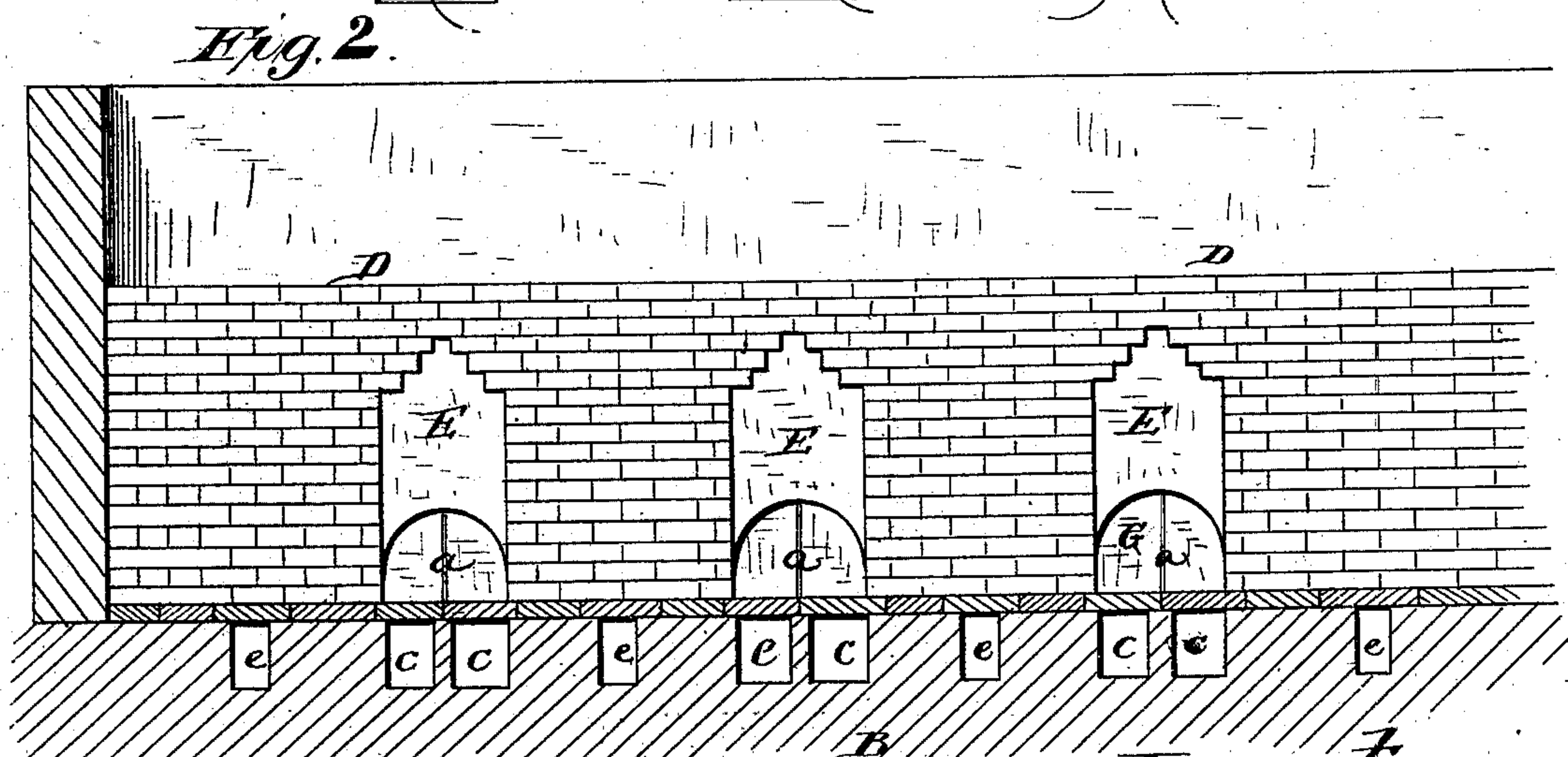
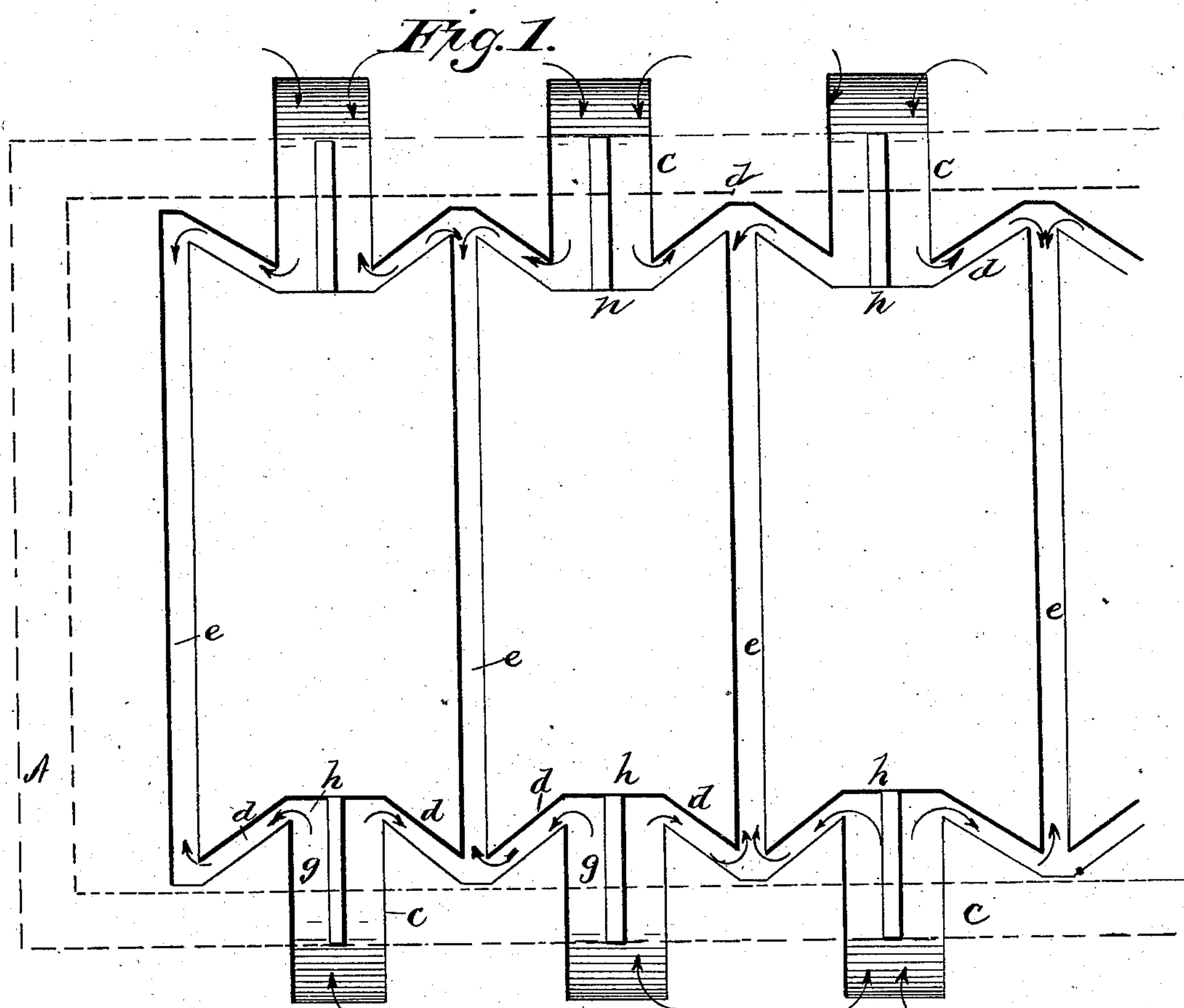


(No Model.)

J. C. GIBSON.
Brick Kiln.

No. 237,265.

Patented Feb. 1, 1881.



Witnesses.
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UNITED STATES PATENT OFFICE.

JOHN C. GIBSON, OF RICHMOND, VIRGINIA.

BRICK-KILN.

SPECIFICATION forming part of Letters Patent No. 237,265, dated February 1, 1881.

Application filed November 30, 1880. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. GIBSON, of Richmond, in the county of Henrico, and in the State of Virginia, have invented certain
5 new and useful Improvements in Brick-Kilns; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked
10 thereon, making a part of this specification.

This invention is designed to provide a series of permanent draft passages or flues in a brick-kiln, whereby air may be admitted to the interior to support combustion in such
15 manner that the quantity can be readily controlled, so as to enable the burner or superintendent to regulate the supply, and the consequent intensity of the combustion, according to the nature of the clay and the fuel employed, and the condition of the weather.

Heretofore draft or air passages or flues have been formed in the body of the kiln, during the setting of the bricks, directly by means of the bricks or by means of permanent benches
25 constructed of fire-clay, iron, or other suitable material, in all of which cold air was admitted to the heated brick, causing great loss by breakage, and no sufficient manner of controlling the admission of air was possible with
30 such construction. Moreover, such construction has proved further objectionable, for the reason that effective room is taken up in the kiln.

I have found by experience that to properly
35 burn the bricks in kilns constructed with flues the air should be excluded from the flues for from twenty-four to fifty-six hours at the start, according to the condition of the green brick, and to the closeness with which they are set.

40 It is the object of my invention to obviate the above-mentioned difficulties and provide for regulating the draft so as to exclude the air when necessary; and these objects I attain by the apparatus and devices illustrated in the
45 accompanying drawings, in which—

Figure 1 represents a plan view of the ground upon which the kiln is to be built, showing my improved system of flues or air-passages; Fig. 2, a vertical sectional view of
50 the kiln and ground upon which it stands, also showing the flues.

The letter A indicates the walls of the kiln, which are constructed in the ordinary manner; and B, the floor, constructed of brick-work, as usual.

55 The letters C *d e* indicate the air flues or passages, which form the essential feature of my invention. These flues are formed directly in the ground, below the floor, the ground being properly beveled off and the flues constructed therein. These flues C commence on
60 each side of the kiln, a short distance outside of the same, and extend inward directly below the kiln-eyes *a*. The said flues at these points are of a width about equal to the width
65 of the eyes, and are divided by longitudinal partitions *g*, which commence at the mouths of said flues and extend backward therein to the walls *h*, where they terminate, forming
70 double passages leading to the smaller flues *d*, branching to each side, and connecting with the transverse flues *e*.

The bricks are set in the kiln in the ordinary manner, as indicated by the letter D, forming the usual fire-arches, E, as indicated in Fig. 2
75 of the drawings.

The kiln-eyes or fuel-openings are provided with doors G, by means of which the direct draft into the same may be regulated and controlled.

80 It will be seen that the bricks forming the floors of the fire-chambers rest at their joints on the partitions *g*. These bricks, as they contract under the influence of the heat, widen the joints, so as to admit air from the entrance-
85 flues directly to the fire-chambers, to assist in supporting combustion. The air courses around the flues *d* and *e*, thus becoming heated, so that as it permeates upward and meets the unconsumed products of combustion in the
90 kiln it will assist the combustion of the same, economizing fuel to a great extent.

By regulating the draft at the mouth of air-passages or flues, it is evident that the air admitted to the kiln may pass entirely from the
95 flues C into said kiln, or partly through the kiln-eyes, thus putting the operation of burning under complete control of the superintendent.

When the "load" or charge is burned it is
100 removed, in the ordinary manner, by means of wagons, and to prevent injury to the floor

as the wagons are backed in to be loaded the said floor may be protected by a covering of boards or otherwise. In case of dirt, ashes, or cinders entering the flues, it is only necessary, to remove them, to take up the course of bricks directly over the flues, when the said flues can be swept out without disturbing the remaining portions of the floor.

After the bricks are all removed from the kiln it is ready for recharging without the reconstruction of the flues.

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

1. A brick-kiln built upon a level bed, having suitable air-passages leading from the outside into and transversely across said bed, the said kiln being provided with a continuous

level floor to support the bricks, substantially as specified.

2. A brick-kiln constructed with a series of flues formed in a bed supporting a flooring below said bed, the flues leading from the outside inwardly, and branching at angles and transversely across the bed, whereby the air may be heated before coming into contact with the bricks, and the draft regulated and controlled until the kiln is in proper condition for its admission, substantially as specified.

In testimony that I claim the foregoing I have hereunto set my hand this 29th day of October, 1880.

JNO. C. GIBSON.

Witnesses:

H. AUBREY TOULMIN,
BAILEY DAVIS.