H. B. EVANS & E. G. KEMPER.

BRICK-KILN.

No. 169,684. Patented Nov. 9, 1875.

Fig. 1

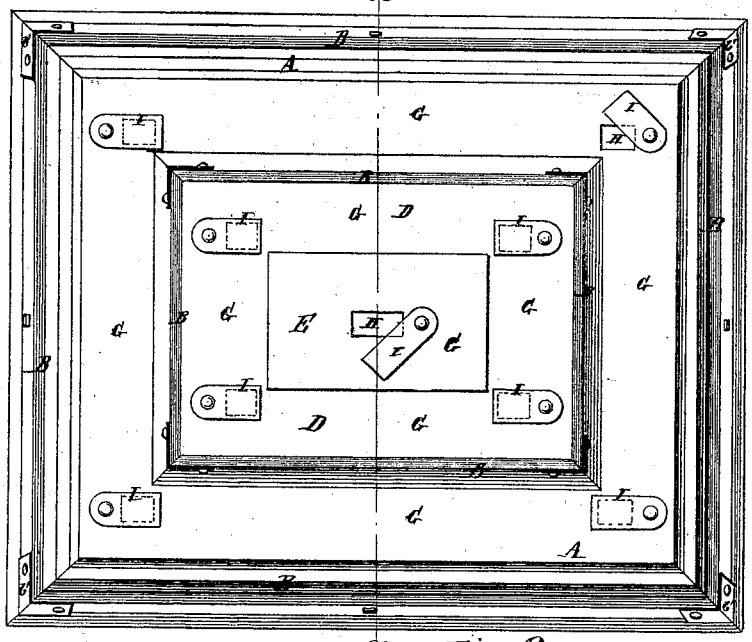
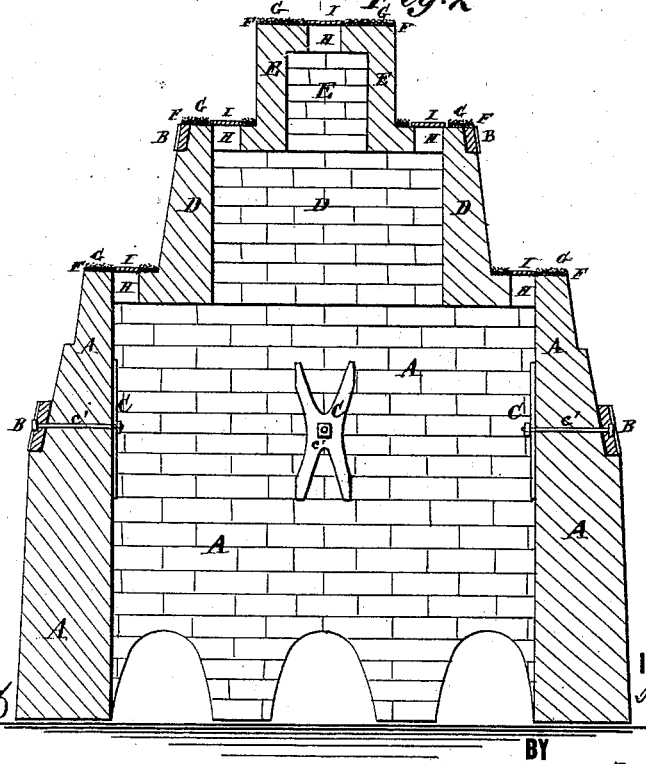


Fig. 2



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UNITED STATES PATENT OFFICE.

HOLLAND B. EVANS AND EARNEST G. KEMPER, OF ST. CHARLES, MO.

IMPROVEMENT IN BRICK-KILNS.

Specification forming part of Letters Patent No. **169,684**, dated November 9, 1875; application filed July 3, 1875.

To all whom it may concern:

Be it known that we, HOLLAND B. EVANS and EARNEST G. KEMPER, of St. Charles, in the county of St. Charles and State of Missouri, have invented a new and useful Improvement in Brick-Kilns, of which the following is a specification:

Figure 1 is a top view of our improved brick-kiln; and Fig. 2 is a vertical cross-section of the same, taken through the line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts.

The invention relates to the construction and arrangement of the several compartments of the kiln and their flues, as hereinafter described.

A represents the lower or main part of the kiln, the walls of which are built of burnt bricks, in the usual way, except that they have one or more offsets built in their outer parts to receive the brace B. The braces B are formed of planks framed to each other at the corners of the kiln. The corners of the braces B are strengthened by iron angle-plates *b'*, securely bolted to said planks. The braces B are strengthened at each side of the kiln by one or more anchors, C, the bolts *c'* of which pass through the walls of the kiln and through the said braces, as shown in Fig. 2. The kiln A may also be strengthened by inclined props extending from the braces B to the ground, but which are not shown in the drawing. The interior of the kiln A is then built up with unburnt bricks, in the usual way, with spaces between them for the passage of the products of combustion, and with spaces in the lower part to receive the fuel.

D is a compartment which is of less diameter than the main kiln A, and is formed wholly of unburnt bricks, except the outer walls, which may be formed of burnt or unburnt bricks, and the top, which is formed of burnt bricks, the bricks in the outer course or walls being laid close, and the inner part being built with spaces between the bricks, for the passage of the products of combustion.

E is a compartment of smaller diameter than the compartment D, and also built wholly of unburnt bricks, except the outer walls, which may be formed of burnt or unburnt bricks, and the top, which is formed of burnt bricks, the bricks in the outer courses or wall being laid close, and the interior being built with spaces between the bricks for the passage of the products of combustion, which spaces should be a little larger than in the other parts of the kiln, to increase the draft and adapt the said compartments to serve as a stack.

More than two compartments, D E, may be used, if desired, and the lower one, or all of them, may be strengthened with braces B, as herein described.

The top course, or the two top courses, of the compartment E of the compartment D outside of the compartment E, and of the main kiln A outside of the compartment D, are formed of burnt bricks, which are laid close, and are covered with a layer, F, of clay, cement, or mud, or a mixture of two or more of them, prepared as if for being molded into bricks. This layer F is then covered with a layer, G, of dry sand. By this means, should the heat crack the layer F of clay, the sand G will drop into the fissure and close it, so that the heat cannot escape.

In the top of the main kiln A, outside of the compartment D, in the top of the compartment D, outside of the compartment E, and in the center of the top of the compartment E, are formed flues H, which may extend down through the space of one, two, or more courses, to prevent the heat from being drawn off from the top parts of said kiln and compartments too rapidly for the top bricks to be properly burned.

The flues H may rise above the tops of the kiln and compartments, and are provided with sliding or pivoted covers I, so that, by opening and closing the said covers, the heat may be readily controlled and directed to or withdrawn from any desired part of the kiln.

By this construction as many more bricks as are contained in the compartments D E can be burned with the same or less amount of fuel than with a kiln of the same dimensions constructed in the old way.

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

In a brick-kiln, the combination of main and top compartments A D E, the same being graduated in size, and the flues H formed in the ledges or horizontal top portion of each of said compartments, and provided with slides I, as shown and described, for the purpose specified.

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