

2 Sheets—Sheet 1.

No. 467,981.

Patented Feb. 2, 1892.



Inventor,
Geo. C. Little,

by

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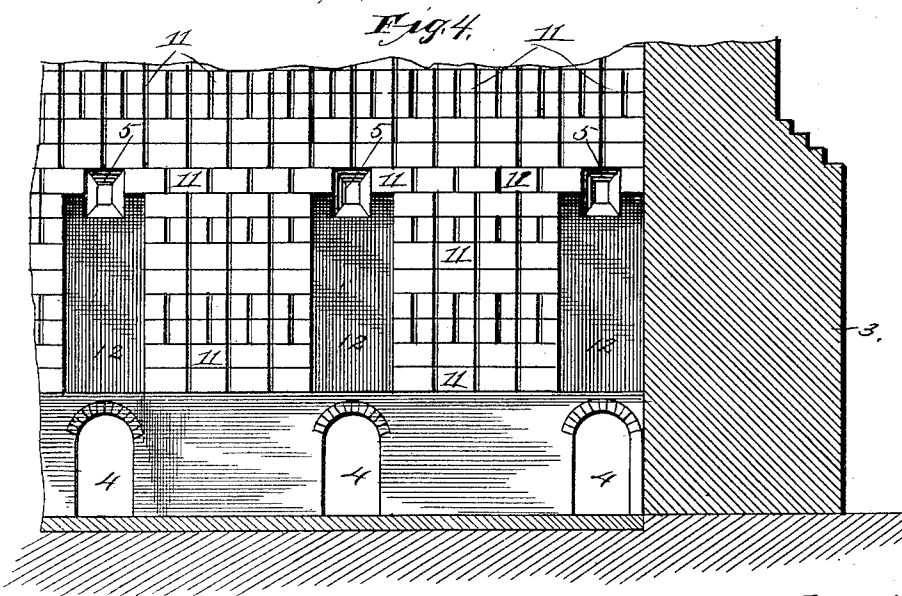
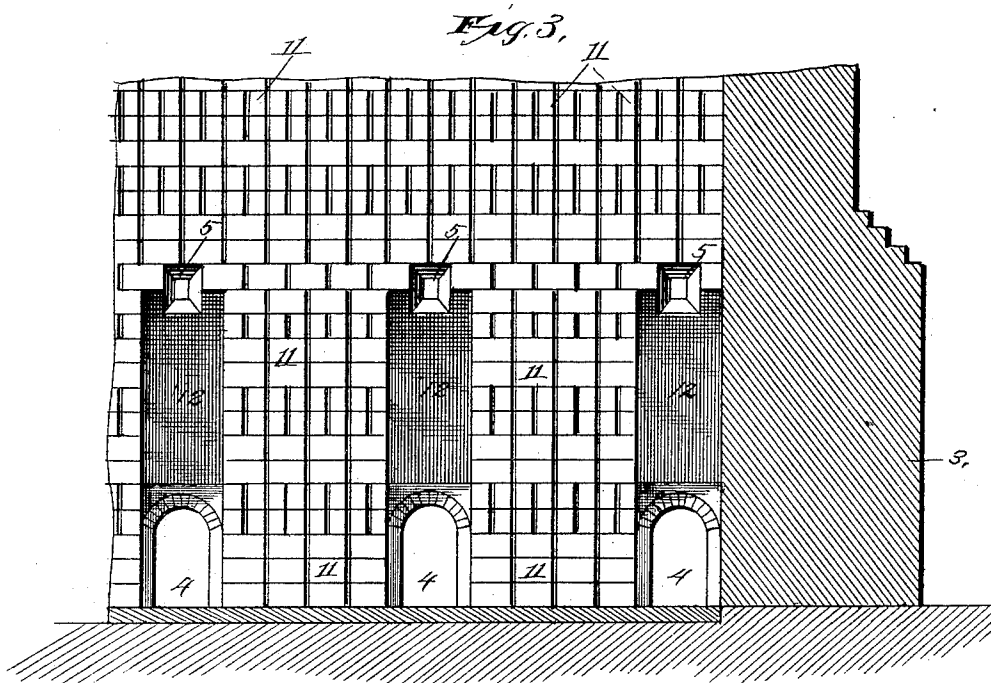
(No Model.)

2 Sheets—Sheet 2.

G. C. LITTLE.
BRICK KILN.

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Witnesses;

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UNITED STATES PATENT OFFICE.

GEORGE C. LITTLE, OF VANCE, KANSAS.

BRICK-KILN.

SPECIFICATION forming part of Letters Patent No. 467,981, dated February 2, 1892.

Application filed August 7, 1891. Serial No. 402,004. (No model.)

To all whom it may concern:

Be it known that I, GEORGE C. LITTLE, of Vance, Wyandotte county, Kansas, have invented certain new and useful Improvements in Brick-Kilns, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to furnaces for burning bricks; and the object of my invention is to produce a furnace which shall be simple in construction and economical in its consumption of fuel, and by means of which the entire body or mass of green bricks shall be uniformly and thoroughly burned throughout.

To the above purpose my invention consists in certain peculiar and novel features of construction and arrangement, as hereinafter described and claimed.

In order that my invention may be fully understood, I will proceed to describe it with reference to the accompanying drawings, in which—

Figure 1 is a transverse vertical section of a brick-kiln constructed in accordance with my invention. Fig. 2 is an irregular horizontal section of the same on the line 2 2 of Fig. 1. Fig. 3 is a vertical section of the same on the line 3 3 of Fig. 1. Fig. 4 is a vertical section of the same on the line 4 4 of Fig. 1.

Previous to my invention great difficulty has been experienced in economically burning the entire mass or quantity of green bricks uniformly throughout, and particularly those bricks which are placed next to the walls of the kilns. In fact, so far as I am aware, no kiln has heretofore been devised which will thoroughly, uniformly, and economically burn all the green bricks at a single operation.

As will be seen from the ensuing description, I have devised a kiln which entirely overcomes this difficulty and attains the objects referred to, and which is also simple in construction and economical in its use of fuel.

Referring to the accompanying drawings, 1 designates the roof, and 2 the supports of said roof, the said parts being of the usual or any preferred form adapted to the purpose of a brick-kiln.

3 designates the interior wall of the kiln, said wall being built up of fire-bricks or any

other refractory material which will effectually resist the action of the heat of the kiln. In the lower part of this kiln are placed any number of horizontal arches 4, which are also constructed of fire-bricks or other material which, like the wall 3, will effectually resist the action of the heat of the kiln, and which are placed in oppositely-disposed pairs, and each of which also extends horizontally inward toward the middle of the kiln, and which, furthermore, opens out of the lower part of the wall 3, as shown. In the wall 3 are formed a number of sight-openings 5, each of which is preferably placed directly above one of the openings of the arches 4. The inner ends of these arches 4 open into the interior of the kiln, and each of said arches is formed in its top with an opening 6, which is close to the inner surface of the wall 3.

7 designates a number of furnace-chambers, each of which is external to the wall 3, and contains a suitable grate 8 and a fire-opening 9, closed by a suitable fire-door 10, the inner end of each of these furnace-chambers communicating with one of the arches 4. It is to be observed that the arches 4 are of less height than that of the fire-chambers 7, and also that the described openings are not only located adjacent to the inner surface of the wall 3, but are also formed directly in the tops of the arches, and are consequently horizontal openings. The result of these relative arrangements is that all of the heat from the fire-chambers is compelled to enter the arches 4, and is equally and uniformly discharged from the inner ends of the arches and from the openings in the tops of the same, the heat being thus not only equally and uniformly but also economically applied.

11 designates the mass or quantity of green bricks which are to be burned, said bricks being piled up so as to leave spaces between each two bricks in the usual manner, and being laid between and against the inner surface of the wall 3. It is to be observed that these green bricks are also so piled within the kiln as to form passage-ways or arches 12, each of which extends entirely across the interior of the kiln, and each of which is also of such height as to reach above the corresponding sight-openings 5. By virtue of this

arrangement a person looking into one of the sight-openings can see into these arches and entirely across the kiln, and can thus observe clearly the progress of the burning operation.

5 It will be seen that when the furnaces 8 are fired the heat and products of combustion of the fuel in the furnaces will flow into the arches 4 and will escape partly through the inner ends of said arches and partly through

10 the openings 6 in the top of the same. That part of the heat and products of combustion which flows out of the inner ends of the arches 4 will permeate the interior of the mass of green bricks 11 and that part of the

15 products of combustion which flows out of the openings 6 will permeate the outer parts of the mass of green bricks. Consequently the green bricks which are adjacent to the wall 3 will be thoroughly burned, and so also

20 will those bricks which are in the interior of the kiln, and hence all of the bricks will be thoroughly and uniformly burned. Furthermore, it will be seen that the arrangement of the furnace-chambers 8 relative to the other

25 parts of the kiln is such that the consumption of fuel is reduced to the minimum, and the effective application of the heat resulting from such fuel-consumption is maintained at the maximum point; and, more-

30 over, since all of the products of combustion must enter the arches 4 from the fire-cham-

bers 7, there is insured a uniform distribution of the products of combustion at the inner and outer ends of the arches. Hence, as above stated, the heat of the furnaces is not only equally and uniformly applied to the bricks, but is also economically utilized.

Having thus described my invention, what I claim as new therein, and desire to secure by Letters Patent, is—

An improved brick-kiln comprising a suitable protecting top or roof, a vertical wall of refractory material, a number of fire-chambers located externally of said wall and disposed oppositely from each other at opposite sides of the wall, a number of oppositely-disposed horizontal arches of less height than the furnaces and each communicating at its outer end with one of the furnaces and at its opposite end with the middle portion of the kiln, a horizontal opening formed in the top of each arch adjacent to the inner surface of the wall, and a number of sight-openings formed through the wall above the furnaces, substantially as set forth.

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

GEORGE C. LITTLE.

Witnesses:

JNO. L. CONDRON,
F. G. FISCHER.