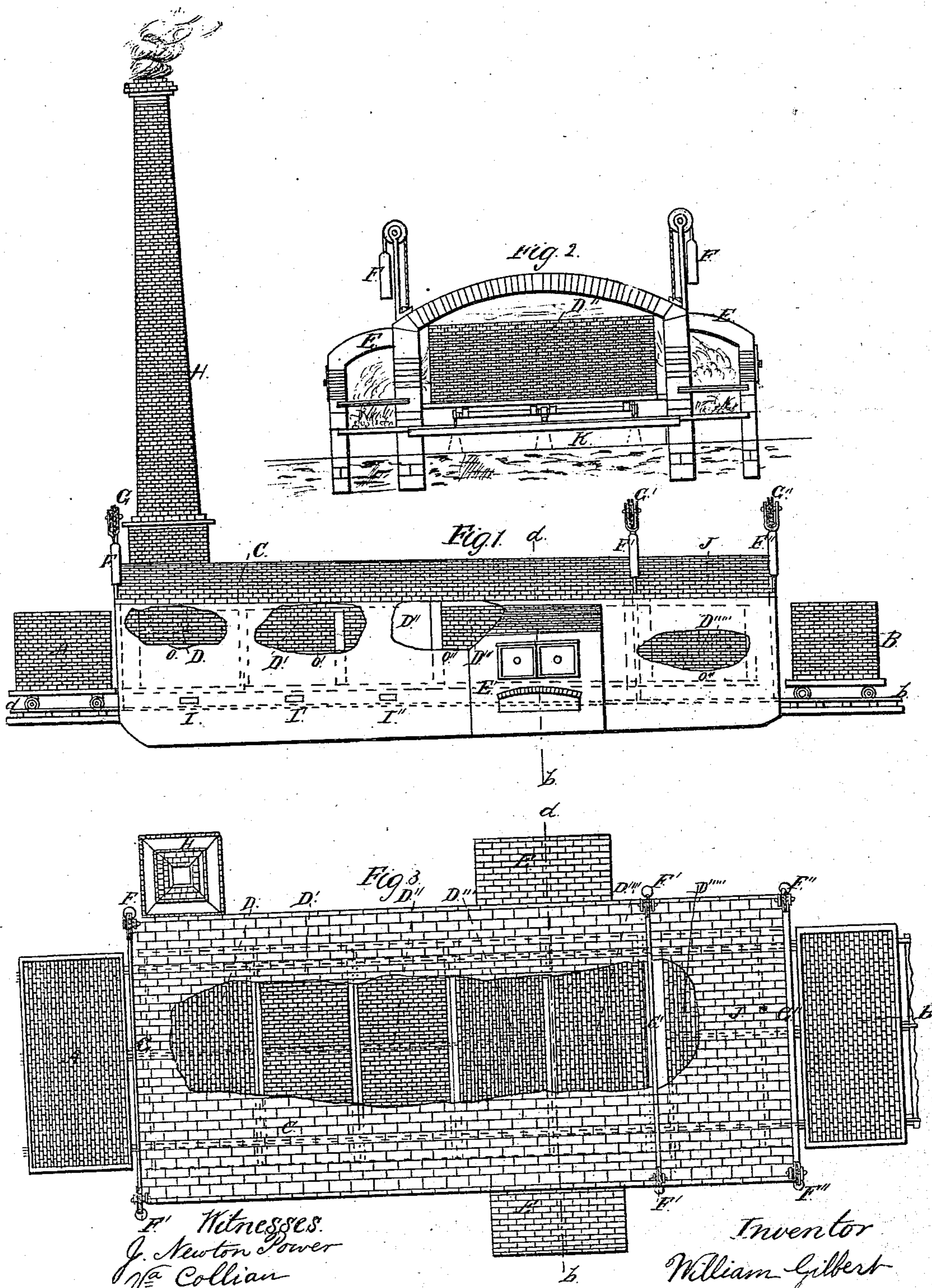


W. GILBERT
BRICK KILN.

No. 82,511.

Patented Sept. 29, 1868.



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WILLIAM GILBERT, OF DETROIT, MICHIGAN.

Letters Patent No. 82,511, dated September 29, 1868.

IMPROVED BRICK-KILN.

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, WILLIAM GILBERT, of Detroit, in the county of Wayne, in the State of Michigan, have invented a new and improved Perpetual Brick-Kiln; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists in a new apparatus for burning bricks, which will permit the work of loading perpetually the bricks at one end of the apparatus and unloading at the other, and without being obliged to stop the fires.

Figure 1 is an elevation and side view of the kiln.

A is a carriage, loaded with bricks to be burned.

B is another carriage, with burned bricks, after being through the furnace, C.

D D' D'' D''' are carriages loaded with bricks during the operation of burning (shown through the holes O O' O'' O''').

E is a side view of one of the furnaces.

G G' G'' are three gates.

F F' F'' are counter-weights for raising them.

H is the chimney, for the escape of smoke after combustion.

I I' I'' are openings, to let the air from outside the furnace pass into the same underneath the carriages.

J is the cooling-room.

Figure 2 is a section through the two furnaces, as shown in fig. 1 by the section-line A B, and in Figure 3, also by section-line A B.

D'' is one of the carriages loaded with bricks.

K is a tank, with water in it, to cool the plates supporting the railroad.

Figure 3 is a plan of the apparatus, in which the figures are the same as in figs. 1 and 2.

To enable those skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

The same letters represent the same pieces in the different figures.

Fig. 1 represents a side view of the furnace in operation. This furnace is of a sufficient length to contain several carriages similar to those represented in A D B, and the railroad, which is inside, is inclined from *a* to *l*, in order to carry the carriages through the furnace.

The furnace is closed at both ends by two hanging-doors, G G'', counterbalanced by means of counter-weights. It is also divided into two apartments, of different dimensions, by means of hanging doors, G', counterbalanced as the others by the weights F' F'.

In the largest apartment, between the doors G and G', the operation of burning goes on gradually.

The flames traverse the furnace the whole length from D''' to D. The smoke escapes by the chimney, which is at the extremity.

I call the smaller space, which is between G' and G'', the cooling-room.

Operation of the Furnace.

The fires being lighted in the furnaces, the bricks to be burned are loaded on the carriage A, which is run out of the furnace; then, the door G being raised, the carriage is pushed into the entrance of the furnace, and takes the place marked by the letter D; then the door G is lowered.

After a certain time the carriage A is replaced by another carriage, which has also been loaded with bricks to burn. After a certain time, the door being again opened, the carriage A is pushed, and moves forward the ones already in the furnace, so that the last carriage occupies the place of the preceding one.

The door is then closed, another carriage is put in the place of the last introduced into the furnace; it is loaded with bricks, and, after a space of time, the door G is again opened, and it is introduced, pushing forward by this means the others, and so on, till the furnace is filled with carriages loaded with bricks, as far as the door G'.

When the bricks, which are on the carriage occupying the space D''', are sufficiently burned, the doors G and G' are raised, and, by means of a carriage loaded outside, as we have before described, all the carriages which are in the baking-room are pushed forward a sufficient space to allow the carriage D''' to pass into the cooling-room, and the carriage A into the place of the carriage D, each carriage taking the place of the preceding one.

The doors G and G' are then closed.

When the bricks on the carriage D''' are burned, the three doors are raised, and, in pushing a new carriage of bricks to be burned, from A to D, the carriage which was in the cooling-room is pushed out, and a new one is introduced in its place. The three doors are then closed, and the operation goes on indefinitely.

It is evident by the preceding that a gradual baking is obtained, the carriage nearest the chimney having the least temperature, the one nearest the furnace, where it arrives gradually, receiving the highest temperature. When the baking is completed in the space D''', the bricks are gradually cooled.

In order to prevent injury to the carriages, the air necessary for combustion is made to pass under them, and to come to the furnace by the openings I I' I'' under the grate, (fig. 2.)

This air is regulated at will by means of the openings I I' I''. Some air passes also under the door G, which can be raised at will.

There is made a space under the place most exposed to the action of the fire, for a reservoir of water, the evaporation of which lessens the liability of injury to the carriages.

I am aware that the several devices herein described, and mainly also their combination, are not new, and I do not, therefore, claim any of said devices separately, nor their combination; but

What I do claim, is—

A progressive burning and cooling-kiln, composed of the furnace C and cooling-room J, enclosed and separated by the vertically-sliding gates G G' G'', and furnished with the inclined track *a b*, the fireplaces E, on either side the furnace, and the chimney H, all arranged with relation to each other, and operating substantially as and for the purposes herein set forth.

WILLIAM GILBERT.

Witnesses:

J. NEWTON POWER,
Vo. COLLIAN.