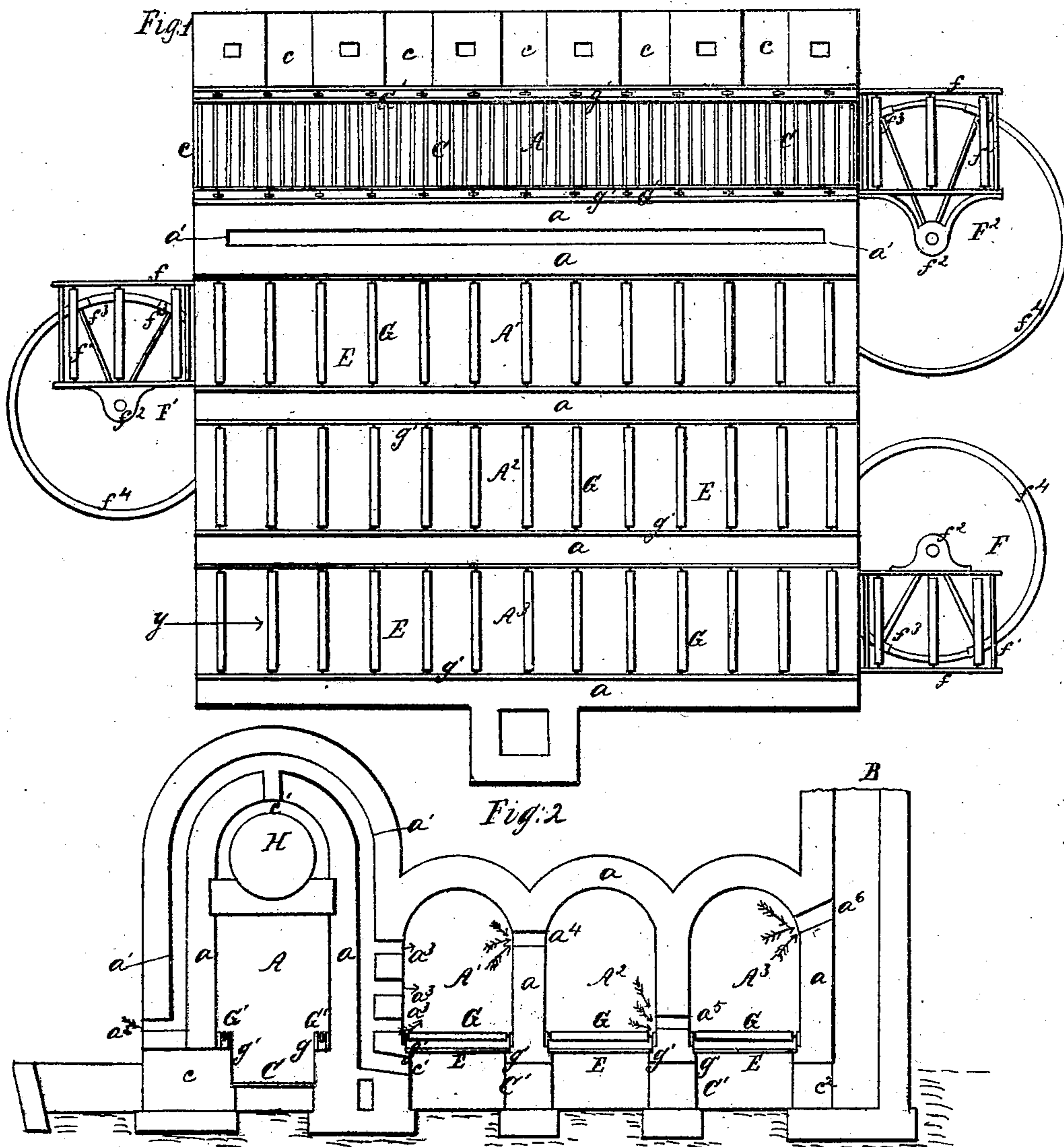


F. POWER.
BRICK KILN.

No. 79,595.

Patented July 7, 1868.



Witnesses

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FIELDER POWER, OF ST. LOUIS, MISSOURI.

Letters Patent No. 79,595, dated July 7, 1868.

IMPROVEMENT IN BRICK-KILNS.

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, FIELDER POWER, of St. Louis, in the county of St. Louis, and State of Missouri, have made certain new and useful Improvements in Kilns; and I do hereby declare that the following is a full and clear description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The object of this invention is to construct a kiln for burning bricks, stone-ware, and such other like articles, in a much cheaper and more expeditious manner than it can now be accomplished.

The invention consists in constructing a series of long, narrow chambers, arched over the top with brick walls, and floored with iron plates, beneath which are subterranean smoke-passages in all but one compartment, which is to be used as the kiln proper, while the others are only drying-chambers. The fires are to be built under the kiln proper, from whence the smoke and hot gases escape under the iron floors of the drying-chambers, and pass thence up a smoke-flue built outside of them. In passing under the aforesaid iron floors, the hot gases and smoke impart to the drying-chambers such a degree of heat as to thoroughly dry and warm the green bricks or ware preparatory to their entering the highly-heated kiln. The bricks or other articles to be burned are to be placed on cars or platforms, and passed successively through the whole series of chambers, commencing in the coolest and finishing in the hottest or kiln proper. The invention also relates to various other devices, which will be hereinafter more fully explained.

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

Figure 1, of the drawings, is a general plan of the kiln and drying-chambers.

Figure 2 is a central sectional elevation of the same.

The kiln A is enclosed by the walls a on its two sides and top, both ends being left open. The drying-chambers $A^1 A^2 A^3$ are built in a similar manner, as relates to the side and top walls a . The kiln A is enclosed by double walls, so as to leave an air-chamber, a^1 , between them. An orifice, or series of orifices, a^2 , in the front of the kiln, permits the external air to enter into the chamber a^1 , and a current is thereby created in the direction of the arrows x , the said current becoming heated in the chamber a^1 to a very high degree, and it is passed thence through apertures a^3 into the drying-chamber A^1 , thence through the apertures a^4 into the next chamber, A^2 , thence through the apertures a^5 into the chamber A^3 , and thence through the aperture a^6 into the chimney B. In this manner the heat generated around the kiln is utilized in drying the bricks or other articles in the drying-chambers.

The fires are to be built on the grate-bars C; through the doors c , and the smoke and hot gases will pass through one or more flues, c^1 , into the subterranean passages C^1 beneath the iron floors E, that form the bottoms of the drying-chambers, and so on, through the aperture c^2 , into the base of the smoke-stack.

It is evident, from the foregoing description, that a large amount of heat will be imparted to the plates E, and from them to the drying-chambers above, which heat may very readily be employed in drying and heating the bricks, or other articles to be burned, before they enter the kiln proper.

The bricks, or other articles to be burned in this kiln, are to be placed on platforms, (not shown,) and shoved into the kiln or drying-chamber A^3 , first in the direction of the arrow y . As soon as this chamber shall have become filled in this manner, the foremost platform will be drawn out on the turn-table F, which will then be turned around so as to place the loaded platform before, and in position to enter the chamber A^2 , which chamber will then be filled with the loaded platforms as they come from A^3 . When A^2 is filled in this manner, the platforms will in succession be placed on the turn-table F^1 , and turned around and sent into the chamber A^1 , then on the turn-table F^2 , and turned into the kiln A, where the bricks or other articles will be thoroughly burned and finished.

Thus it will be seen this apparatus is a continuous kiln and dry-house, eminently adapted to drying and burning bricks or pottery-ware. The heat in the remote chamber A^3 will be so mild as not to injure or crack

the green articles placed therein, and the temperature is so gradually raised in the successive chambers $A^1 A^2 A^3$ as to imperceptibly heat the articles placed therein, and prepare them, almost red hot, to enter the highly-heated kiln A, where they may be readily finished in a very short time, and more thoroughly and evenly than they could be in those kilns where the articles are piled in in large masses.

In passing through the various chambers of this kiln and dry-houses, the platforms, on which the bricks, &c., are placed, slide in on stationary rollers, which may be placed entirely across the chamber, as those marked G, or they may be simply short rollers or sheaves, as at G' in the furnace-compartment. The short rollers would probably be less liable to heat and bend than the long ones. In either case, shelf, g , will be made in the brick-work, for sustaining the rollers, bearing rods g' .

The turn-tables $F F^1 F^2$ are simple frames, f , carrying rollers, f^1 . The frames are pivoted on one side at f^2 , and on the other side sustained on two wheels, f^3 , which run on the curved track f^4 , the whole arrangement being such as to allow the table to turn around from one chamber to another.

Of course the number of drying-chambers may be increased indefinitely, but three will probably be found to be usually sufficient.

The foundations of the walls, and the smoke-passage C^1 , should be sunk into the ground far enough to bring the floors E on a level with the surface, or but slightly raised above it.

In order to economize the heat generated in the kiln to as great an extent as possible, the walls of the kiln proper are to be built high enough to allow a chamber for the steam-boiler H (which is to generate the steam for driving the works) above the place occupied by the burning bricks, &c.

Having described my invention, what I claim, is—

1. The kiln A, and drying-chambers $A^1 A^2 A^3$, when combined and arranged as herein shown and described.
2. The turn-tables $F F^1 F^2$, when combined with the drying-chambers and kiln, as described and set forth.

FIELDER POWER.

Witnesses:

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