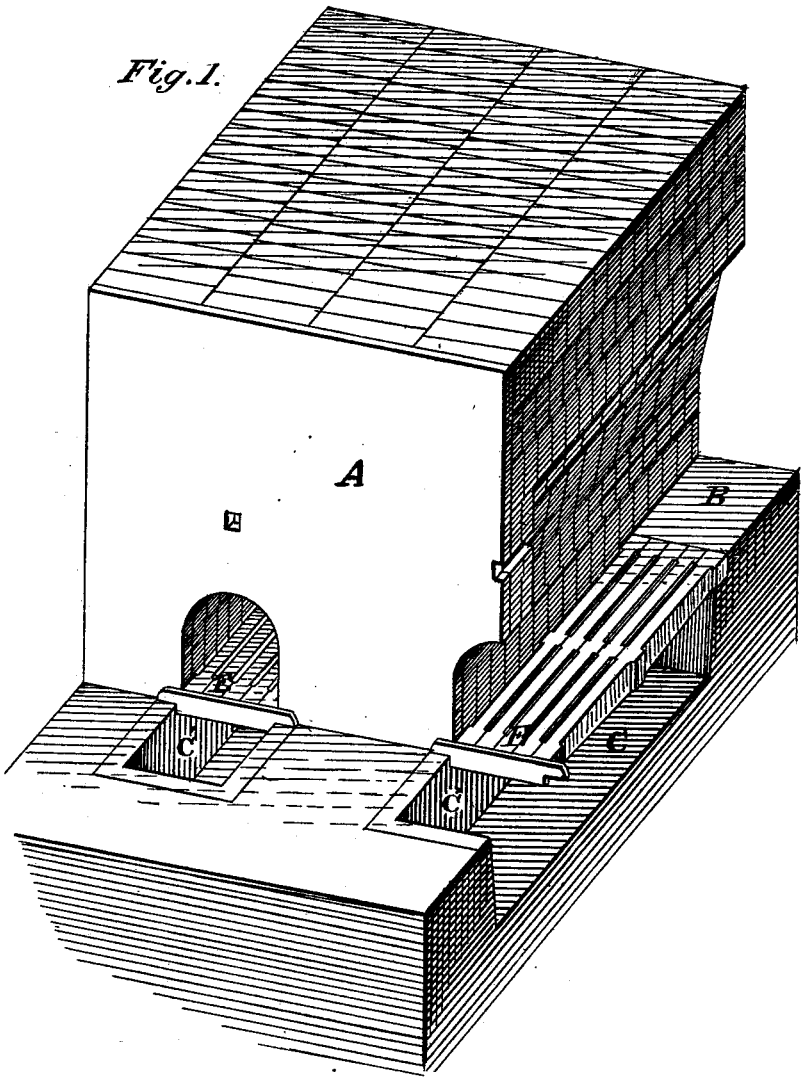
2 Sheets—Sheet 1.

B. H. WARBURG.

METHOD OF BURNING STONE COAL SLACK IN THE MANUFACTURE OF BRICK, &c.

No. 188,703. Patented March 20, 1877.

Fig. 1.



Attest.
L. Knight
W. Knight.

B. H. Warburg
By Knight Bros.
Attys.

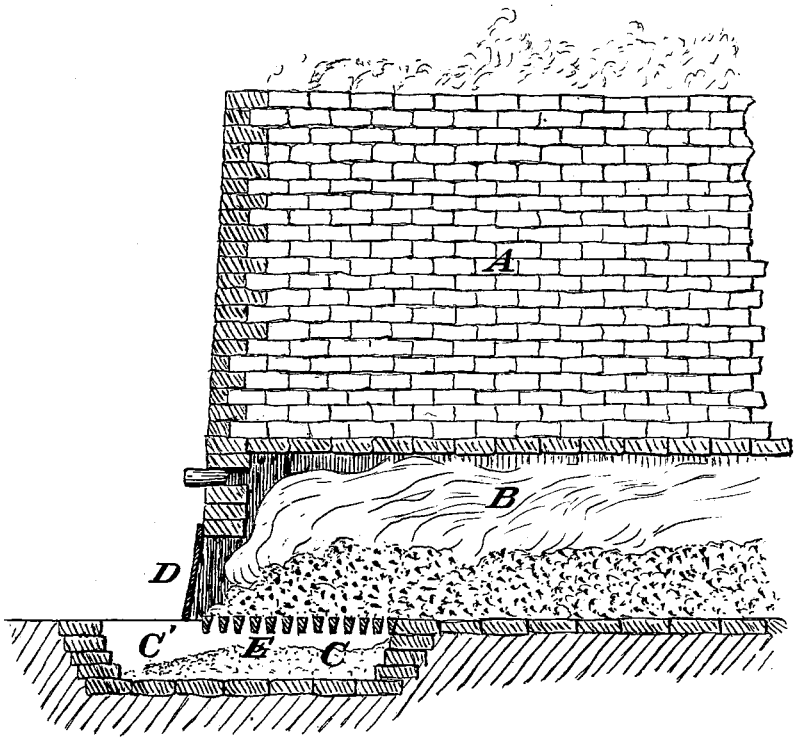
2 Sheets—Sheet 2.

B. H. WARBURG.

METHOD OF BURNING STONE COAL SLACK IN THE MANUFACTURE OF BRICK, &c.

No. 188,703. Patented March 20, 1877.

Fig. 2.



Attest.
L. Knight,
Walter Knight

B. H. Warburg
By Knight Bros
Attys.

UNITED STATES PATENT OFFICE.

BERNARD H. WARBURG, OF CINCINNATI, OHIO.

IMPROVEMENT IN METHOD OF BURNING STONE-COAL SLACK IN THE MANUFACTURE OF BRICK, &c.

Specification forming part of Letters Patent No. **188,703**, dated March 20, 1877; application filed November 22, 1876.

To all whom it may concern:

Be it known that I, BERNARD H. WARBURG, of Cincinnati, in the county of Hamilton and State of Ohio, have invented a new and useful Improvement in the Method of Burning Stone-Coal Slack in Brick-Manufacture, and for other similar purposes, of which the following is a specification:

Stone-coal slack and breeze, if thrown upon a hearth or into an ordinary fire-box, will not burn. Many efforts have been made to secure combustion of this very abundant and cheap form of carbon, by compounding it with other materials and pressing into blocks. This involves great expense.

My invention consists in mixing the coal-slack with a material, such as spent tan or sawdust, in about the proportion of one measure of stone-coal slack to two measures of spent tan or sawdust, the tan being preferred, so as to form a porous mass, and then placing this mass in a hot furnace, such as hereinafter described, when complete combustion takes place, and the full value of the carbon is obtained.

The following description illustrates my invention as applied to the burning of bricks, for which it is very useful.

In the accompanying drawings, Figure 1 is a perspective view, and Fig. 2 a vertical section, of a portion of a brick-kiln whose fire-places are adapted for the use of my improved fuel.

A represents a portion of the front and lower side of a brick-kiln; B, a portion of a flue; C, an ash-pit, which extends about three-fourths of its length underneath, and the remaining fourth in front of, the kiln body, as at C′. D is a fire-door or blower. E is a grate, preferably with longitudinal bars, having very narrow interstices and whose upper surface is flush with the flue floor, as shown at Fig. 1.

The fire having been started by the use of any suitable kindling, is afterward maintained by my fuel-mixture, as above.

I am aware that a mixture of fine coal and cinder has been employed as fuel in brick-burning operations, but its use has not been successful, and has been abandoned, it having been found to choke the draft-passages and the pores of the brick by the heavy deposition of sooty and tarry matters, causing imperfect combustion, and also causing distortion and destruction of brick by the thus imprisoned moisture; but, by combining with the slack double its volume of spent tan-bark, as above, the flame from the bark consumes all the products of combustion of the coal, which would otherwise have remained unburnt, with injurious effects above cited.

Having thus described my invention, the following is what I claim as new and desire to secure by Letters Patent:

The method herein described for burning stone-coal slack, consisting in placing the same mixed with spent tan or sawdust in a furnace provided with a grate and a blast device, substantially such as described, so as to keep the mass sufficiently open for the admission of air to support combustion, as set forth.

In testimony of which invention I hereunto set my hand.

BERNARD H. WARBURG.

Attest:

GEO. H. KNIGHT,

L. H. BOND.