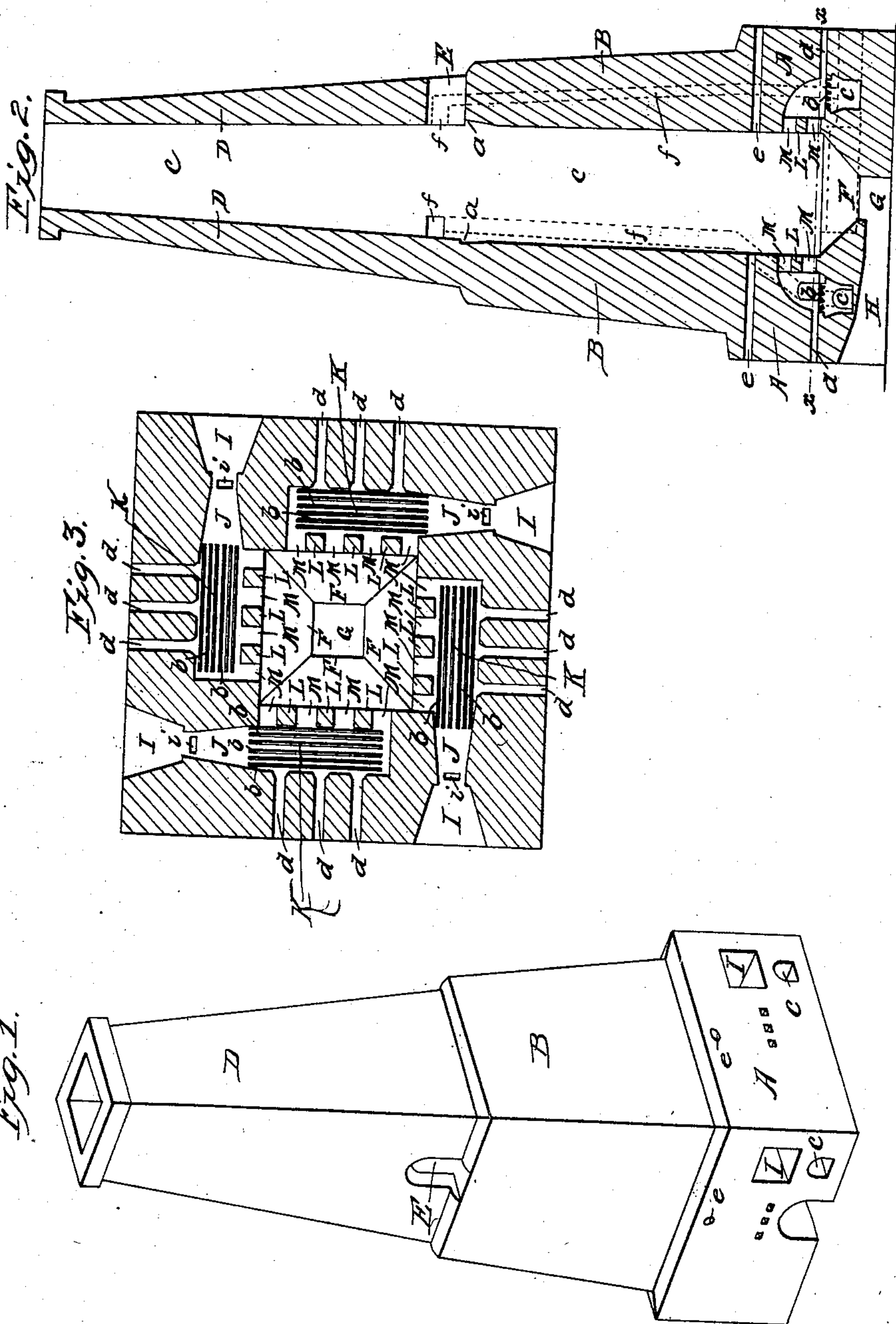


J. MCGREGOR.
LIMEKILN.

No. 17,885.

Patented July 28, 1857.



UNITED STATES PATENT OFFICE.

JOHN MCGREGOR, OF SELMA, ALABAMA.

LIMEKILN.

Specification of Letters Patent No. 17,885, dated July 28, 1857.

To all whom it may concern:

Be it known that I, JOHN MCGREGOR, of Selma, in the county of Dallas and State of Alabama, have invented certain new and useful Improvements in Limekilns; and I do hereby declare the following to be a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, which make a part of this specification, in which—

Figure 1, represents an elevation in perspective. Fig. 2, represents a vertical section through the kiln; and Fig. 3, represents a horizontal section taken at the line *x, x*, of Fig. 2.

Similar letters of reference where they occur in the several figures denote like parts of the kiln in all of them.

The nature of my invention relates especially to the manner in which I have arranged the furnaces or fire chambers in combination with the draft holes and fire flues, around the inner square chamber of the kiln.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same with reference to the drawings.

A represents the base of the structure, which may be square, and have its sides without batter in the walls. On this base is built the first section B of the superstructure, which is in the form of a truncated cone, on its outside, and inclosing a square chamber C slightly contracting in area as it rises. And upon this section B, is raised the upper or top section D, also of a truncated cone shape and inclosing a chamber, which is a continuation of the chamber C. At the top of the first section B, of the stack, is an opening E, where the charge of limestone is fed in, and immediately below this point E additional or reversed batter is given to the masonry, as at *a*, to prevent the charge from clogging. The bottom of the inside of the stack or the chamber inclosed thereby is rapidly contracted at its lower end F, and terminates in a cooling pit G, into which the burned lime drops, and from whence it may be drawn through the opening H, at proper intervals, the kiln being of the kind known as "perpetual kilns."

At the four corners of the base A of the kiln are arranged, respectively, the arched recesses I, I, I, I, from each of which a pas-

sage J, leads into the fire chamber or furnace proper, K. These fire chambers extend along nearly the whole length of the four sides of the bosch of the kiln, and are divided therefrom by fire walls L, through which there are double tiers of openings M, for admitting the fire into the bosch or chamber of the kiln.

b, b, &c., are the grate bars upon which the wood or coal that is used for fuel is placed, and underneath them are ash pits *c, c*, &c. Draft holes *d, d*, &c., are made through the outer walls, through which the air that supplies combustion is introduced. These draft holes are opposite the openings M, in the fire walls L, and tend to drive the flame and heat through said openings into chamber C, where the lime is burned. The fire is thus brought in horizontally at all four of the sides of the chamber C, the draft being across the fires, or at right angles to the fire chamber.

e, e, are port holes through which the charge can be loosened up, or the process of burning examined from the outside of the kiln. From each of the recesses I, a flue extends, as seen in dotted lines at *f, f*, in Fig. 2, up through the walls until they rise above the top of the first section B, of the stack, and then said flues enter the chamber C, the gases carried up therein mingling with those driven off from the lime stone burned in the said chamber below. Draft holes *i, i*, &c., are also made from the ash pits and extend from said pits into the front of the passages J, that lead into the fire chamber. The crowns of the fire chambers, are arched as seen at N, Fig. 2, so as to turn the flame toward the openings in the fire wall, and direct it into the burning chamber C.

Having thus fully described the nature of my invention, what I claim therein as new, and desire to secure by Letters Patent, is—

The particular arrangement of the furnaces or fire chambers K, K, K, K, in relation to each other, and to the square chamber C, when the same are constructed and used in combination with the draft holes *d, d*, and fire flues M, in the manner, and for the purpose herein set forth and described.

JOHN MCGREGOR.

Witnesses:

JAS. A. WORKS,
S. D. RADEFER.