(No Model.)

W. BARCKLEY.

Brick Kiln.

No. 237,945. Patented Feb. 22, 1881.

Fig. 3.

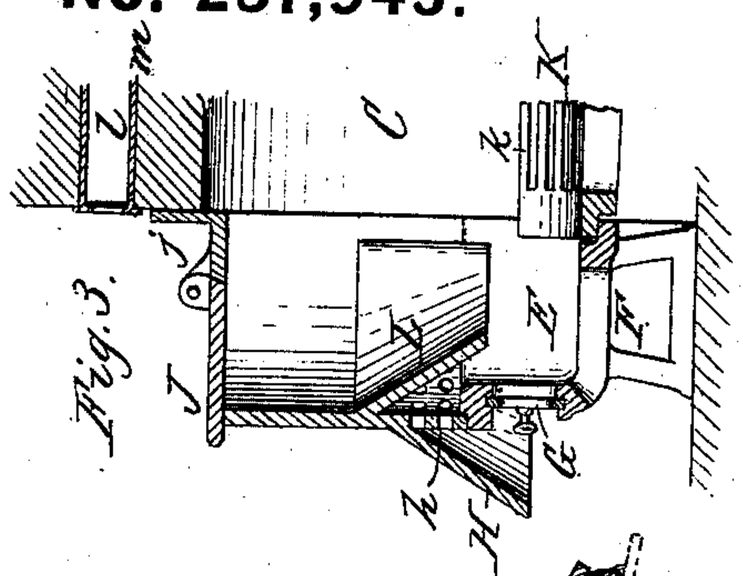

Fig. 1.

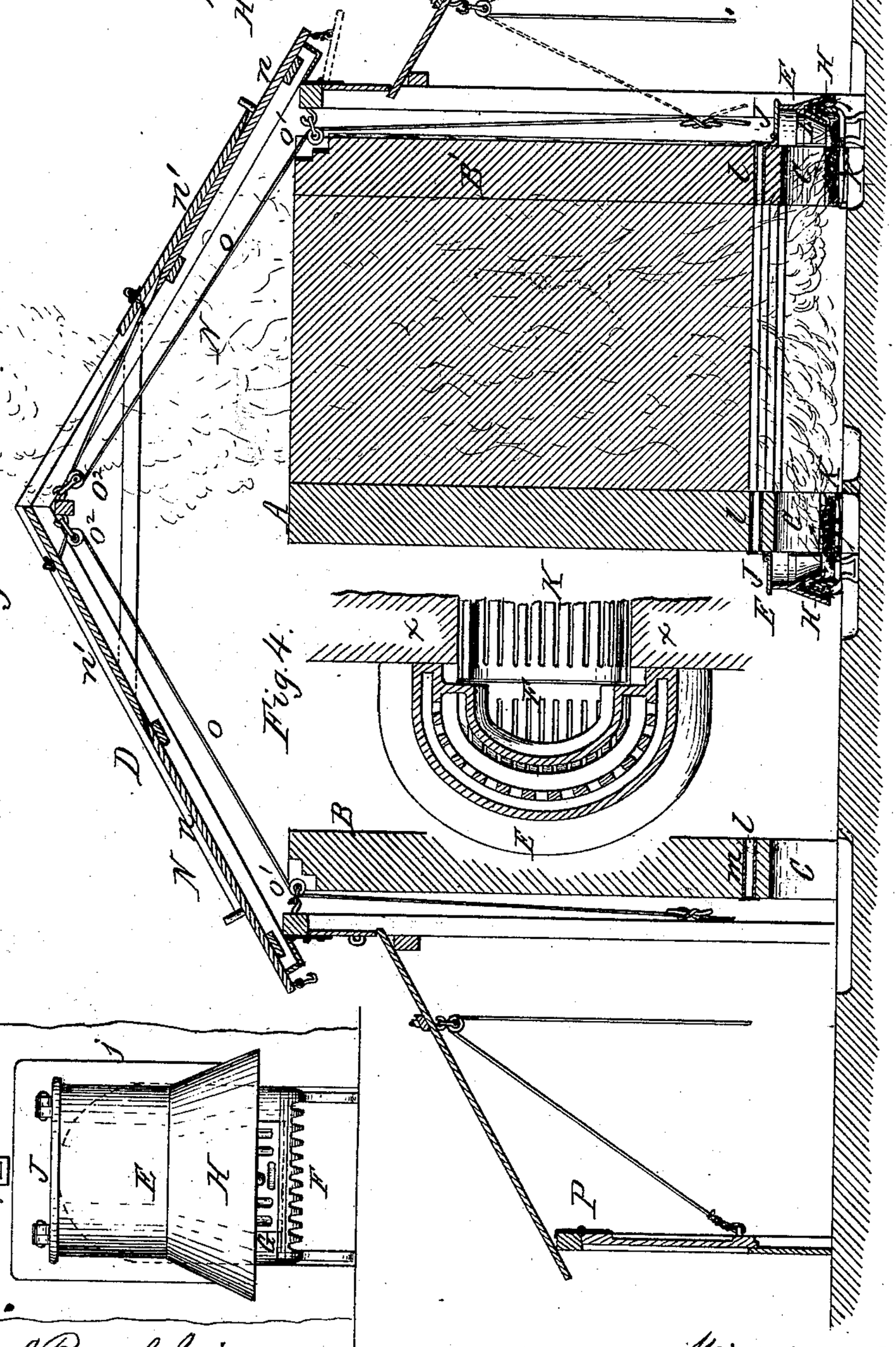

Fig. 4.

Fig. 2.

Fig. 5.

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UNITED STATES PATENT OFFICE.

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BRICK-KILN.

SPECIFICATION forming part of Letters Patent No. 237,945, dated February 22, 1881.

Application filed November 11, 1880. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM BARCKLEY, of the city of Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Brick-Kilns, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates more particularly to that class of brick-kilns which are composed of permanent walls, between which the green brick is placed for the purpose of burning the same.

The object of my invention is to reduce the cost of such kilns and the space which they occupy, and to so construct the same that they can be conveniently and economically charged and burned.

My invention consists, first, of a kiln composed of a central wall and two outside walls arranged on opposite sides of the central wall, the fire-openings being formed in all three walls, and the central wall being adapted to be used alternately with one or the other of the outside walls in forming a kiln, whereby the central wall is made to do duty for two kilns, and the space between the central wall and one of the outside walls can be filled and burned, while the space between the other outside wall and the central wall is being emptied and refilled; also, of the peculiar construction of the furnace, whereby a complete combustion of the fuel is produced.

In the accompanying drawings, Figure 1 is a sectional elevation of my improved brick-kiln. Fig. 2 is a front elevation of the furnace on an enlarged scale. Fig. 3 is a longitudinal section, and Fig. 4 a horizontal section thereof. Fig. 5 is a cross-section of the grate in line *x x*, Fig. 4.

Like letters of reference refer to like parts in the several figures.

A represents the central wall of the kiln, and B B′ the two side walls, arranged parallel with the central wall, A, at a suitable distance from the latter, to permit arches of the proper length to be placed between the center wall and each of the side walls.

C represents openings formed in the walls A B B′ at proper intervals for admitting the fire to the arches.

D represents a shed, covering and inclosing the walls A B B′ and a sufficient space on the outer side of each side wall to permit the handling of the bricks and the attending of the kilns under cover.

E represents a furnace, adapted to be placed against the outer side of each opening C in the walls A B B′.

F represents the grate of the furnace, and G a register arranged in the front wall of the furnace, above the grate, for admitting air to the burning fuel.

h represents openings formed in the front wall of the furnace, above the register G, for admitting air above the fuel; and H is a hood, which projects over the openings *h* on the outer side of the furnace, and protects the same and directs the current of warm air, which ascends along the front wall of the furnace to the openings *h*.

L is a similar deflecting plate or hood, projecting downwardly and inwardly from above the openings *h*, and directing the air entering through said openings downward upon the burning fuel.

J is a cover, hinged to the top plate of the furnace, so that by raising the cover fuel can be introduced upon the grate. The rear side of the furnace is left open, and the side and top walls of the furnace are provided with a flange, *j*, which fits against the outer side of the wall, around the opening C in the same, thereby placing the furnace in direct communication with the opening C and the interior of the arch built against the inner side of the same.

K is an inward continuation of the grate F, arranged within the opening C of the respective wall, and preferably having its side portions *k* curved upward to admit air from below through the perforations of the side portions above the fuel.

By the above-described construction of the furnace the fuel is supplied with the proper quantity of air to effect a complete combustion, and the quantity of fuel required in burning the kiln is thereby greatly reduced.

l is an opening formed in each of the walls A B B′, above each of the fire-openings C, for the purpose of enabling the operator to observe the condition of the arches as to whether the proper degree of heat is maintained therein.

m is a frame, of galvanized iron or other suitable material, fitted in each opening *l*, and closed at its outer end by a pane of mica or similar transparent material, whereby the condition of the arch is rendered visible without admitting the exterior cold air to the arch.

N represents that portion of the roof of the shed which covers the walls A B B′. Each side of this roof is composed of a lower stationary portion, *n*, and an upper movable portion, *n′*, which can be lowered, so as to form an opening near the apex of the roof for the escape of the steam and products of combustion. As shown in the drawings, the upper movable portions of the roof are arranged to slide down over the lower stationary portions, *n*.

o is a rope, running over pulleys *o′* *o*² to the upper end of each movable roof portion *n′*, and terminating with its lower end in convenient reach of the operator. By pulling on the rope *o* the upper movable portion, *n′*, is raised, so as to close the opening at the top of the roof, and by releasing the rope *o* the portion *n′* is permitted to slide down over the lower stationary portion, *n*. If the pitch of the roof is such that the movable portions thereof will not descend by gravity, another rope may be connected with said portions for drawing the same down.

The portions P and P′ of the side walls of the shed are hinged so that they can be opened or closed, as may be desired.

In operating my improved brick-kiln only one side is burned at a time—that is, the space between the central wall, A, and one of the side walls, B B′, is filled with green brick, and the furnaces and grates are applied in the manner represented in the drawings, so as to burn this part of the kiln. While the burning of this part of the kiln takes place the green brick is being built up against the inner side of the other side wall, B′, until the green brick approaches the central wall so closely that no more green brick can be placed without interfering with the movements of the workmen on that side of the central wall, A, when the operation of laying green brick is stopped. When the burning of the kiln is completed the furnaces are removed from the central wall, A, and the remaining space between the green brick and the central wall is filled with green brick, while at the same time the burned brick on the opposite side of the central wall is removed. As soon as this is accomplished the furnaces are placed against the openings C of the central wall, on the opposite side thereof, and the furnaces which were used in the wall B are applied to the wall B′ when the kiln is ready for burning. In this manner room and expense is saved, as the central wall answers for both kilns, and the time required for charging the kiln with green brick and removing the burned brick is considerably shortened.

I claim as my invention—

1. In a brick-kiln, the combination, with a central wall, A, of two walls, B B′, arranged on opposite sides of the central wall, and fire-openings C, formed in the walls A B B′, the central wall being adapted to be used alternately in connection with one or the other of the walls B B′ in forming a kiln, substantially as set forth.

2. In a brick-kiln, the combination, with a central wall, A, and two walls, B B′, arranged on opposite sides thereof, of fire-openings C, formed in the walls A B B′, and removable furnaces E, substantially as set forth.

3. The furnace E, having a grate, F, air-inlets *h*, arranged in the wall of the furnace above the grate, and an interior deflecting-plate, L, whereby the air is directed downward upon the fuel, substantially as set forth.

4. The furnace E, constructed with a grate, F, a register, G, air-inlets *h*, an exterior hood, H, and an interior deflecting-plate, L, substantially as set forth.

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Witnesses:

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