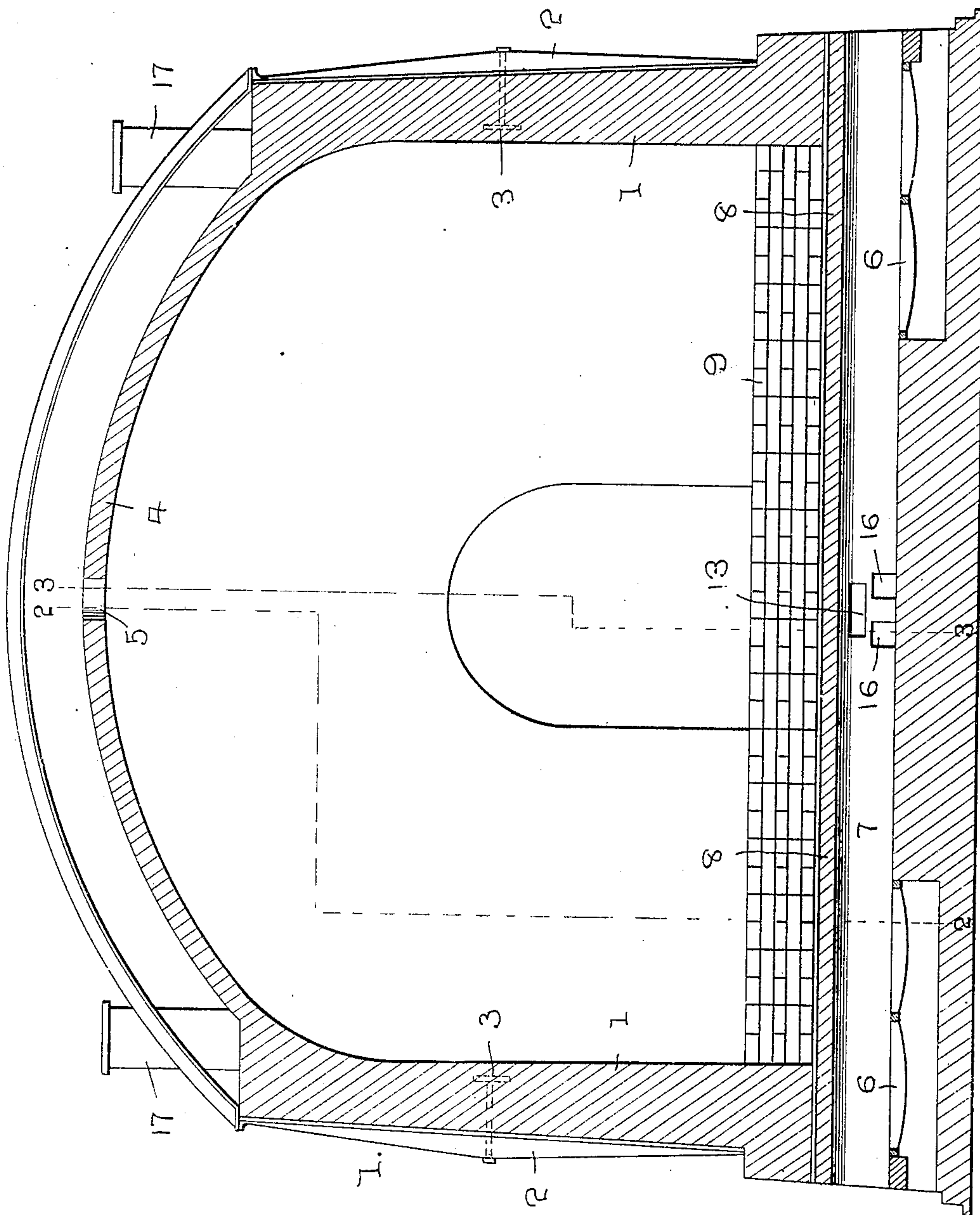


904,994.

W. RENNIE.
BRICK KILN.
APPLICATION FILED JUNE 23, 1908.

Patented Nov. 24, 1908.
3 SHEETS—SHEET 1.



WITNESSES:

Thomas Riley
S. Notes

INVENTOR

W. Rennie

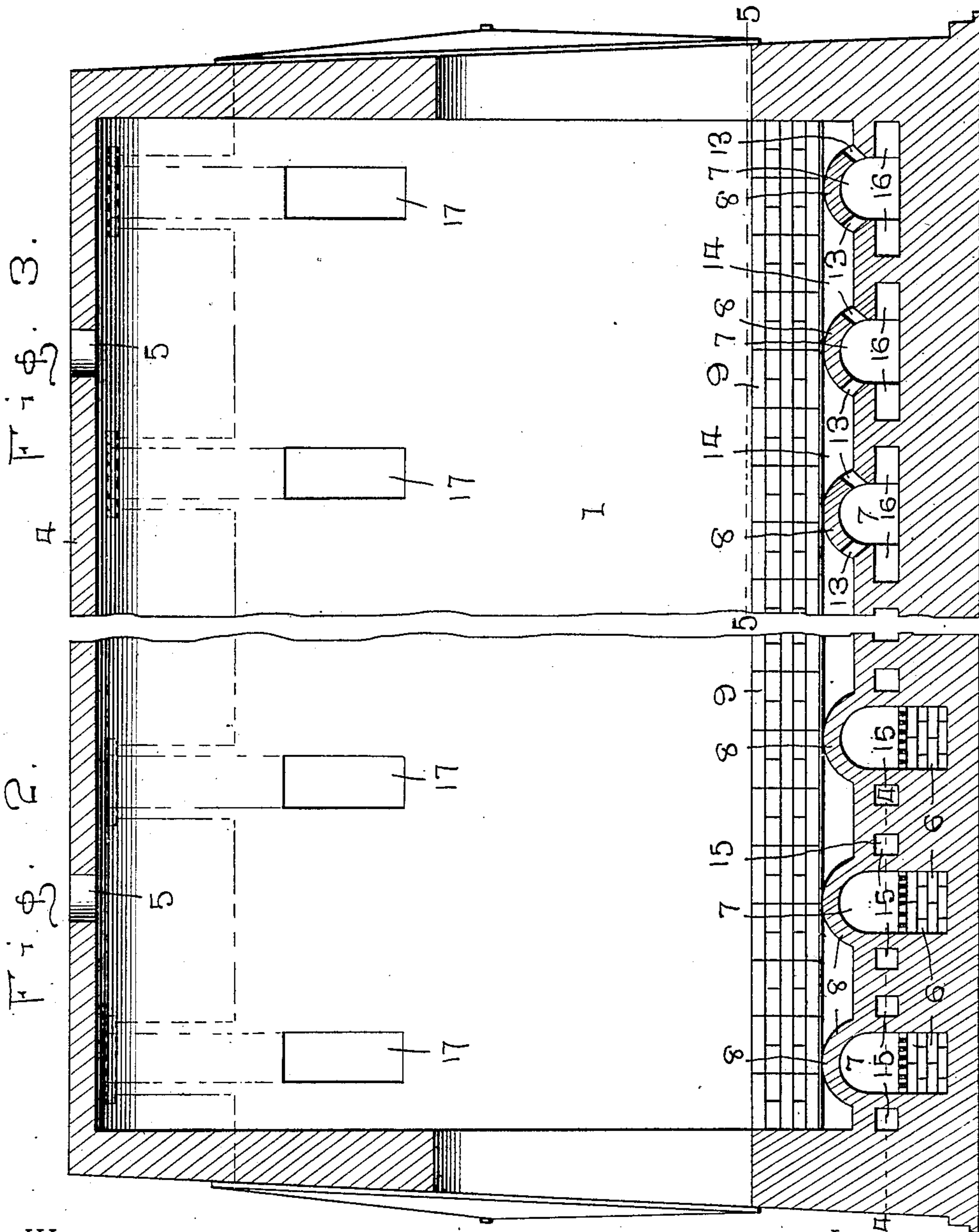
BY

W. J. Fitzgerald & Co
Attorneys

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3 SHEETS—SHEET 2.



WITNESSES:

Thomas W. Riley
G. Notes

INVENTOR

W. Rennie

BY

W. J. FitzGerald & Co.
Attorneys

W. RENNIE.

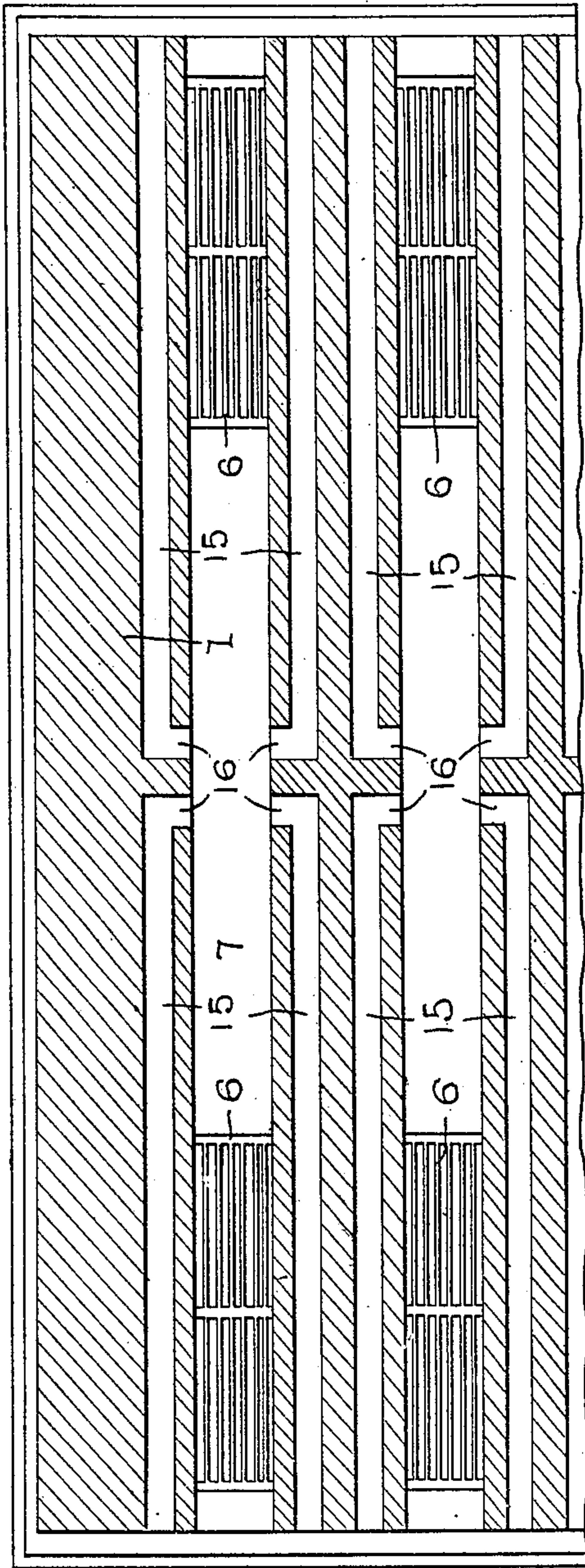
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3 SHEETS—SHEET 3.

904,994.



WITNESSES: Fig. 4.

Thos. W. Riley
G. Notes.

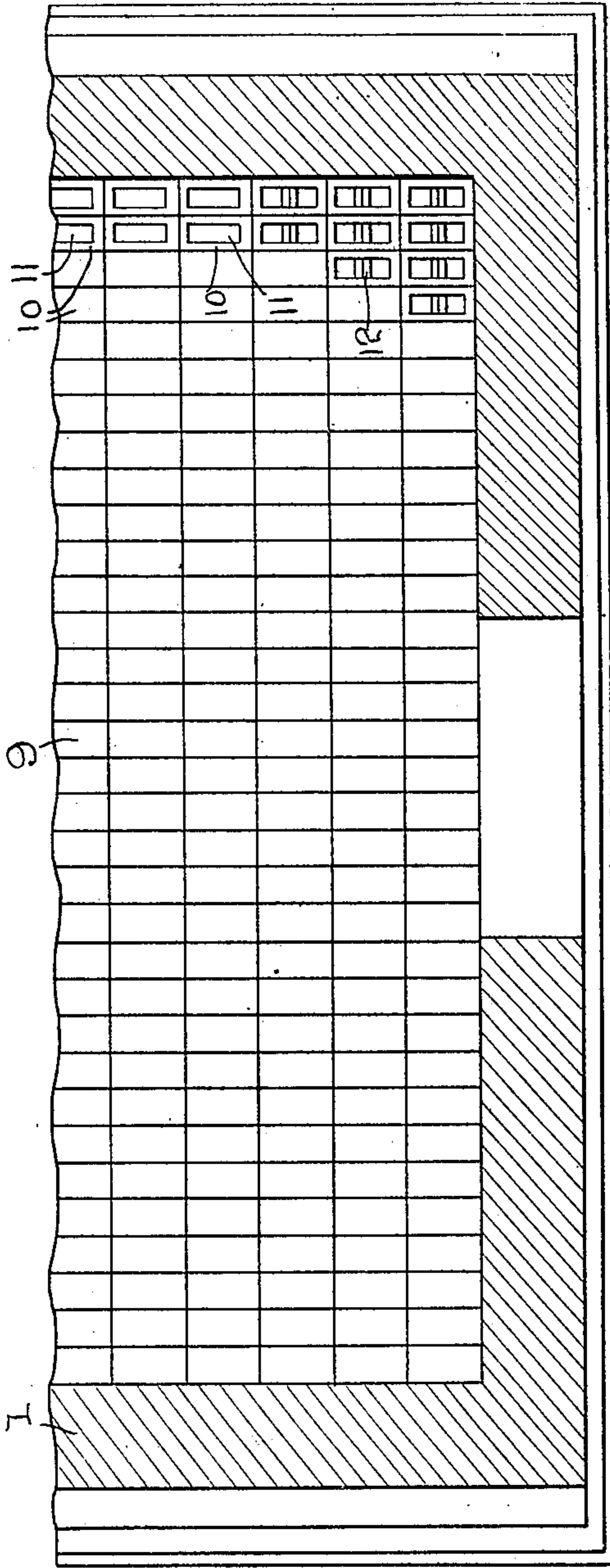


Fig. 5. INVENTOR

W. Rennie

BY

W. J. Fitzgerald & Co.
Attorneys

UNITED STATES PATENT OFFICE.

WILLIAM RENNIE, OF NEW YORK, N. Y.

BRICK-KILN.

No. 904,994.

Specification of Letters Patent.

Patented Nov. 24, 1908.

Application filed June 23, 1908. Serial No. 439,983.

To all whom it may concern:

Be it known that I, WILLIAM RENNIE, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Brick-Kilns; and I 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.

This invention relates to new and useful improvements in brick kilns and it is an object of the invention to provide a novel device of this character wherein the flame and smoke will be spread in the kiln and the gases in the furnace completely consumed, the bricks being thus properly burned without producing any soft, pale or overburned bricks.

It is also an object of the invention to provide a novel device of this character wherein the entire floor of the kiln is checker.

Furthermore, it is an object of the invention to provide a novel device of this character wherein the heat, flame and gases are drawn to the center of the kiln floor to assure an even percolation of the same.

It is also an object of the invention to provide a novel device of this character which will be simple in construction, efficient and advantageous in practice and comparatively inexpensive to manufacture.

With the foregoing and other objects in view the invention consists of the details of construction and in the novel arrangement and combination of parts to be hereinafter more particularly referred to.

In describing the invention in detail, reference will be had to the accompanying drawings forming part of this specification wherein like characters of reference denote corresponding parts in the several views, and in which,

Figure 1 is a transverse vertical sectional view of a kiln constructed in accordance with the present invention. Fig. 2 is a sectional view taken on the line 2—2 of Fig. 1. Fig. 3 is a sectional view taken on the line 3—3 of Fig. 1. Fig. 4 is a view taken on the line 4—4 of Fig. 2, and, Fig. 5 is a view taken on the line 5—5 of Fig. 3.

In the drawings, 1 denotes the walls of the kiln which are braced or strengthened

by the brick stays 2 and binding plates 3 in the usual manner and 4 denotes the crown arch extending between the ends of the kiln and this crown arch is provided approximately centrally with an opening 5, the purpose of which is to be hereinafter referred to.

The furnaces 6 are arranged along the ends of the kiln and may be of any desired number according to the size of the kiln and the fire chambers 7 of the furnaces extend entirely across the kiln transversely and are open at their ends to the atmosphere. Each of the fire chambers is provided with a dome 8 which supports the kiln floor or bottom 9. This bottom 9 has its entire area checkered and is formed by a series of super-imposed bricks 10 having centrally elongated openings 11. The bricks of one tier are arranged at right angles to the bricks of the next succeeding tier as is indicated at 12 in Fig. 5. By this arrangement it will be seen that the flame and products of combustion will percolate through the bottom and produce an even heat which will assure a proper burning of the bricks placed within the kiln and reduce to a minimum the possibility of any of the bricks becoming pale or being overburned.

Each of the fire chambers approximately centrally its length is provided with the opposed ports 13 which communicate with the chambers 14 formed by the domes 8 and kiln floor 9 as is more particularly shown in Fig. 3 and it is this arrangement which positively assures an even distribution of the heat. On each side of each of the furnaces 6 are formed in the walls 1 the air inlet tubes or passages 15 which extend longitudinally through the walls of the fire chamber and extend inward to about the center thereof where they are provided with the right angular branches 16 which communicate with the fire chamber beneath the ports 13 before referred to. This assures the provision of heated air in addition to the flames and products of combustion of the furnaces to assist in the burning or baking of the bricks. It might be well to further state that there is a certain amount of air drawn in through the open ends of the fire chambers. The remaining structure of the kiln is as usual and a detail thereof is believed to be unnecessary.

In practice the bricks are piled in the kiln

on the floor of the same in the usual manner and fires are built in the furnaces as will be readily understood. The flames and products of combustion will pass inwardly of the fire chambers through the openings 13 into the chambers 14 and then percolate through the checker floor to the bricks so as to burn the same. Fresh air will enter through the passages 15 and pass through the same to the branches 16 where it will enter the fire chambers and commingle with the products of combustion and pass into the kiln therewith. This will assure an ignition of the gases generated by the products of combustion. It is thought to be apparent that the floor of the kiln will be heated to a high degree so that any of the gases which may remain unconsumed will be burned on passing the floor and the quantity of fuel necessary to maintain the fire will be reduced to a minimum.

Attention is to be directed to the chimneys 17 arranged at the ends of the kiln leading from the crown arch to the outer air. These chimneys are intended to create the proper draft to assure the circulation of the flame and smoke within the kiln and in order that they will be assured of a circuitous course

is the function performed by the opening 5 before mentioned.

I claim:

A brick kiln consisting of outer walls, a crown arch extending between the walls, said crown arch having an opening approximately its center, chimneys leading from and through the crown arch to the open air, fire chambers extending transversely of the kiln, said fire chambers being provided with arches, a checker floor for the kiln supported by said arches, said arches having openings approximately centrally thereof communicating with the chambers formed by the arches and the floor, furnaces within the fire chambers and passages leading from the outer walls of the kiln through the walls of the arches and approximately centrally of the kiln, the inner ends of the passages being provided with branches communicating with the fire chambers beneath the openings thereof.

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

WILLIAM RENNIE.

Witnesses:

J. I. CROSS,

CHARLES H. VAN AKIN.