

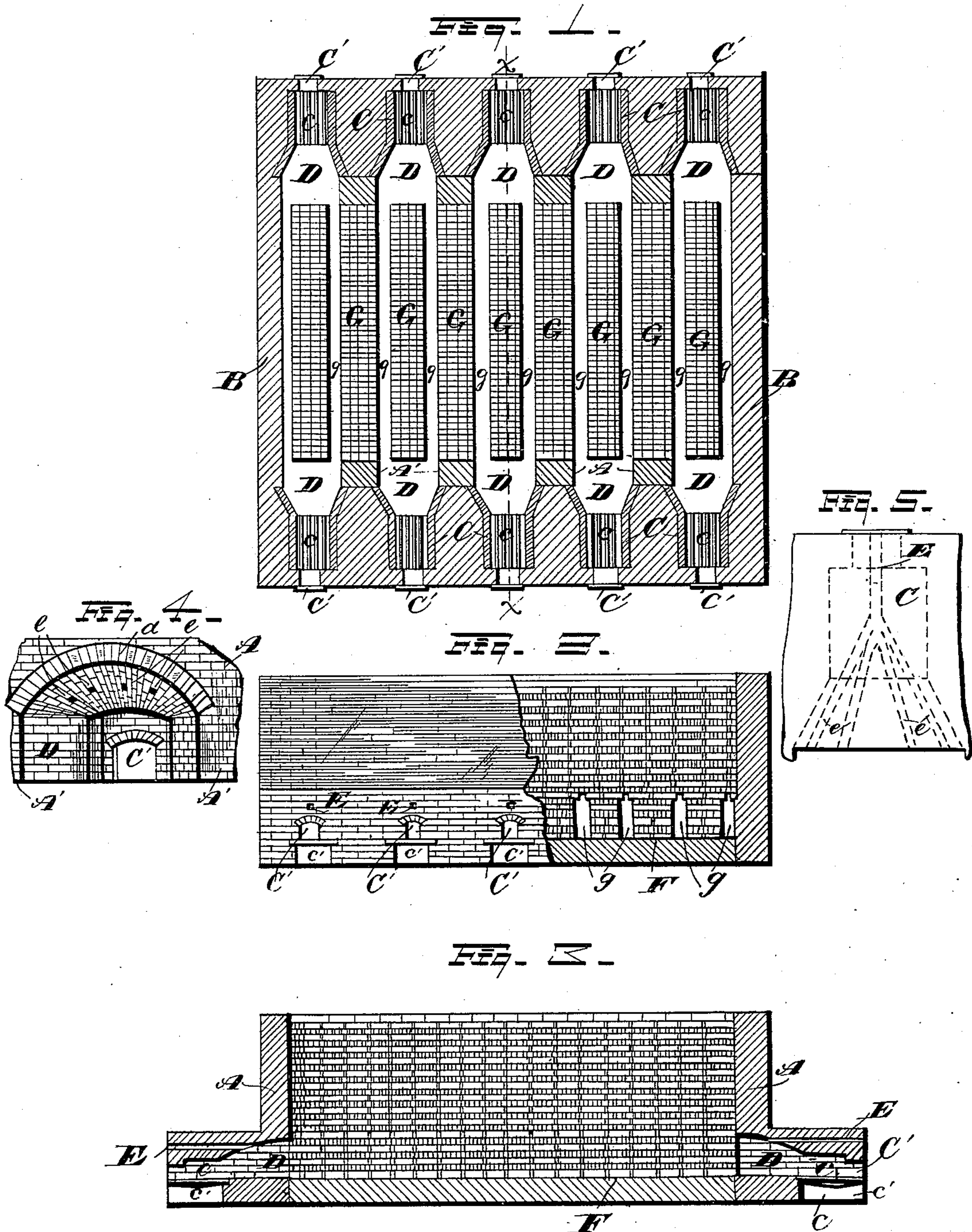
(No Model.)

J. WEAVER.

BRICK KILN.

No. 308,391.

Patented Nov. 25, 1884.



WITNESSES

Wm. M. Monroe,
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UNITED STATES PATENT OFFICE.

JOHN WEAVER, OF EAST LIVERPOOL, OHIO, ASSIGNOR TO HIMSELF, GEORGE P. CONNELL, AND GEORGE C. KELL, ALL OF SAME PLACE.

BRICK-KILN.

SPECIFICATION forming part of Letters Patent No. 308,391, dated November 25, 1884.

Application filed September 11, 1884. (No model.)

To all whom it may concern:

Be it known that I, JOHN WEAVER, of East Liverpool, in the county of Columbiana and State of Ohio, have invented certain new and useful Improvements in Brick-Kilns; and I 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 pertains to make and use the same.

My invention relates to improvements in brick-kilns; and it consists in certain features of construction and in combination of parts hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a horizontal section just above the grates, showing a plan of my improved kiln. Fig. 2 is a side view in elevation, with a portion of the outer wall broken away to show the arrangement of the bricks inside. Fig. 3 is a vertical section on the line *x x*, Fig. 1. Fig. 4 is an enlarged view of a portion of the kiln in elevation, showing from the inside a combustion-chamber and furnace. Fig. 5 is a diagram showing in dotted lines a plan of the furnace, combustion-chamber, and air-ducts.

A represents the side walls, and B the end walls, of the kiln proper.

C represents the furnaces, that have the openings *C'* for firing, and are provided in the usual manner with the grates *c* and the ash-pit *c'*. As shown, the furnaces are on each side of the kiln and are outside of the walls A. Each furnace at the inner end opens into a combustion-chamber, D, that flares out toward the kiln, as shown more clearly in Fig. 4. These chambers D extend through the walls A, that are arched above the opening, as shown at *a*, Fig. 4, leaving the piers *A'* to support the wall A. In the mason-work over each furnace is left an air-duct, E, that may have several branches *e*, (see diagram, Fig. 5,) that open into the chamber D through the arch above. These ducts admit currents of air from the outside that become heated in their passage over the furnaces, and commingle with the products of combustion from the furnaces and render the gases more inflammable, so that the gases, instead of being condensed into smoke, are ignited and burned, thereby greatly increasing the amount of heat that passes to the kiln.

F represents the floor of the kiln, that, as shown in Fig. 3, is about on a line with the floor of the chamber D and with the grates *c*. The bricks to be burned are stacked in rectangular piles or benches G, leaving passage-ways *g* between the benches; and it will be observed that the mouth of a chamber D covers two of these passage-ways *g*, so that the heat from each furnace is divided and enters the kiln in two places. By this means the heat is at first quite evenly diffused through the kiln. These benches are breasted out toward each other, so as to close over the passage-ways *g*, as shown on the right hand in Fig. 2. The upper portion of the kiln is of ordinary construction, and is therefore not shown.

For small kilns one set of furnaces arranged on one side of the kiln will be found sufficient; but for large kilns the two sets of furnaces arranged on opposite sides of the kiln, as shown in Figs. 1 and 3, are preferable.

What I claim is—

1. In a brick-kiln, the combination, with furnaces for heating the kiln, of combustion-chambers separating the furnaces from the kiln and in open relation with both, the said combustion-chambers gradually increasing in size as they approach the kiln, substantially as set forth.

2. In a brick-kiln, the combination, with the furnaces and combustion-chambers arranged as aforesaid, of air-ducts leading from the outside into the said chambers, and arranged in the mason-work above or adjacent to the furnaces, to the end that the air is heated in its passage through the ducts, substantially as set forth.

3. In a brick-kiln, the combination, with furnaces and combustion-chambers arranged as aforesaid, of air-ducts located, respectively, above the respective furnaces, and provided with branch air-ducts leading to the combustion-chambers, to the end that the air is more equally diffused through the chamber, substantially as set forth.

4. In a brick-kiln, the combination, with the furnaces C and combustion-chambers D, and the air-ducts terminating in said combustion-chambers, of the flues *g*, and the parts so arranged that each furnace discharges its heat into at least two of the passage-ways *g*, substantially as set forth.

5 5. In a brick-kiln, the combination, with furnaces each provided with a combustion-chamber substantially funnel-shaped, with the larger end joining the kiln, and the air-ducts terminating in said chambers, of two or more flues, passage-ways, or openings leading from each combustion-chamber into the body of the kiln, substantially as set forth.

In testimony whereof I sign this specification, in the presence of two witnesses, this 29th day of August, 1884.

JOHN WEAVER.

Witnesses:

H. R. HILL,

E. D. MARSHALL.