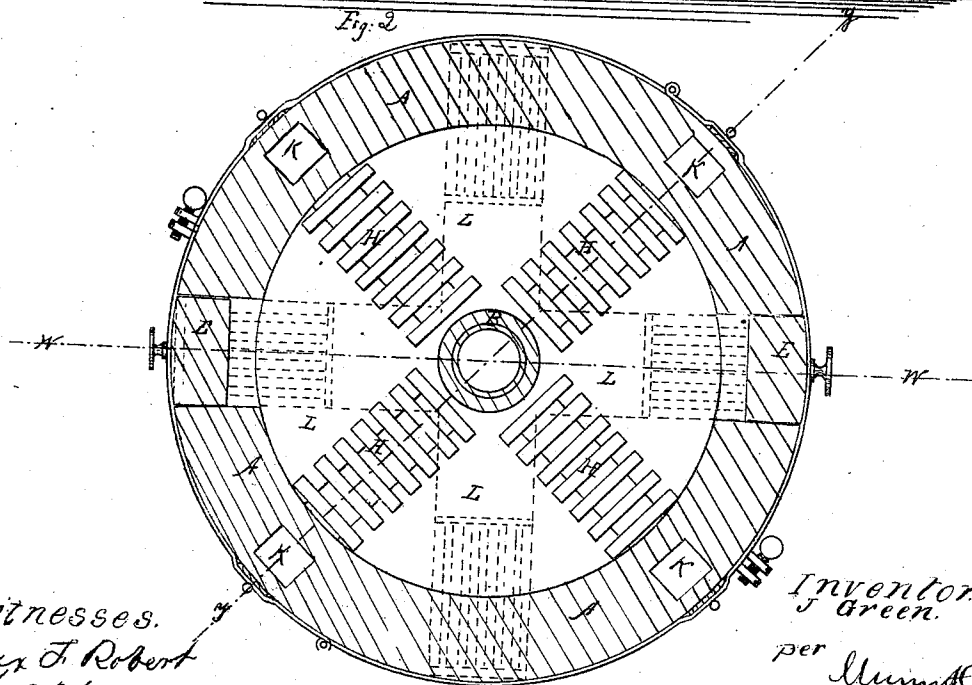
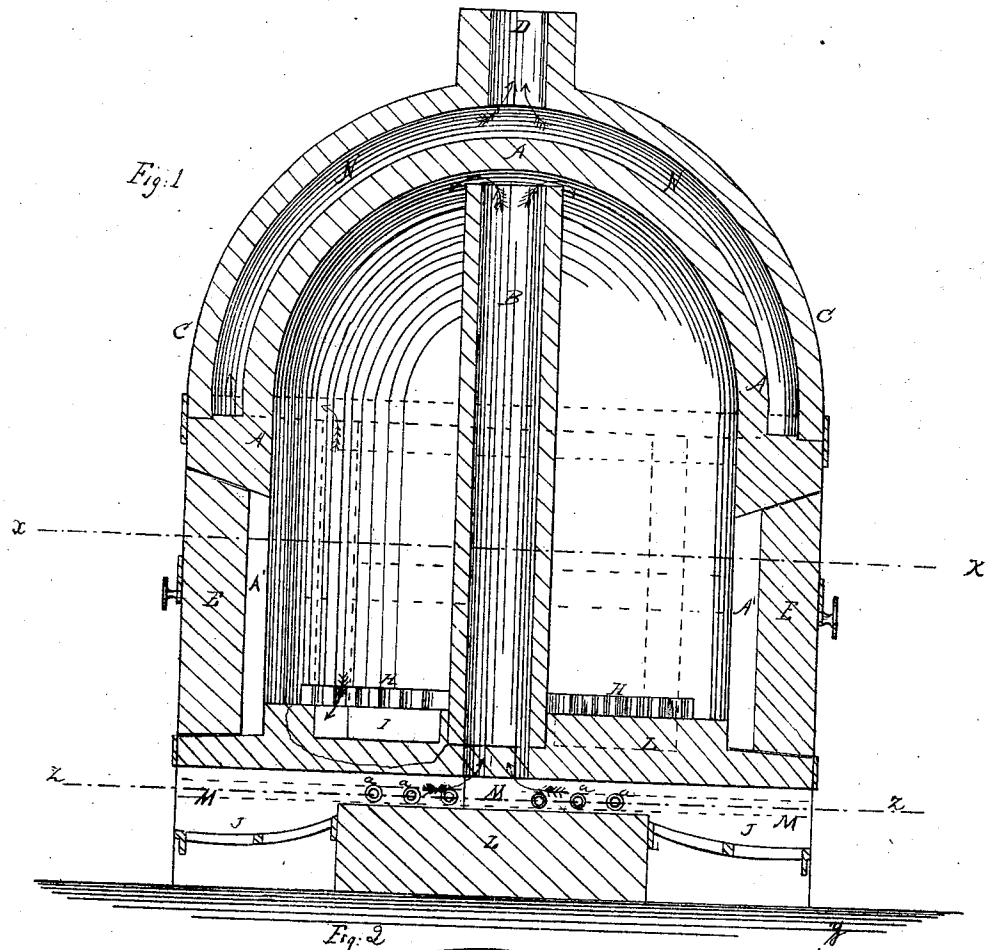


2 Sheets Sheet 1

J. Green. Kiln for burning Fire Brick Tiles & c:

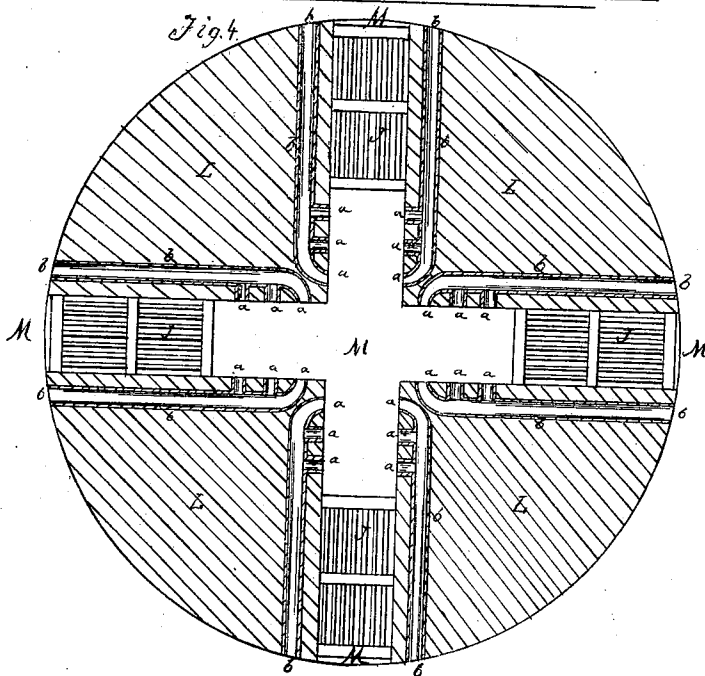
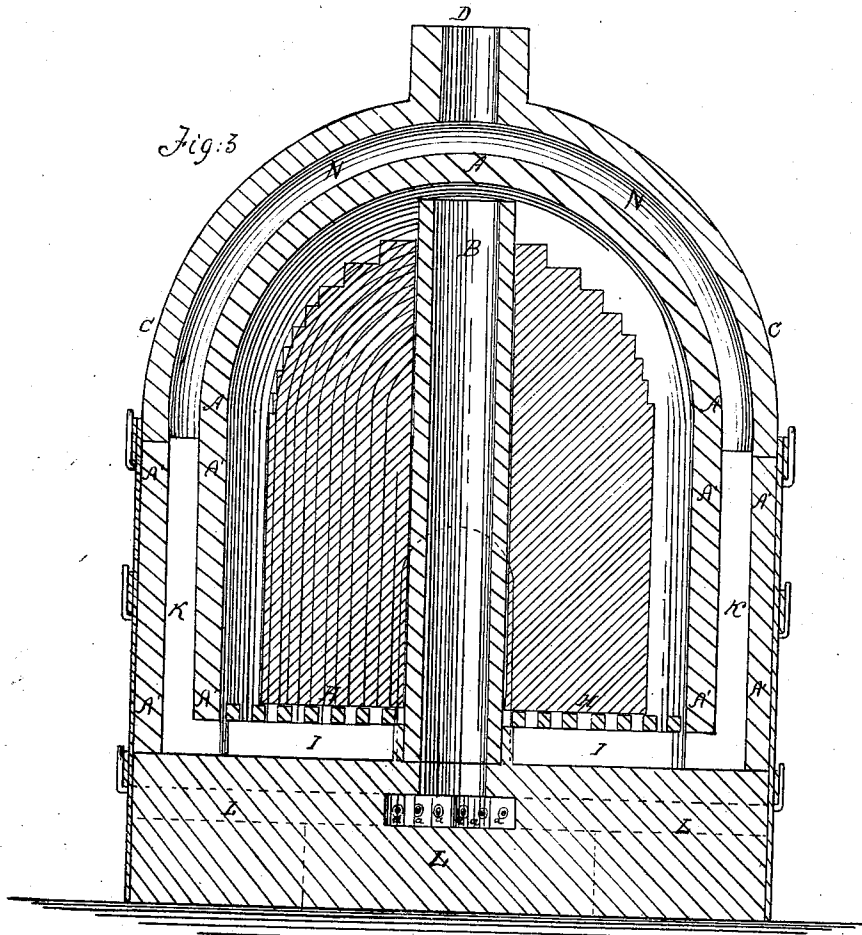
Patented Jan 12, 1869.

No 85 813.



Witnesses.
Alex J. Robert
Wm Morgan

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J. Green.
per Mumford
Attorneys.



United States Patent Office.

JAMES GREEN, OF ST. LOUIS, MISSOURI.

Letters Patent No. 85,813, dated January 12, 1869.

IMPROVED BURNING-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, JAMES GREEN, of St. Louis, in the county of St. Louis, and State of Missouri, have invented a new and improved Kiln for Burning Fire-Brick, Tiles, and other analogous articles of manufacture; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a central vertical section of the kiln through the line *w w*, fig. 2.

Figure 2 is a horizontal section of the same through the line *x x*, fig. 1.

Figure 3 is a vertical section of the same through the line *y y*, fig. 2.

Figure 4 is a horizontal section of the same through the line *z z*, fig. 1.

Similar letters of reference indicate corresponding parts.

The object of this invention is to provide a permanent kiln for burning fire-brick, tiles, and the like, with economy and facility.

It consists in the arrangement of flues, fire-passages, draught-passages, and stacks with other parts, perfecting the whole, as herein set forth

In the drawings, *L L L* is a base, of fire-brick, surmounted by a cylindrical wall, *A'*, and a double dome, *A C*.

The outer dome, *C*, is formed of plate-iron or fire-brick, and is provided at its apex with an outlet-stack, *D*, for the escape of the heat and smoke that have passed through the kiln.

The inner dome, *A*, is concentric with the outer dome, and separated from it by an air-space, *N*.

Both domes spring from the top of the wall *A'*, and are a continuous part of it, the inner dome being built of fire-brick.

The base, *L*, is formed with radial fire-passages, (usually four in number,) which merge together at the centre of the kiln, immediately under the central smoke and heat-stack *B*, also of fire-brick, which extends upward nearly to the top of the inner dome.

The fire-passages *M* are enlarged at their central openings, and provided with grate-bars, *J*, thus constituting furnaces in which the fuel is placed.

At each side of each of these furnaces, air-pipes or passages, *b*, are located, the external openings being in the wall, near the furnace-fronts, and their internal open-

ings, consisting of several smaller passages, *a a a*, are arranged to admit the air to the fire-passages *M*, just in rear of the grates, so as to conduce to the more perfect combustion of the carbonaceous particles and flame as they pass over the bridge-wall, thus constituting a system of draught-passages, which, from their proximity to the furnaces, enable the air to become warmed as it is drawn through, and thus operate more effectively in promoting combustion.

The heat passes upward through the stack *B*, which opens downward into the space or recess formed by the junction of the fire-passages, as before mentioned.

The space within the wall *A'* and the inner dome *A* is filled with the bricks or tiles to be burnt, the same being introduced through regular openings in the wall, which are afterward closed by blocks or doors, *E*, of tile-material or iron.

The bricks or tiles being burnt are arranged around the central stack *B* in any open or loose manner which will permit the passage of the heat downward through the mass.

Radial flues, *I*, (usually four in number,) are formed in the base, *L*, from the stack *B* outward, where they open into vertical flues *K*, formed in the wall *A'*, these latter flues opening into the space *N* between the domes.

The passage of the heat and smoke, as indicated by the arrows in fig. 1, is up through the stack *B*, and down through the main cavity of the kiln which contains the bricks, to the flues *I*, which latter are bridged with tiles, *H*, arranged with spaces between, for the downward passage of the heat and smoke into the flues *I*, from whence it passes into the flues *K*, and thence into the space *N*, and finally out through the stack *D*.

The wall *A'* is strengthened and sustained by circular bands and vertical bars, in the usual manner.

The doors *E* are held in place by the passage of the bands across them, the latter being hinged at the doors, to admit of the removal of the latter.

I claim as new, and desire to secure by Letters Patent—

The described arrangement of the base, *L*, fire-passages *M*, central stack *B*, draught-passages *b a a a*, flues *I K*, domes *A C*, outlet-stack *D*, wall *A'*, and doors *E*, for the purpose specified.

JAMES GREEN.

Witnesses:

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