

H. McCUE.
Brick-Kiln.

No. 219,492.

Patented Sept. 9, 1879.

Fig. 1.

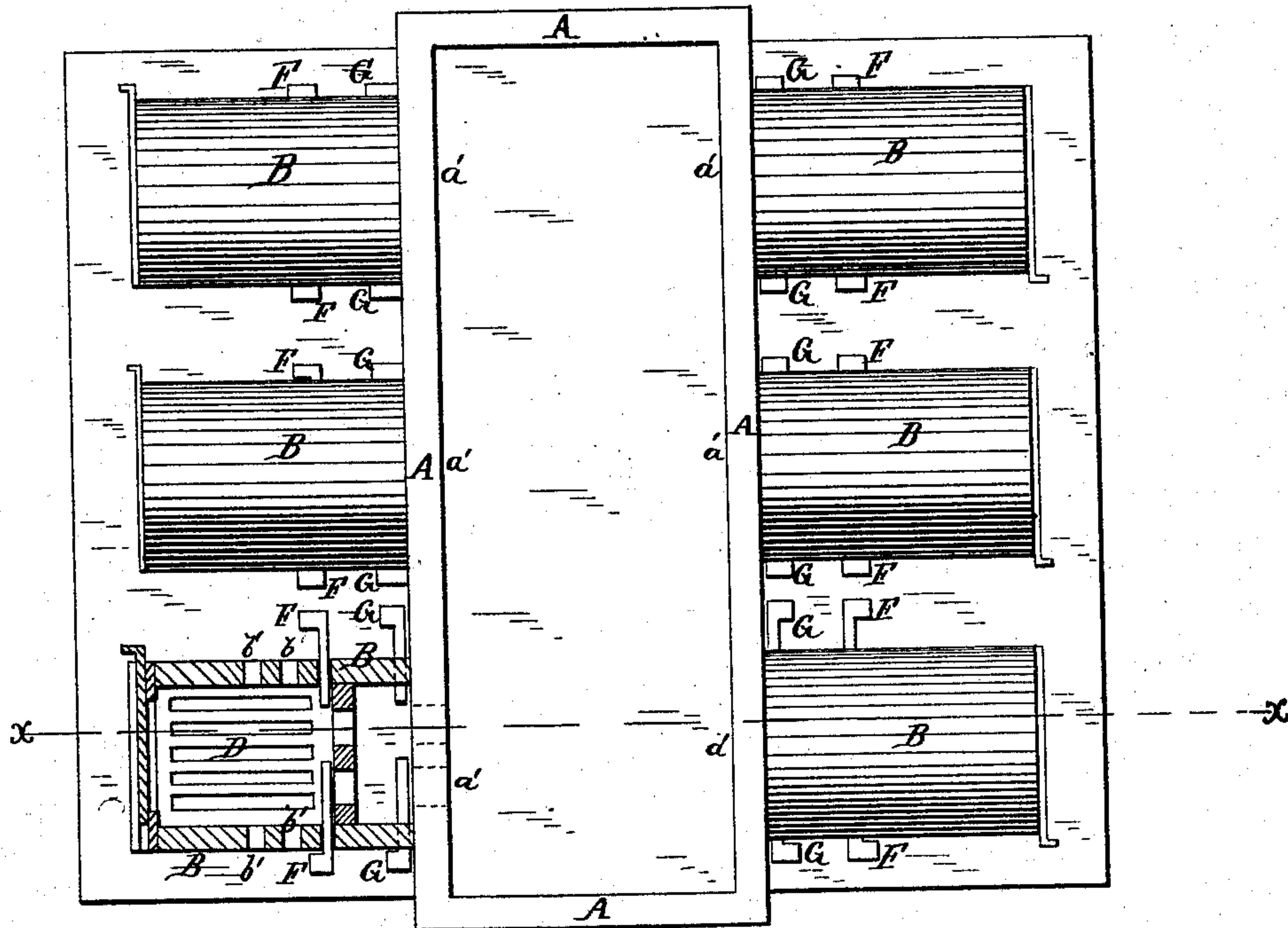


Fig. 2.

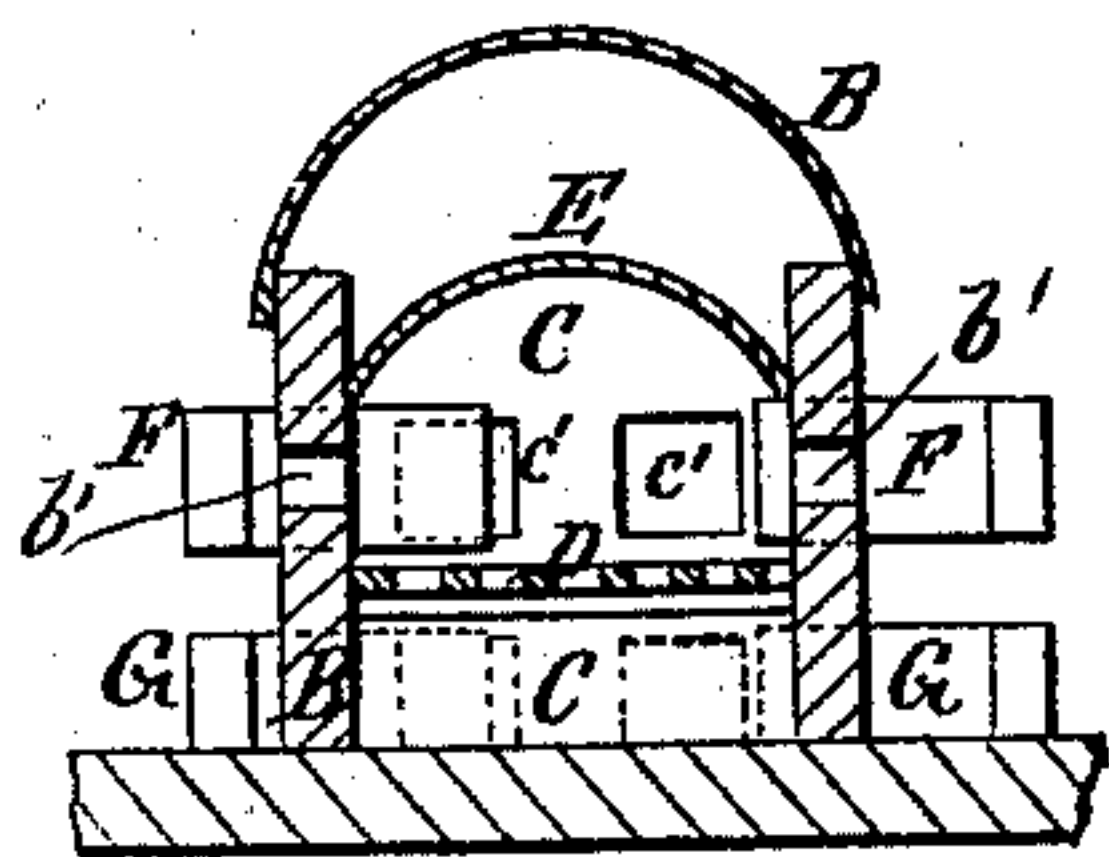
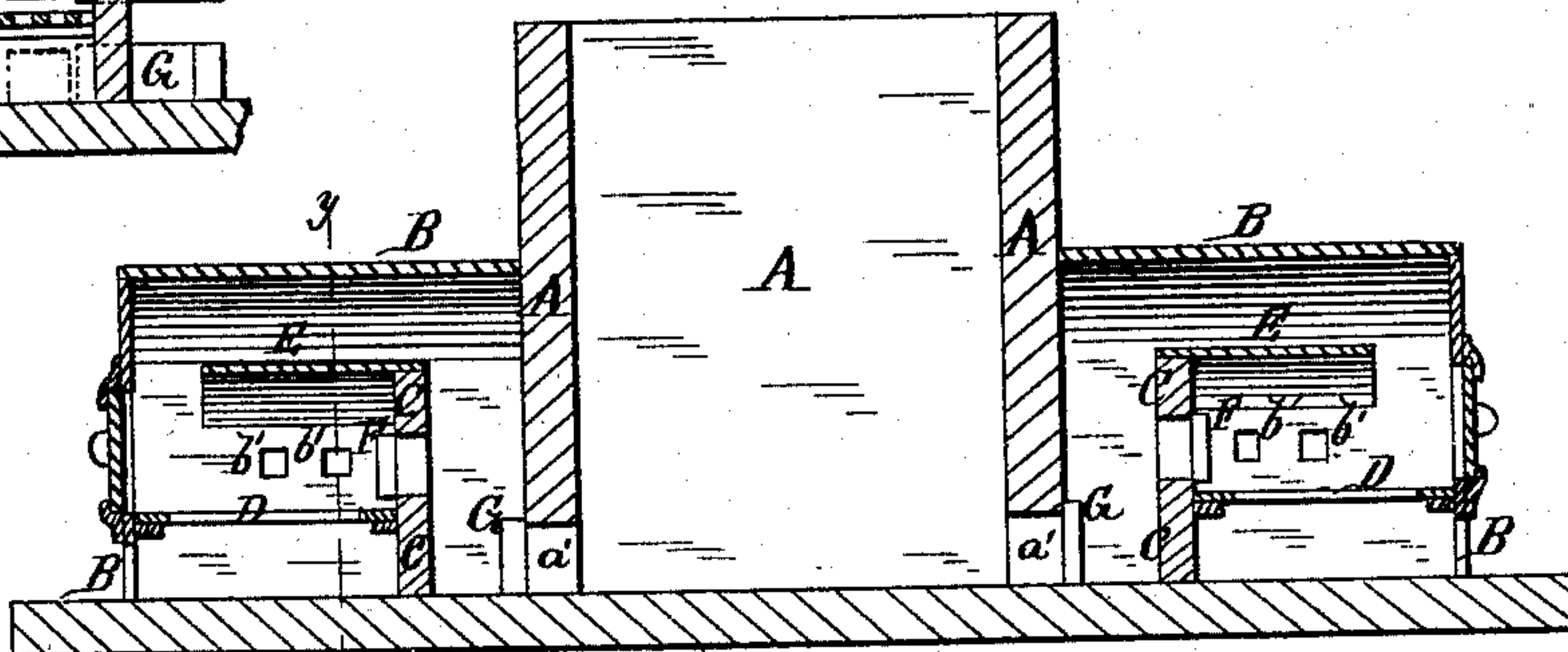


Fig. 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

HENRY McCUE, OF TERRE HAUTE, INDIANA.

IMPROVEMENT IN BRICK-KILNS.

Specification forming part of Letters Patent No. **219,492**, dated September 9, 1879; application filed February 14, 1879.

To all whom it may concern:

Be it known that I, HENRY McCUE, of Terre Haute, in the county of Vigo and State of Indiana, have invented a new and useful Improvement in Brick-Kilns, of which the following is a specification.

Figure 1 is a top view of my improved kiln, one of the furnaces being shown in horizontal section. Fig. 2 is a detail vertical section taken through the line *y y*, Fig. 3. Fig. 3 is a detail vertical section taken through the line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish an improved kiln for burning brick which shall be so constructed as to prevent the shriveling, cracking, breaking, or glazing of eye or jet bricks, to form less soft or clinker brick, to burn the brick to a more uniform size and color throughout the kiln, to use less fuel, to produce a better combustion, to allow the heat to be directed to any desired part of the kiln, and to require less labor in working the kiln.

The invention consists in the furnace provided with the bridge-wall having openings formed through it, the fire-grate, the inner arch or cover, the four dampers, and the air-inlet openings, to adapt the said furnace to be applied to the outer walls or clamps of a brick-kiln, as hereinafter fully described.

A represents the outer walls of the kiln, technically called "clamps," and in their lower parts are formed the holes or eyes *a'*, through which the products of combustion from the furnaces B enter the said kiln. The furnaces B are divided by a bridge-wall, C, into two compartments—a smaller rear compartment and a larger forward compartment or fire-chamber. D are the fire-grates, which extend from the front of the furnaces B back to the bridge-wall C, and are made detachable, so that they may be moved from one furnace to another, if required.

The fire-chambers of the furnaces are provided with covers or arches E, extending from side wall to side wall, and from the top of the bridge-wall nearly to the front wall of the said furnaces.

In the bridge-wall C are formed two open-

ings, *c'*, for obtaining a direct draft when required. The openings *c'* are provided with dampers F, sliding in through openings in the side walls of the furnaces.

The eyes or flues *a'* of the kiln A are provided with dampers G, sliding in through openings in the side walls of the furnaces B. The dampers F G may be made of fire-brick or cast-iron, and are detachable, so that they may be moved from one furnace or kiln to another, as required.

In the side walls of the furnace B, a little in front of the upper dampers, F, are formed ventilating-holes *b'*, which may be closed by slides or other convenient means when not required for use.

In first firing the kiln, the upper dampers, F, are opened, which gives a direct draft into the kiln, so as to establish a draft through it. When the water has been expelled and the kiln has become warm, the upper dampers, F, are closed, as the kiln will then be able to force its own draft. When the upper dampers, F, are closed, the ventilating-holes *b'* may be opened to admit air directly into the fire-chamber, to mingle with the smoke and the gaseous products of combustion and cause them to be burned.

When it is desired to concentrate the heat in the middle part of the kiln, the upper dampers, F, are opened, and the plugs are removed from the sight-holes, which are situated in the kiln-walls just above the tops of the furnaces, so that the air entering through the said sight-holes may force the heat to the center of the kiln.

The lower dampers, G, are designed for use for shifting the heat from one eye *a'* to the other—as, for instance, when one eye gets too hot, and there is danger of melting, the lower damper, G, communicating with that eye, is closed until the said eye has cooled down enough to allow the heat to be again admitted; or, should one eye become sufficiently burned, its damper G may be closed and the heat allowed to pass through the other eye.

With this construction the heat can be readily controlled and turned from one point to another, as may be required. The dampers G may also be closed when putting in fuel, so as to prevent cold air from entering the kiln

through the furnace, the said dampers being again opened as soon as the furnace-doors are closed.

I am aware that it is not new to provide a furnace with an air-space above the fire-box, and connect the said space with front air-flues for admitting fresh air, and with rear flues for conducting the same to flues connecting the furnace with the kiln, so as to produce the intermixture and complete combustion of the fire-gases on their entrance to the kiln, the said connecting-flues being provided with dampers for controlling the admission of the products of combustion to the kiln; but

What I claim, and desire to secure by Letters Patent, is—

The furnace B, divided into two compartments by the bridge-wall C, having openings *c'*, closed by dampers F, and provided with the grate D, the arch or cover E, the air-inlet openings *b'*, and dampers G, for closing the holes or eyes *a'* in the walls of the kiln A, in combination with the walls A of a brick-kiln, substantially as shown and described, and for the purpose set forth.

HENRY McCUE.

Witnesses:

JOHN DAVIS,

JOHN T. HARRIS.