

E. G. KEMPER.
Kiln for Burning Brick.

No. 215,936.

Patented May 27, 1879.

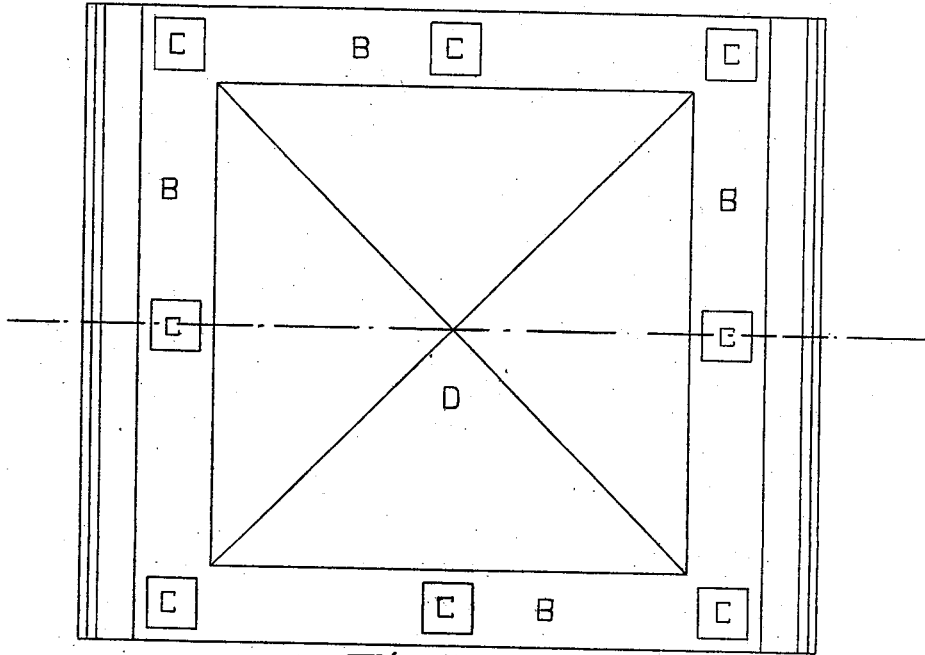


Fig. 1.

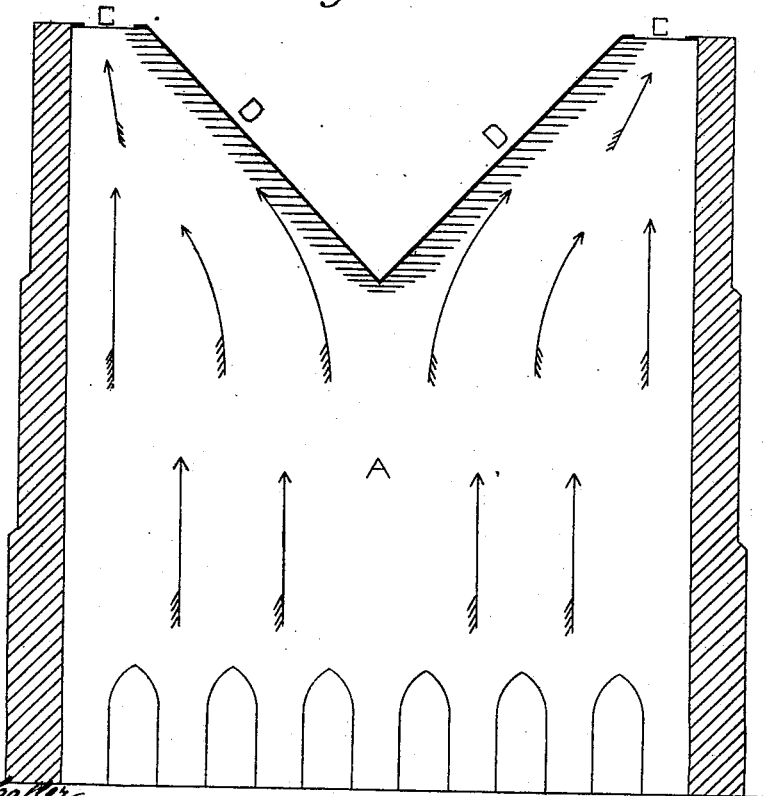


Fig. 2.

Witnesses:

Frederick H. Barker
John Canby

Ernest G. Kemper
inventor

UNITED STATES PATENT OFFICE.

ERNEST G. KEMPER, OF ST. LOUIS, MISSOURI.

IMPROVEMENT IN KILNS FOR BURNING BRICKS.

Specification forming part of Letters Patent No. **215,936**, dated May 27, 1879; application filed February 15, 1879.

To all whom it may concern:

Be it known that I, ERNEST G. KEMPER, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Brick-Kilns and Process of Burning Bricks, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My improvement is applied to the ordinary rectangular kiln; and consists in two things: first, in increasing the height of the walls; secondly, in forming in the middle of the head or top of the kiln a vacancy in form of an inverted pyramid or frustum of the same, to confine the products of combustion to the outside courses of bricks at the top, and to deflect the currents from the center, (even below the bottom of the cavity.)

Heretofore the bricks at the center of the kiln have been almost melted, and the bricks near the sides and top only slightly burned; but with my improvement the bricks are burned with a very near approach to uniformity throughout the whole of the kiln except immediately over the arches.

Figure 1 is a top view, and Fig. 2 is a section through a kiln with my improvements applied thereto.

I will describe my improvement as applied to an ordinary kiln containing, say, forty courses of bricks each way and forty courses in height.

The kiln is filled in the ordinary way, as shown at A. Then the outer walls are increased in height, say, twelve courses. The head or top of the kiln is then filled in the following manner: Nineteen courses of brick are set from each of the four sides of the kiln, leaving a vacancy of four bricks at the center. The next course of bricks is set back farther from the center one-half a brick, and the next set back a like distance from the last one, and so on. Thus is formed in the middle of the kiln head or top a vacancy widening upward in form of an inverted pyramidal frustum.

The sloping walls of this open space are shown at D. These walls D are formed of burned bricks.

In the fifth course the set-back space may be increased to a full brick, and so on, each fifth course being laid back to a greater distance than the intermediate courses. The object of this is to give increased facility for the escape of the "water-smoke," as this enables the burner to open and close the space at will for its escape.

Thus the head or top of the kiln is built up until the top of the vacancy measures thirty-four bricks (more or less) in width in each direction, leaving a width of three bricks around every side at the top B. This may be formed of flattening and daubed with mud; but spaces C are left in the top B for the escape of the products of combustion.

After the escape of the water-smoke the whole face of the walls D may be daubed with mud, so as to force the heated currents to ascend through the mass of unburned brick surrounding the hopper-shaped space in the head. The confinement of the heat to this part between the walls D and the outer walls causes so high a temperature there that the bricks are fully burned throughout.

The heated currents are deflected outward below the bottom of the hopper-shaped space by the influence of the walls D and flues or spaces C, so that the heat is equalized in the part A of the kiln, and the bricks are preserved from overburning at the center and slack burning at the sides.

I do not confine myself to any precise size or form of hopper-shaped space; but

I claim as my invention—

The process of burning brick by filling the sides of the kiln with the brick to be burned higher than the center, thus forming a cone or pyramidal shaped cavity in the head or top of the kiln, and lining or daubing the same, so as to deflect the heat from the center to the sides of the kiln, and thus insure a uniform burning of all the bricks in the kiln, substantially as described.

In testimony whereof I have hereunto set my hand this 26th day of April, 1879.

ERNEST G. KEMPER.

Witnesses:

GEO. H. KNIGHT,
C. H. BROWN.