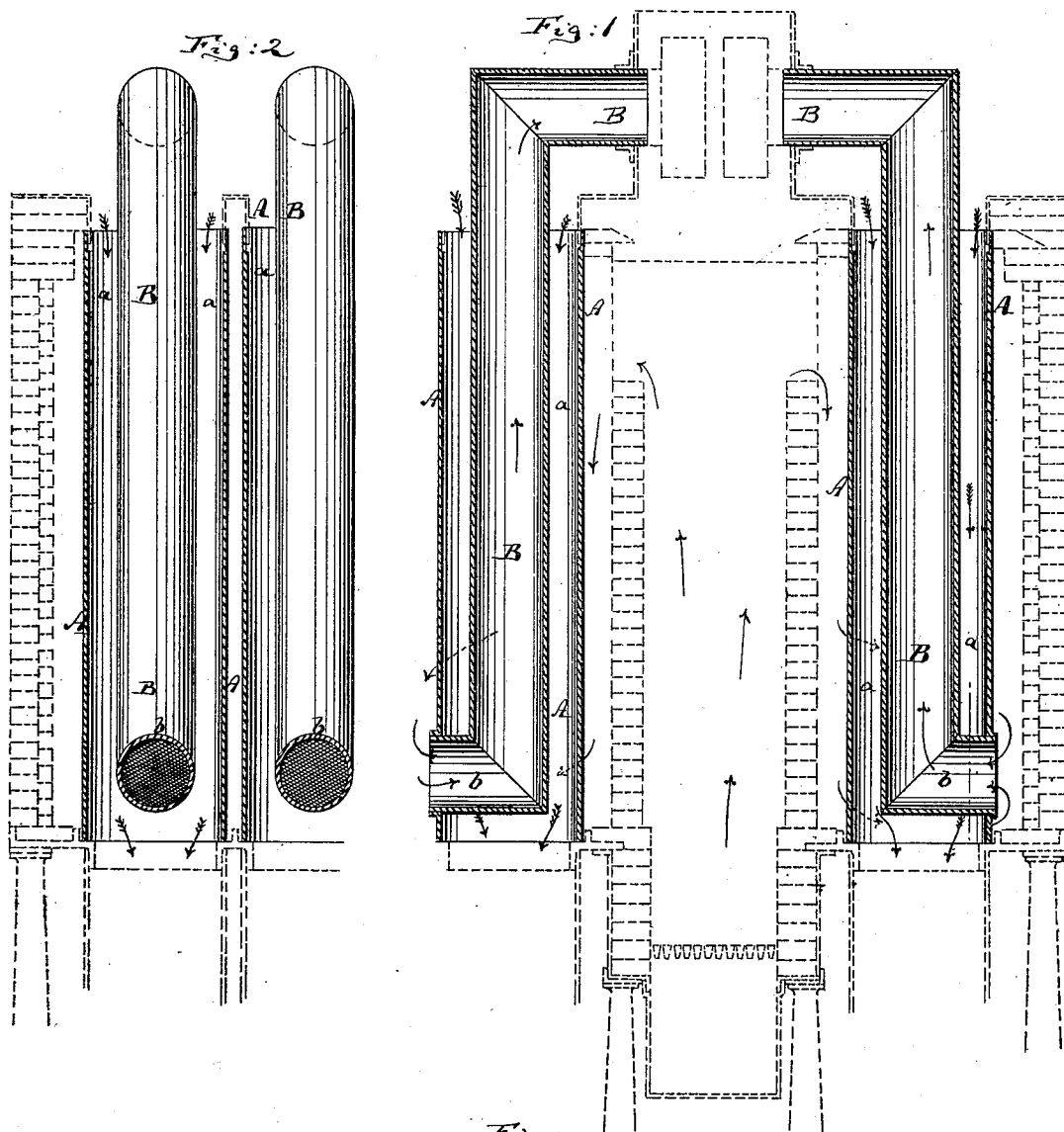


J. GANDOLFO.

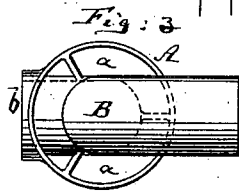
APPARATUS FOR BURNING AND REVIVIFYING BONE BLACK.

No. 178,286.

Patented June 6, 1876.



Witnesses:
Ernest C. Wray
F. v. Briesen



Inventor:
J. Gandolfo
by his attorney
A. v. Briesen

UNITED STATES PATENT OFFICE.

JOSEPH GANDOLFO, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN APPARATUS FOR BURNING AND REVIVIFYING BONE-BLACK,

Specification forming part of Letters Patent No. **178,286**, dated June 6, 1876; application filed December 11, 1875.

To all whom it may concern:

Be it known that I, JOSEPH GANDOLFO, of Brooklyn, Kings county, New York, have invented an Improved Apparatus for Burning and Revivifying Bone-Black, &c., of which the following is a specification:

Figure 1 is a vertical cross-section of a furnace provided with my invention. Fig. 2 is a detail longitudinal section of part of the same. Fig. 3 is a detail top view of one of the retorts, and of the flue extending through the same.

Similar letters of reference indicate corresponding parts in all the figures.

This invention relates to a new construction of retort, and to a new combination thereof, with an interior smoke-flue, for use in bone-black revivifying or burning apparatus.

The invention consists, principally, in perforating that side of the retort which is turned away from the fire-place, for the admission of the lower end of a smoke-flue that is contained within said retort, and also in combining such smoke-flue directly with a vertical retort open at both ends, to discharge the bone-black at the bottom and the gases at the top.

In the accompanying drawing, the letter A represents a vertical retort for use in a furnace for revivifying or burning bone-black or other substance. It is made of cylindrical form, or of oval or other suitable cross-section, open on top and at or near the bottom, and made of iron or other proper material, either in one piece or in sections. It is placed into the furnace, to be enveloped by the products of combustion generated in such furnace, and is adapted to receive the bone-black, or other substance to be revivified or burnt, at the open top, and to discharge the same at the open lower end. B is a smoke-flue, extending lengthwise through the retort A, and communicating at its upper end with a chimney or other conduit, or it may discharge the

smoke directly into the air. The lower part b of the flue B is bent to extend through a hole in that side of the retort which is turned away from the fire-place of the furnace, as clearly shown in the drawing. The products of combustion generated in the furnace are thus caused to completely envelop and to heat the retort before they can enter the flue B. The bone-black is burnt in the chamber a, which is formed within the retort around the flue B. This chamber a may be provided with shelves, to detain the descending bone-black, said shelves being either attached to the inner side of the retort or to the outer side of the flue B. Said flue may be made of cast or sheet metal, in one piece or in sections.

It will be observed that the products of combustion, after enveloping the retort, escape through the smoke-flue B within such retort, thus heating the outer as well as the inner walls of the chamber a.

The bone-black burnt in the retort is discharged through the open lower end of the retort into a suitable receptacle, while the fumes or gaseous products of revivification ascend in the retort, and are discharged through the open top of the same. If this upper discharge were not provided the fumes would be liable to remain in contact with the bone-black, and finally to condense on them, and thereby defeat the object of the revivifying process.

I claim as my invention—

The revivifying retort A, perforated at the side which is turned away from the fire-place, and combined with the central smoke-flue B, which enters at said perforation, substantially as specified.

JOSEPH GANDOLFO.

Witnesses:

ERNEST C. WEBB,
F. V. BRIESEN.