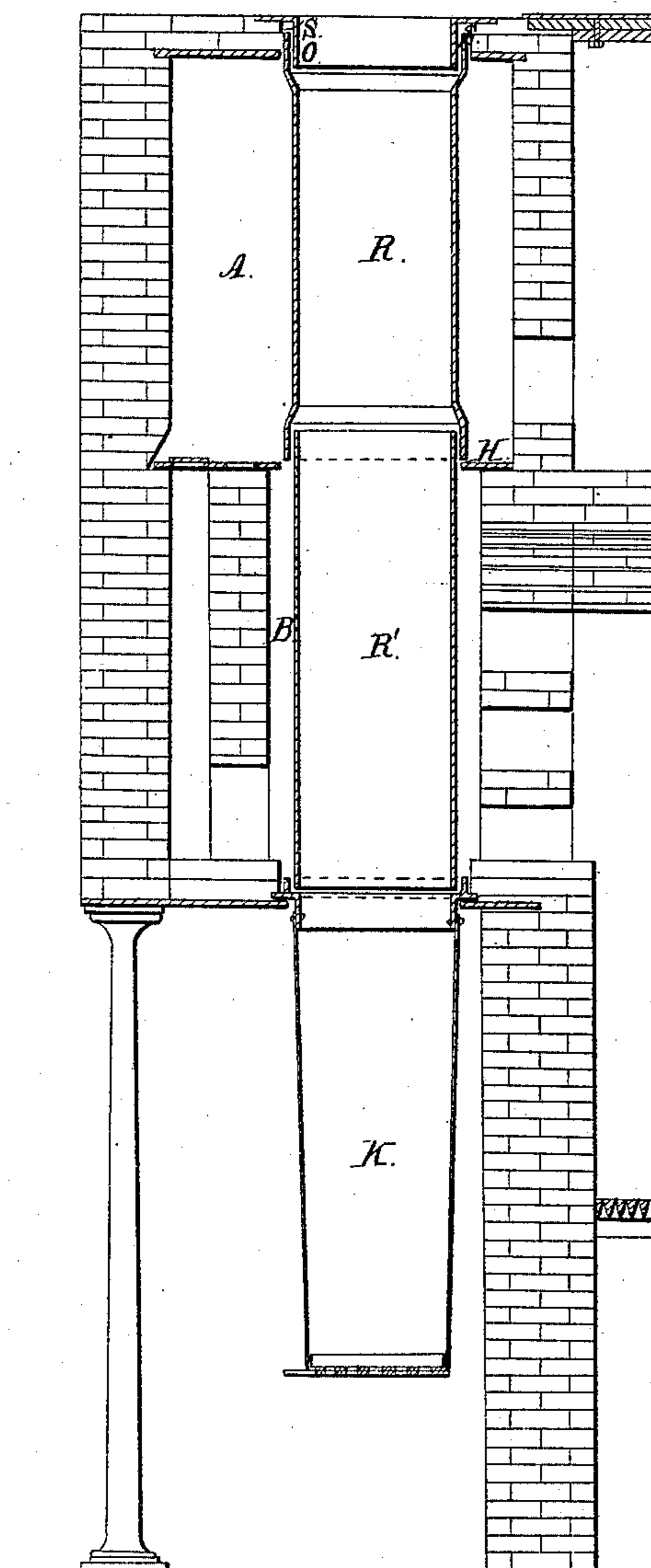


*E. P. Eastwick.*  
*Bone Black Kiln.*

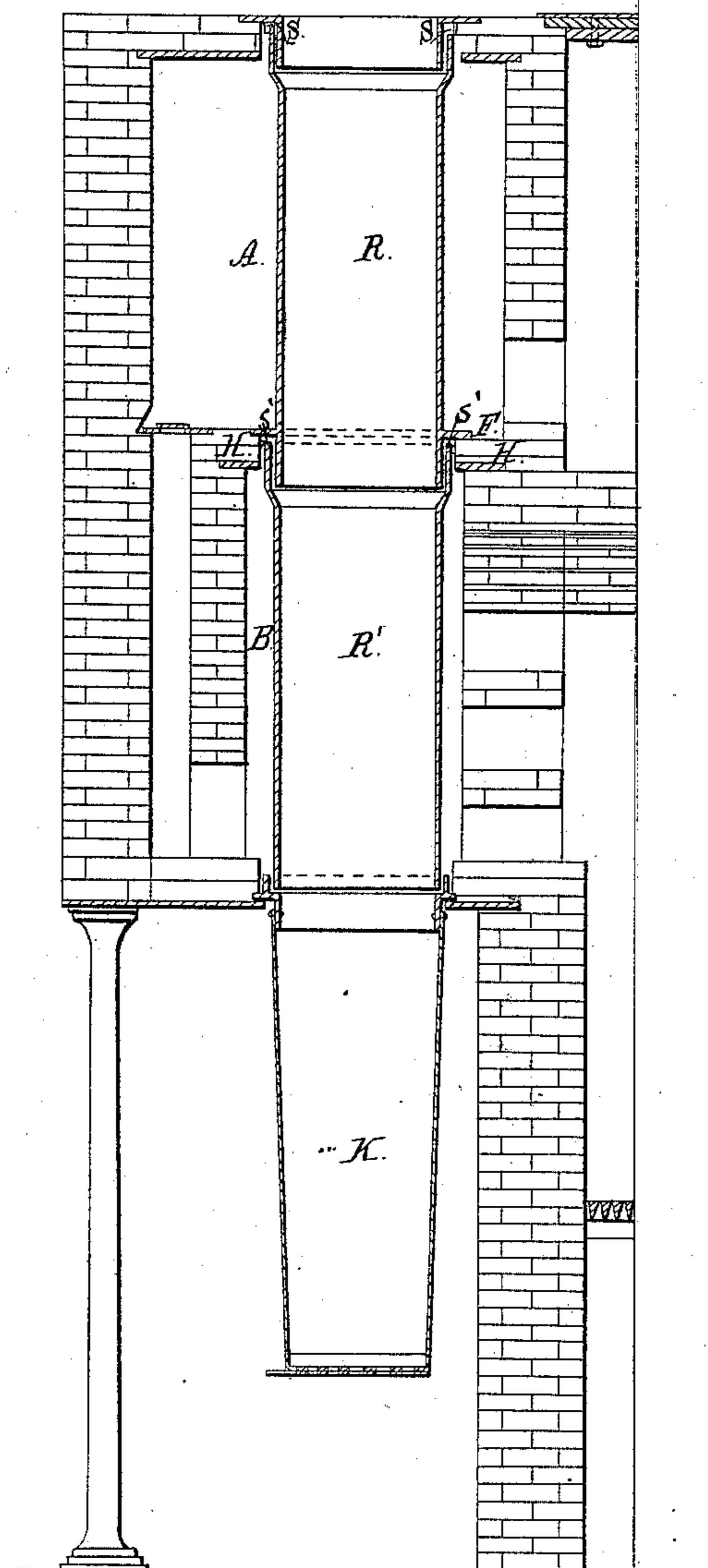
*N<sup>o</sup> 88,702.*

*Patented Apr. 6, 1869.*

*Fig. 1.*



*Fig. 2.*



*Witnesses.*

*Geo. S. Dresh*  
*Andrew Longacre*

*Inventor.*

*E. P. Eastwick*

# United States Patent Office.

EDWARD P. EASTWICK, OF BALTIMORE, MARYLAND.

Letters Patent No. 88,702, dated April 6, 1869.

## IMPROVED KILN FOR 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 of Baltimore, in the State of Maryland, have invented a new and useful Improvement in Bone-Black Kilns, or kilns for similar purposes.

My invention consists in the mode of supporting two or more vertical retorts, which, with the cooler below, form, on the inside, a continuous chamber in the bone-black kiln, or kiln for similar purposes, in such manner that each retort in the continuous chamber is independently supported from below, and is allowed a separate and independent expansion, as is herein substantially described and set forth.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same.

In the accompanying drawing—

Figure 1 represents a vertical section of one-half of a bone-black kiln, with an upper chamber, A, and lower chamber B, the former containing a series of upper retorts, one of which is represented by R, and the latter, a corresponding series of lower retorts, one of which is represented by R', with a corresponding series of coolers below, one of which is represented by K.

Figure 2 represents the lower retort, independently supported, and overlapping the lower end of the retort above it.

The lower retort R' rests vertically on the lower floor of the kiln, as seen in fig. 1, or other lower support, in such manner that its upper end extends up into and enters the mouth of the retort R, immediately above it, where it is allowed free expansion room, for which purpose, the retort above may be slightly bell-shaped at the bottom, or otherwise.

The upper retort R is sustained on the central support, which, in fig. 1, is represented by H, the floor of the upper chamber, so that its upper end extends up into and enters, as in the drawing, the mouth of the retort, immediately above it, or, when it is the top retort, it may enter the space S, left at the top of the kiln for its expansion. The upper retort, at the top of the kiln, may be bell-shaped, as seen in fig. 1. Thus, any number of vertical retorts may be used, one above the other.

Over this space S at the top of the kiln, the top plate, with neck O, should be inserted as a guard.

The cooler K, below, is independently supported, and may be attached in any of the well-known methods

which may be preferred. One mode is indicated in fig. 1.

The lower retort may extend around instead of into the mouth of the retort above it, as seen in fig. 2, where it expands into the space S', left for the purpose, in which case the upper retort is supported by a flange, F, or similar device. I do not prefer this method, however.

The spaces S and S', and around where the upper and lower retorts and coolers are connected, should be carefully luted and bricked around on the outside, and care should be taken throughout, to form as continuous a chamber as practicable, from the top of the upper retort, to the bottom of the cooler.

By the above-described arrangement, double-chambered kilns, with their vast saving of fuel, are rendered more practicable, as an independent expansion for each retort upward into the mouth of the retort above it, or into the space S or S', is provided for, which is not the case with double-chambered kilns as commonly used, and the disadvantages of one long retort, or, what is practically the same, two or three retorts fastened firmly and rigidly together, with the attendant communicated expansion and contortion from below, where the greater heat is sustained, and to which the length but adds a leverage, and no provision is made for the independent expansion of the retorts, are avoided, thus obviating the wear and tear incident to other double-chambered kilns, admitting of a cheaper construction, and rendering the kiln more durable and economical.

I do not claim the well-known method of inserting one pipe within another; but,

What I claim as my invention, and desire to secure by Letters Patent, is—

The mode of supporting two or more vertical retorts, which, with the cooler below, form, on the inside, a continuous chamber in the bone-black kiln, or kiln for similar purposes, in such manner that each retort in the continuous chamber is independently supported from below, and is allowed a separate and independent expansion, as is herein substantially described and set forth.

EDW. P. EASTWICK.

Witnesses:

ANDREW LONGACRE,  
GEO. S. WEST.