(No Model.) 2 Sheets—Sheet 1.

J. CONLEY & J. M. WOLFE.

BRICK KILN.

No. 487,174. Patented Nov. 29, 1892.

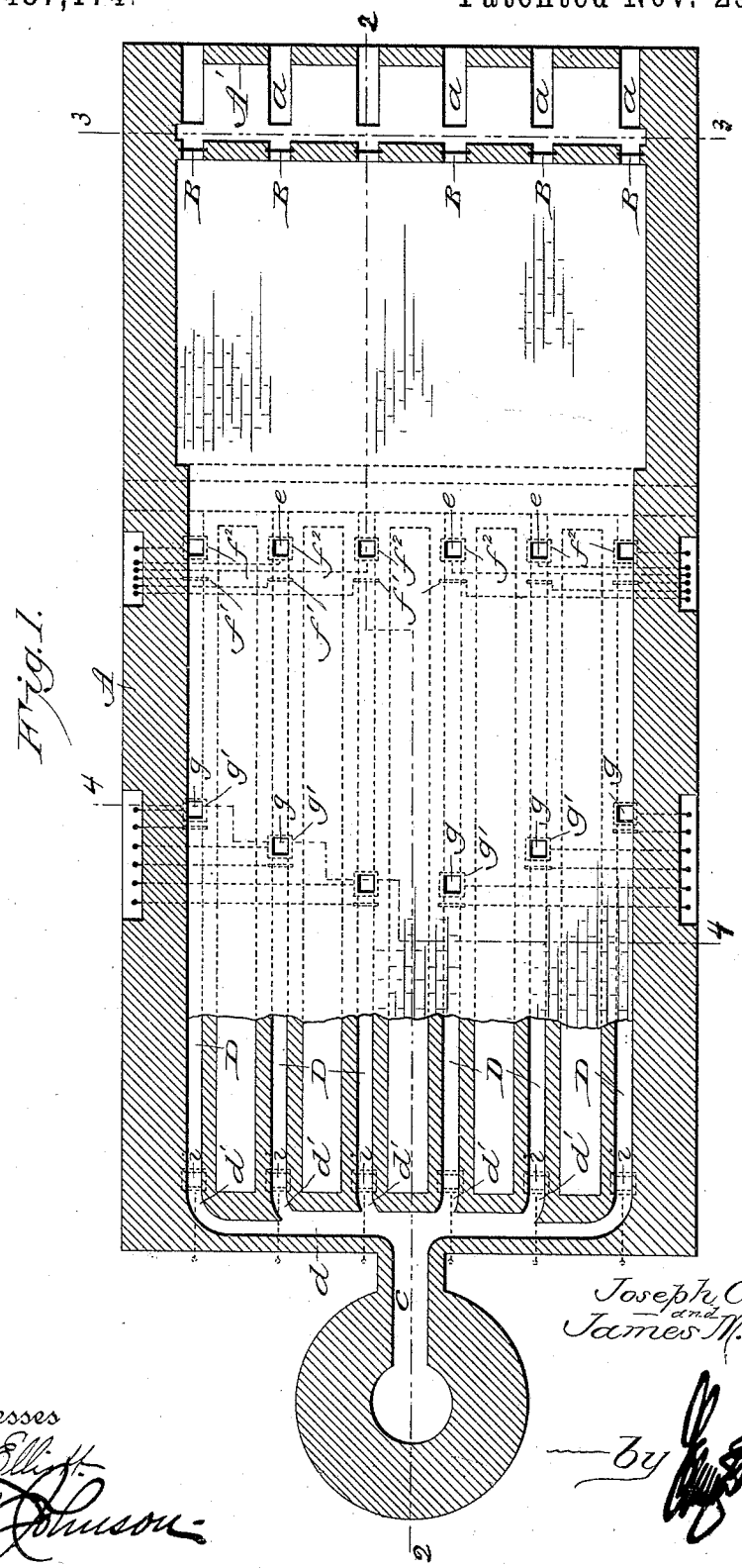

Fig. 1.

Witnesses
L. S. Elliott
E. W. Johnson

Joseph Conley and James M. Wolfe.
Inventors.
By
Attorney

(No Model.) 2 Sheets—Sheet 2.

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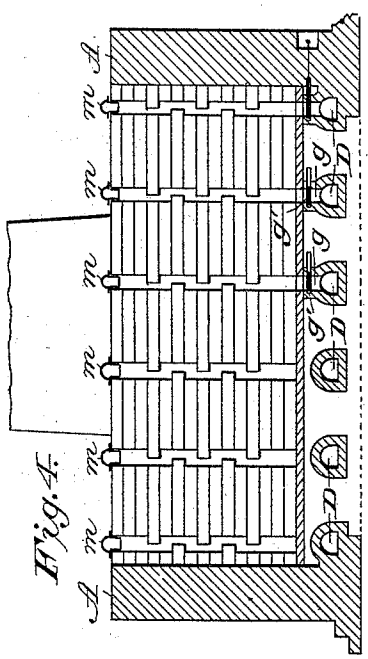

Fig. 4.

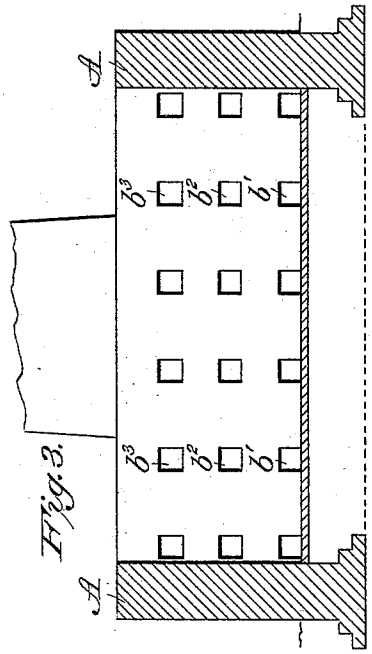

Fig. 3.

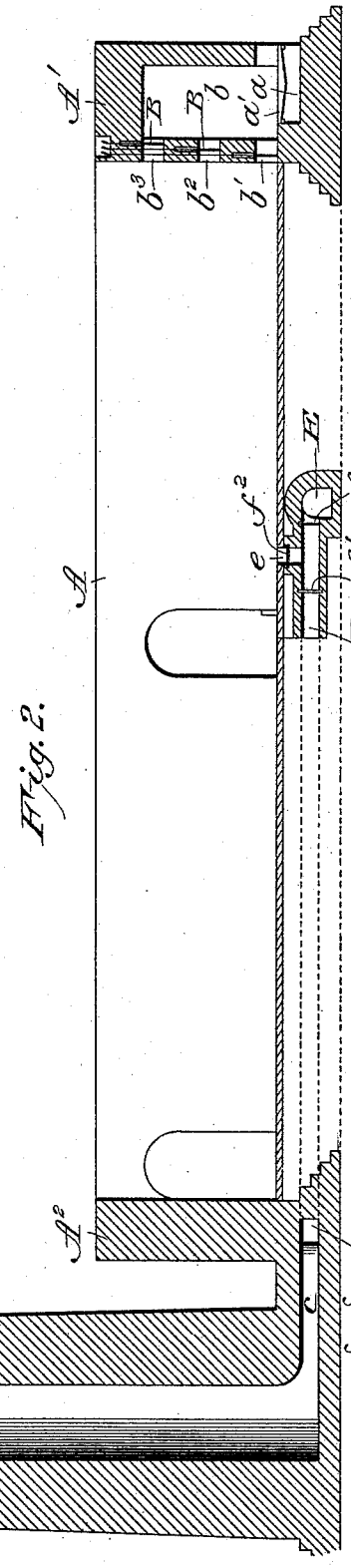

Fig. 2.

Witnesses
L. S. Elliott
E. W. Johnson

Joseph Conley
and
James M. Wolfe.
Inventors.
Attorney

UNITED STATES PATENT OFFICE.

JOSEPH CONLEY AND JAMES M. WOLFE, OF TARKIO, MISSOURI.

BRICK-KILN.

SPECIFICATION forming part of Letters Patent No. 487,174, dated November 29, 1892.

Application filed August 11, 1892. Serial No. 442,747. (No model.)

To all whom it may concern:

Be it known that we, JOSEPH CONLEY and JAMES M. WOLFE, citizens of the United States of America, residing at Tarkio, in the county of Atchison and State of Missouri, have invented certain new and useful Improvements in Brick-Kilns; and we 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, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in brick-kilns.

The object of the invention is to provide a brick-kiln the flues of which are cheaply constructed and of comparatively-small size to resist being crushed by the weight of the bricks placed above the same, said kiln being so constructed as to have a flue for each section of the furnace, so that the heat may be distributed equally over the bottom of the entire kiln, the construction being such that only longitudinal hot-air flues are employed, which are connected with a transverse cold-air flue, the flues having dampers which can be opened or closed for heating or cooling any part of the kiln, whereby the bricks can be burned at the sides of the kiln first, as will be hereinafter further set forth; and with this end in view our invention consists in the peculiar construction and combination of the parts of the kiln, as will be hereinafter fully set forth in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a plan view of the kiln. Fig. 2 is a longitudinal section on the line 2 2 of Fig. 1. Fig. 3 is a vertical sectional view taken on the line 3 3 of Fig. 1. Fig. 4 is a sectional view on the line 4 4 of Fig. 1.

A A designate the side walls of the kiln, the front wall A′ being built up, so as to provide ash-pits *a*, above which are located grate-bars *a′*, the furnaces *b* being above the grate-bars and each furnace provided with openings *b′*, b^2, and b^3, arranged one above the other, said openings being adapted to be closed by dampers B, which are manipulated by rods, so that the heat and products of combustion can be directed through any of the openings. Thus the heat and flame may be directed to the lower, central, or upper part of the kiln or to either side, as desired.

The end wall of the kiln opposite the furnace is provided with a flue *d*, which connects with the chimney by a flue *c*, and with the longitudinal flues located beneath the kiln by ways *d′*, said longitudinal flues communicating with a cold-air flue E, which extends transversely across the kiln. Immediately in the rear of the cold-air flue E are a series of openings *e*, which connect the interior of the kiln with the flues D. The flues D and E are located below the bottom of the kiln, upon which the bricks are stacked, as will be seen by reference to Fig. 2 of the drawings.

The cold-air flue E is provided with dampers *f* for cutting off communication between said flues E and the flues D, and the flues D beyond the openings *e* are provided with dampers *f′*, while the openings *e* have dampers f^2. These dampers are connected to suitable rods for manipulating the same, so that the heat and flame may be directed from the furnaces through the first section of the kiln downwardly through the openings *e* into the hot-air flues D into the chimney, and when the first section has been sufficiently burned the heat and flame can be directed to the next section, it being understood that the bricks to be burned are stacked in the sections of the kiln, as shown in our prior patent, No. 477,993, dated June 28, 1892, and that the side walls are also provided with doorways to permit access to the kiln in packing the bricks, and with partitions for dividing the body of the kiln into sections.

The flues D are provided at suitable points with apertures *g*, above which operate dampers *g′*, and adjacent to these apertures the flues are provided with dampers, which operate vertically and across the same. The damper's rods may be suitably incased, so as to operate easily. The ends of the flues D, where they join the conduits *d′*, which lead to the chimney or smoke-stack, are provided with dampers *i*, which operate across said flues.

From the construction hereinbefore described it will be noted that the longitudinal

hot-air flues can be connected when desired with the cold-air flue to admit cold air into the kiln to supply air to the fuel that is fed from the pots *m* upon the projecting ends of the green brick, and that the burning of said fuel and the bricks can be regulated by properly manipulating the dampers, so that when one section of brick is burned it can be cut off and the next section burned.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a brick-kiln, the combination of a series of furnaces located at one end of the kiln and a chimney at the opposite end, each furnace having apertures one above the other, dampers for closing said apertures, the body of the kiln being susceptible of being divided into sections and provided at the end of the first section beyond the furnaces with a transverse flue, said flue being connected with longitudinal flues which connect with the chimney, substantially as shown, and for the purpose set forth.

2. In combination with a brick-burning furnace or kiln, a series of furnaces at one end of the kiln, a transverse flue, a series of longitudinal flues equal in number with the furnaces, said longitudinal flues being connected with the chimney and provided with dampers covering openings in the longitudinal flues, and dampers which are susceptible of being moved across said flues, substantially as shown, and for the purpose set forth.

3. In a brick-burning furnace or kiln, the combination of a rectangular structure having at one end a series of starting-furnaces and at the opposite end a chimney, an intermediate transverse cold-air flue located between the chimney and furnaces, a series of underground longitudinal flues, each communicating with the chimney and with the transverse cold-air flue, apertures *e*, leading into the hot-air flues, and dampers *f*, *f'*, and f^2, arranged substantially as shown, and for the purpose set forth.

4. In a kiln constructed substantially as shown, the combination of a series of parallel longitudinal hot-air flues D D, communicating at intervals with the interior of the kiln, the ends of said flues connecting with the chimney, and a transverse cold-air flue, dampers or cut-offs *f*, *f'*, and f^2, intermediate dampers operating across said flues and over the intermediate openings in said flues, and end dampers *i*, the parts being organized substantially as shown.

5. In a brick-kiln, the combination of a rectangular structure having beneath the ground-floor or base thereof longitudinal flues, which are connected to the chimney, and a transverse underground air-flue, openings connecting the longitudinal flues with the interior of the kiln and with a chimney and the transverse flue, dampers or cut-offs arranged substantially as shown, the starting-furnaces having openings one above the other, with dampers adapted to close said openings, for the purpose set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

JOSEPH CONLEY.
JAMES M. WOLFE.

Witnesses:
JOHN F. HOWARD,
C. R. BARROW.