

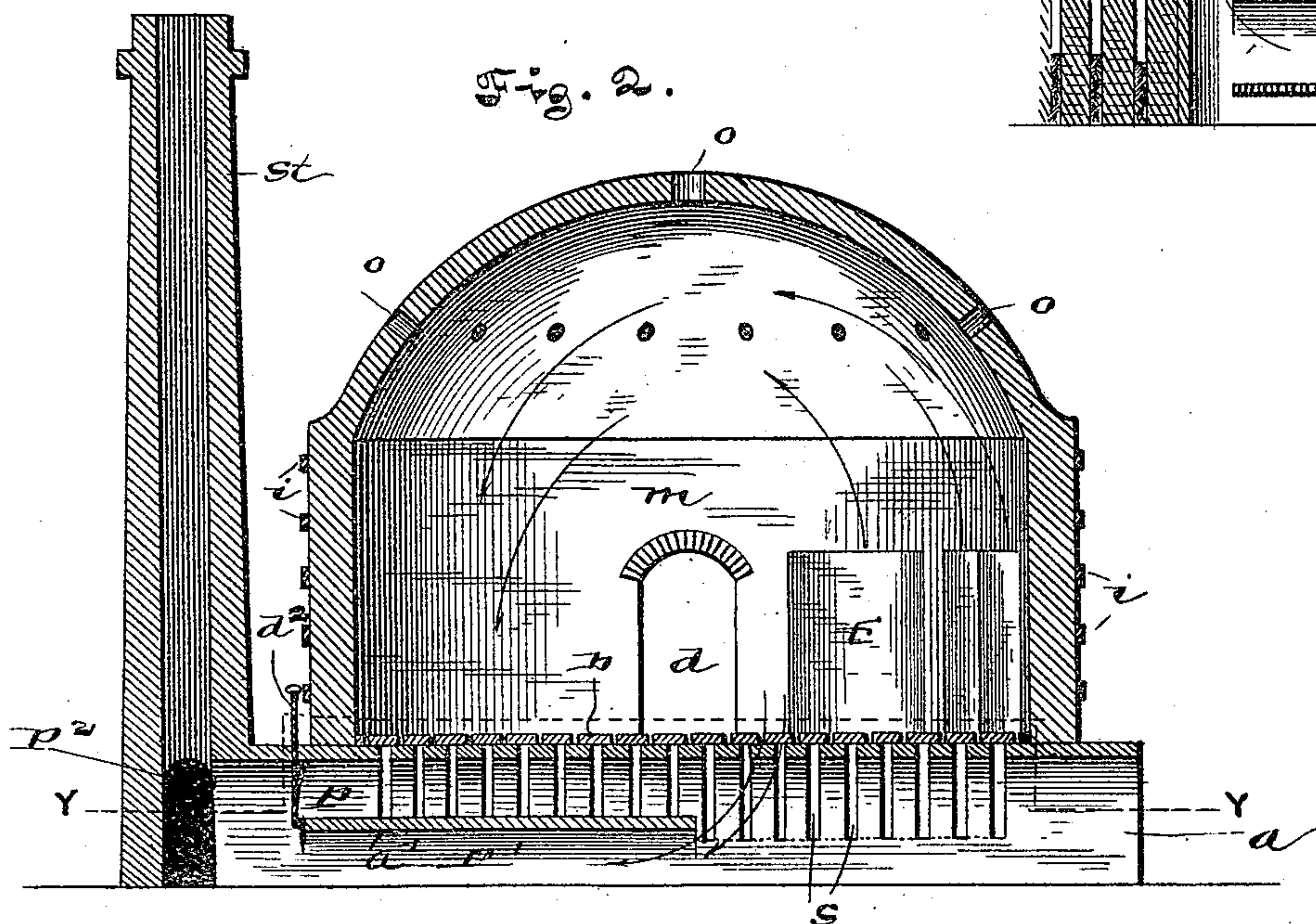
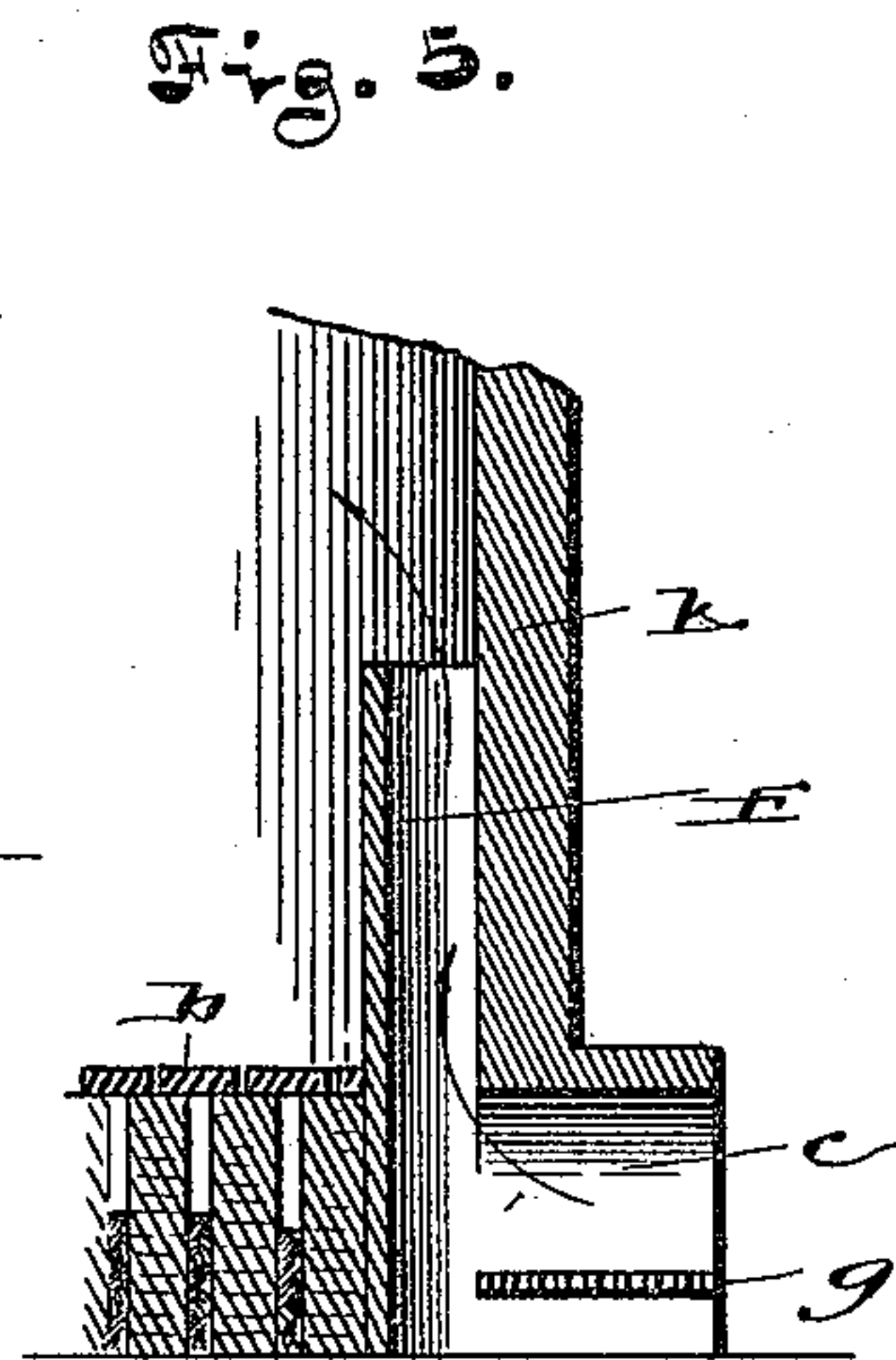
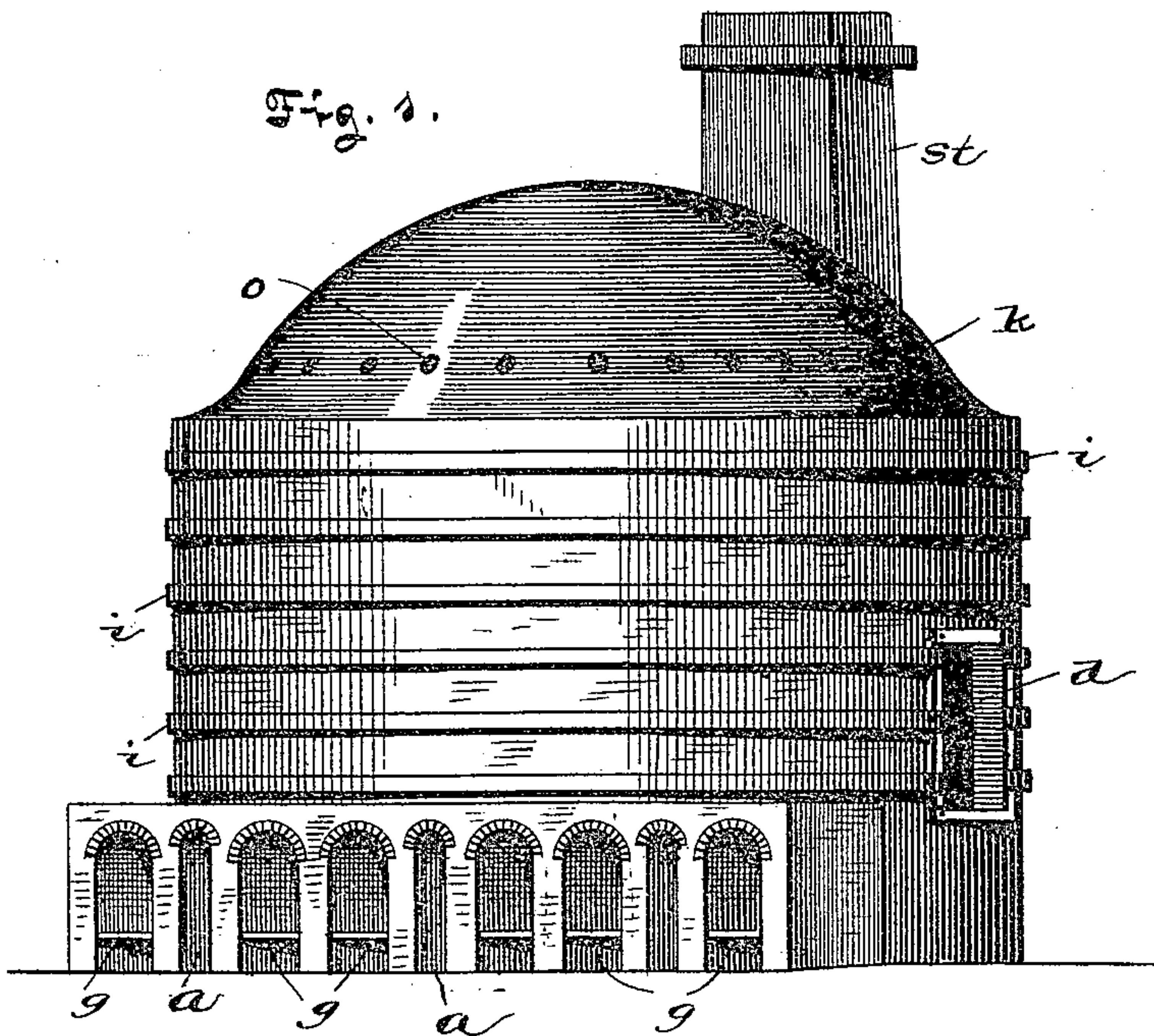
(No Model.)

2 Sheets—Sheet 1.

B. C. WICKERS.
BRICK AND TILE KILN.

No. 438,335.

Patented Oct. 14, 1890.



WITNESSES:

H. D. Nealy
E. B. Griffith.

INVENTOR

Barney C. Wickers,

BY

C. P. Jacobs.

ATTORNEY.

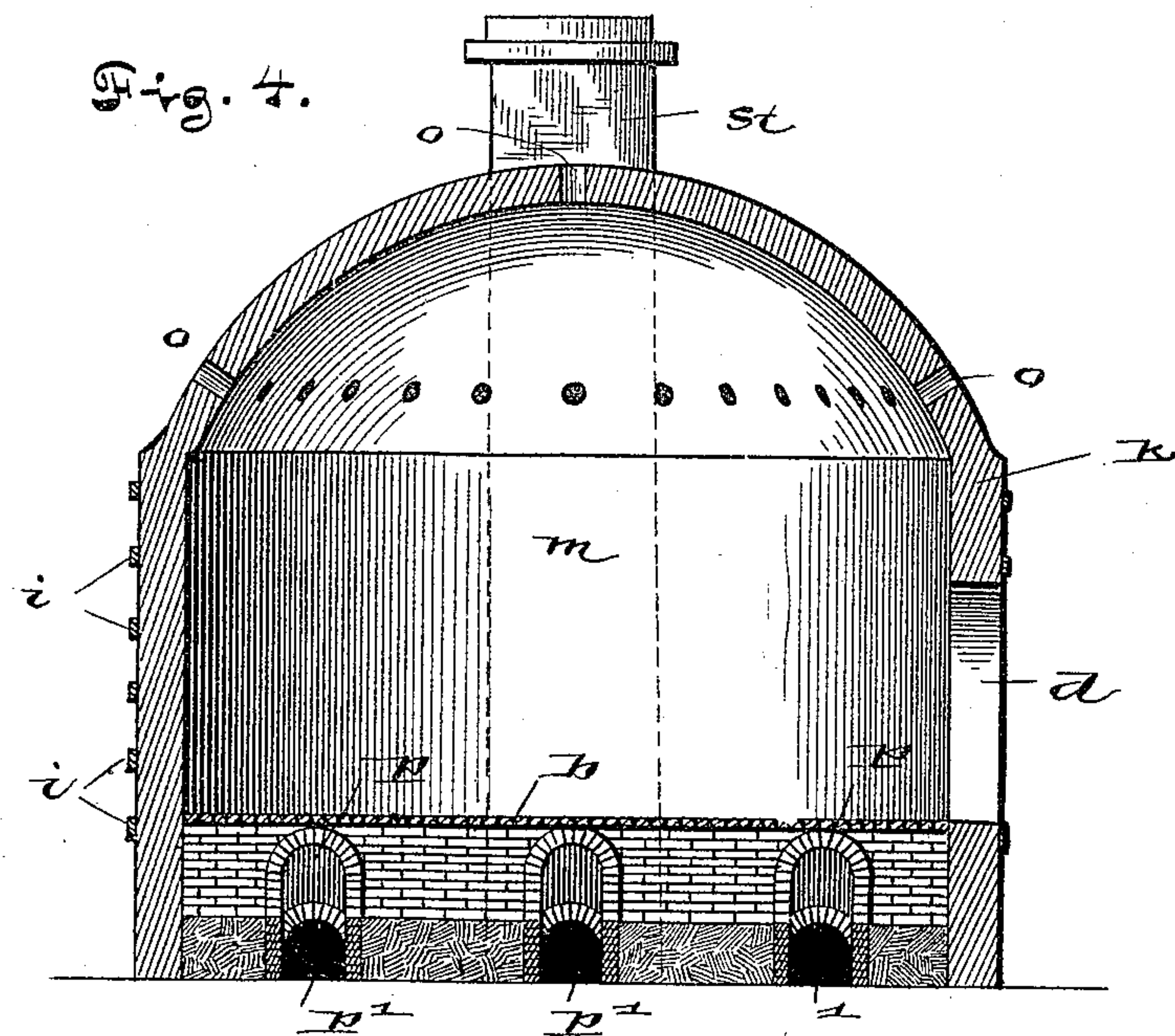
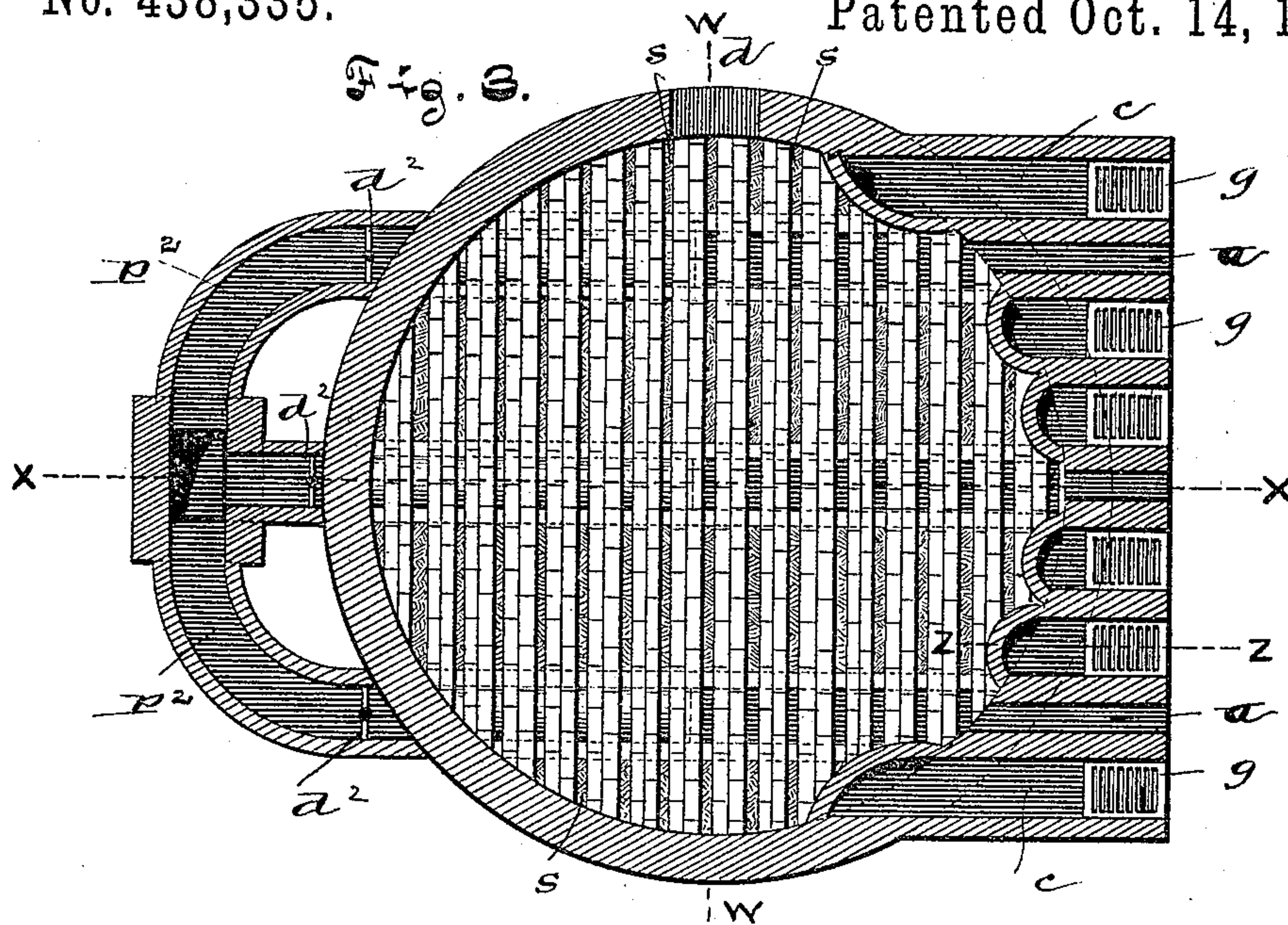
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UNITED STATES PATENT OFFICE.

BARNEY C. WICKERS, OF WESTFIELD, INDIANA.

BRICK AND TILE KILN.

SPECIFICATION forming part of Letters Patent No. 438,335, dated October 14, 1890.

Application filed June 24, 1890. Serial No. 356,576. (No model.)

To all whom it may concern:

Be it known that I, BARNEY C. WICKERS, of Westfield, county of Hamilton, and State of Indiana, have invented certain new and useful Improvements in Tile-Kilns; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which like letters refer to like parts.

My invention relates to improvements in the construction of kilns for burning tile and brick and will be understood from the following description.

In the drawings, Figure 1 is an elevation. Fig. 2 is a vertical section on the line $x x$, Fig. 3. Fig. 3 is a longitudinal section on the line $y y$, Fig. 2. Fig. 4 is a vertical section on the line $w w$, Fig. 3. Fig. 5 is a section on the line $z z$, Fig. 3.

In detail, the kiln k is built of brick in a circular form, the walls being strengthened and bound together by metal bands i . At the back of the flue is a stack st , opening below into a curved passage p^2 , which is connected on each side and in the center to horizontal passage-ways $p p'$, which are separated by the short arch a' , and each of which is provided with a damper d^2 , which is adapted to close either or both at the rear end whenever occasion may require. These horizontal passages unite in the larger arched openings a , which are at first nearly closed with brick, small apertures being left to look through to see whether the several parts of the kiln are being uniformly burned, and when the burning is completed these arches are entirely opened to cool off the kiln.

c are combustion-chambers, having grates g , in which the fire is placed, and these connect with flues f , formed in the sides of the kiln and opening above into the main chamber m , which is covered by a domed roof having small openings o for carrying away the heat into the open air when the kiln is cooling off. These openings are covered over with tiles or brick when the kiln is burning, and are only opened to cool off the kiln when the burning is completed. The openings a are arched, as shown, and between these arches are spaces s , which allow the free intercommunication of heat between the arches, and also the passage of air-currents. These spaces

at the rear only open into the passage p ; but in front they extend down far enough to connect with the lower passage p' , the object of this being to drive or force the heat toward the front of the kiln, when the dampers of the upper passages p are closed, to complete the burning at such point, the heat then finding its only outlet to the stack through the lower passage. Upon the top of the arches and covering these spaces are loosely laid the floor-brick b , and upon these are piled the tile or brick to be burned.

Fire being started in the combustion-chambers, the heat and wood smoke and other products of combustion pass up the flues f in the direction shown by the arrows into the main chamber m , and the openings of the dome being closed they cannot pass up, but are drawn downward through the mass of the tile and brick, through the joints between the floor-brick, and into the spaces s , and thence into the open passages a below. The back part of each of these passages is divided by an arch into two parts $p p'$, the upper one of which is directly tapped by the air-spaces s in front, and the smoke and heat will naturally take that passage out through the stack. After the upper part of the kiln has been well burned the damper d^2 may be closed so far as to cut off all outlet through the upper passage p , and this forces the currents of heat to pass down through the lower passage p' and out to the stack, thus completing the burning of the brick in the lower part of the kiln. As the brick above are always first burned by the pressure of the heat and those lower down are the last to be affected, the operator may by looking up through the arched openings a , one of which is on each side and the other in the center, as shown in Figs. 3 and 4, readily see whether any part of the kiln is insufficiently burned, and by closing the dampers connecting with the other passages he may force the entire volume of heat to that side whose passage is left open, and thus finish the burning of the material above it.

d is a door or man-hole opening in the side of the kiln for the removal of the material.

What I claim as my invention, and desire to secure by Letters Patent, is the following:

1. The kiln k , having combustion-chambers c , grates g , flues f , connected with such com-

bustion-chambers, opening into the main chamber, and arched openings a , having intercommunicating spaces s , divided at the rear into the passages $p p'$, either one or both clos-
5 able by dampers d^2 , substantially as shown and described.

2. The kiln k , have openings o in its roof, the stack st , connected therewith, combustion-chambers c , opening into the flues f , arched
10 passages a , with intercommunicating spaces s between, the rear part of these passages divided into parts $p p'$, and dampers d^2 , for closing one or both of the same, whereby the heat
15 may be directed to any part of the kiln for the better burning of the material at that point, all combined substantially as shown and described.

3. The kiln k , having the main chamber m , combustion-chambers c , connecting by flues f with such main chamber, and a floor composed
20 of loosely-laid brick b , resting upon arches a below, and these connected with a stack in the rear by passages $p p' p^2$ and with each other through the spaces s with dampers d^2 , for
25 closing any one or more of such passages, all combined substantially as shown and described.

In witness whereof I have hereunto set my hand this 19th day of June, 1890.

BARNEY C. WICKERS.

Witnesses:

H. D. NEALY,
E. B. GRIFFITH.