

No. 765,098.

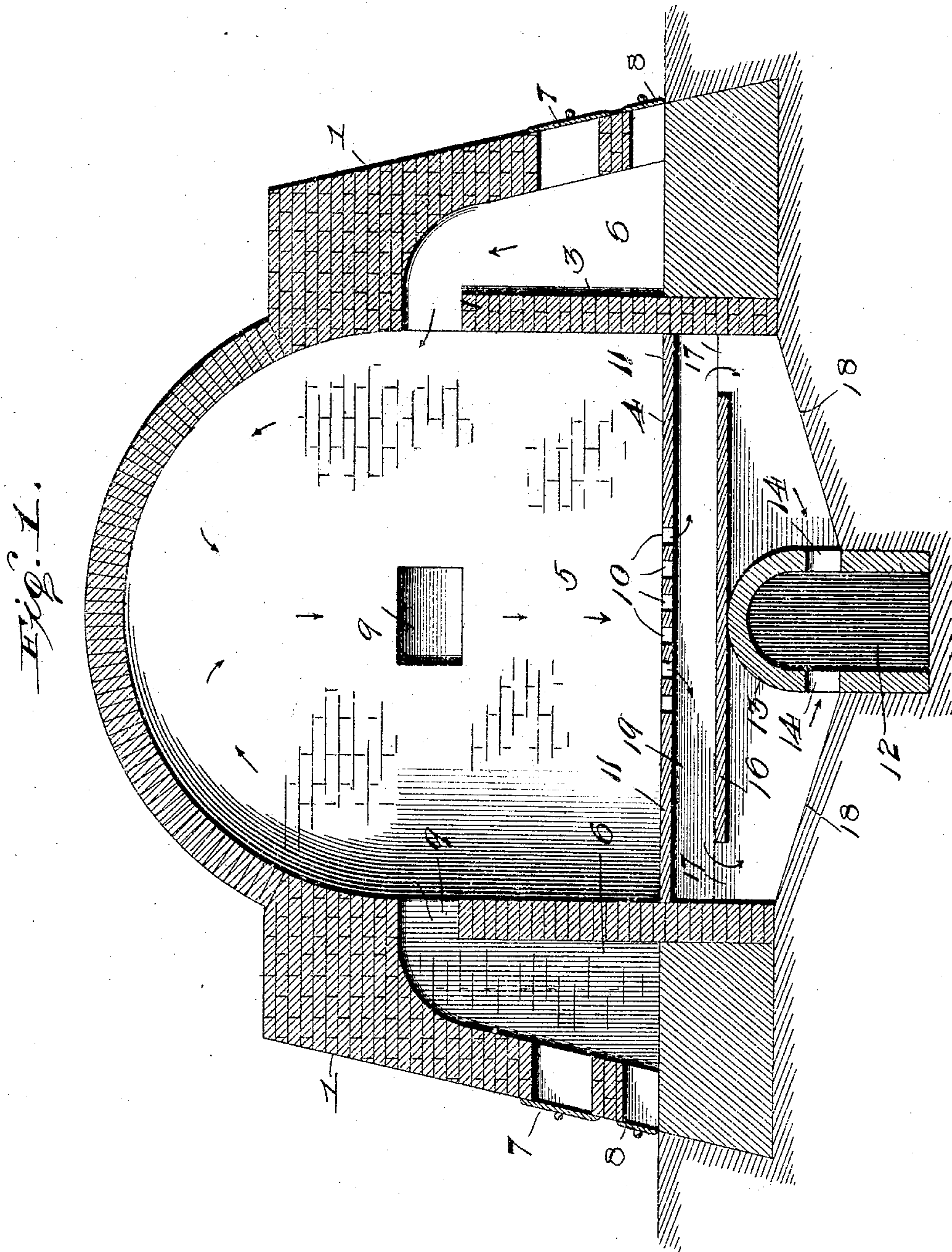
PATENTED JULY 12, 1904.

S. RAWLES.
BRICK KILN.

APPLICATION FILED APR. 16, 1904.

NO MODEL.

2 SHEETS—SHEET 1.



WITNESSES:

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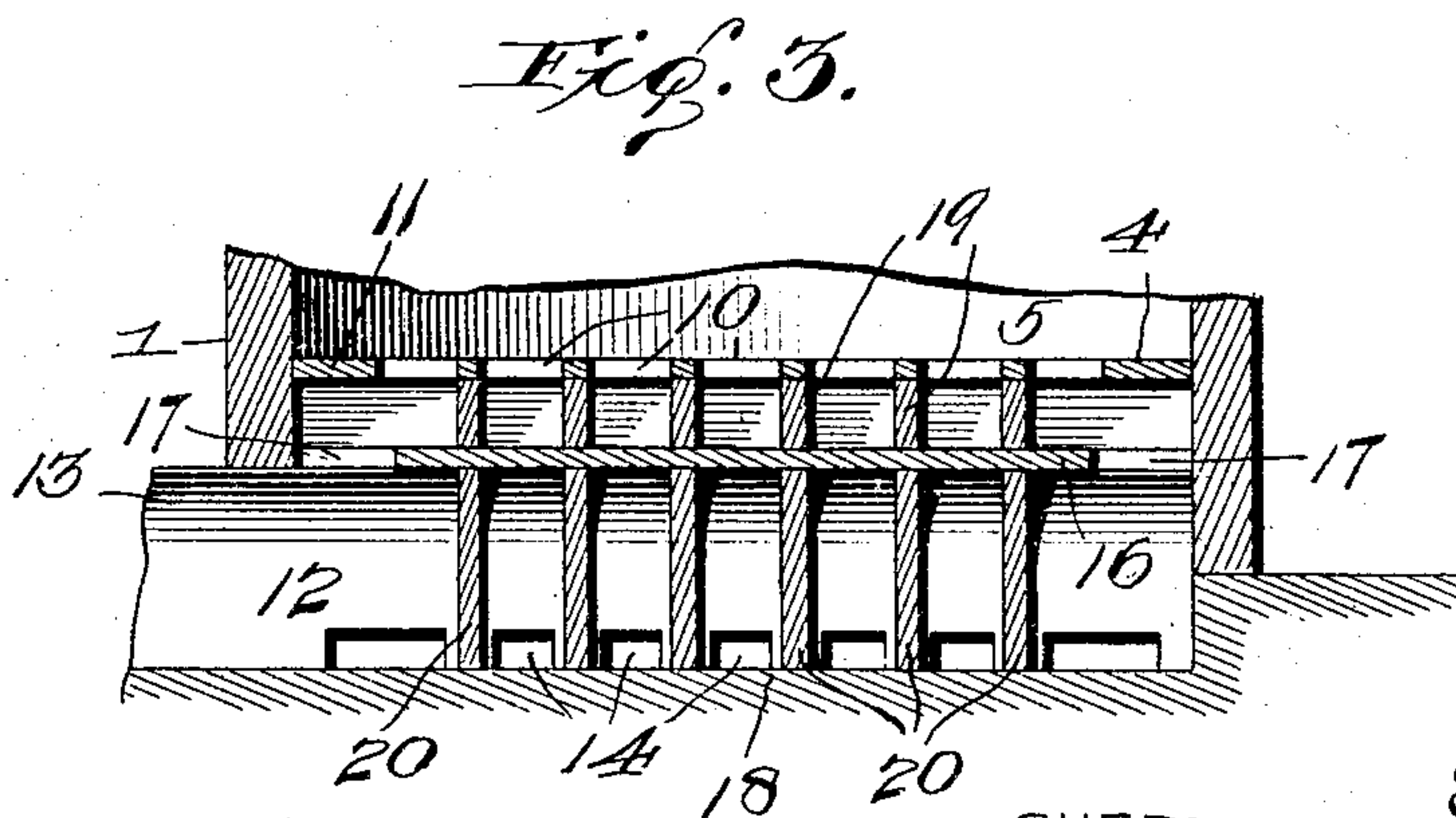
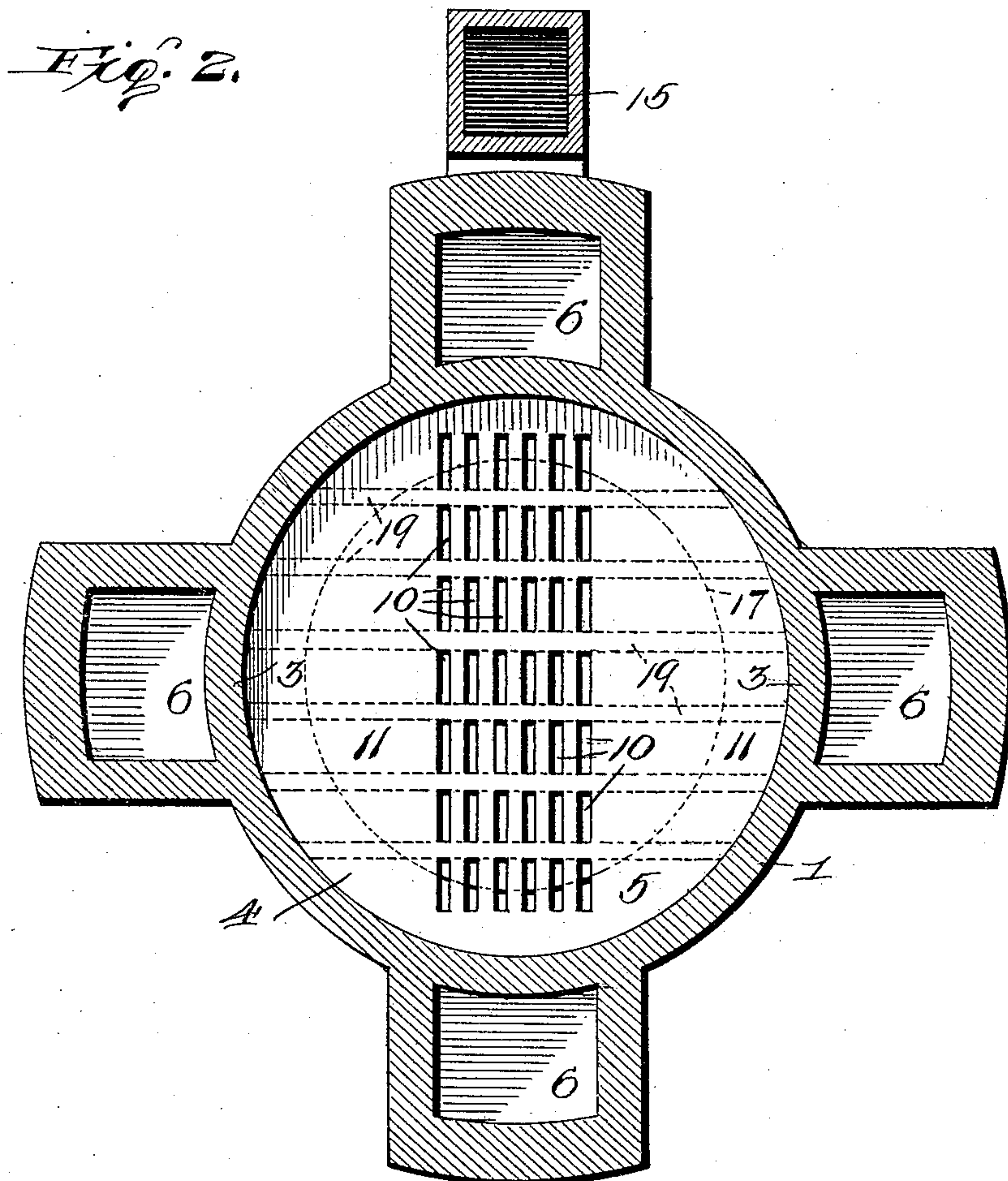
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2 SHEETS—SHEET 2.



Witnesses

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UNITED STATES PATENT OFFICE.

SHERMAN RAWLES, OF EAST GALESBURG, ILLINOIS.

BRICK-KILN.

SPECIFICATION forming part of Letters Patent No. 765,098, dated July 12, 1904.

Application filed April 16, 1904. Serial No. 203,521. (No model.)

To all whom it may concern:

Be it known that I, SHERMAN RAWLES, a citizen of the United States, residing at East Galesburg, in the county of Knox and State of Illinois, have invented certain new and useful Improvements in Brick-Kilns, of which the following is a specification.

This invention relates to brick-kilns; and the object of the invention is to provide means, in connection with a kiln, embodying a portion of the kiln structure, by which a material saving in time, fuel, and therefore expense, is obtained, while at the same time an increase of salable or properly-burned brick is secured without increasing the size or brick-containing space of the kiln.

Under the construction of brick-kilns in general use a perforate floor is employed and also an uncrowned and perforate kiln-flue. Such construction allows the heat to pass practically unchecked to the outlet-flue, and a vast amount of heat is thereby wasted, requiring a greater amount of fuel to properly burn a given amount of stock, also requiring greater length of time to complete the burning operation. By reason of the construction hereinafter described the line of draft is changed and the circulation, while complete, is checked, so as to utilize a much greater proportion of the heat, thus economizing in fuel and saving time in the burning operation.

The objects above pointed out are attained by means of a special construction of double kiln-floor and a crowned flue, said parts being so arranged that the heat is distributed and equalized throughout the burning-chamber and beneath the kiln-floor, thus subjecting all of the brick to a uniform and unvarying temperature.

With the above and other objects in view, the nature of which will more fully appear as the description proceeds, the invention consists in the novel construction, combination, and arrangement of parts hereinafter described, illustrated, and claimed.

In the accompanying drawings, Figure 1 is a vertical sectional view through a brick-kiln embodying the present invention. Fig. 2 is a horizontal section through the same, taken

above the perforate floor. Fig. 3 is a vertical section through the lower portion of the kiln, taken at right angles to Fig. 1.

Like reference-numerals designate corresponding parts in the several figures of the drawings.

The kiln in its general construction is of the form at present in use, embodying the kiln-walls 1, the arch 2, the flash-walls 3, and the perforated floor 4, the said parts forming the burning-chamber 5 for the bricks. At a suitable number of points around the burning-chamber and within the kiln-walls are fire-boxes 6, provided with flue-doors 7 and ash-pit doors 8, said fire-boxes communicating with the burning-chamber by means of the inlet-flues 9, which enter the burning-chamber at points considerably above the floor 4, the latter being provided with the usual grated or perforated portion 10, the perforations or openings occupying the central portion of the floor, as shown in Fig. 1, while the side portions 11 of the floor are left imperforate. 12 designates the outlet-flue, which extends horizontally beneath the kiln-floor.

In carrying out the present invention the outlet-flue 12 is provided with an imperforate arch 13, while ports 14 are formed in the sides of the flue, as clearly shown in Figs. 1 and 3, for the purpose of allowing the circulation to pass from beneath the kiln-floor into the flue and out at the discharge 15, which may be arranged at any suitable point.

Interposed between the perforated floor 11 and the flue-arch 13 is a solid or imperforate subfloor or draft-check 16. The floor 16 extends horizontally beneath the kiln-floor 11, so as to leave an intervening circulating and distributing space 17 in order that the heat may be distributed beneath and along the bottom of the kiln-floor and carried in opposite directions to the opposite sides of said floor, as clearly indicated by the arrows in Fig. 1, the subfloor or draft-check 16 projecting in opposite directions well beyond the flue-arch 13, so as to cause the heat after passing downward through the perforated floor 11 to move in opposite directions beneath said floor and around the ends of the subfloor and thence downward through the ports 14 into the outlet-flue 12.

The foundation 18 of the kiln is preferably inclined reversely downward toward the outlet-flue, as shown in Fig. 1, so that the heat may readily find its way to the outlet-flue.

5 Any number of imperforate partitions 19 may extend from the perforate floor downward to the subfloor, and corresponding partition-walls 20 may extend from the subfloor 16 downward to the foundation 18, as shown
10 in Fig. 3.

The arrangement above described provides for the thorough circulation of heat and distribution of the same throughout all the bricks contained in the burning-chamber and
15 also throughout the kiln-bottom, thereby insuring a uniform burning of all the bricks. The subfloor or draft-check 16 serves as a baffle-wall for the currents of heat, thus maintaining an equal temperature throughout the
20 kiln and retarding too rapid circulation. In this way the time required to burn a given quantity of bricks is materially reduced, fuel is saved, and as all of the bricks are subjected to a uniform temperature and burning a
25 greater proportion of marketable bricks are produced in the same kiln-space.

It will be apparent that changes in the form, proportion, and minor details of construction may be resorted to without departing from

the principle or sacrificing any of the advantages of the invention. 30

Having thus described the invention, what is claimed, and desired to be secured by Letters Patent, is—

1. A brick-kiln comprising a burning- 35 chamber having a perforated floor, a heat-inlet flue communicating therewith above the floor, an outlet-flue beneath said floor, and an imperforate subfloor interposed between the perforated floor and the outlet-flue and projecting beyond the outlet-flue at opposite sides. 40

2. A brick-kiln comprising a burning- chamber having a perforated floor, a heat-inlet flue communicating therewith above the floor, an outlet-flue located beneath said floor 45 and having an imperforate arch and side ports, and an imperforate subfloor located between the perforated floor and said arch and projecting in opposite directions beyond the sides of the arch for checking the heat circulation and 50 distributing and equalizing the temperature on all parts of the kiln-floor.

In testimony whereof I affix my signature in presence of two witnesses.

SHERMAN RAWLES.

Witnesses:

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