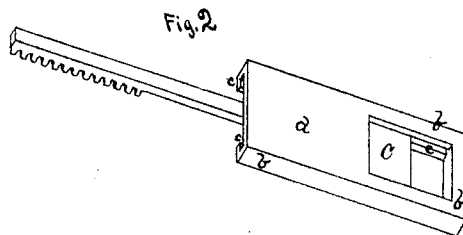
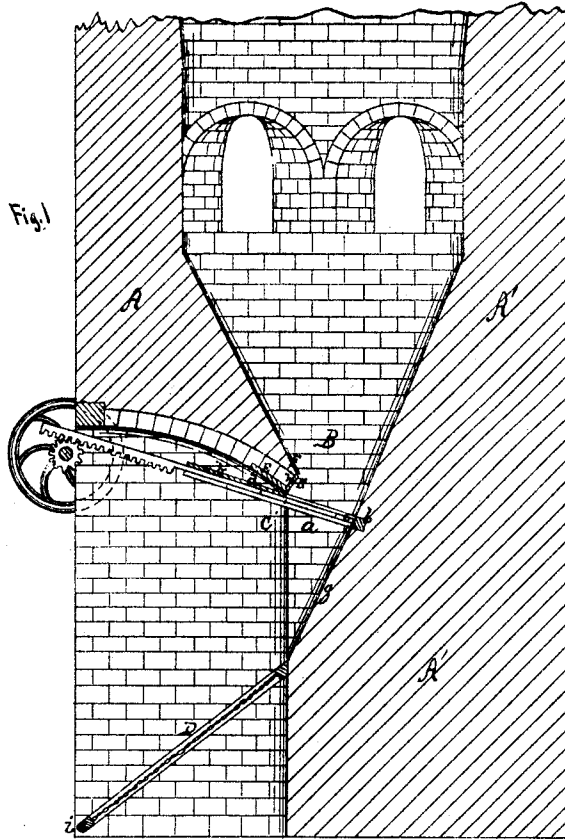


L. MONTGOMERY.
Lime-Kilns.

No. 144,555.

Patented Nov. 11, 1873.



WITNESSES.

C. D. Swan.
C. N. Woodward.

Lucius Montgomery
INVENTOR, BY
Burke, Fraser & Co.
attys.

UNITED STATES PATENT OFFICE.

LUCIUS MONTGOMERY, OF AKRON, ASSIGNOR OF ONE-HALF HIS RIGHT TO
LEROY NEWMAN, OF NEWSTEAD, NEW YORK.

IMPROVEMENT IN LIME-KILNS.

Specification forming part of Letters Patent No. **144,555**, dated November 11, 1873; application filed
March 14, 1873.

To all whom it may concern:

Be it known that I, LUCIUS MONTGOMERY, of Akron, Erie county, and State of New York, have invented certain new and useful Improvements in Lime-Kilns, of which the following is a specification:

This invention relates to ordinary kilns for burning lime; and its object is to furnish a self-drawing and self-screening kiln. The invention consists in setting the draw-door at a slant and arranging it in an iron frame-work, which aids, also, in supporting the brick-work; also, in an iron plate set between the door and masonry, supporting the latter and taking the place of an arch.

In the drawings, Figure 1 is a sectional elevation of the entire kiln, and Fig. 2 a perspective of the door-frame.

A A' represent a section of the base of a lime-kiln, and B the lower part of the hopper. The exit-opening *a* is made square, the back A' of the kiln slanting downward some little distance below the opening. This square (or oblong) opening *a* is entirely surrounded by an iron frame, *b*. (See Fig. 2.) This is set in slanting, and the inner sides are provided with grooves *c c*, in which slides the draw-door C. A top or cover, *d*, is provided to prevent the brick, lime, &c., from interfering with the working of the door, as well as to strengthen the side pieces of the frame.

This door, working in this frame and setting at an angle, is one of the important features of my invention, as it offers but little resistance in opening from the weight of lime, &c., on it, and is easily shut, there being little or no friction.

The edge of the door is made beveled or sharp, so that it more readily penetrates, and the casing is made with a groove corresponding in form, into which the edge shuts or fits, thus preventing any opening being left. This arrangement does away with the disadvantages of the ordinary doors, which are set in flat or longitudinally.

The frame-work of the door is also very important, as, if masonry alone were used for the door to slide in, it would be almost impossible to draw and close it. This frame not

only furnishes the slide or ways for the door, but protects it from the masonry, &c., and also acts as a strengthening support to the brick-work around it.

The door may be operated by any suitable device, either rack and pinion, as shown, or in any other desired manner.

E is an iron plate, set in one side or forming a part of the masonry of the kiln, and which supports the lower end of the masonry F, and takes the place of an arch. It is provided with a flange, *h*, or upward-projecting piece, beveled on its inner edge to conform to the fitting of the brick-work.

This flange is important, as it holds all the brick-work the width of the hopper, and, as it is just above the door-frame *b d*, it greatly facilitates the working of the door by keeping the pressure off. It also forms a light connection, makes the masonry more durable, and cheapens the construction.

The slant A' of the hopper-bottom B is continued downward a short distance below the mouth *a*, forming a chute, as shown at *g*, to conduct the lime farther out toward the front, where it falls onto a screen or sieve, D, set slanting against the back of the kiln at one end, the other being hinged or hung, at the bottom, on a rod, *i*, which allows it to be swung back or down, or removed altogether, when it is desired to shovel out the fine lime, ashes, &c., in the pit beneath. When the door is drawn the lime falls down the chute onto this sieve, and as it continues in its course the lumps are thus separated from the rest, and deliver themselves outside the kiln.

In ordinary kilns with which I am acquainted the lime merely drops down into a cooling chamber or pit beneath the door, and has to be shoveled out.

By these simple arrangements I provide a self-drawing and self-screening kiln, saving greatly in labor and expense.

I claim—

1. The door C and casing *b c d* set slanting in the opening *a* of the hopper B, in combination with the kiln A A', as and for the purpose specified.

2. The door C and casing *b c d*, constructed

as described, in combination with the iron supporting-plate E *h* and kiln A, all arranged in the manner and for the purpose hereinbefore specified.

3. The iron plate E, having the beveled flange *h*, in combination with the kiln A, as and for the purpose specified.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

LUCIUS MONTGOMERY.

Witnesses:

J. R. DRAKE,

C. N. WOODWARD.