No. 7,757. PATENTED NOV. 5, 1850.

W. McCOY.

LIMEKILN.

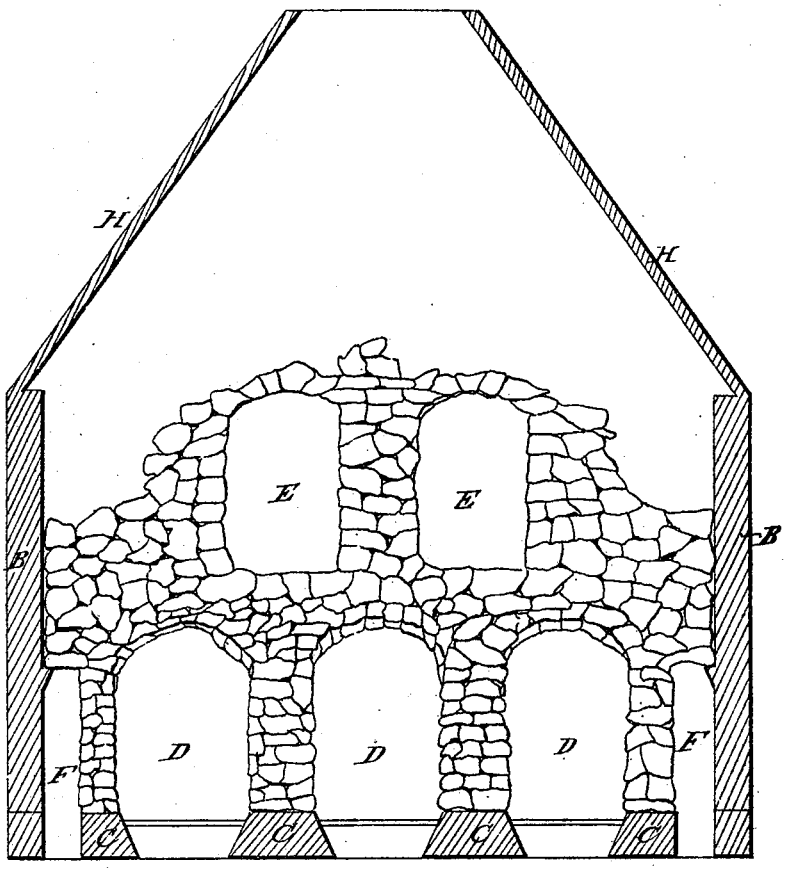
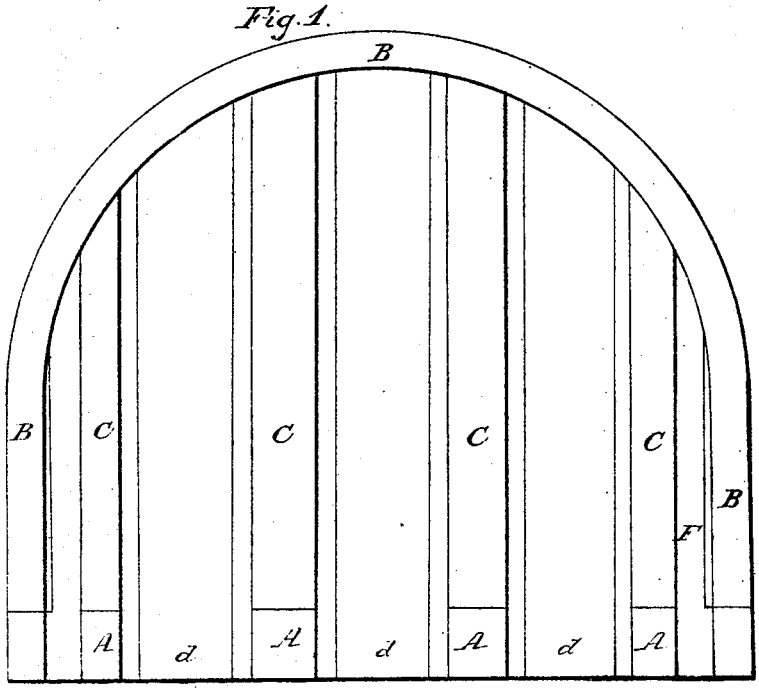


Fig. 1.



UNITED STATES PATENT OFFICE.

WM. McCOY, OF FANNETTSBURG, PENNSYLVANIA.

LIME-KILN.

Specification of Letters Patent No. 7,757, dated November 5, 1850.

To all whom it may concern:

Be it known that I, WILLIAM McCOY, of Fannettsburg, county of Franklin, and State of Pennsylvania, have made certain new and useful Improvements in the Construction of Kilns for Burning Lime; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, making part of this specification.

In the commonly constructed kilns now in use the process of making lime scarcely pays the expense of its manufacture, from the fact, that the enormous amount of wood used for burning is nearly (in expense) equal to the proceeds of the sales. To obviate this it was deemed more advisable to use coal, and by so doing but a small amount of difference was perceptible in consequence of having to extinguish the fire (before the operation was completed) to extract the clogged matter together with the ashes, &c., thereby subjecting the limestone to become cold, and in replenishing requiring almost the same amount of fuel as was used in the first heat.

In my improved kiln the difficulty is obviated; by using an upper tier or tiers of arches, I keep up a continuous heat until the material has been thoroughly burned, as will be seen from the following description of its operation and construction.

Figure 1, is a ground plan, A, being the front wall, said wall being built 6 feet high, and twelve feet long with three openings or throats, (*a*) for the admission of fuel in to the arches, (with the upper part of the wall shown as removed). B, is the semi-circular wall, the same height of the front wall, being built against, and extending some feet into a bank, or mound. C, C, C, C, are the beds upon which the arches are constructed one foot high, and of a width sufficient to build the arches strong enough to support the material resting thereupon; these beds together with the outer walls are built of free-stone, or any other suitable material, the front wall being eighteen inches thick, and the side or semi-circular walls nine.

Fig. 2, is a vertical section from side to side representing the arches, as constructed of limestone the lower ones, D, D, D, are three in number and the upper E, E, two in number. (I will here remark that I always construct the kiln with the arches above one less than I do at the bottom, with the upper ones situated two or three feet above, and over the abutments of the lower, for the purpose of giving it strength and durability.) F, F, are recesses or openings, for augmenting the draft to the upper arches when the lower ones have become clogged, these are always left open during the process of burning, as they tend also to increase the draft to the lower as well as the upper arches, but are designed more especially for the benefit of the upper arches, for in the lower arches I burn coal and in the upper ones wood, as it is well known that before the process of calcination is completed the lower arches will become choked with the clogged matter (coal, ashes, &c.), and will not admit of sufficient draft to diffuse thoroughly the heat through the whole structure. H H, Fig. 2, is a coating of clay, cement, (or any like substance) over the limestone and will become hardened by the action of the heat, and may be removed without intermixing with the lime.

This kiln can be built on a larger scale, and from ten to twenty feet higher than any now in use.

Having thus fully described the construction and operation of my improved kiln, what I claim therein as new and desire to secure by Letters Patent is—

1. The construction of an upper tier or tiers of arches in the manner and for the purpose herein fully set forth.

2. I claim the recesses or openings (F, F) in combination with an upper tier or tiers of arches for the purpose of creating a draft through the structure after the lower arches have become stopped up.

WILLIAM McCOY.

Witnesses:

JAMES CAMPBELL,

JOHN W. ELLIOTT.