J. HORNSBY.

Brick Kiln.

No. 107,496. Patented Sept. 20, 1870.

Fig. 1.

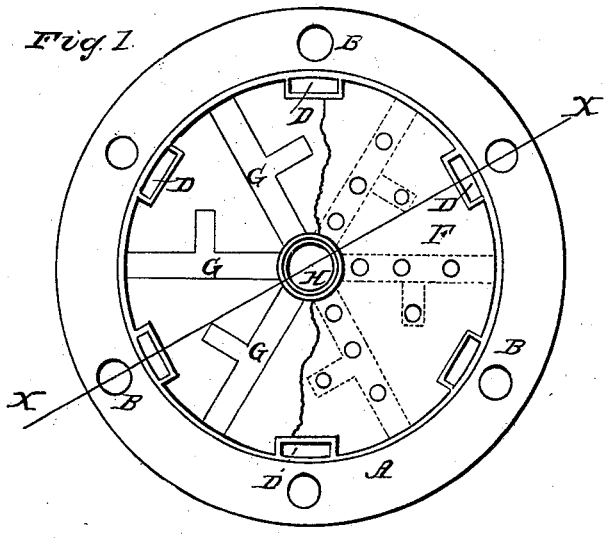
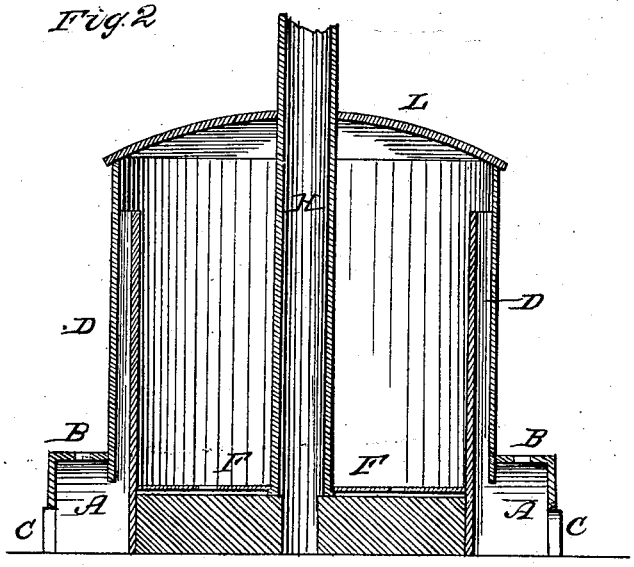



Fig. 2




Witnesses:
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# United States Patent Office.

JOHN HORNSBY, OF WOODBRIDGE, NEW JERSEY.

*Letters Patent No.* 107,496, *dated September* 20, 1870.

## IMPROVEMENT IN KILNS FOR BURNING TILES, PIPES, &c.

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, JOHN HORNSBY, of the town of Woodbridge, in the county of Middlesex and State of New Jersey, have invented new and useful Improvements in Kilns for Burning Tiles, Pipes, &c.; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing forming a part of this specification and to the letters of reference marked thereon.

My invention has for its object an improvement in kilns for burning tiles, and pipes for drains, bricks, and such other preparations of clay as are used for like purposes, and which are required to be burned.

The nature of my invention consists—

First, in constructing and arranging the chimney or principal flue directly in the center of the kiln, into which are directed a suitable number of other flues, so as to distribute the heat evenly throughout the mass of molded clay that is designed to be subjected to the action of the heat.

It consists, in the second place, in making the kiln in a circular form, and conducting the heat to the top of the mass of molded clay, and by the peculiar and novel construction of the flues the heat is drawn down through the mass equally on all sides, so that every piece of clay in the mass is equally subjected to its action, by which means the whole mass is burnt evenly and in the very best manner.

Heretofore all kilns of this description have been constructed in such a manner as to bring a large portion of the molded clay directly to the action of the heat, while a large portion, being remote from the fire, receives but a small portion of heat, in fact, not enough to burn it sufficiently to make it marketable, while that portion nearest the fire was nearly destroyed by the heat.

By my invention this difficulty is entirely obviated, in the manner hereinbefore stated, and a large percentage of fuel is saved, for the reason that the heat is so evenly distributed that it does not have to be forced, so as to reach the remote portions of clay within the kiln to give it a sufficient burn.

I may state that my invention is more particularly designed to be used for burning drain-tiles and sewer-pipes.

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

Figure 1 is a plan view of my improved kiln, with a portion of the perforated bottom broken out, so as to show more clearly the position and arrangement of the flues.

Figure 2 is a longitudinal sectional elevation of the same, taken through the line *x x*.

Letters of like name and kind refer to like parts in each of the figures.

A may represent the base, containing the furnaces, of my improved kiln, which may be made of any required capacity, and circular in form.

B represents the entrance to the fire-chamber, through which the fuel is introduced thereto.

C C are the dampers, through which the draught of air is admitted into the fire-chamber.

D D represent the vertical flues, located and arranged in the interior of the kiln, near or against the wall of the kiln.

The said flues D pass upward from the fire-chamber to near the top or cover, L, of the kiln, where they terminate, and the heat is distributed over the surface of the kiln, and drawn down through the perforated bottom F into the horizontal flues G, and from thence into the main center chimney or flue H, from which it escapes into the general atmosphere.

The perforated bottom F lies or is supported on the flues, or near them, in any well-known manner, and the tiles or bricks or other molded clay designed to be burned are packed thereon, through an opening made in the side of the shell or body of the kiln, (not shown in the drawing, as it is not claimed as any part of my invention,) until it is full, when it is ready for putting in the fire.

It will be understood that the perforations in the bottom F come directly over the flues G G, so as to allow perfect freedom of draught.

Having thus described my invention,

What I claim as new, and desire to secure by Letters Patent of the United States, is—

In the circular kiln, provided with a perforated floor, F, flues G, central chimney H, and peripheral furnaces A, as herein shown and described, the distinct upright flues D, when constructed and arranged with reference to the other parts named, in the manner and for the purposes herein shown and described.

JOHN HORNSBY.

Witnesses:

JOHN S. THORNTON,

WM. VENTZ.