

J. W. Andrews,

Brick Kiln,

N^o 3,016,

Patented Mar. 21, 1843

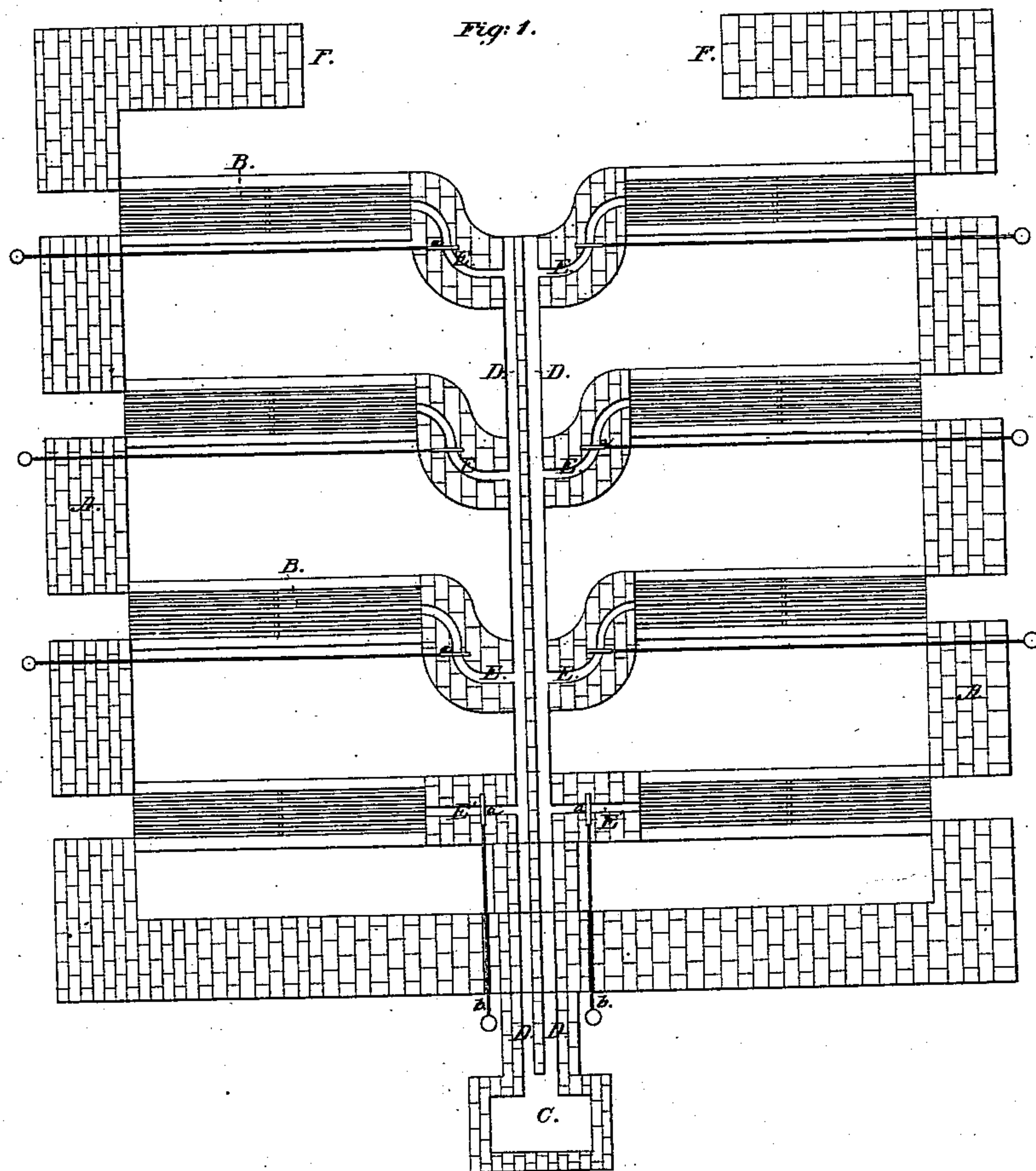
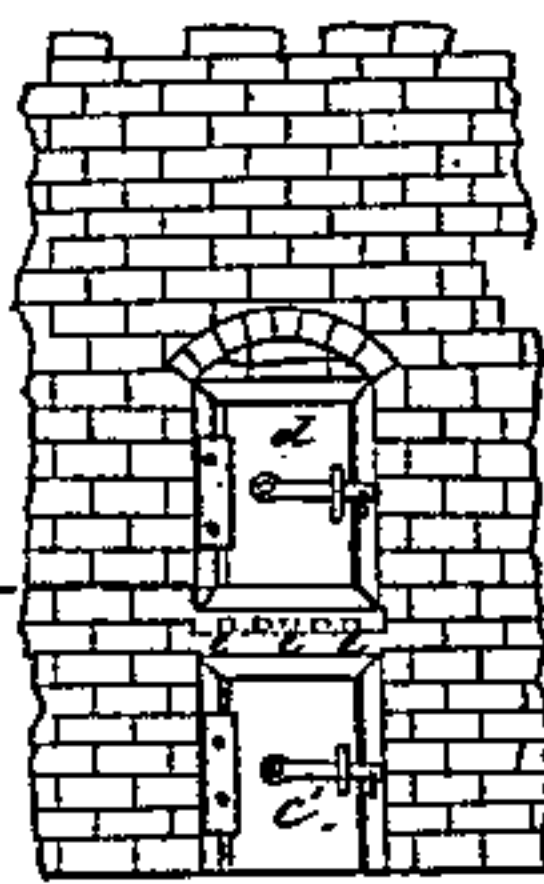


Fig. 2.



UNITED STATES PATENT OFFICE.

JOEL W. ANDREWS, OF NORRISTOWN, PENNSYLVANIA.

BURNING BRICKS.

Specification of Letters Patent No. 3,016, dated March 21, 1843.

To all whom it may concern:

Be it known that I, JOEL W. ANDREWS, of Norristown, in the county of Montgomery and State of Pennsylvania, have invented certain new and useful improvements in the manner of burning bricks, which I effect by means of anthracite as fuel in a kiln constructed especially for that purpose; and I do hereby declare that the following is a full and exact description thereof.

I construct a kiln the walls of which are similar to those now in use; and under the floor of this kiln I form air flues leading into air-chambers, or ash-pits, under the grate bars, upon which the fuel is to be placed. The air necessary to combustion, I force into these flues by means of a fan wheel, or other blowing apparatus; the manner in which the respective parts are arranged and governed is represented in the accompanying drawing, in which A, A, Figure 1, are the walls of the kiln, as seen on a horizontal plane, on a level, or nearly so, with the floor of the kiln.

B, B, are the grate bars upon which the fuel is to be placed, and below each of these, there is an air-chamber, or ash-pit, furnished with close fitting, iron doors, *c'* Fig. 2, as are also the fire holes, *d*, above them, through which the fuel is supplied.

C, is an air-chamber, into which wind may be blown by means of a wind-wheel, or otherwise; and from this chamber extend two longitudinal flues, D, D, which are carried along the kiln, to the farthest ash-pit; and are separated from each other by a partition wall; these flues may be about eight inches square, and the bottoms of them may be about two feet below the floor of the kiln; in the drawings, they are shown as removed. From these two flues, there proceed lateral flues, E, E, which may be six inches square, and serve to supply air to the respective fires. Each of these lateral flues is furnished with a damper, as at *a*, *a*. The two flues, E', E', may be opened, or closed, by the rods, *b*, *b*, at the back of the kiln. The other lateral flues, I construct in such manner as that the rods *c*, *c*, which operate the dampers in them, shall pass out at the sides of the kiln where the fire doors are situated; and, in fact, the whole of them may be made so to pass out. The opening F, F, at the back of the kiln, is for filling it, and for removing the brick; and is to be closed in the usual manner, when the bricks are to be fired.

In filling my kiln, I turn a double arch over each of the fire holes, the intensity of the heat in the immediate vicinity of the fire rendering this precaution necessary. In my first experiments, I placed the grate bars near to each other in order to use the smaller kind of coal; but I now employ coal as large as is ordinarily used in grates, and find it good economy so to do, as the fire is easily managed, and the heat readily diffused throughout the kiln, producing an economy in the cost of fuel equal to fifty per cent., when compared with wood, and a saving of full one half of the time required for burning with the latter fuel.

The fire holes, I build four feet apart, and make them ten inches wide by sixteen high, as are, also, the holes for the ash-pit doors. The grate bars, I place about three inches below the bottom of the doors of the fire-holes, as shown by the dotted lines *e*, *e*, Fig. 2, and the same distance lower than the floor of the kiln. The grate bars extend five feet into the kiln, the latter being about sixteen feet wide, thus allowing a distance of about six feet between their inner ends. The ash-pit which extends under the grate bars, I have made one foot wide, and two feet deep.

In setting the bricks in the kiln, the arches are made to extend entirely through, from side to side, and the bricks are placed somewhat farther apart than when wood is used as fuel. The number of fire holes may, of course, be varied, as may, also, the dimensions of the other parts, without thereby changing the principle of action.

Having thus fully set forth the manner in which I construct, and use, my kiln for burning bricks by means of anthracite coal, what I claim therein as new, and desire to secure by Letters Patent, is—

The particular arrangement and combination of the flues, dampers, and fire compartments therein; there being a double flue along the center, from which lateral flues branch off in a curved, or angular, manner, so as to admit of the employment of dampers in each, in the manner herein represented, and made known.

JOEL W. ANDREWS.

Witnesses:

THOS. P. JONES,
JOHN HITE.