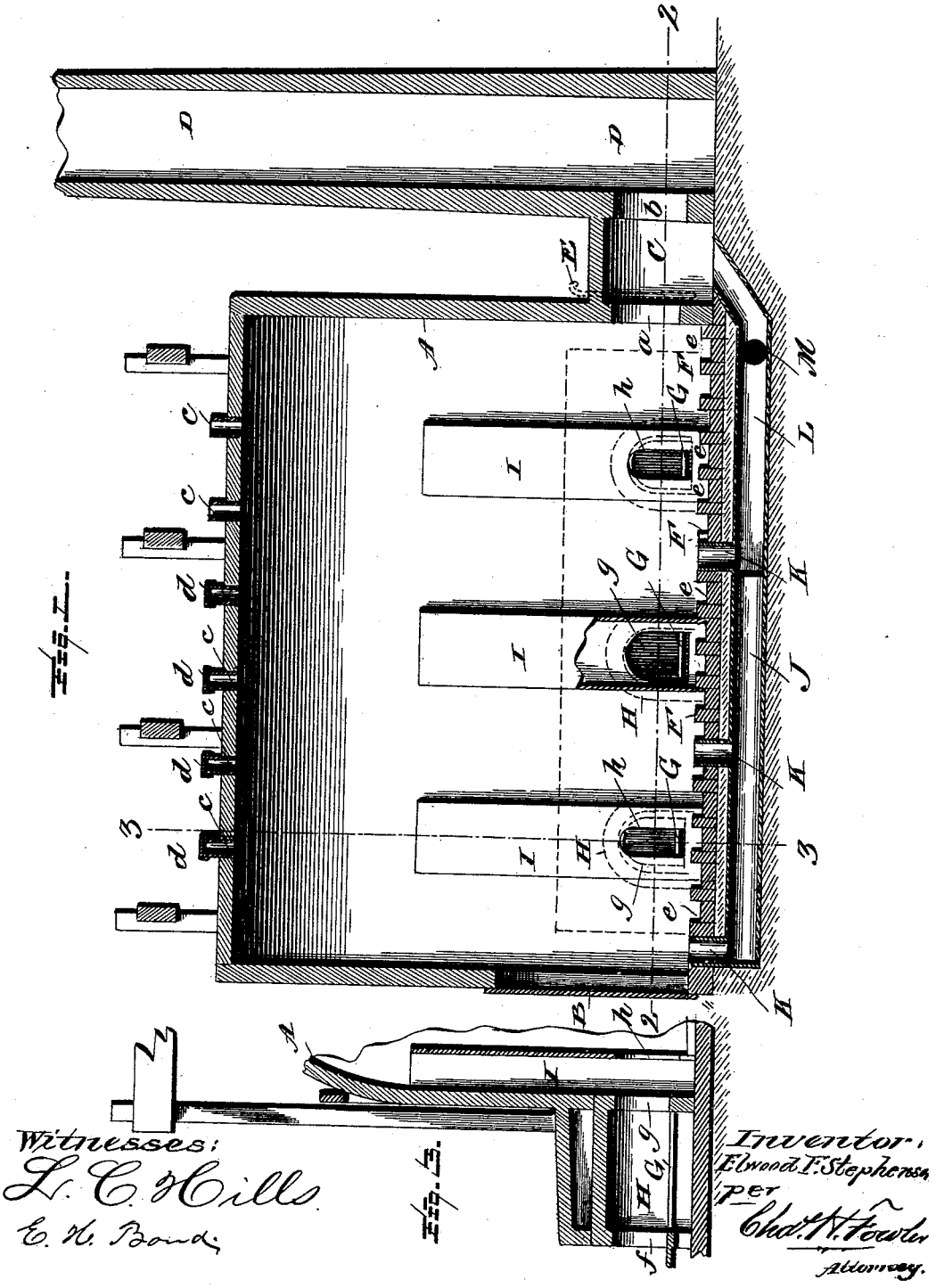
(No Model.) 2 Sheets—Sheet 1.

E. F. STEPHENSON.

BRICK OR TILE KILN.

No. 492,064. Patented Feb. 21, 1893.



Witnesses:
L. C. Hills
E. N. Bond.

Inventor:
Elwood F. Stephenson
per
Chas. N. Fowler
Attorney.

(No Model.) 2 Sheets—Sheet 2.

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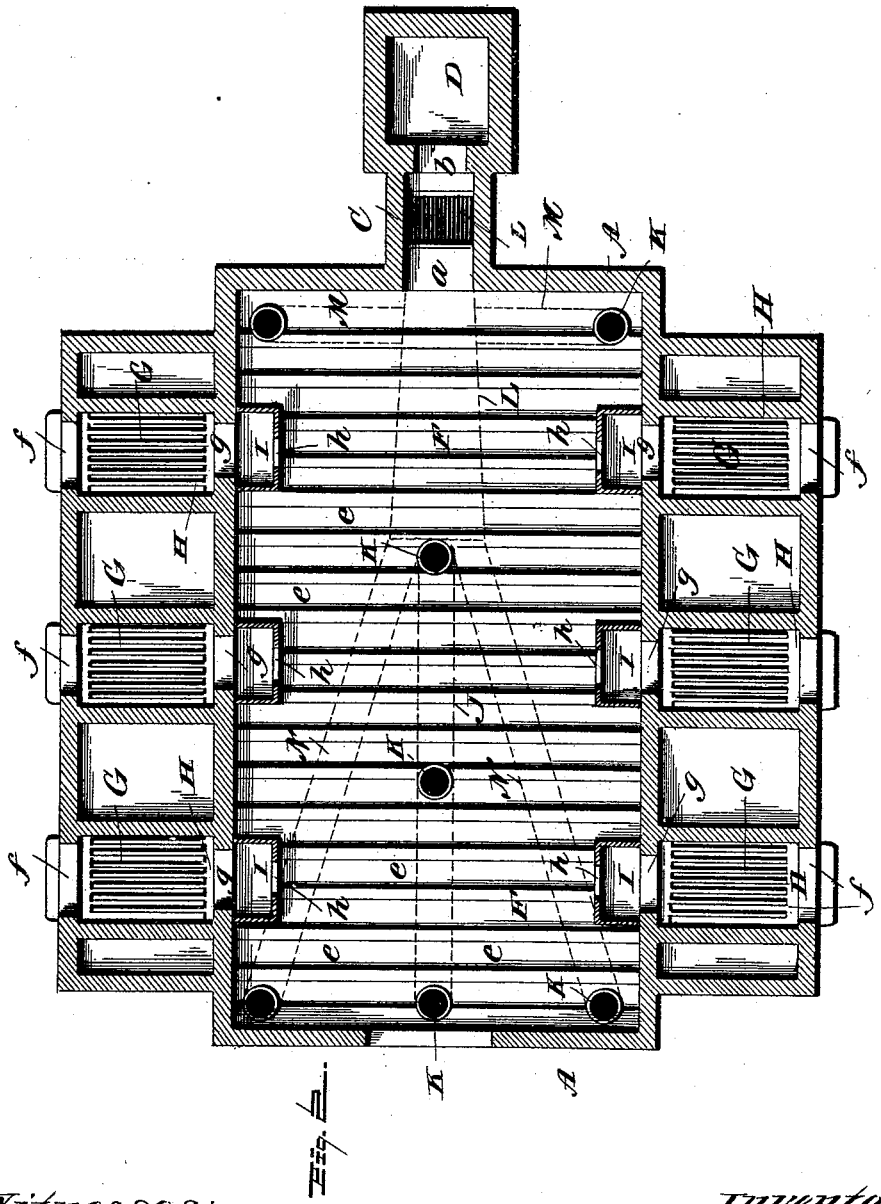

Fig. 2.

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Attorney.

UNITED STATES PATENT OFFICE.

ELWOOD F. STEPHENSON, OF CARTERSBURG, INDIANA.

BRICK OR TILE KILN.

SPECIFICATION forming part of Letters Patent No. 492,064, dated February 21, 1893.

Application filed May 16, 1892. Serial No. 433,121. (No model.)

To all whom it may concern:

Be it known that I, ELWOOD F. STEPHENSON, a citizen of the United States, residing at Cartersburg, in the county of Hendricks and State of Indiana, have invented certain new and useful Improvements in Tile-Kilns; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters of reference marked thereon.

This invention relates to certain new and useful improvements in kilns designed primarily for tile, but of course it may be used for other purposes for which it is applicable.

It has for its objects among others to provide an improved kiln in which an improved underground draft is employed with which communication is provided from the interior of the kiln by openings through the floor. The main flue extends under the floor from the door to the connections of the stack. I also provide an opening across from each arch with the bottom course of tile the floor being paved with bricks each alternate one of which is set on edge and flatwise. By closing the damper in the top connection the heat is thrown down to the bottom and in all corners thus equalizing the heat and burning the tile all the same at the bottom and top. Openings are provided at the top of the kiln which are for drying and cooling off, being closed by suitable means, as caps, while burning. A chamber is provided between the kiln and the stack, into which the draft pipes empty, the pipes or tubes being branched from the corners and having openings communicating therewith at different points in the floor.

Other objects and advantages of the invention will hereinafter appear and the novel features thereof will be specifically defined by the appended claim.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which

Figure 1 is a central vertical longitudinal section through my improved kiln. Fig. 2 is a horizontal longitudinal section on the line 2 2 of Fig. 1. Fig. 3 is a fragmentary vertical cross section on the line 3 3 of Fig. 1.

Like letters of reference indicate like parts throughout the several views.

Referring now to the details of the drawings by letter, A designates the kiln proper provided at one end with a door B and at the other end near the floor with an opening *a* which communicates with the shallow chamber C which has an outlet *b* affording communication with the stack D as seen in Figs. 1 and 2. E is a damper provided within the chamber C to close or disclose the opening *a* as seen in Fig. 1.

The kiln is provided at the top with a plurality of openings *c* as seen in Fig. 1 which are preferably short tubes provided with removable caps *d;* during the burning these caps are placed over the tubes, but when the burning is completed and it is desired to dry and cool off the caps are removed and permit of the escape of the heat.

The floor F is composed of bricks one row of which is set on edge and the next flatwise as shown in Figs. 1 and 2 so as to form transverse channels *e* beneath the tiles when they are supported on the bricks which are set on edge.

Upon each side of the kiln are the grates G arranged in the separated combustion chambers H which are provided with suitable feed openings *f* designed to be closed when desired in any suitable manner, and the inner walls of these chambers are provided with openings *g* into the vertical flues I as seen best in Figs. 2 and 3. These flues also have openings *h* in their inner walls into the kiln as seen in Figs. 2 and 3. These flues extend preferably somewhat over half the height of the kiln as seen in Fig. 1.

J is a flue extending longitudinally and centrally of the kiln beneath the floor thereof as seen in Figs. 1 and 2, extending from a point near the door B to a point near the center of the kiln as seen in Fig. 2 where it is joined with a flue of larger area as also seen in Fig. 2 and which extends to the other end of the kiln and then extends upward and empties into the center of the chamber C as seen in Figs. 1 and 2. This central flue has a plurality of short vertical flues K communicating therewith and opening into the kiln as seen in said Figs. 1 and 2. At the end of the kiln

nearest the stack there are the cross flues M which communicate with the enlarged flue L as seen in Fig. 1 and which at the outer ends near the sides of the kiln extend upward and open into the kiln as seen in Fig. 2.

N are branch flues extending diagonally from the front corners of the kiln as seen in Fig. 2 and communicating with the flue L, their outer ends extending upward and communicating with the interior of the kiln. By this construction a forced draft is provided along the bottom of the kiln and the heat is equalized within the kiln so that the tile will be evenly heated throughout. By closing the outlets *c* at the top of the kiln the heat is forced down and around the bottom and in all the corners of the kiln, this is aided by the arrangement of the flues.

What I claim as new is—

In a kiln, a floor formed of bricks set on edge and flatwise alternately across the floor to form transverse channels, as set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

ELWOOD F. STEPHENSON.

Witnesses:
W. W. IRONS,
W. F. MARTIN.