

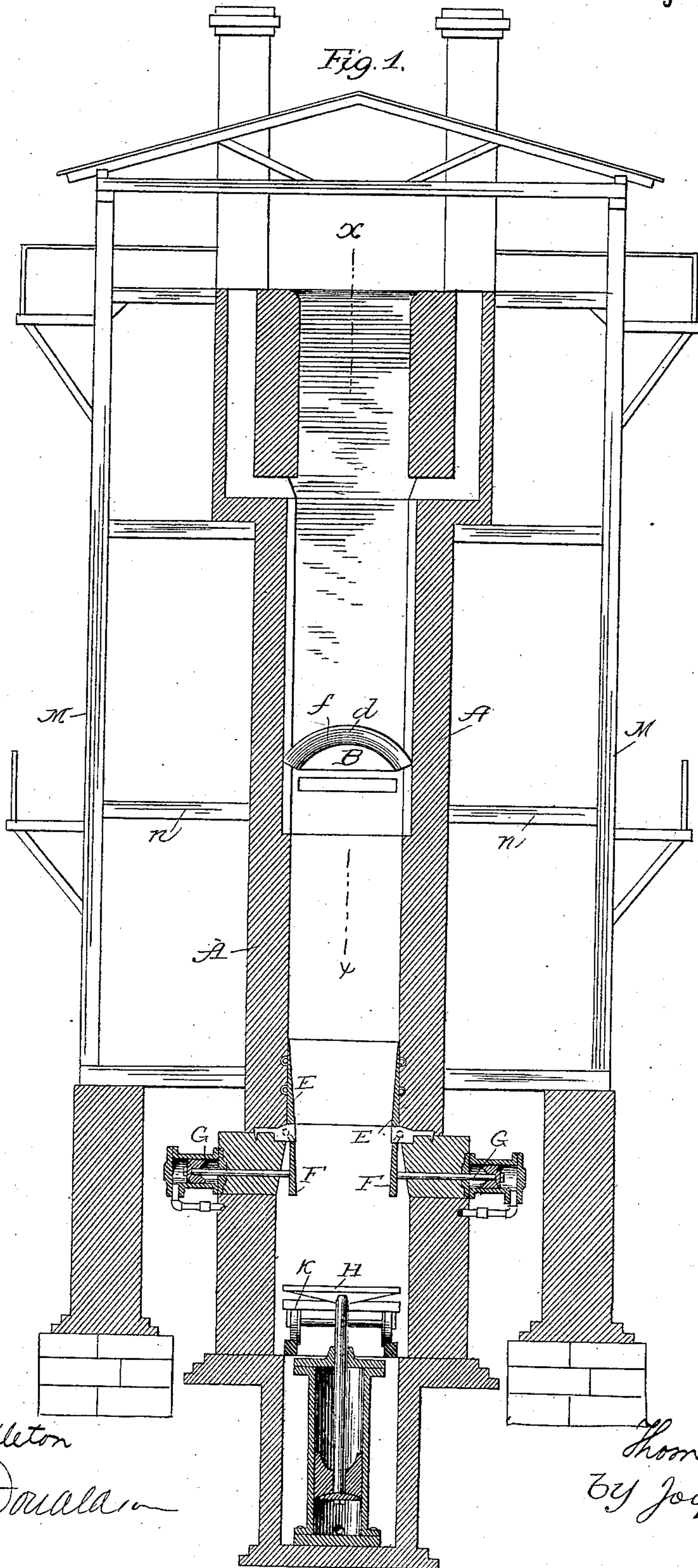
(No Model.)

3 Sheets—Sheet 1.

T. S. HAWKINS.
BRICK KILN.

No. 317,351.

Patented May 5, 1885.



Attest:
F. L. Middleton
Walter D. Mullen

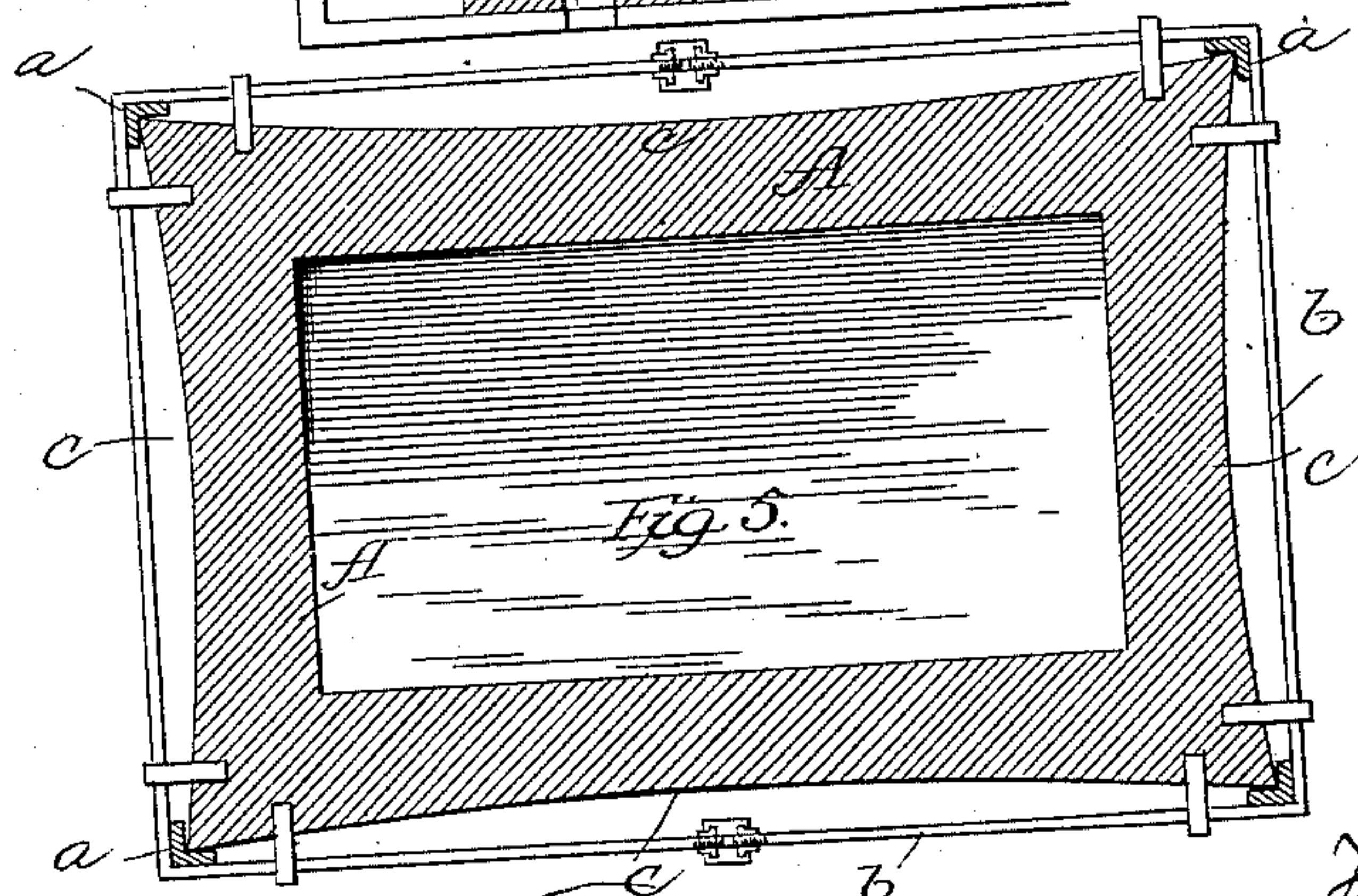
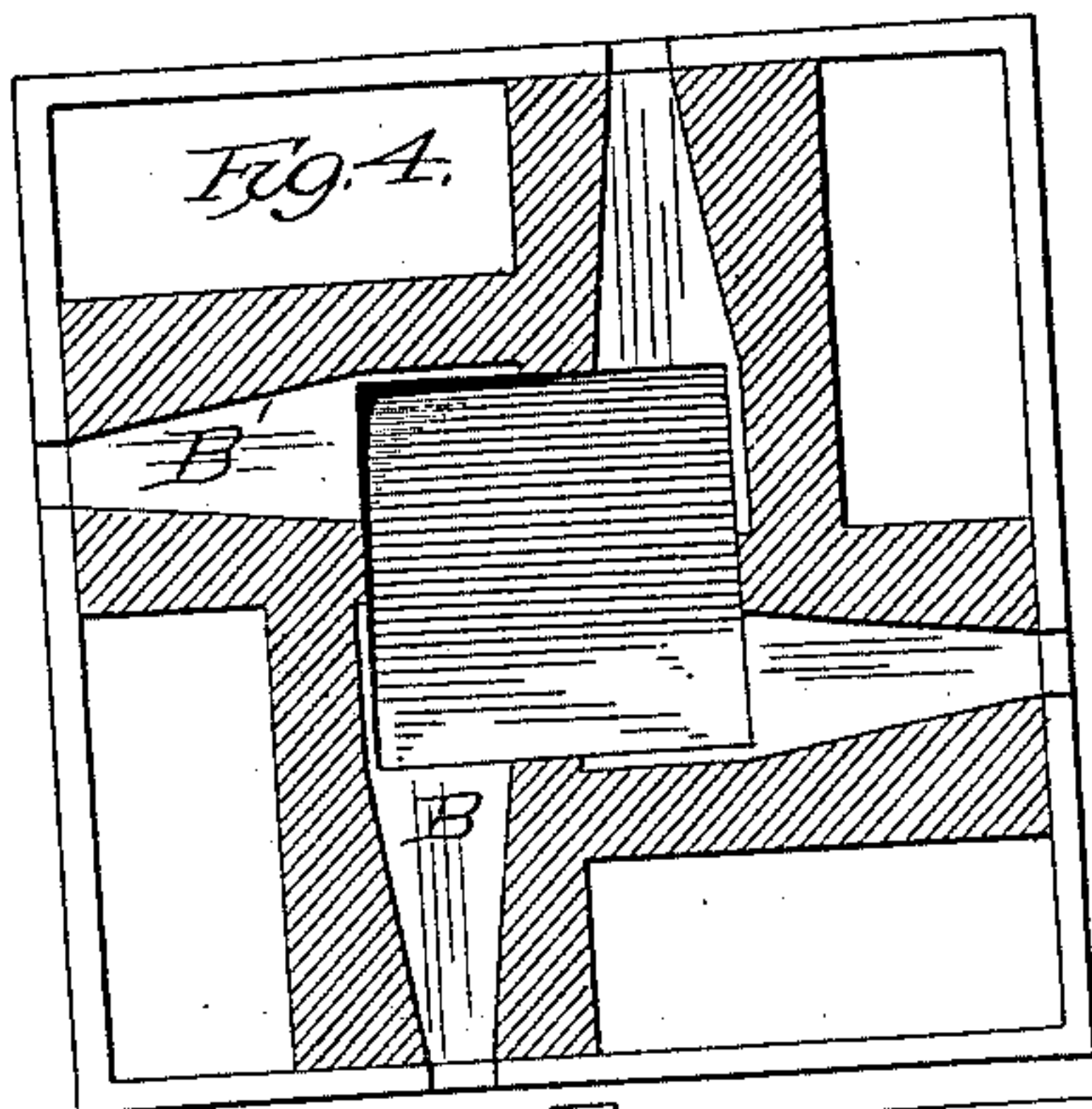
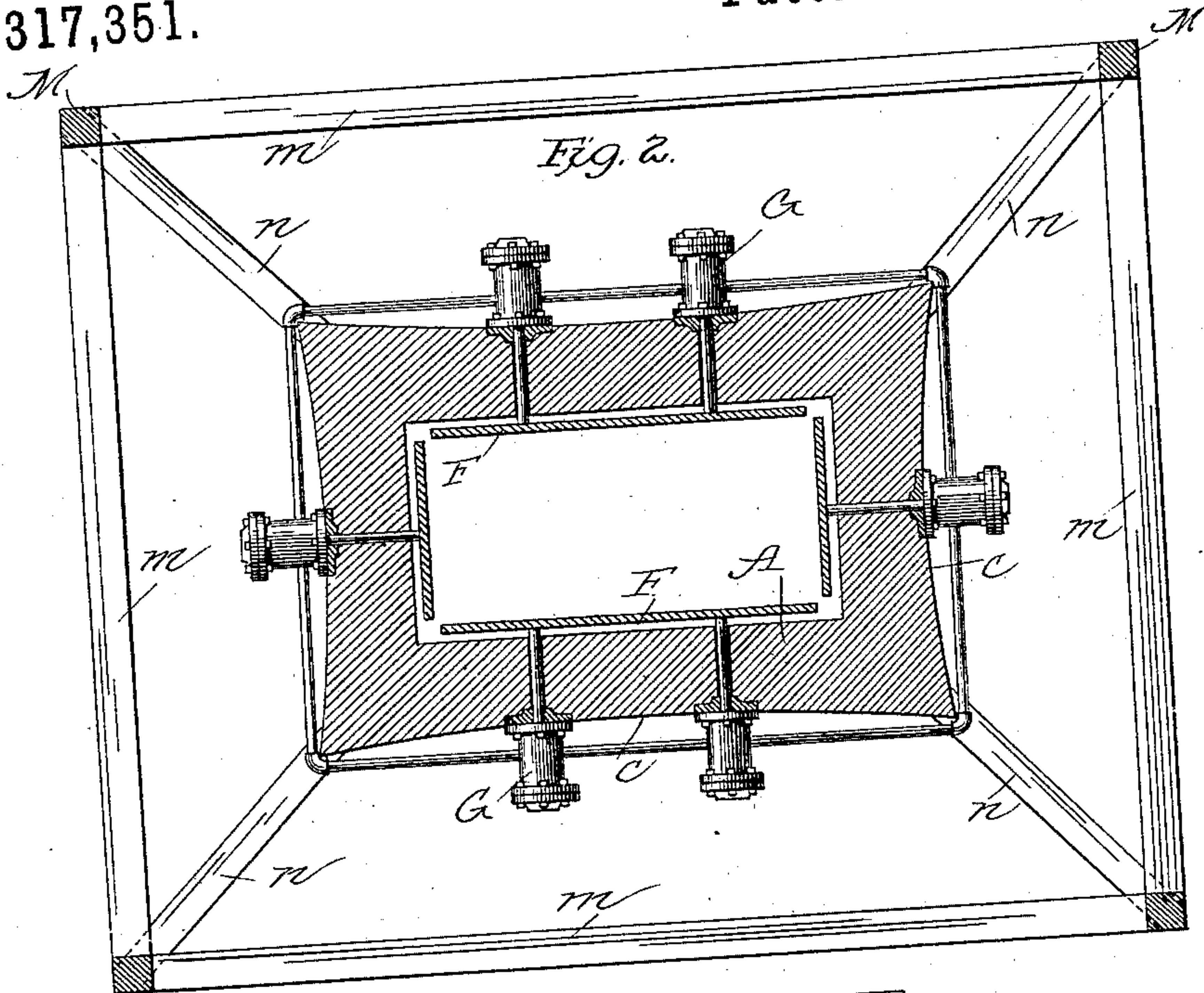
Inventor
Thomas S. Hawkins
by Joyce & Spear
Attys

(No Model.)

T. S. HAWKINS.
BRICK KILN.

Patented May 5, 1885.

No. 317,351.



Attest:
F. L. Middleton

Inventor
Thomas S. Hawkins
by Joyce Spear
Atty.

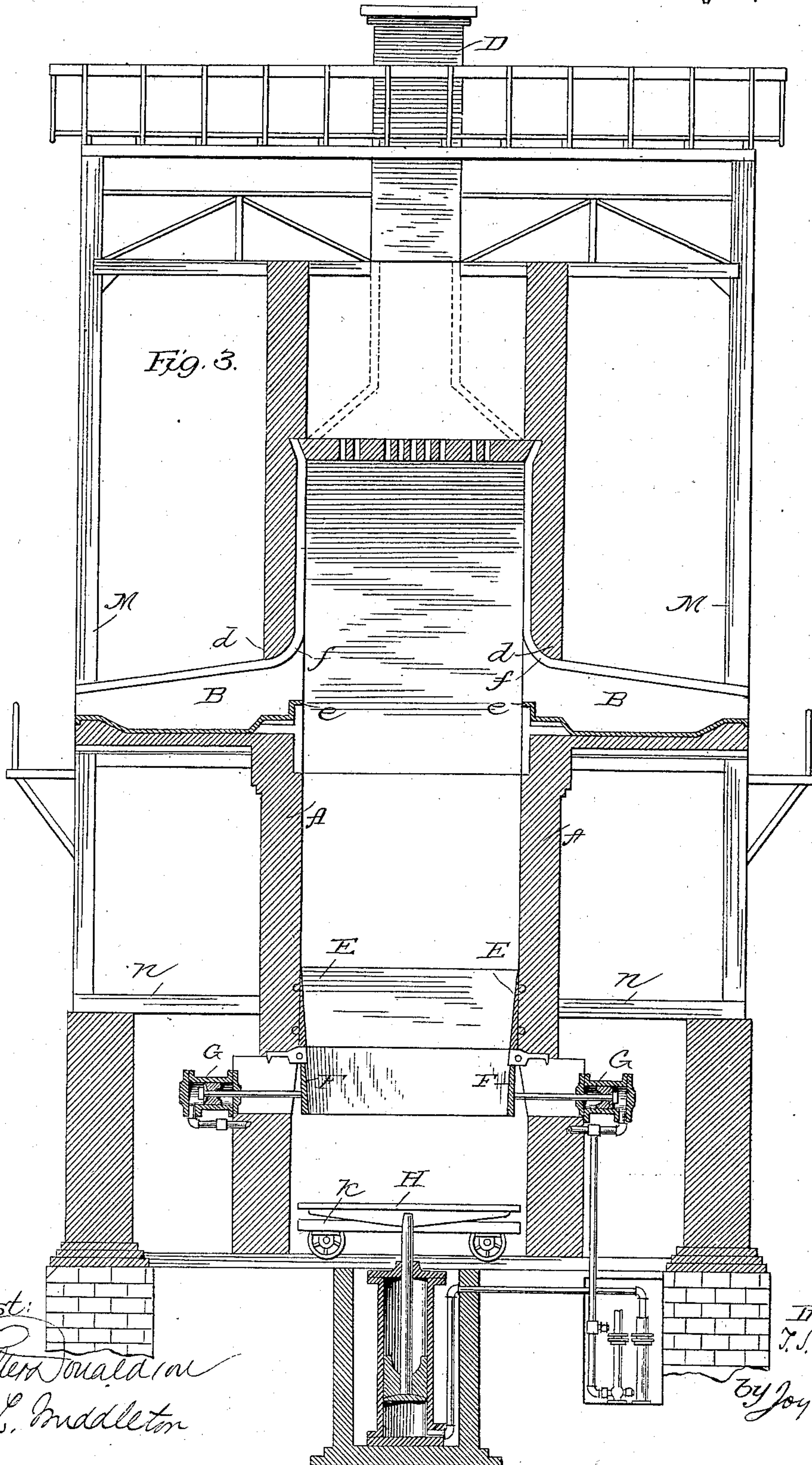
(No Model.)

3 Sheets—Sheet 3.

T. S. HAWKINS.
BRICK KILN.

No. 317,351.

Patented May 5, 1885.



Attest:
F. L. Middleton

Inventor
T. S. Hawkins
by *Joyce Spear*
Atty.

UNITED STATES PATENT OFFICE.

THOMAS S. HAWKINS, OF CHATTANOOGA, TENNESSEE.

BRICK-KILN.

SPECIFICATION forming part of Letters Patent No. 317,351, dated May 5, 1885.

Application filed August 28, 1884. (No model.)

To all whom it may concern:

Be it known that I, THOMAS S. HAWKINS, of Chattanooga, in the county of Hamilton and State of Tennessee, have invented a new and
5 useful Improvement in Brick-Kilns; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention relates to perpetual kilns for burning bricks. The invention is in part more
10 particularly applicable to that apparatus shown in Letters Patent of the United States granted me on the 12th day of August, 1879, and No. 218,529. In part, however, my improvement is applicable to any kind of kiln of
15 this class.

The invention relates, first, to the contraction or "choking" of the flue or chamber in which the bricks are burned; second, to the devices used for lowering and supporting the column of bricks in removing a charge which has
20 been burned; third, to the construction of the furnaces; fourth, to the construction of the main body of the stack or kiln; fifth, to the special construction of the frame of the shed and
25 combination of said frame with the stack.

In the accompanying drawings, Figure 1 represents a central vertical section of the kiln, &c. Fig. 2 shows a horizontal section. Fig. 3 is a
30 vertical section on line *xx*, showing the improved furnaces. Fig. 4 is a horizontal section showing an improved arrangement of furnaces. Fig. 5 is a horizontal section showing the manner of bracing the walls.

The main shaft of the kiln is composed of
35 brick walls A, with re-enforcements of angle-irons *a* and straps *b*, Fig. 5, the angle-irons being applied at the corners. For the purpose of resisting the outward thrust, I prefer to hollow the walls slightly, as shown at *c*. The
40 brick-work may be of any required height, and may be provided with ordinary or any suitable furnaces, B, placed at a suitable height and opening into the kiln under arches *d*.

In order to prevent the coal and ashes from
45 sifting from the kiln, I raise the lining of the furnace to form bridges *e*; and in order that the products of combustion may flow readily and directly to the edge as well as to discharge into the center of the kiln, I round the upper
50 surface of the entrance of flue, as shown at *f*.

In Fig. 4 I have shown a construction and arrangement of the furnaces with relation to

the stack for the purpose of burning certainly at the corners. The furnaces B' are set rear of the corner, so as to open on every side into
55 the stack, with the side of the opening substantially in plane with the side of the adjacent wall. Thus one furnace discharges through one wall and across the face of another of the stack, and all parts are alike heated. I provide
60 my kiln with lateral chimneys D D, as and for the purpose explained in my aforesaid application.

It will be understood that in this kiln, as in my patent aforesaid, I hold the column of bricks
65 while the burned charge is being removed by means of lateral compression; but I have modified the construction as shown in said patent by contracting the passage above the compression-plates.
70

It will be understood that in order to form an exit for the products of combustion, and that the heat may be applied uniformly through the mass, the bricks are piled loosely with regular interstices. When the passage
75 is choked, so as to arrest the column, the pressure applied to the column of bricks forces the bricks together and necessitates considerable movement of the compression-plates before the solid resistance is reached. In order to com-
80 press the column and close up the interstices before it reaches the compression-plates, I have provided an inclined re-enforcement, E, around the walls of the kiln just above the compression-plates. This re-enforcement is made of
85 iron thinned to an edge at the top and increasing in thickness downward. It serves another purpose besides that of compressing the columns—namely, that the surface being comparatively smooth, of the iron re-enforcements,
90 the outer bricks as they press against it are not injured, as they would be if pressed against the brick lining. The thickness of the lower part of the re-enforcements is sufficient to close up the interstices, and to render the column
95 solid as it advances to the plates. The plates F F are pivoted, so that when compression is removed they will swing clear from the column of bricks. They are suitably hung at their upper edges, and are pressed inward by means
100 of a hydraulic press, G G.

The column of bricks is supported and lowered upon a platform, H, substantially in the manner described in my said patent; but I have

modified the supporting-platform for convenience in loading. The platform H is of iron, properly re-enforced, and rests loosely upon a truck, K. It has a socket underneath to receive the piston-rod of the hydraulic press, so that the platform may rest upon the car, or may be lifted from the car by the piston.

It will be observed that the distance between the compression-plates and the furnaces is considerably greater than the distance between the compression-plates and the truck. This is sufficient to leave two successive charges in the kiln below the furnace while the third is burning, and thus these charges are allowed to cool before they are discharged.

I have also modified and improved the form of frame-work for the protecting-sheds about the kiln. This consists of posts M M and beams *m m*, with diagonal braces *n n* bracing against the corners of the brick-work. This tends to give stability to the whole structure.

I claim as my invention—

1. The combination, in a brick-kiln, of a main shaft, suitable compression-plates, and a contraction in the said main shaft above the compression-plates, substantially as described.

2. The combination, in a brick-kiln, of a main shaft, suitable compression-plates, and

the inclined re-enforcement E, above the compression-plates, substantially as described, and for the purpose set forth.

3. In combination with the flue or chamber, the furnaces provided with the bridge *e*, substantially as described, and for the purpose set forth.

4. In combination with the brick-work of the main shaft, the posts M M, beams *m m*, and diagonal braces *n n*, bearing against the corners of the brick-work, as and for the purpose set forth.

5. The main shaft of the kiln composing the brick walls A, having inwardly-curved surface combined with the angle-irons *a* and straps *b*, as and for the purpose set forth.

6. The combination, with the main shaft of a brick-kiln, of the furnaces B', arranged one at each corner of the said shaft, as described, and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

THOMAS S. HAWKINS.

Witnesses:

L. G. WEAVER,
ADOLPHUS OCHS.