(No Model.) 2 Sheets—Sheet 1.

T. EAST.

CONTINUOUS BRICK KILN.

No. 438,227. Patented Oct. 14, 1890.

Fig. 1.

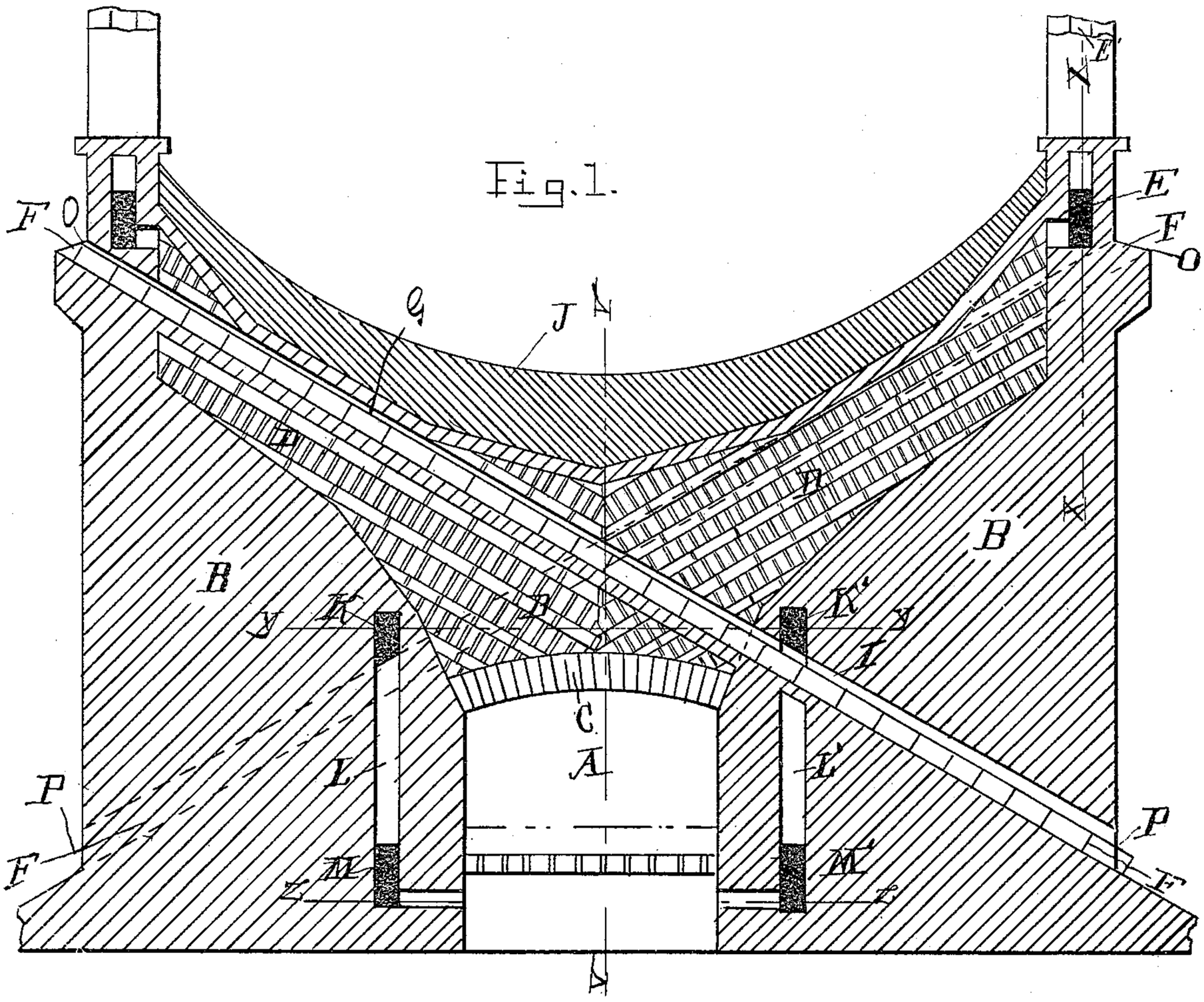
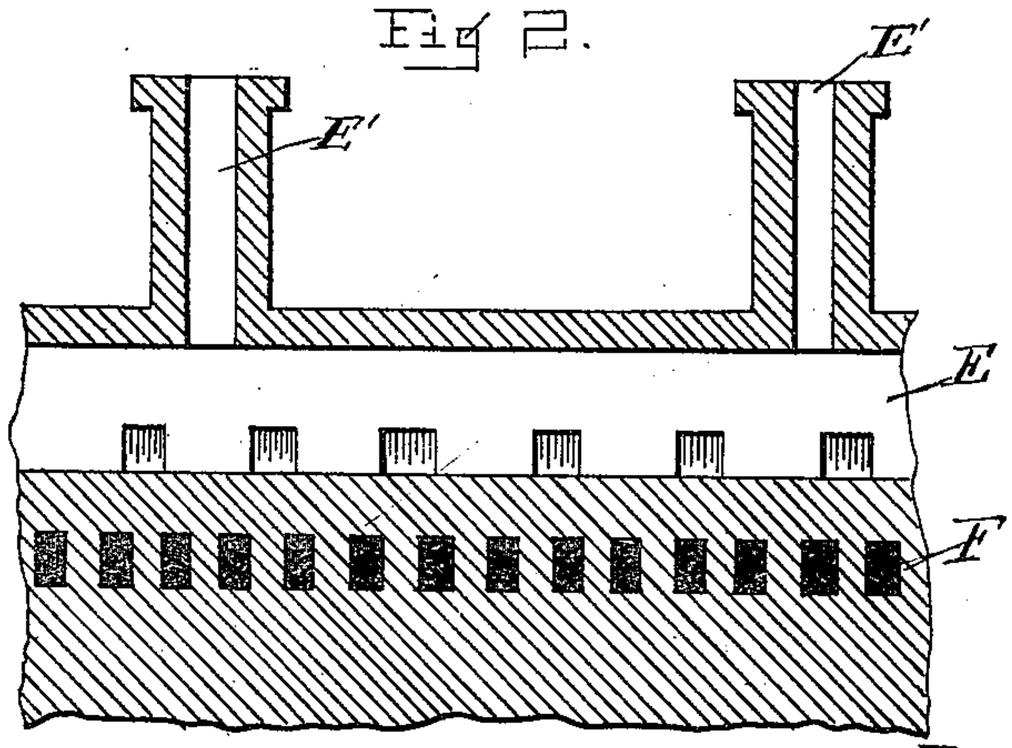


Fig 2.



Witnesses:

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Inventor:

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Att'y.

(No Model.) 2 Sheets—Sheet 2.

T. EAST.

CONTINUOUS BRICK KILN.

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Fig. 3

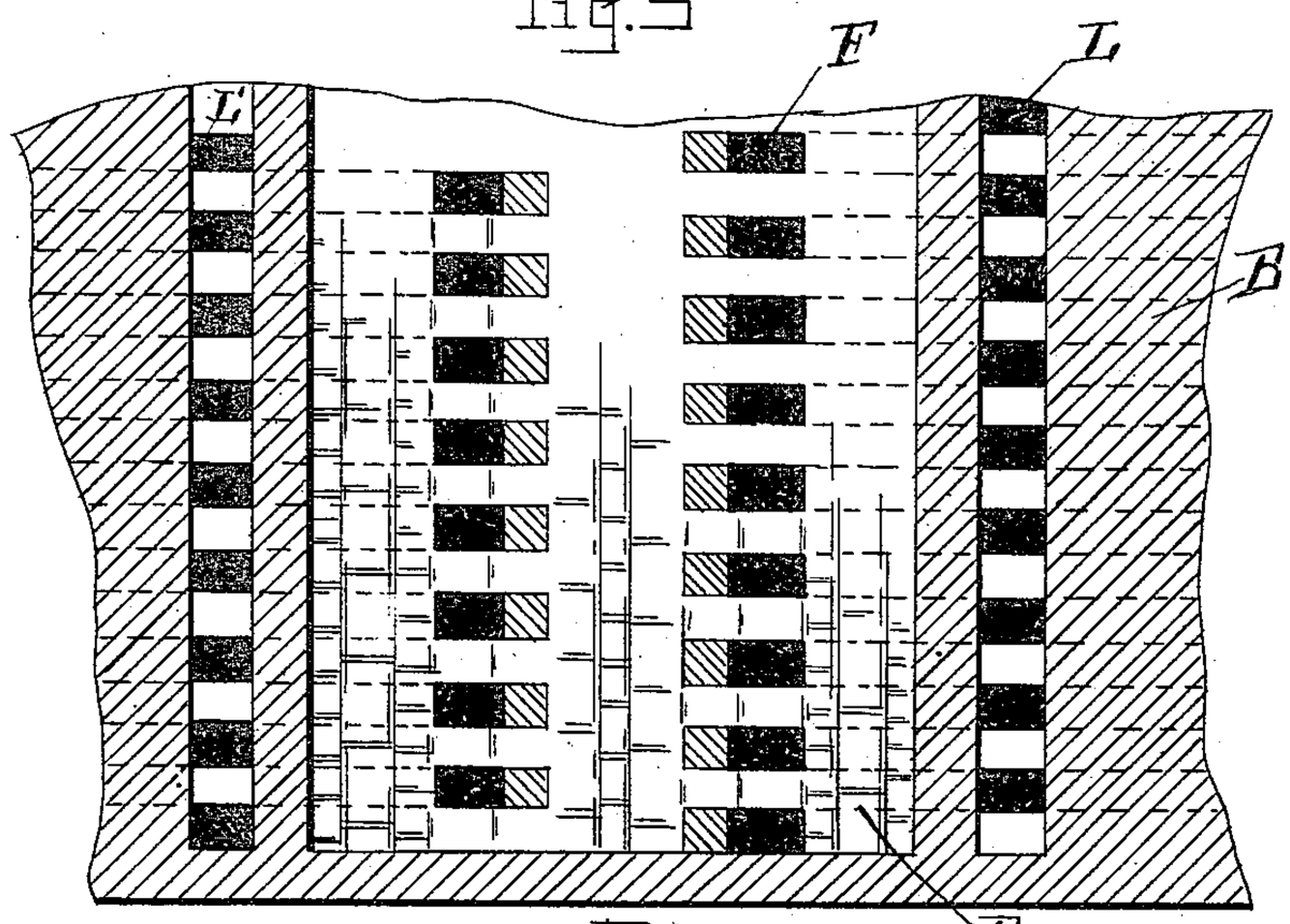


Fig. 4

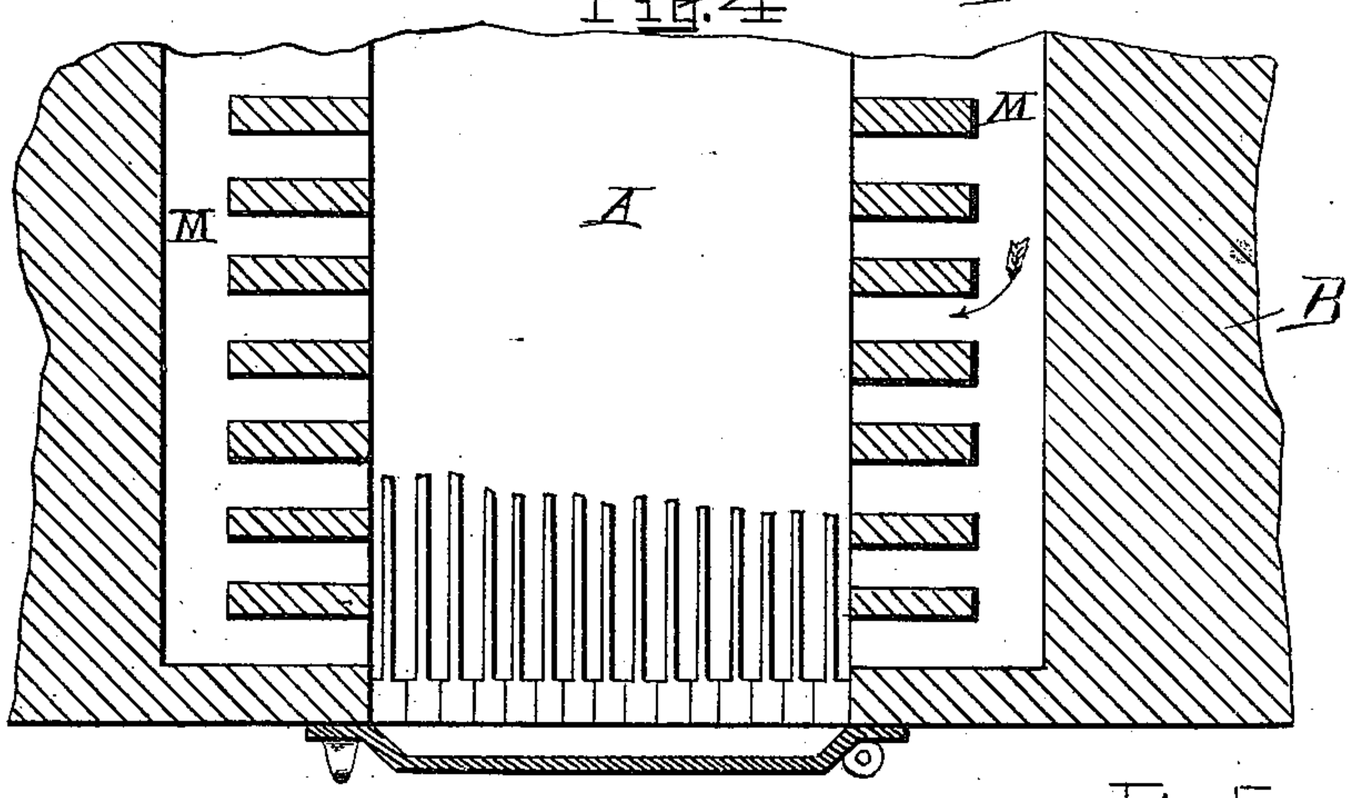
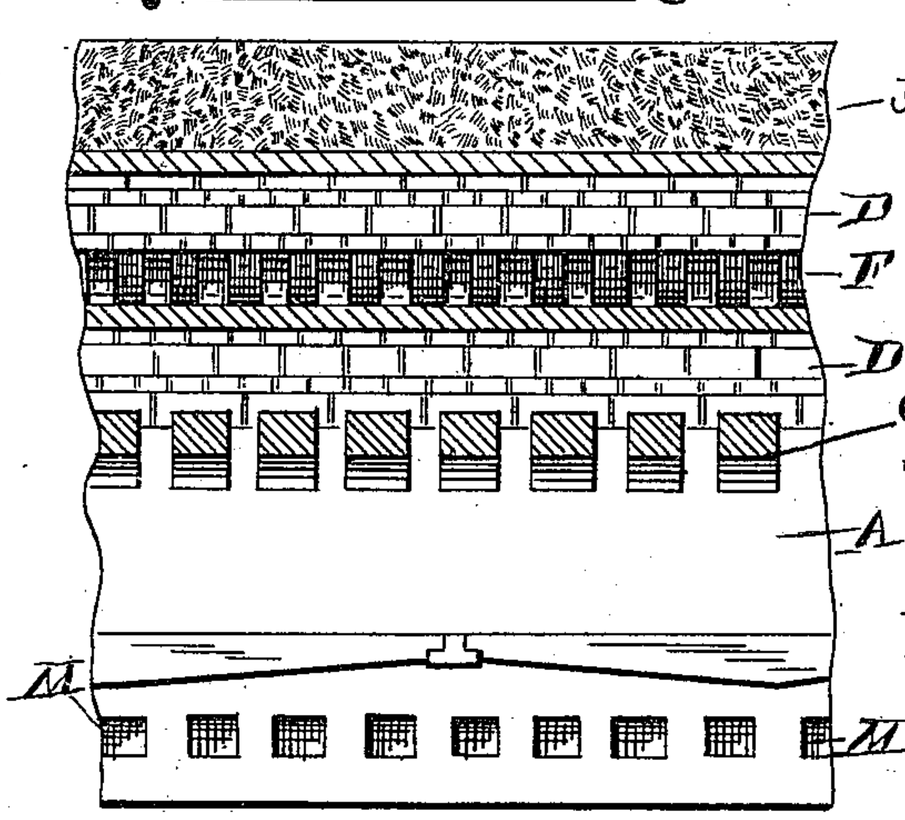


Fig. 5



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THOMAS EAST, OF PARK HILL, CANADA.

CONTINUOUS BRICK-KILN.

SPECIFICATION forming part of Letters Patent No. 438,227, dated October 14, 1890.

Application filed October 10, 1889. Serial No. 326,640. (No model.)

To all whom it may concern:

Be it known that I, THOMAS EAST, a citizen of Great Britain, residing at Park Hill, in the county of Middlesex and Province of Ontario, Canada, have invented certain new and useful Improvements in Continuous Brick-Kilns, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to new and useful improvements in brick-kilns; and the invention consists in the peculiar construction of the kiln and the means for feeding the brick continuously therethrough, whereby they are properly baked and slowly cooled, preventing all danger of cracking and warping; and, further, in the peculiar construction, arrangement, and combination of the various parts, all as more fully hereinafter described.

In the drawings which accompany this specification, Figure 1 is a vertical central cross-section through my improved kiln. Fig. 2 is a vertical section thereof on line *x x* in Fig. 1. Fig. 3 is a horizontal section on line *y y* in Fig. 1. Fig. 4 is a horizontal section on line *z z* in Fig. 1. Fig. 5 is a vertical section thereof on line *v v* in Fig. 1.

A is the combustion-chamber of my brick-kiln, which is set in a suitable foundation, and at the top of which is located the open-work arch C, which communicates with the slanting flues D, extending in both directions from the combustion-chamber. These slanting flues are made up of open-work brick, forming a heating medium around the inclined brick-passages, having interstices between for the passage of the products of combustion, and communicate at their upper end with a horizontal passage-way or flue E, which at each end or at a number of points at the top of the kiln are provided with exit-flues E′. These slanting flues D extend the full length of the kiln over the combustion-chamber, which may be of any desired length.

My kiln may be so arranged that the combustion-chamber can be fed from one or both ends, according to the size of the kiln constructed. Through these inclined flues I arrange a series of brick-passages G, which in the double kiln shown in the drawings are staggered, so that they pass each other at the point directly over the combustion-chamber. These brick-passages G extend diagonally from one corner of the kiln to the other, the lower part I forming the discharge or cooling portion and the upper part located in the flues D, forming the baking part. Above the flues D any suitable covering or roof may be placed which will retain the heat within the structure—such as, for instance, the clay covering J shown in the drawings.

I preferably make the brick-passages G slightly larger than the bricks, so that the movement of the bricks may be with as little friction as possible and also allow of the upward passage of air through the portion I of the brick-passages to the air-feeding flues F beside the combustion-chamber, which communicates through the flues K, L, and M with the ash-pit below the combustion-chamber, thereby feeding the necessary air for combustion. The passage of this air through the lower portion I of the brick-passages also tends to cool the bricks and heat the air, delivering hot air for feeding the fire.

My device being thus constructed, the operator feeds the bricks in at the upper entrance O of the brick-passages, and they are carried by gravity downwardly through the flues F, over the combustion-chamber, until they are discharged at the lower end P of the brick-passages, where an attendant is in waiting to take them off. When the brick-passages are entirely full, the attendant at stated intervals removes the lowest brick from each brick-passage, allowing the remaining bricks to slide downward, and at the same time the attendant at the upper end of the passage feeds in a new brick. Thus it will be seen that the device may be operated continuously, and that the bricks are heated gradually, approaching, as they do, slowly to the hottest point and leaving that point gradually. After leaving the point directly over the combustion-chamber they are cooled by the inflowing air.

By experiment I have found that bricks baked in this way have an even hardness and finish, and being slowly heated and cooled they will not crack or warp in the process of manufacture, and they are manufactured in a much more rapid manner than by previous constructions of kilns.

The object of the heating medium around

the brick-passages is to provide a continuous even heat during the firing, so that the full force of the fire will not come upon the brick. The heating medium makes certain that the bricks will receive practically a uniform temperature, notwithstanding slight variations in the fire, and thus more perfect results in burning are achieved by running my inclined flues or brick-passages through a heating medium which stores or reflects the heat for the purpose above described. It also prevents the entire and direct heat of the products of combustion from coming in contact with the bricks, which often causes them to be improperly baked.

What I claim as my invention is—

1. In a brick-kiln, the combination, with a combustion-chamber, of a heating medium arranged above said combustion-chamber, having a number of interstices forming passages for the products of combustion of the furnace on their way to the exit-flues, and inclined brick-passages formed in said medium, substantially as described.

2. In a brick-kiln, the combination, with a combustion-furnace and its side walls, of a heating medium having a number of interstices formed therein for the passage of the products of combustion, such heating medium extending outwardly and above the sides of the furnace, exit-flues formed at the other extremities of such medium, and inclined brick-passages therethrough, substantially as described.

3. In a brick-kiln, the combination, with the combustion-chamber, of flues D, brick-passages G, and air-passages connecting the arm I of the brick-passages with the combustion-chamber, substantially as described.

4. In a brick-kiln, the combination, with the combustion-chamber, of slanting flues D, extending in both directions from said combustion-chamber, and brick-passages in said flues intersecting each other over the combustion-chamber and provided with the lower discharge-arm I, substantially as described.

5. In a brick-kiln, the combination, with the combustion-chamber, of the inclined flues D, the brick-passages G, smoke-passages E, chimneys E′, lower arm I, connecting with the flues J, and the flues L and M, connecting with the ash-pit, the parts being arranged and constructed to operate substantially as and for the purpose described.

6. The combination, in a brick-kiln, of one or more inclined brick-passages, a combustion-chamber located at or near the middle thereof, the upper part of said passage forming an exit for the products of combustion and the lower part thereof forming the air-feeding inlet to the combustion-chamber, substantially as described.

7. In a brick-kiln, the combination, with the furnace and the side walls thereof, of a perforated heating medium formed above the side walls of the furnace and extending laterally and forwardly therefrom, an imperforate cover placed above said heating medium, and inclined brick-passages through said heating medium, substantially as described.

In testimony whereof I affix my signature, in presence of two witnesses, this 27th day of August, 1889.

THOMAS EAST.

Witnesses:
E. McBREARTY,
GEO. A. GREGG.