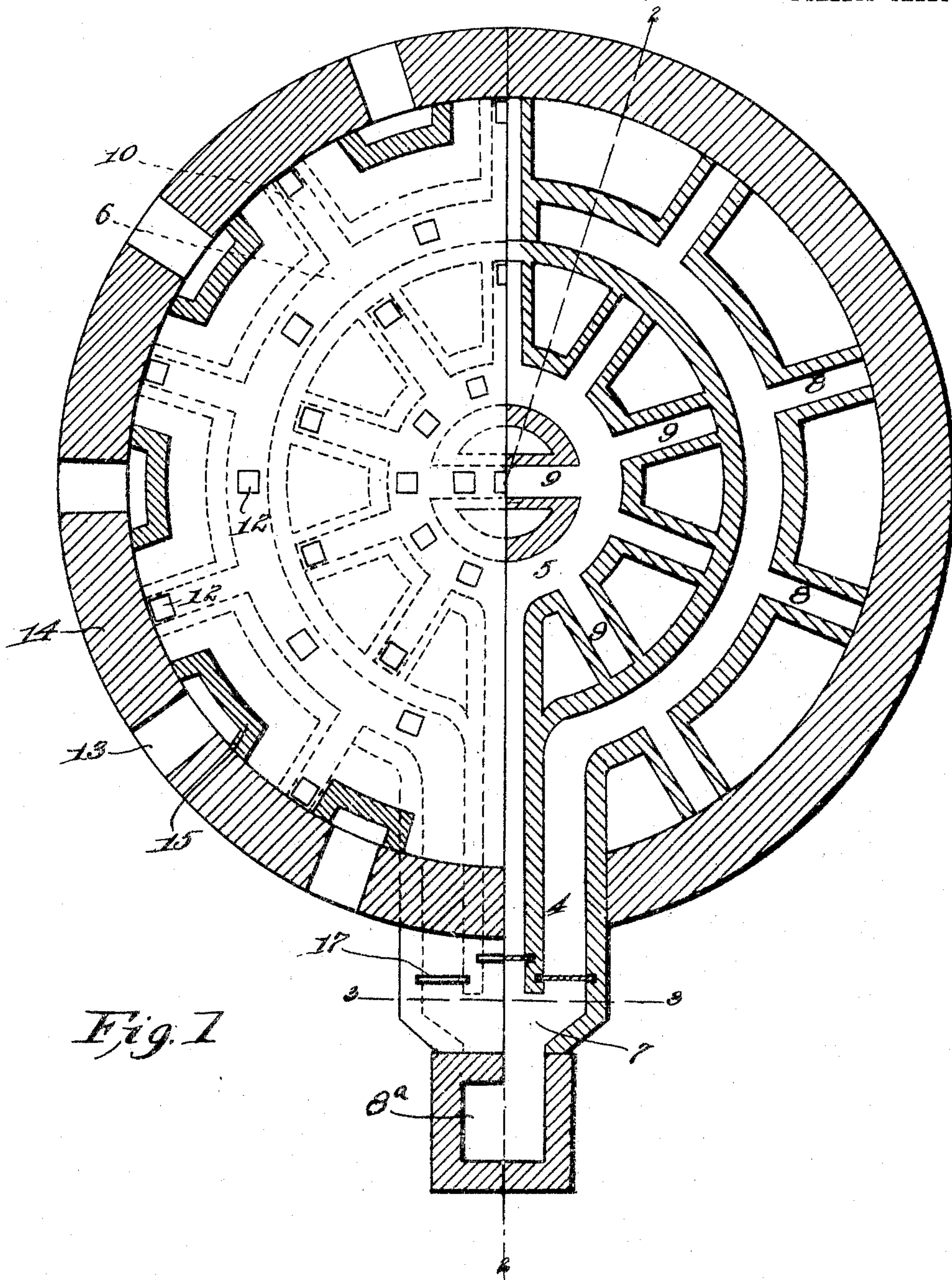


No. 780,021.

PATENTED JAN. 17, 1905.

T. I. BRETT.
DOWNDRAFT BRICK KILN.
APPLICATION FILED DEC. 29, 1903.

2 SHEETS—SHEET 1.



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Witnesses

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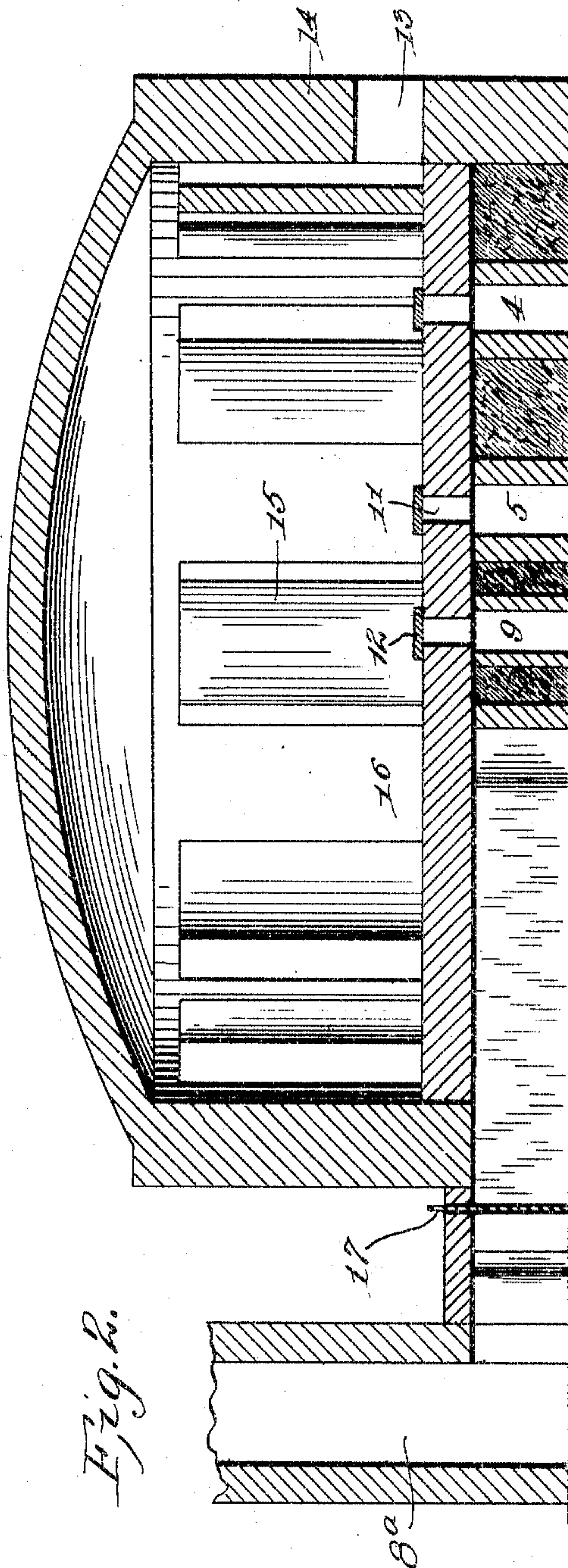


Fig. 2.

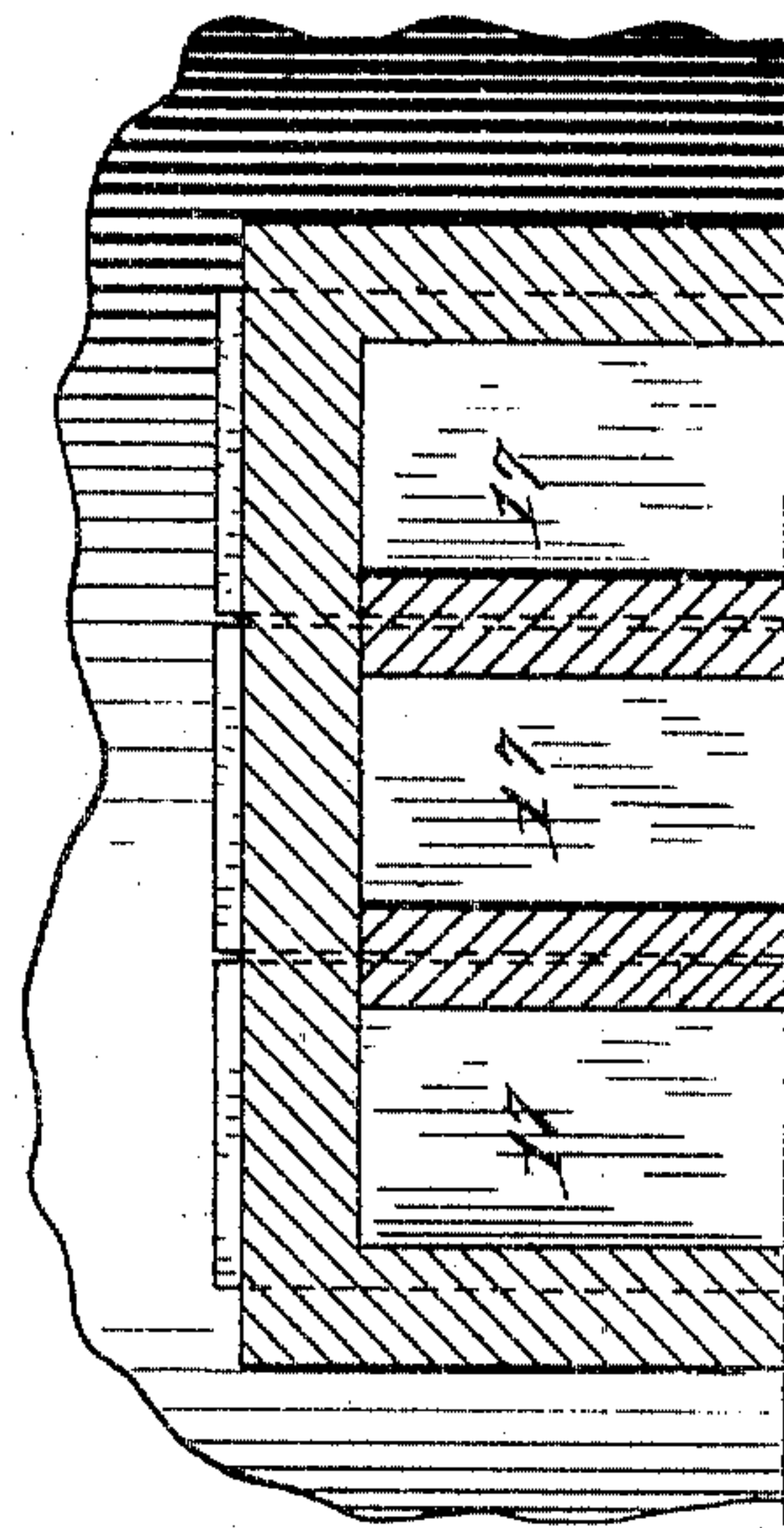


Fig. 3.

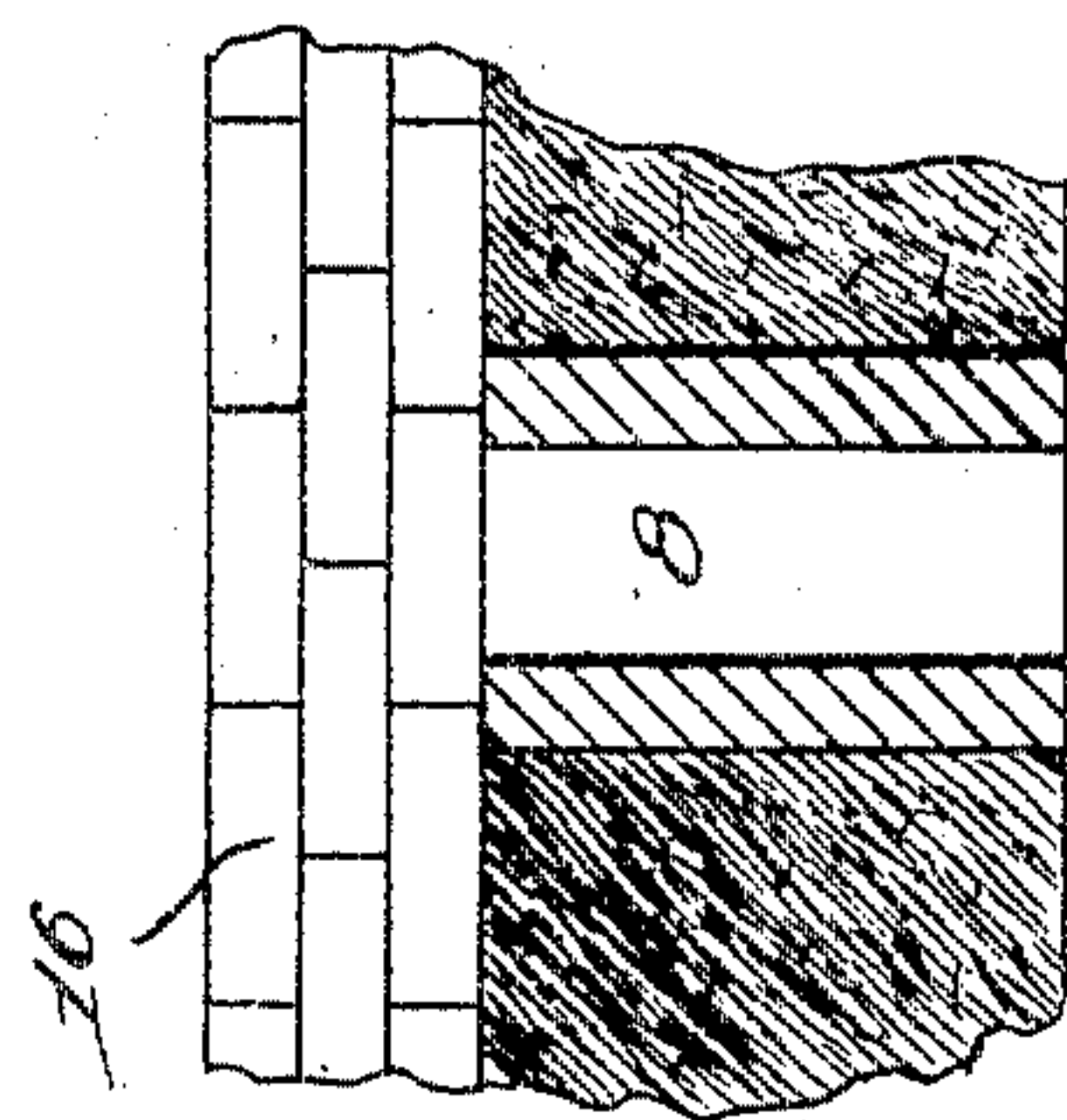


Fig. 4.

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DOWNDRAFT BRICK-KILN.

SPECIFICATION forming part of Letters Patent No. 780,021, dated January 17, 1905.

Application filed December 29, 1903. Serial No. 186,969.

To all whom it may concern:

Be it known that I, THOMAS I. BRETT, a citizen of the United States, residing at Fairmont, in the county of Marion, State of West Virginia, have invented certain new and useful Improvements in Downdraft Brick-Kilns, of which the following is a specification.

The object of my invention is to provide a kiln of this character wherein the heat may be distributed to any part of the kiln at will during the burning of brick by the use of one stack.

In the drawings, Figure 1 is a top plan view of the bottom of the kiln constructed according to my invention, portions being in section. Fig. 2 is a vertical section of the same on the line 2 2, Fig. 1. Fig. 3 is a vertical section on the line 3 3, Fig. 1. Fig. 4 is a vertical section through one of the supplemental flues.

The kiln is divided into three main flues 4, 5, and 6, each of which converges at 7 into a common flue leading to the stack 8^a. Each main flue is provided with series of supplemental laterally-radiating flues 8, 9, and 10, respectively, at regular intervals, whereby the bottom of the kiln is provided with a large flue area.

The floor of the kiln is for all practical purposes built solid as distinguished from the checkered-work floors of kilns of this character, the floor of my kiln being provided at intervals along the lines of the main flues and at the end of the supplemental flues with passages 11, connecting the flues with the interior of the kiln. These passages are provided with closing-tiles 12, which are placed over them when the kiln is being emptied to prevent brick, dust, &c., from falling into the flues, and thereby clogging them; but of course it will be understood that these tiles do not cover said passages when the kiln is being burned.

It will be seen in Fig. 1 that the supplemental flues of the main flues 4 and 6 are positioned about midway between the bag walls 15.

13 represents the fireplaces built in the wall 14 of the kiln at intervals.

17 represents the dampers placed in the main flues.

It will be noticed that the floor 16 of the kiln is constructed of a series of courses of brick loosely laid upon each other, thereby facilitating the removal of that portion of the floor immediately over the flues for the purpose of cleaning said flues of the accumulation of dust, &c., incident to the use of the kiln.

The central flue 5 with its supplemental flues 9 cover an area equal to flues 4 and its supplemental flues 8. The flue 6 and its supplemental flues 10 cover an area equal to flue 4 and its supplemental flues. Thus it will be seen that each flue covers an area equal to one-third ($\frac{1}{3}$) of the floor area of the kiln.

In the operation of this character of kiln the heat ascends between the outer wall 14 and the bag-wall 15 to the crown of the kiln, from which point it is made to circulate downward through burning brick by means of the draft openings or passages 11, leading to the main flues or supplemental flues, through which it is conveyed to the stack. In case it is desired to shut off any portion of the kiln the damper of the flue leading to that portion is closed and the heat directed to other portions of the kiln from which the remaining flues lead.

In starting the kiln I prefer to direct the heat through the main center flue, thereby causing the brick in course of burning to settle toward the center instead of toward the outer walls of the kiln, whereby they are kept from falling out and being broken up when the kiln is open and the fireplaces are kept free from being choked and the bag-walls from being damaged by falling brick.

The supplemental flues of the main flues 4 and 6 are directed toward the wall of the kiln at a point midway between the bag-walls 15 in order to insure the proper amount of heat being directed toward the said outer walls, thus obtaining a more uniform heating of all portions of the kiln.

I may dispense with the dampers 17 by simply placing a board or other flat body over the opening in the top of the main flues, through which said dampers pass, and in the use of such an expedient when it is desired to shut off the heat from any portion of the kiln

the board covering the opening of the particular flue is lifted off of the opening, thus breaking the draft in the flue 1 as a damper.

Having thus described my invention, what I claim is—

1. A brick-kiln provided with a stack to one side of the kiln, a central circular flue beneath the floor of the kiln, a radial flue leading from the central flue to the stack, radial flues extending from the central circular flue and closed at their outer ends, two semicircular flues, one on each side of the central circular flue but closed to the same and to the other, radial flues extending from each of the semicircular flues to the outer wall of the kiln and closed at their outer ends by the said wall, a flue leading from each of the semicircular flues to the stack, the area of the floor covered by the central circular flue and its radial flues being equal to the area of the floor covered by either one of the semicircular flues and its radial flues, and means for controlling the draft of the central circular flue and the two semicircular flues separately.

2. A brick-kiln provided with a stack to one side of the kiln, a central circular flue beneath the floor of the kiln, a radial flue leading from the central flue to the stack, radial flues extending from the central circular flue and closed at their outer ends, two semicircular flues, one on each side of the central circular flue but closed to the same and to the other, radial flues extending from each of the semicircular flues to the outer wall of the kiln and closed at their outer ends by the said wall, a flue leading from each of the semicircular

flues to the stack, bag-walls located above the floor and between the radial flues of the two semicircular flues and means for controlling the draft of the central circular flue and the two semicircular flues separately.

3. A brick-kiln provided with a stack to one side of the kiln, a solid floor composed of a series of courses of brick loosely laid upon one another, a central circular flue beneath the floor of the kiln, a radial flue leading from the central circular flue to the stack, other radial flues extending from the central flue and closed at their outer ends, two semicircular flues, one on each side of the central circular flue but closed to the same and to the other, radial flues extending from each of the semicircular flues to the outer wall of the kiln and closed at their outer ends by the said wall, the area of the floor covered by the central circular flue and its radial flues being equal to the area of the floor covered by either one of the semicircular flues and its radial flues, means for allowing the passage of the products of combustion at the closed ends of all the radial flues and above the central and the two semicircular flues, bag-walls located above the floor and between the radial flues of the two semicircular flues, and means for controlling the draft of the central and the two semicircular flues separately.

The foregoing specification signed this 26th day of December, 1903.

THOMAS I. BRETT.

In presence of—

E. F. HARTLEY,
C. W. SWISHER.