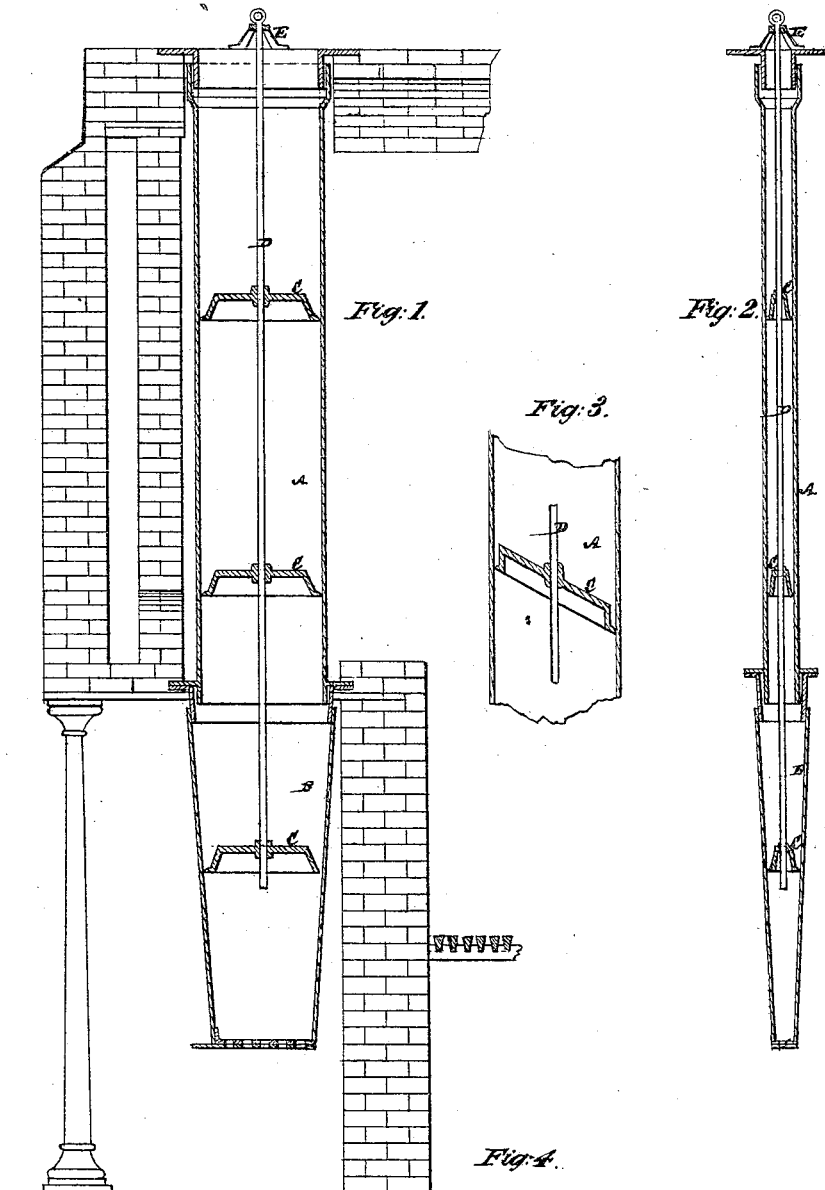


EDWARD P. EASTWICK.

Improvement in Kilns for Reburning Bone-Black.

No. 114,780.

Patented May 16, 1871.



Witnesses:
Fred. Haymes
Fred. Tusch

Fig. 5.

Edw. P. Eastwick

United States Patent Office.

EDWARD P. EASTWICK, OF BALTIMORE, MARYLAND.

Letters Patent No. 114,780, dated May 16, 1871.

IMPROVEMENT IN KILNS FOR REBURNING BONE-BLACK.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, EDWARD P. EASTWICK, of the city and county of Baltimore, in the State of Maryland, have invented a new and useful Improvement in Kilns for Burning or Revivifying Bone-Black, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing forming part of this specification, and in which—

Figure 1 represents a vertical section of a bone-black kiln, taken in direction of the broadest dimensions of its retort and cooler, with my improvement applied to the same;

Figure 2 is a vertical section at right angles to fig. 1 of the same, or section through said retort and cooler, in direction of their narrowest dimensions; and

Figure 3, a similar view to fig. 1 of the retort in part, with my improvement under a modified form of construction applied thereto.

Figure 4 is a plan of the upper portion of the retort with a support thereon for a vertical rod used to carry my improved attachments or distributing plates; and

Figure 5, a horizontal section through the retort in illustration of said appendages.

Similar letters of reference indicate corresponding parts.

Although applicable to kilns for other purposes, it will suffice here to describe the improvement as applied to kilns for burning or revivifying bone-black.

The kiln in its general construction may be similar to others in ordinary use; and

My invention consists in a certain arrangement within the upright retort, also, if desired, within the cooler, of a kiln of distributing plates or partitions, arranged to occupy the center space of the retort or cooler, leaving a reduced space around them or between them and the side or sides of the retort or cooler, and preferably made to form a series, lying one above the other, at suitable distances apart.

The invention also includes an inclined arrangement of said partitions relatively to the side or sides of the retort and cooler, or either; also, a manner of suspending the same by a rod or rods from the top of the retort.

The object of the invention is to divert the bone-black from the center to the sides of the retort, or of it and the cooler combined, in order that the mass of bone-black in the kiln may more readily absorb the heat of the furnace, and to effect more rapidly the subsequent cooling of the mass.

By way of making clearer the importance of the invention, it may here be observed that in revivifying bone-black by bringing it to a red heat in upright re-

torts, which are continuous in their action, receiving the bone-black at their tops, and providing for the drawing off of the same from a cooler below, it has heretofore been very difficult or impossible to effect a proper heating of the charcoal throughout its entire body or mass, by reason of the portion which lies next to the sides of the retort being more exposed than the portion or portions occupying the center of the retort throughout its length or height.

This will be more apparent when it is remembered that bone-black is a poor conductor of heat, which causes the center of the mass to be but slowly reached, and often at the expense of overheating the portion which is adjacent to the sides of the retort, while it is important, in order to restore to the charcoal its full efficiency as a decolorizing agent or purifier, that it should neither be overheated nor underheated.

The overheating of the exterior portions of the mass also causes rapid destruction of the retort, and involves a waste of fuel. My invention obviates these evils, and secures a more perfect and uniform revivification of the bone-black.

Referring to the accompanying drawing—

A represents the vertical retort, and

B the cooler of a kiln, operating upon the principle hereinbefore specified.

C C represent a series of distributing plates or partitions, arranged at suitable distances within the retort, or within it and the cooler combined, so as to intercept the passage of the charcoal down the center of such structure or structures, and, by jogs on the edges of said partitions, or by any other suitable means, leaving a reduced space or spaces, *b*, between the edges of said plates and the sides of the retort, as clearly shown in fig. 5 of the drawing.

By means of these distributing plates or partitions, open at their edges, the bone-black in the center of the retort is held back, as it were, or allowed to descend less rapidly than that next to the sides of the retort, and at the same time, is diverted toward the sides of the latter. In this way the entire contents of the retort are brought to where they can most readily receive the required amount of heat, and overheating is avoided.

This secures a more perfect revivification of the bone-black, a saving of fuel, and less wear and tear of the retorts from excessive heat. It also economizes time, and secures more rapid cooling of the burned or revivified mass.

It is preferred to construct the distributing plates C C sloping from their center or body portion to their outer edges, to form an inclined plane or planes for the bone-black to pass over them, and to prevent lodg-

ment of the same on said plates or partitions when the latter occupy horizontal positions, as shown in figs. 1 and 2; but such centrally-arranged intercepting plates or partitions C may, if desired, be made to occupy an inclined position, as represented in fig. 3, so as to direct the bone-black from one side of the retort to the other.

Said plates or partitions may be variously supported, but a convenient means for the purpose, both in point of simplicity and as regards the facility which is afforded for insertion and removal of the plates, is a rod or rods, D, to which they are attached, and which is suspended from or sustained by a support, E, made to rest by legs on the top of the retort or kiln.

What is here claimed, and desired to be secured by Letters Patent, is—

1. The arrangement, within the retort of the kiln

or within the retort and cooler combined, of distributing plates C, operating to intercept the descending mass at its center and to divert the same toward the sides of the retort, or sides of it and the cooler combined, substantially as specified.

2. The distributing plates C, set to occupy an inclined position relatively to the sides of the retort A, so as to direct the mass from one side to the other thereof, essentially as herein set forth.

3. The combination of the rod or rods D and upper support E with the distributing plates C and retort A, substantially as specified.

EDW. P. EASTWICK.

Witnesses:

FRED. HAYNES,
FERD. TUSCH.