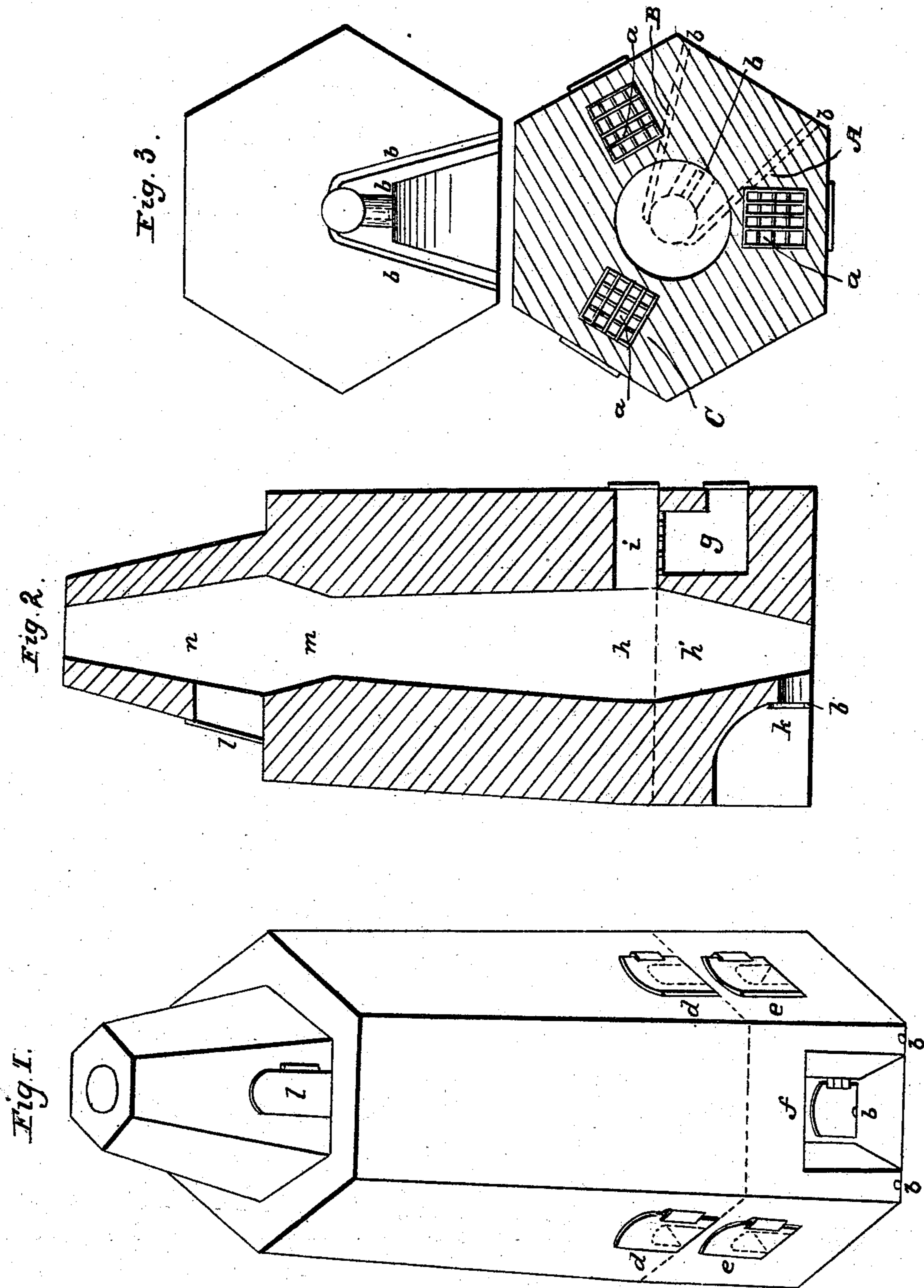


A. JEFFRIES.
Lime Kiln.

No. 17,098.

Patented April 21, 1857.



UNITED STATES PATENT OFFICE.

AARON JEFFRIES, OF WILKINS, PENNSYLVANIA.

LIMEKILN.

Specification of Letters Patent No. 17,098, dated April 21, 1857.

To all whom it may concern:

Be it known that I, AARON JEFFRIES, of Wilkins, Allegheny county, Pennsylvania, have invented a new and Improved Mode of
5 Constructing Limekilns; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon.

10 The nature of my invention consists in the peculiar arrangement of three arched furnaces and three cooling flues within a hexagonal stack of a lime kiln as will be more fully described hereafter.

15 To enable others skilled in the art to make and use my invention I will proceed to describe its construction and operation.

I construct my lime kiln in the form of a hexagon on the exterior, Figures 1 and 3,
20 on the alternate sides of which are placed three arched furnaces, Fig. 3, A, B, C, with grate beds of fire brick *a, a, a*.

Fig. 1 is a perspective view of the exterior of the lime kiln showing the doors *d, d*, for
25 closing the furnaces and the ash pits *e, e*, beneath. In one of the blank sides of the hexagon is an arch, *f*, for drawing out the lime from the chamber after it is burnt. A vertical section, Fig. 2, shows the interior
30 arrangement of the kiln, cupola, and lime pit *h, h'*, ash pit *g*, door for drawing the lime *k*, door for filling the kiln *l*.

35 The advantage of the arrangement of the furnaces in the hexagonal form is that the draft from each of the three furnaces will strike the alternate blank wall directly opposite the interior part of the furnace, thus heating every part of the circular chamber in a regular and thorough manner, so that

the limestone is evenly and thoroughly
40 burnt. The chamber of the lime pit below the furnaces is circular and tapering from about a diameter of six feet at the top to about two feet at the bottom. The tube or
45 chamber, *h*, Fig. 2, of the cupola is carried up tapering and narrowing in its diameter about one foot in height for fourteen feet and thence flaring and widening into a
50 funnel *m* for about six feet higher and thence again tapering and narrowing for about ten feet to a diameter of about three feet at the extreme top of the stack as seen
at *n*, with a door *l*, Figs. 1 and 2, for receiving the limestone. Opening into the base of
55 the limepit are three cooling flues *b, b, b*, Figs. 1, 2, and 3. These are to admit air to the burnt lime and also to furnish air when needed to assist the draft of the furnaces.

The cone shape of the chamber is for
60 permitting the descent of the stone without obstruction when it expands by the heat.

Having thus fully described the construction and operation of my invention I do
not claim the form of the stack above the
65 arches in the interior. But

What I do claim as my invention and desire to secure by Letters Patent is—

The combination and arrangement of the
three furnaces A, B, C, with the cooling
or draft flues *b, b, b*, when the same are
70 constructed and arranged in relation to each other within a hexagonal stack in the manner and for the purpose set forth.

AARON JEFFRIES.

Witnesses:

THOMAS C. DENN,
WM. J. PARHAM.