

J. K. CALDWELL.

BRICK-KILNS.

No. 172,701.

Patented Jan. 25, 1876.

FIG. 1 B

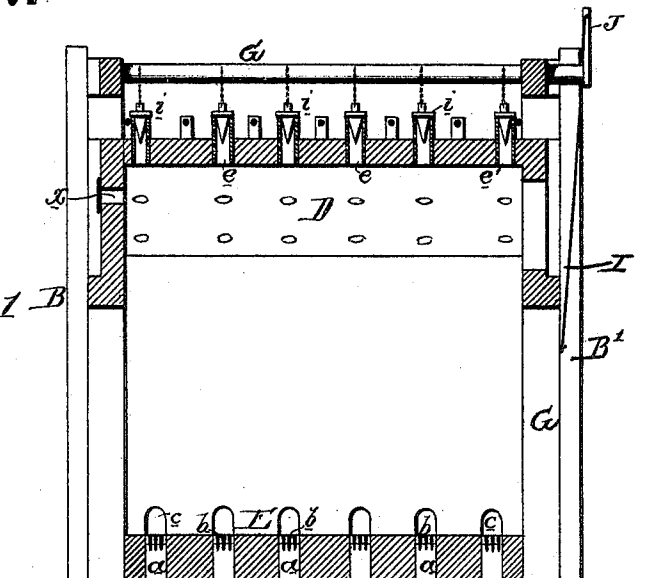


FIG. 2 B

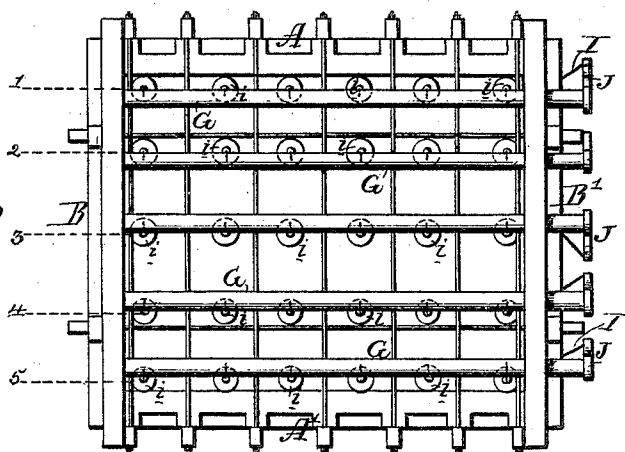
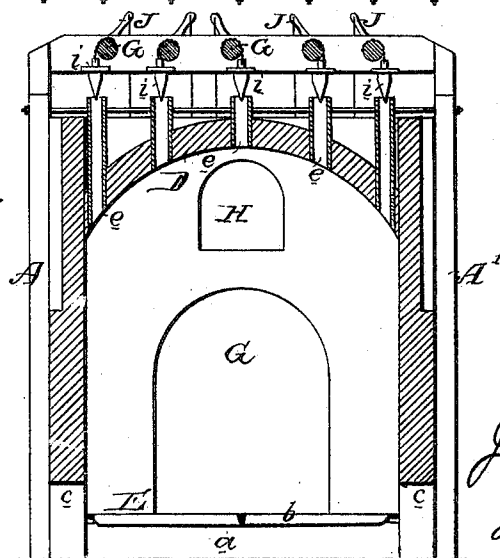


FIG. 3.



Witnesses,
Hubert Howson
Harry Smith

John K. Caldwell
By his Atty.
Howson and Son.

UNITED STATES PATENT OFFICE

JOHN K. CALDWELL, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN BRICK-KILNS.

Specification forming part of Letters Patent No. **172,701**, dated January 25, 1876; application filed February 9, 1874.

To all whom it may concern:

Be it known that I, JOHN K. CALDWELL, of the city and county of Philadelphia, State of Pennsylvania, have invented certain Improvements in Brick-Kilns, of which the following is a specification:

My invention relates to kilns having in the roof openings or vents arranged to direct the products of combustion to any desired point; and my improvements consist in certain devices for operating the valves or covers of such openings, as shown in the longitudinal vertical section, Fig. 1; plan view, Fig. 2; and vertical section, Fig. 3, of the accompanying drawing.

A and A' are the opposite side walls of the kiln; B and B' the end walls, and D the arched roof. The foundation E, on which are erected the tiers of brick to be burned, is built in the manner of ordinary brick-kilns, there being the usual ash-pits *a* at intervals, and the usual grate-bars *b* for receiving the fuel introduced through openings *c*, in the opposite side walls A and A'. The tiers of green bricks are built on the foundation in the same manner as in common brick-kilns, the tiers extending laterally to the side and end walls, and to the roof. Ample opportunity is afforded for the introduction of the green bricks into, and for their withdrawal, when burned, from, the kiln, through large arched openings G in the end walls, and through upper arched openings H. In the arched roof of the kiln are a number of vent-openings, consisting of tubes arranged in rows, as best observed in the plan view, Fig. 2.

There are in the present instance five parallel rows of tubes, marked 1, 2, 3, 4, and 5, but the number of rows may be increased or diminished in accordance with the dimension of the kiln. Whatever may be the number of rows, however, it is essential that there should be one row as near as possible to each of the

side walls A and A' of the kiln, and that the end openings or tubes of each row shall be as near as possible to the end walls.

To each opening or tube is adapted a stopper, *i*, by the vertical adjustment of which the outlet which the tubes afford for the escape of the moisture or the products of combustion from the kiln can be regulated at pleasure.

My invention consists of a contrivance by which the valves of each row of tubes can be raised simultaneously; hence I place above the mouths of the tubes of each row, and parallel with the same, a shaft, G, to points in the circumference of which the valves are suspended by chains or otherwise.

Each shaft is furnished at one end with an arm, J, to which may be attached a rod or chain, I, prepared at its lower end for attachment to pins or hooks in the end wall B'. On releasing this chain the whole of the valves will fall by their own gravity, and simultaneously close the whole of the openings or tubes of one row, but the valves may be adjusted to regulate the area of the outlet to any extent desired.

I claim as my invention—

In a brick-kiln, a permanent ceiling, having two or more lines of draft-openings, each of said lines of openings having an independent shaft for working the valves of each said line, the various dampers being also individually operative, whereby the said openings may be uncovered singly, in lines, or altogether, to direct the heat to any particular spot, side, or line, or let it be diffused equally over the kiln, substantially as shown and described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN K. CALDWELL.

Witnesses:

WM. A. STEEL,
HARRY SMITH.