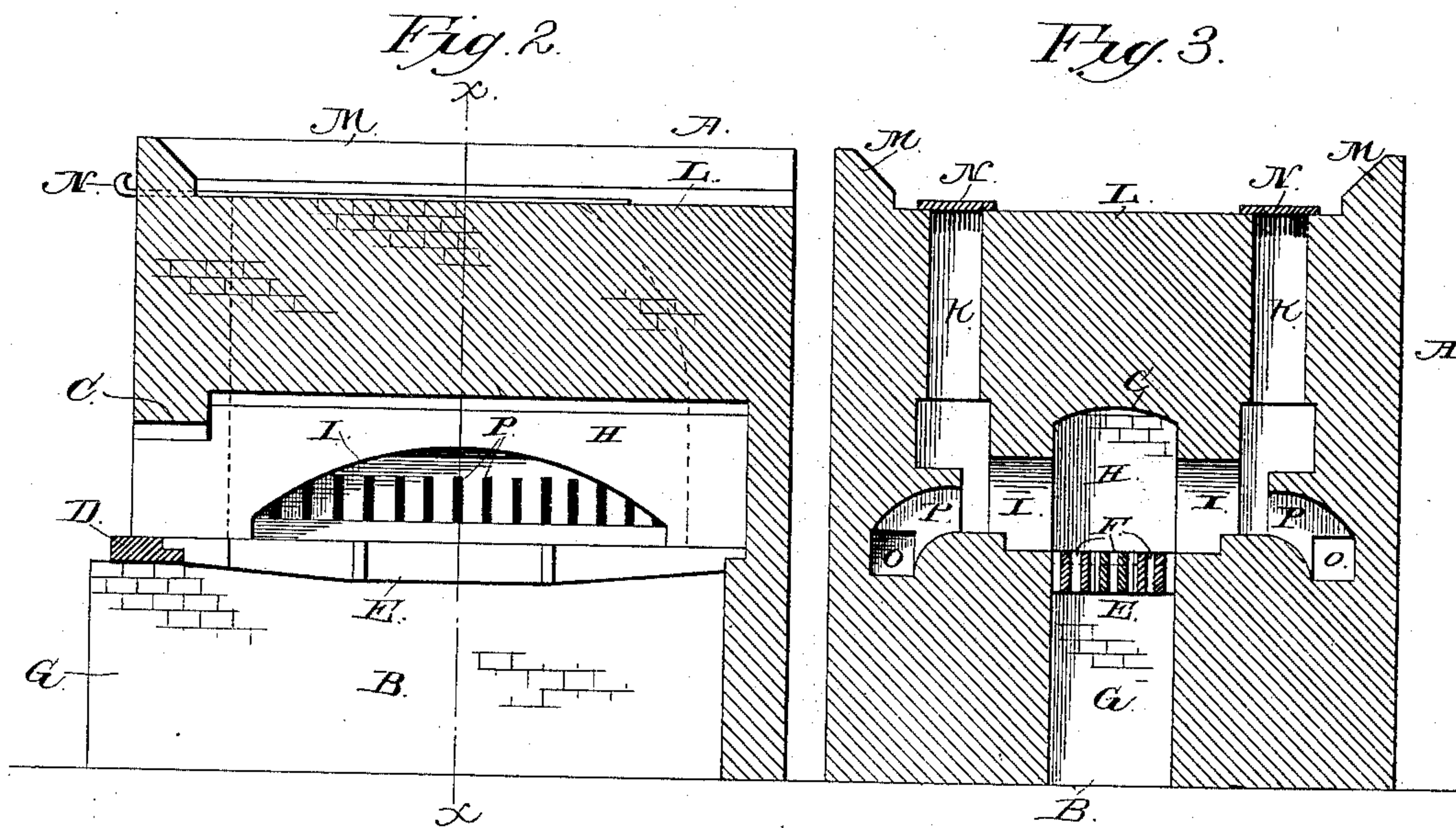
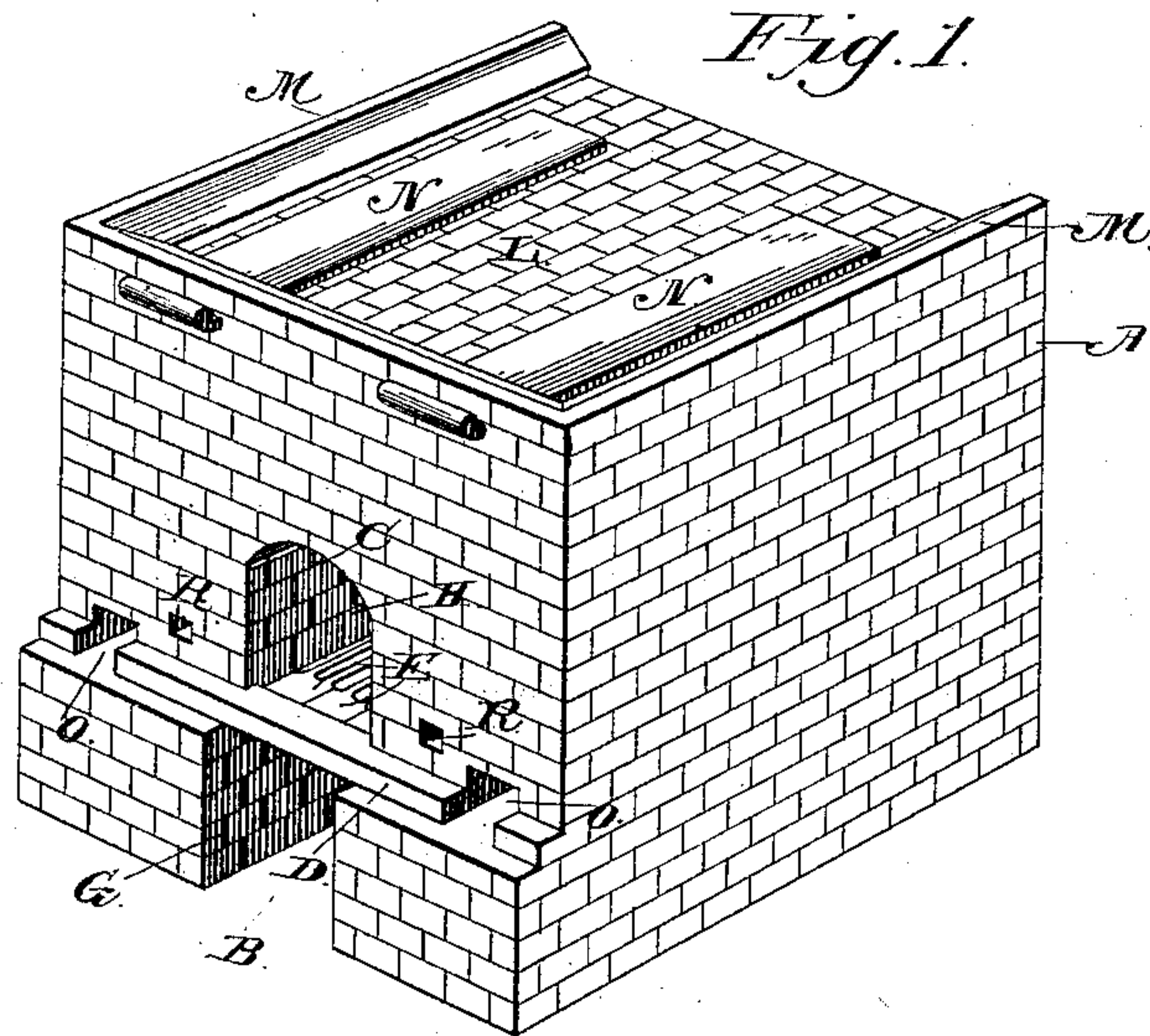


(No Model.)

E. STAIR.
BRICK KILN.

No. 375,838.

Patented Jan. 3, 1888.



Witnesses

M. S. Fowler
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Inventor
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By *his* Attorneys,

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UNITED STATES PATENT OFFICE.

EDMUND STAIR, OF HARRISONVILLE, MISSOURI.

BRICK-KILN.

SPECIFICATION forming part of Letters Patent No. 375,838, dated January 3, 1888.

Application filed April 16, 1887. Serial No. 235,085. (No model.)

To all whom it may concern:

Be it known that I, EDMUND STAIR, a citizen of the United States, residing at Harrisonville, in the county of Cass and State of Missouri, have invented a new and useful Improvement in Furnaces for Brick-Kilns, of which the following is a specification.

My invention relates to an improvement in furnaces for brick-kilns; and it consists in the peculiar construction and combination of devices, that will be more fully set forth hereinafter, and particularly pointed out in the claims.

In the drawings, Figure 1 is a perspective view of a brick-kiln and furnace embodying my improvements. Fig. 2 is a vertical longitudinal view of the same. Fig. 3 is a vertical transverse sectional view of the same, taken on the line *x x* of Fig. 2.

A represents a furnace, which is built of brick, and is provided with a longitudinal vertical central compartment, B, having an arched roof, C. At a suitable distance from the ground transverse bars D are placed across the ends of the compartment B, and on these bars are supported the ends of longitudinal grate-bars E, the latter being trussed on their lower sides, as shown in Fig. 2, and provided with vertical longitudinal openings F, as shown in Fig. 3. The front end of the compartment B is opened and the rear end thereof is closed. The space below the grate-bars forms the ash-pit G, and the space above the grate-bars and below the arch C forms the combustion-chamber H.

In the side walls of the combustion-chamber, and on opposite sides of the latter, are formed fuel-chambers I, which are open on their inner sides and communicate with the combustion-chamber, the upper sides of the said fuel-chambers being arched, as shown in Fig. 2. From the said fuel-chambers I extend vertical longitudinal openings K, which communicate with the outer sides of the fuel-chambers and pass through the roof of the furnace. The roof L is provided on its sides and front with outwardly-inclined or flared flanges M, and thereby the roof of the furnace forms a receptacle on which coals may be piled. N rep-

resents longitudinal slides, which cover the upper ends of the openings K and fit on the top of the roof. The front ends of these slides extend slightly beyond the front side of the furnace, and the said slides are guided in horizontal openings, with which the front flange, M, is provided.

O represents horizontal longitudinal inlet air-flues, which are formed in the side walls of the furnace on the outer sides of the fuel-chambers I, and transverse slits or openings P are made in the said outer sides of the fuel-chambers, and communicate with the air-flues O, whereby the fuel-chambers may be supplied with a constant accession of fresh air.

The operation of my invention is as follows: The coal is heaped on the roof, as before described, and the fire is started in the combustion-chamber. By opening the slides N the upper ends of the openings K are uncovered, and a portion of the coal on the roof of the furnace falls downwardly through the openings K into the fuel-chambers, and from thence inwardly onto the grate in the combustion-chamber. By this means the fuel-chambers may be always kept filled with coal, and the fire will be constantly supplied with fuel.

Openings R are made through the front walls of the fuel-chambers, and are adapted for the insertion of pokers to agitate the fuel in the fuel-chambers and prevent it from becoming clogged therein.

From the foregoing description it will be readily understood that the combustion-chamber is fed with air from the ash-pit directly up through and between the grate-bars, and that it is also supplied with air at its sides through the openings O and P and the fuel-chambers, thus providing a thorough draft and insuring active combustion of the fuel.

Having thus described my invention, I claim—

1. The brick-kiln furnace having the longitudinal combustion-chamber H open at one end, the ash-pit G under the same, the chambers I, for the storage of fuel, arranged along side the combustion-chamber and having their upper sides arched and opening into the combustion-chamber nearly the entire length

thereof, the air-flues O, arranged on the outer sides of the combustion-chamber, and the openings P, communicating with the air-flues and with the fuel-chambers, substantially as described.

2. The brick-kiln furnace having the longitudinal combustion-chamber H, the fuel-chambers I, arranged alongside the combustion-chamber and having their upper sides arched and opening into the same throughout nearly the entire length thereof, the air-flues O, communicating with the fuel-chambers, the vertical longitudinal openings K, extending from the fuel-chambers to the roof of the furnace, and the slides N, arranged on the upper ends of the openings K, substantially as described.

3. The furnace for brick-kilns having the central combustion-chamber, the flue cham-

bers on opposite sides thereof and communicating therewith, the air-flues O and P, extending from the outer air to the outer sides of the fuel-chambers, for the purpose set forth, the vertical openings K, extending from the upper sides of the fuel-chambers to the roof of the furnace, the latter having the side flanges, M, and the slides N, adapted to cover the upper ends of the openings K, for the purpose set forth, substantially as described.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

EDMUND STAIR.

Witnesses:

BEN. C. SMITH,

GEO. D. LITTLE.