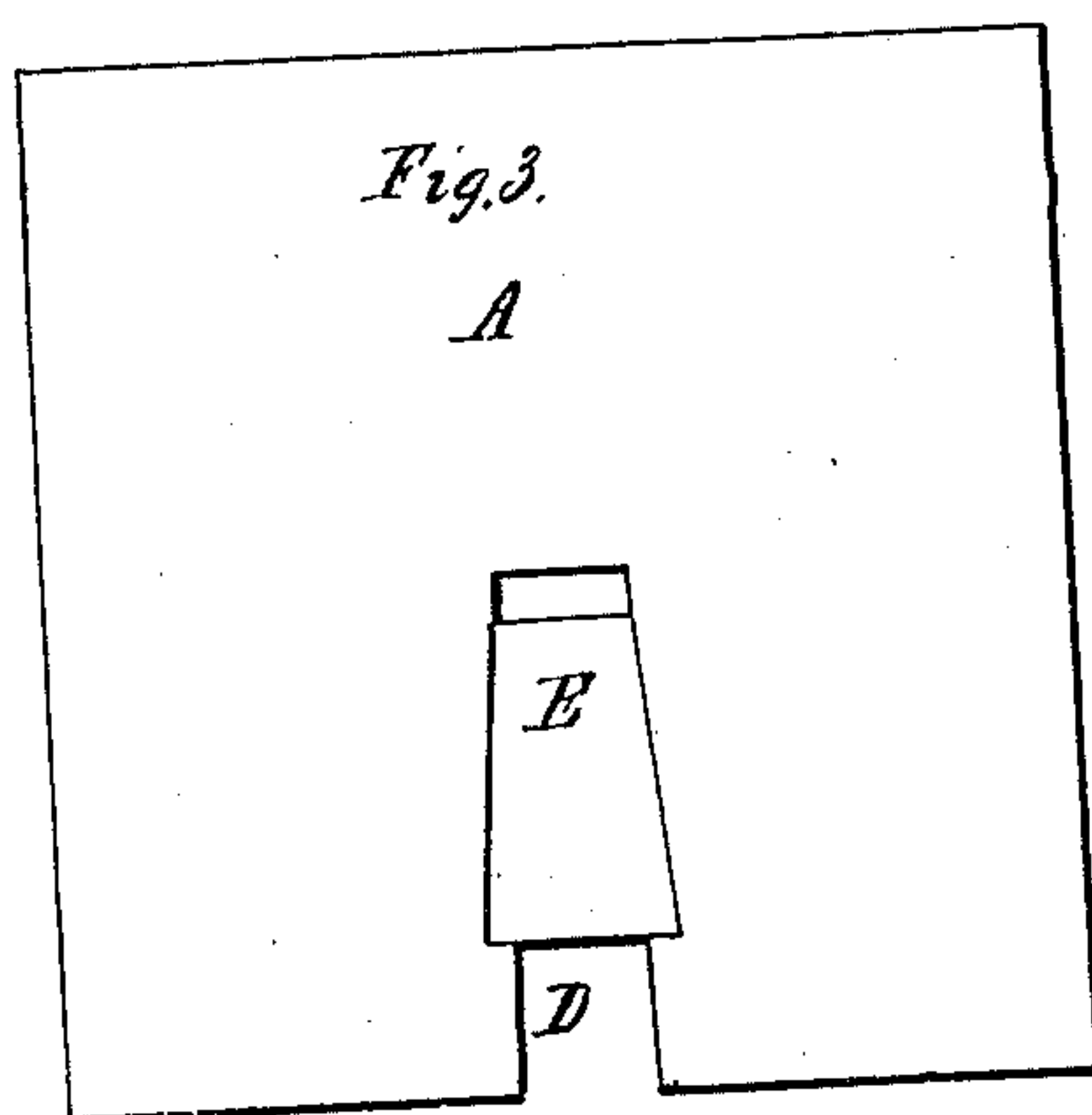
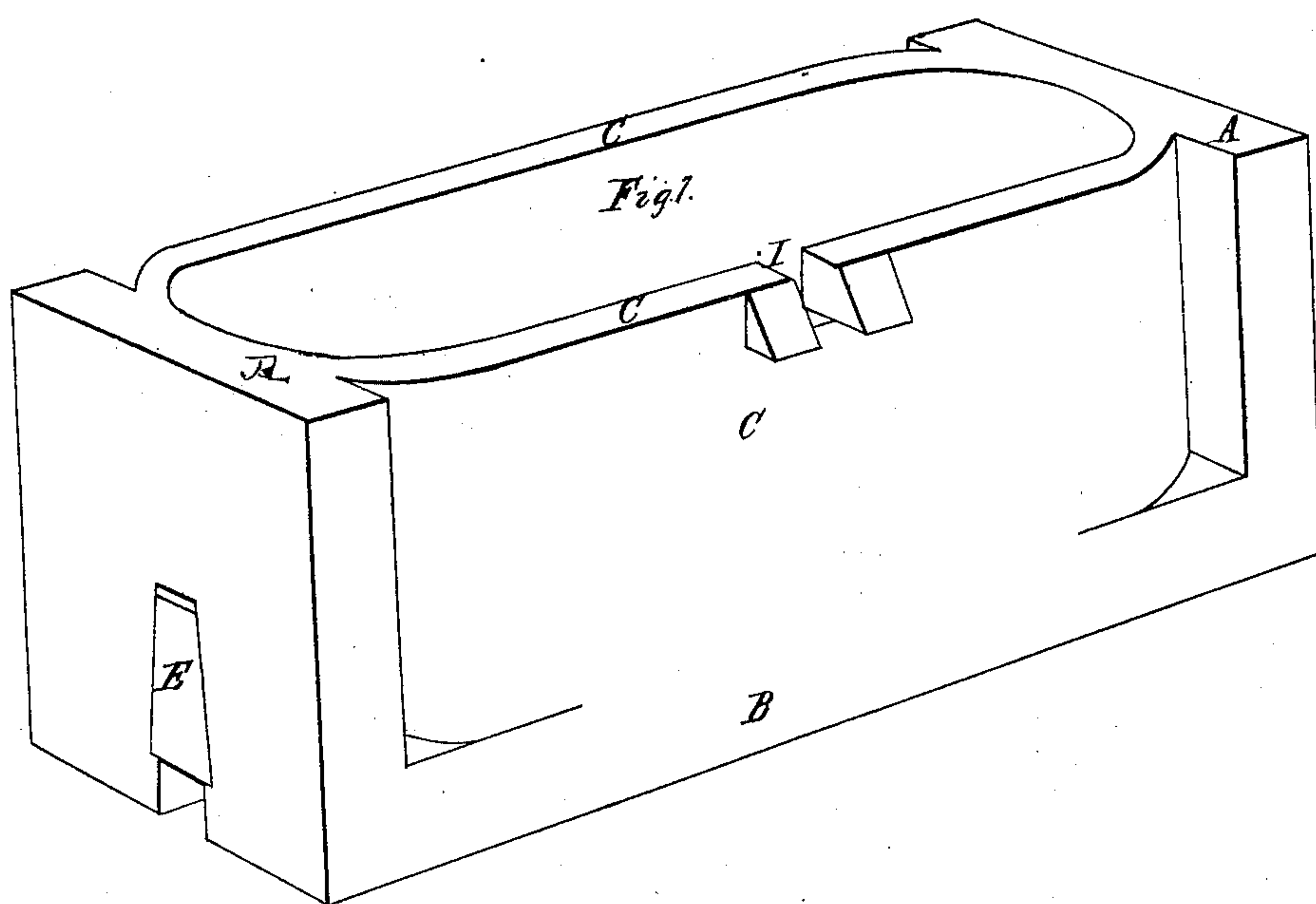


No. 8,319,

PATENTED AUG. 26, 1851.

S. BROWN.
LIMEKILN.

2 SHEETS—SHEET 1.



No. 8,319.

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S. BROWN.
LIMEKILN.

2 SHEETS—SHEET 2.

Fig. 2.

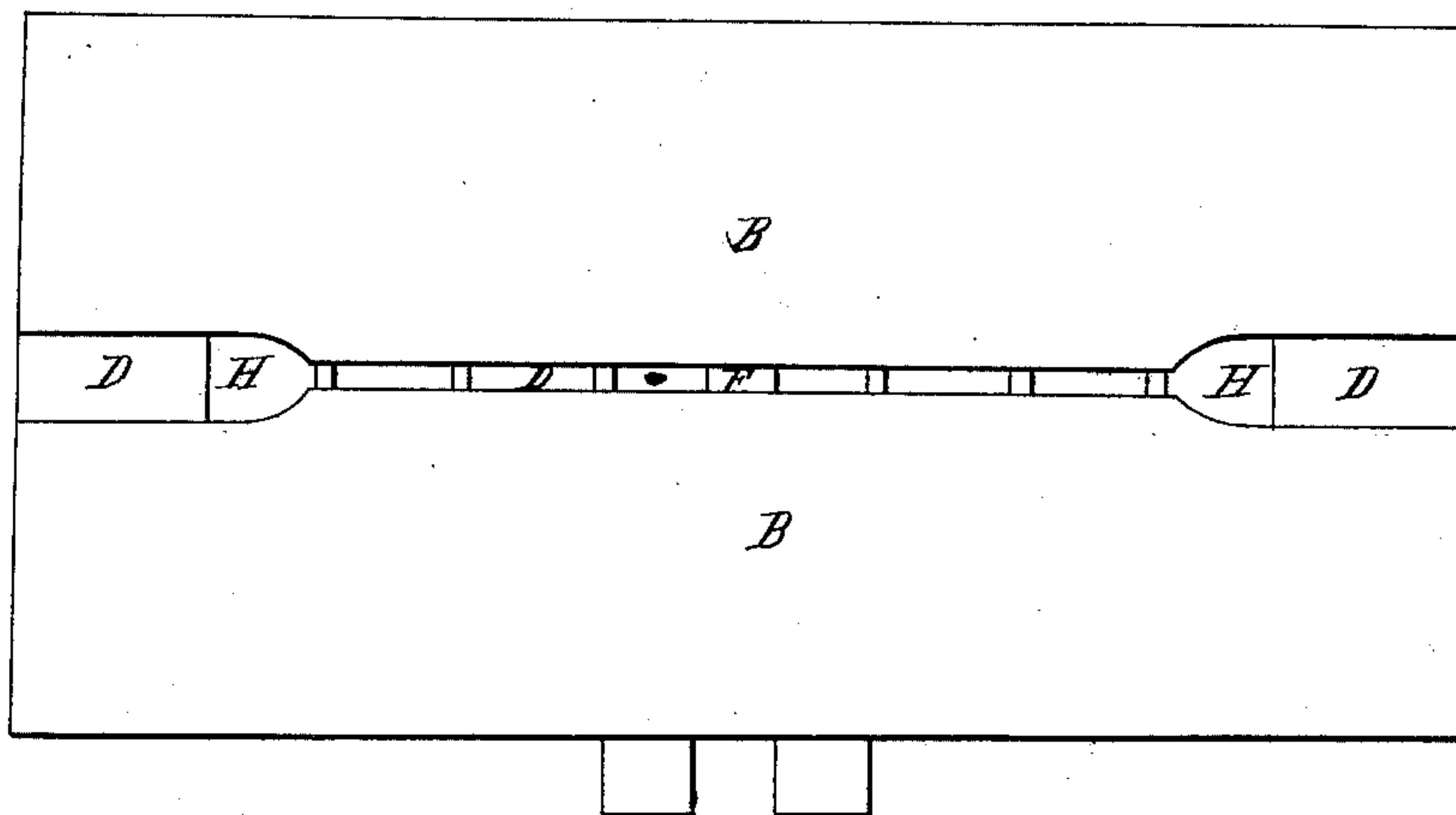
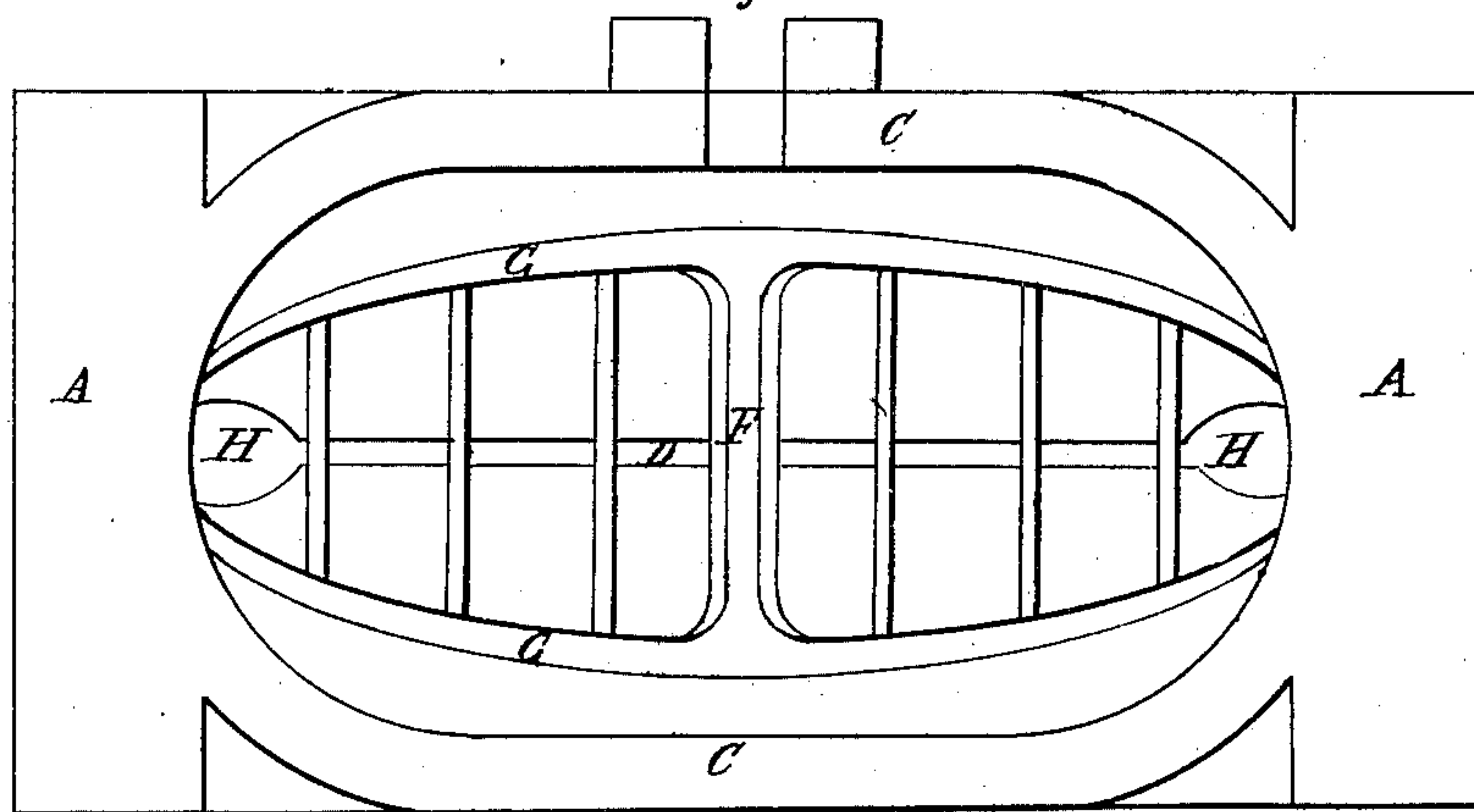


Fig. 4.



UNITED STATES PATENT OFFICE.

SAML. BROWN, OF BERWICK TOWNSHIP, ADAMS COUNTY, PENNSYLVANIA.

LIMEKILN.

Specification of Letters Patent No. 8,319, dated August 26, 1851.

To all whom it may concern:

Be it known that I, SAMUEL BROWN, of the township of Berwick, in the county of Adams and State of Pennsylvania, have invented certain new and useful Improvements in Limekilns; 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 a part thereof, in which—

Figure 1, is a perspective view of the kiln complete, Fig. 2, is a bottom view, Fig. 3, is an end view, and Fig. 4, a top view of the same.

Similar letters in the several figures represent like parts.

The nature of my invention consists, first, in so forming the fire space in lime kilns, which are fired at both ends, as to rise gradually from the center of the kiln, to points above the eyes in each end thereof, for the purpose of so distributing the draft and heat, as to secure the even burning of the same; second, dividing the fire space by a partition wall in the center, into two chambers, for the purpose of shifting and regulating the heat required in either end of the kiln, for the more evenly burning of the same; third, combining with the fire chambers, and partition wall, the ash pits at each end of the kiln, connected by a narrow flue, so that when the eye at either end may be closed for shifting the heat, sufficient draft will be kept up from the opposite end of the flue to allow the fire to burn moderately, without being entirely extinguished.

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

The base of the kiln is of an elliptical form, having a flue D, running through the center thereof its entire length, and of a size suitable to the size of the kiln, and which flue terminates at each end in an ash pit H, so that when the eye at either end is closed or partially closed for shifting the heat, sufficient draft will be kept up from the opposite end to allow the fire to burn moderately. Upon this base or platform B, I build the side walls C; and at each end the breast walls A which are run up with, and to the same height of, the side walls, said breast walls being in length, equal to the greatest width of the kiln. The side and

breast walls may be banked up with earth on the outside, if preferred, or the kiln may be placed in a trench cut through a slight undulation of the ground, or against a side hill.

Where the flue D, opens out through the breast-walls A, I construct the eyes E, which are gradually drawn in toward their tops, having suitable offsets therein, on which to rest the stone, when it is found necessary to close, or partially close up said eyes, leaving always space enough at top to throw in fuel when necessary. By closing up of the eye at either end the heat may be regulated, so as to burn faster at one end than at the other, and which will be found necessary in the burning of almost every kiln, so as to burn all alike and leave no core or cinder.

Across the center of the kiln, I build a partition or pillar F, of suitable height, taking care not to choke the flue underneath it, and around the inside of the kiln, I construct a bench G, upon which and the pillar F, the arches rest, and are burned. The benches G, rise gradually from the level of the partition wall F, to points above the tops of the eyes at each end, for the purpose of so distributing the draft and heat, as to secure the even burning of the stone.

Suitable bars should be placed in the bottom of the kiln, which may be arranged for the burning of either wood or coal, and which should be so constructed as to prevent the fuel from choking up the flue. A "bushel-hole" I, may also be left in the side of the kiln, to facilitate the putting in of the stone, or the taking out of the lime.

The partition wall F, which divides the fire space into two chambers, is intended to aid in shifting the heat and regulating it in either chamber as may be required, so as to insure the more evenly burning of the stone.

I fire my kiln at both ends at the same time. The draft is thus much stronger—the heat is applied much more generally and regularly throughout, and may at any time be increased or diminished at either end so as to burn faster or slower and equalize the burning of the stone. Much less fuel is required for burning the same amount of stone, than in ordinary kilns, for the reason that the heat can be so economized as to only use it where actually required. A kiln constructed after my plan, burns the same quan-

tity as the ordinary kiln, in about one half the time. Instead of three days usually consumed, I can burn my kiln in thirty-six hours. The cost of construction is small, as from its shape, it can be built on flat ground, or where a slight hillock presents itself, through or alongside of which it may be placed. It is very convenient for filling, feeding and for removing the lime when burned. It requires no more hands than a common kiln, and yet half the time is saved. But one of its greatest excellencies, is that I can manage the heat and apply it front or back so as to insure the burning of the stone evenly and regularly, and without leaving any core or cinder.

Having thus fully described my invention, what I claim therein as new, and desire to secure by Letters Patent, is—

20 1. So forming the fire space in lime kilns, which are fired at both ends, as to rise gradually, from the center of the kiln, to points above the eyes in each end thereof,

substantially as herein described, for the purpose of so distributing the draft and heat, as to secure the even burning of the stone. 25

2. I claim dividing the fire space by a partition wall in the center into two chambers, for the purpose of shifting and regulating the heat required in either end of the kiln, substantially as herein described, for the more evenly burning of the stone. 30

3. I claim in combination with the fire chambers, and partition wall, the ash pits at each end of the kiln, connected by a narrow flue, so that when the eye at either end may be closed for shifting the heat, sufficient draft will be kept up from the opposite end of the flue to allow the fire to burn moderately, without being entirely extinguished as herein fully set forth. 40

SAMUEL BROWN.

Witnesses:

D. A. BUEHLER,
D. McCONAUGHY.