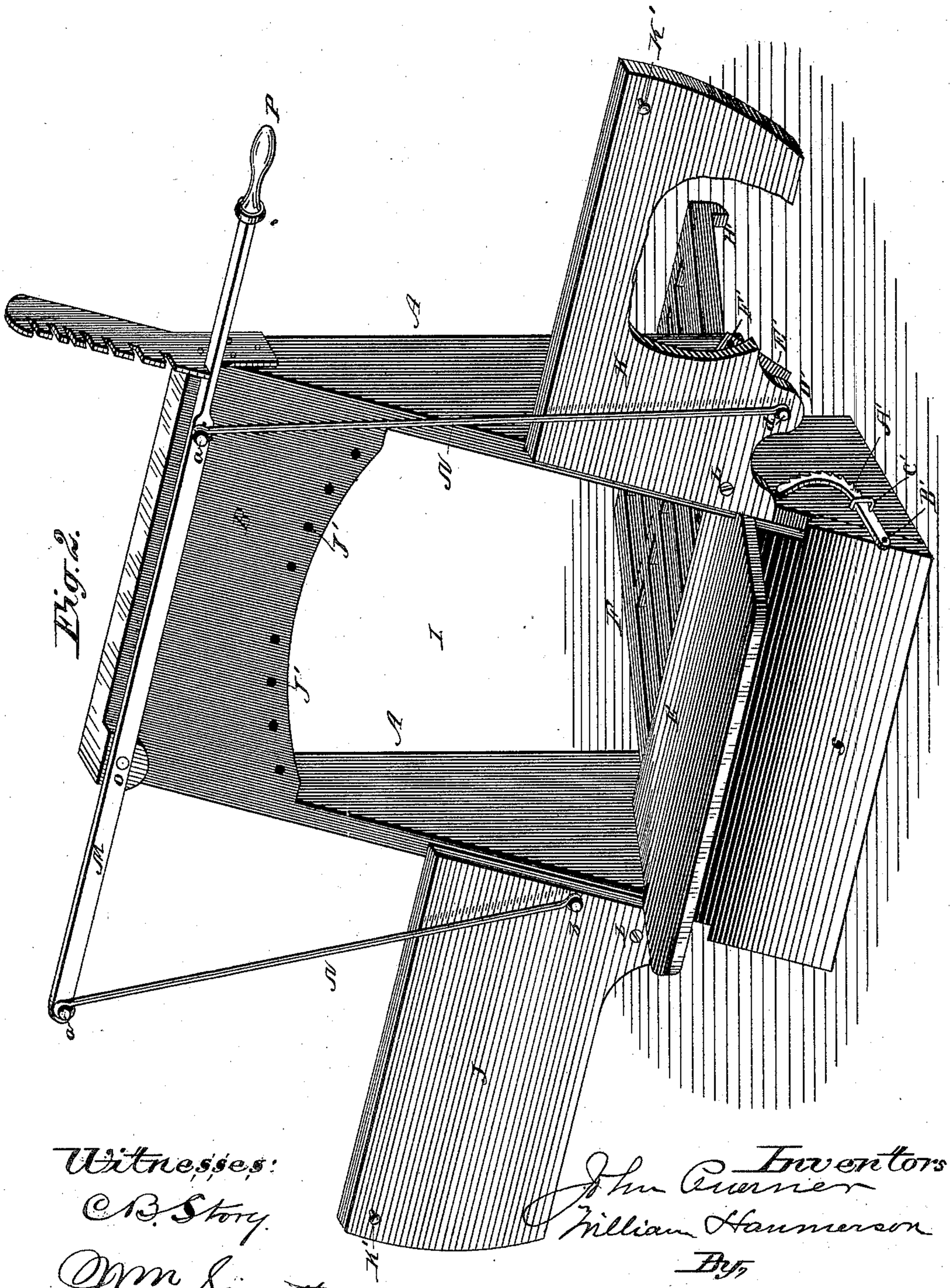

Fig. 2.

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## BRICK KILN.

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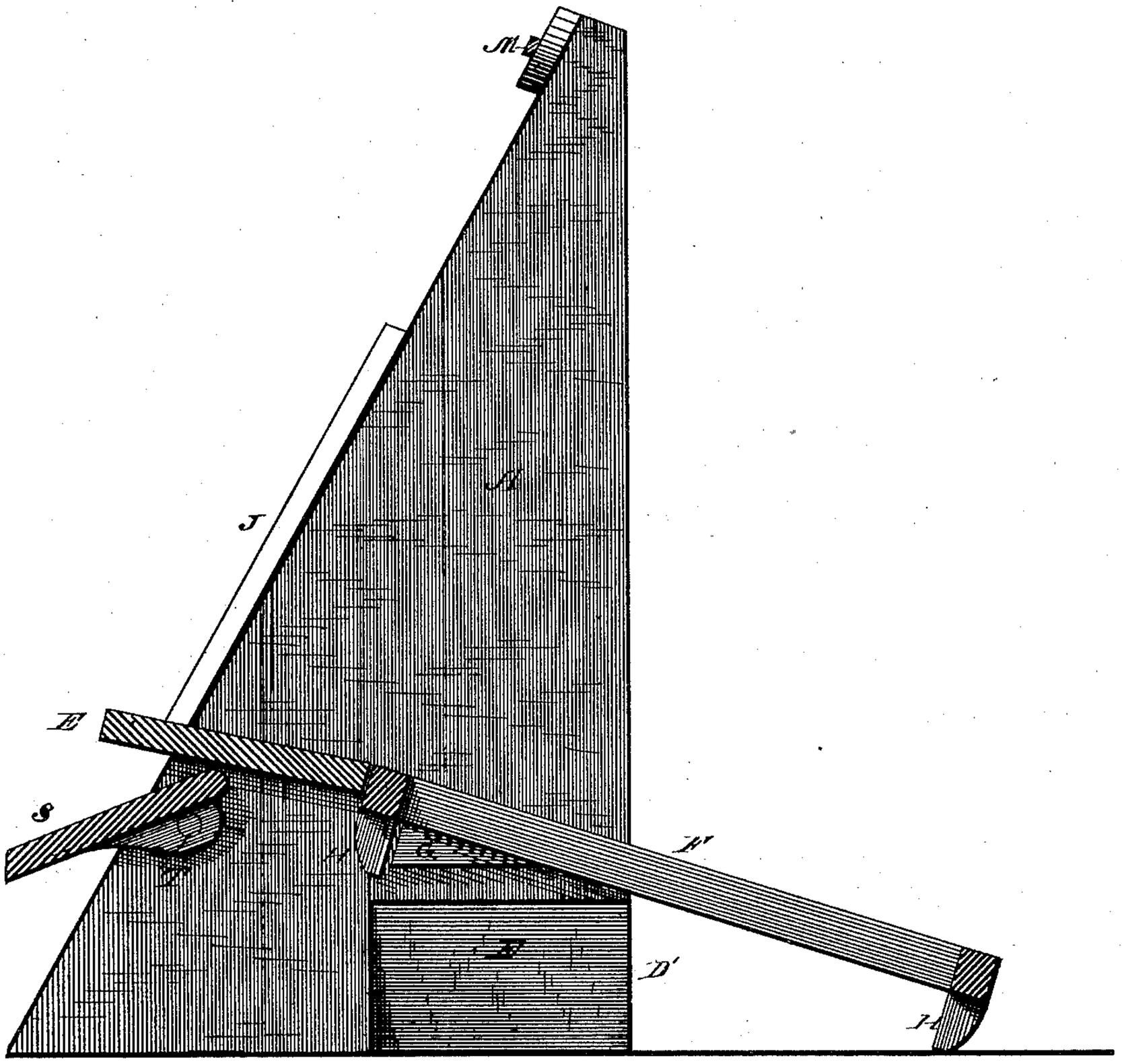
*Fig. 3.*

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# UNITED STATES PATENT OFFICE.

JOHN PUERNER AND WILLIAM HAUMERSON, OF JEFFERSON, WISCONSIN.

## BRICK-KILN.

SPECIFICATION forming part of Letters Patent No. 301,155, dated July 1, 1884.

Application filed April 7, 1884. (No model.)

*To all whom it may concern:*

Be it known that we, JOHN PUERNER and WILLIAM HAUMERSON, citizens of the United States, residing at Jefferson, in the county of Jefferson and State of Wisconsin, have invented certain new and useful Improvements in Brick-Kilns; and we 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

The object of our invention is to provide an apparatus by which the introduction of fuel to a brick-kiln is facilitated, and the admission of air is more perfectly controlled both to and in its course through the kiln, as may be required to meet the varying conditions of the brick in burning or the direction of the wind.

Our invention is further explained by reference to the accompanying drawings, in which Figure 1 represents a perspective view thereof in positions for use against a brick-kiln. Fig. 2 represents a perspective view of the same removed from the kiln, with the doors open. Fig. 3 is a vertical section.

Like parts are represented by the same reference-letters throughout the several views.

The frame of my apparatus, consisting in the sides A A and top B, is preferably made of cast-iron, all cast in a single piece. The rear edges of the sides A are made vertical to fit closely against the vertical walls of the kiln, while their front edges are inclined outward and downward, forming a broad base upon the ground, which gives stability to the frame, causing it to stand firmly in position against the kiln, while the breadth of the sides affords space between them for the deposit of fuel upon the hearth E, preparatory to being thrown into the kiln.

F is the grate, which is supported at its front end by said sides A A upon the inwardly-projecting lugs G, while its rear end inclines downwardly into the flue of the kiln, where it rests upon the ground or other surface.

To prevent the grate F from sliding downward or disengaging from said lugs G, it is provided at its respective corners with downward-projecting lugs H, which engage against the front ends of said lugs G, and thus permanently hold said grate in place. In case one end of the grate becomes burned away or broken, the grate may be readily reversed.

I is the doorway through which the fuel is thrown upon the grate. The doorway I is closed by the doors J and K, which are respectively pivoted at their lower corners upon bolts L L to the front surfaces of the sides A A, upon which bolts they are adapted to turn edgewise, and be opened outwardly in opposite directions to each other, from the position shown in Fig. 1 to the position shown in Fig. 2. The doors J and K are connected together and simultaneously operated by the lever M and rods N N. The lever M is attached to the top B of the frame by a pivotal support, O. The rods N N are attached at their upper ends to said lever by bolts *a a*, and at their lower ends to said doors by bolts *b* and *d*. Bolt *b* is located on said door (when closed) slightly below and at the right of its hinge-bolt, while the bolt *d* is attached to the door K (when closed) slightly above and at the right of its supporting-bolt L, whereby it is obvious that by bearing down upon the handle P said doors will be thrown apart from each other and opened, and that by a reverse movement of said handle said doors will be simultaneously brought together and closed.

Q is a ratchet-bar, in the teeth of which the side of the lever M is adapted to engage, whereby the doors may be held partially open or secured nearer to or farther apart from each other at any desired point of adjustment between its open and closed position. An air-passage, R, is provided beneath the hearth E for the admission of air beneath the grate, whereby combustion is promoted, and the grate prevented from becoming too intensely heated. The passage R is closed by the door S, which is suspended at its upper edge from the sides A A upon the trunnions T. One end of the door S is provided with a circular ratchet-bar, A′, which is attached thereto upon a loosely-fitting pin, B′, its free end passing through the fixed staple C′ in such a manner that as the door S is raised or swung outward said ratch-

et-teeth will be drawn, one after another, through said staple, and will, as soon as said door is released, engage in said staple and support the door at such point of adjustment as may be desired.

To provide for the admission of side drafts of air, as may be required by the shifting course of the wind, the air-passages D′ D′ are provided upon the respective sides of the frame. The passages D′ D′ are closed by doors E′. The doors E′ are attached to the sides A by bolts F′, which permit said doors to be turned sidewise and opened. The swinging ends of the doors E′ are provided with pins G′, extending rearward through them, and adapted to engage in any one of the series of holes H′, provided therefor in the sides of the frame, whereby said doors may be readily fastened at any desired point of adjustment corresponding to the spaces between said holes. If desired, the lever M and rods N may be dispensed with, in which case each door J and K may be adjusted separately at any point corresponding to the spaces between the holes in the series J′ J′, the doors being held at such points by the rearward-projecting ends of the pins K′ K′, which are adapted to engage therein.

All the parts of the apparatus, except the grate, are permanently connected together in such a manner that it is readily moved from one flue of the kiln to another, as may be required.

It is obvious that by means of the several air-passages and adjustable doors we are enabled to control the admission of air as desired, either above, below, or upon either side of the grate, or through any one of such passages, as may be desired.

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

1. In a combustion-chamber for brick-kilns, the frame consisting in sides A A and top B, cast in a single piece, in combination with the fuel-supporting grate and inclosing-doors, as set forth.

2. The combination of the frame consisting of sides A A and top B, with the doors J and K, hearth E, and grate F, as set forth.

3. The sides A A, having vertical rear edge and receding or rearwardly-inclined front edges, connected together at their upper ends by top B, in combination with the grate F, having its front end supported by said sides, and its rear end inclining downward, and adapted to rest on the ground, hearth E, and doors J and K, as set forth.

4. The combination of the sides A A, doors J and K, connected to said sides by bolts L L, hearth E, and grate F, said doors being adapted to be swung on said pins L L outward, apart from each other edgewise when opened, and closed by a reverse movement, as set forth.

5. The combination of the doors J and K, provided with pins K′ K′, sides A A, and top B, provided with series of holes J′ J′, grate F, and hearth E, said pins K′ and holes J′ J′ being adapted to hold said doors at the desired points of adjustment, as set forth.

6. The combination of the doors J and K, rods N N, lever M, with the frame consisting of sides A A and top B, said doors being secured at their lower outer corners to said sides by pivotal bolts L L, upon which they turn, and adapted to be simultaneously opened and closed by the action of said lever, as set forth.

7. The combination of frame-sides A A, doors J K, rods N N, lever M, and ratchet Q, as set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

JOHN PUERNER.
WILLIAM HAUMERSON.

Witnesses:
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M. BECK.