

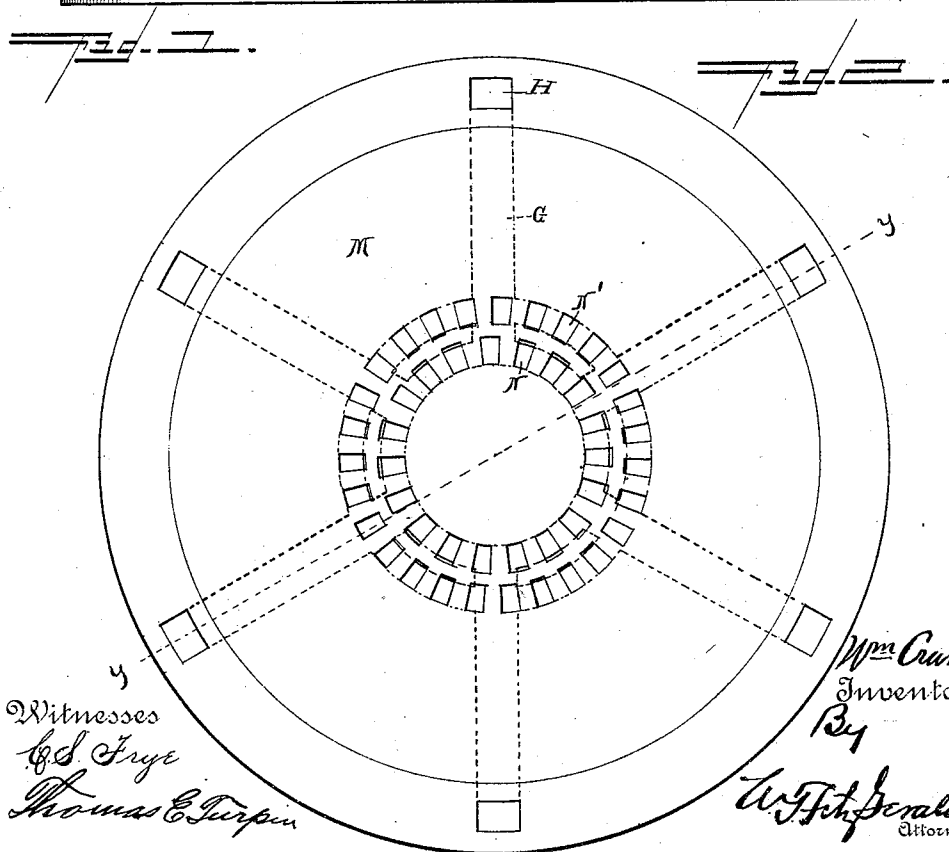
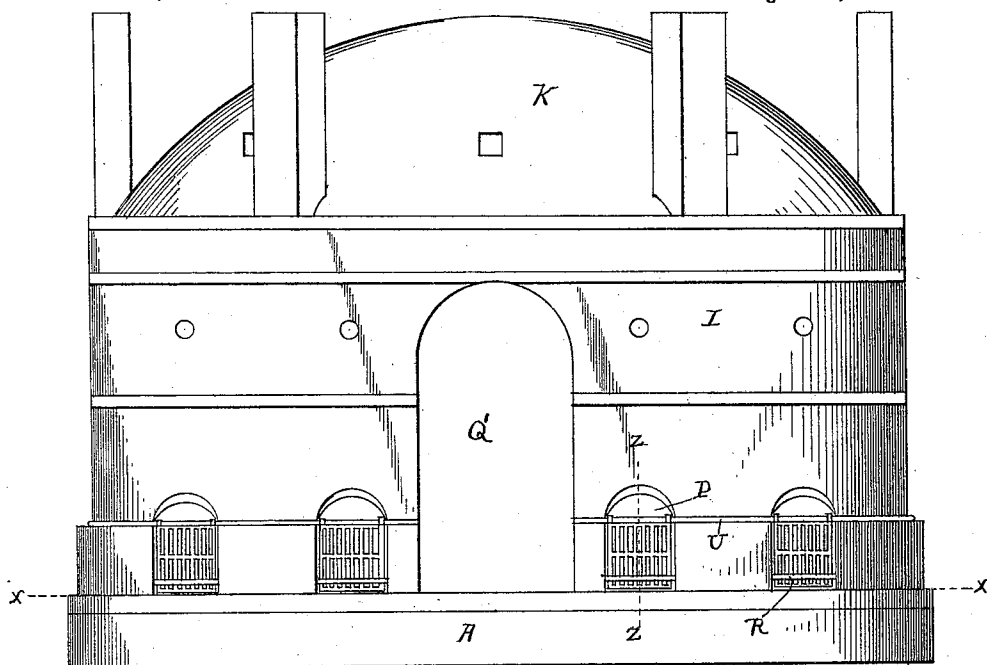
(No Model.)

3 Sheets—Sheet 1.

W. CRUMLIC.
BRICK KILN.

No. 475,237.

Patented May 17, 1892.



Witnesses
Ed. Frye
Thomas E. Turpin

Wm. Crumlic
Inventor:
By
W. F. Gerald
Attorneys.

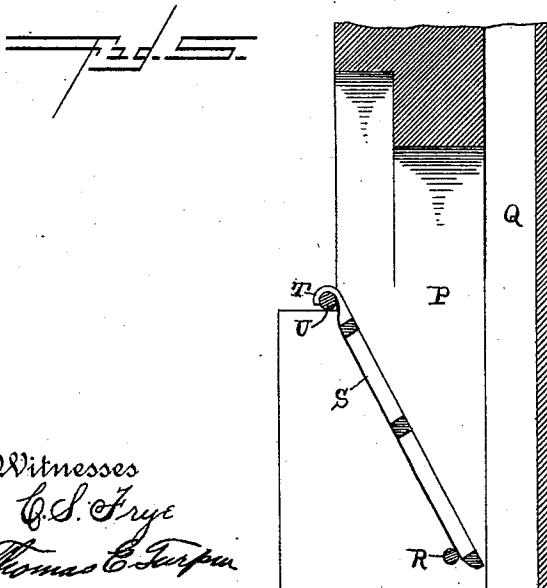
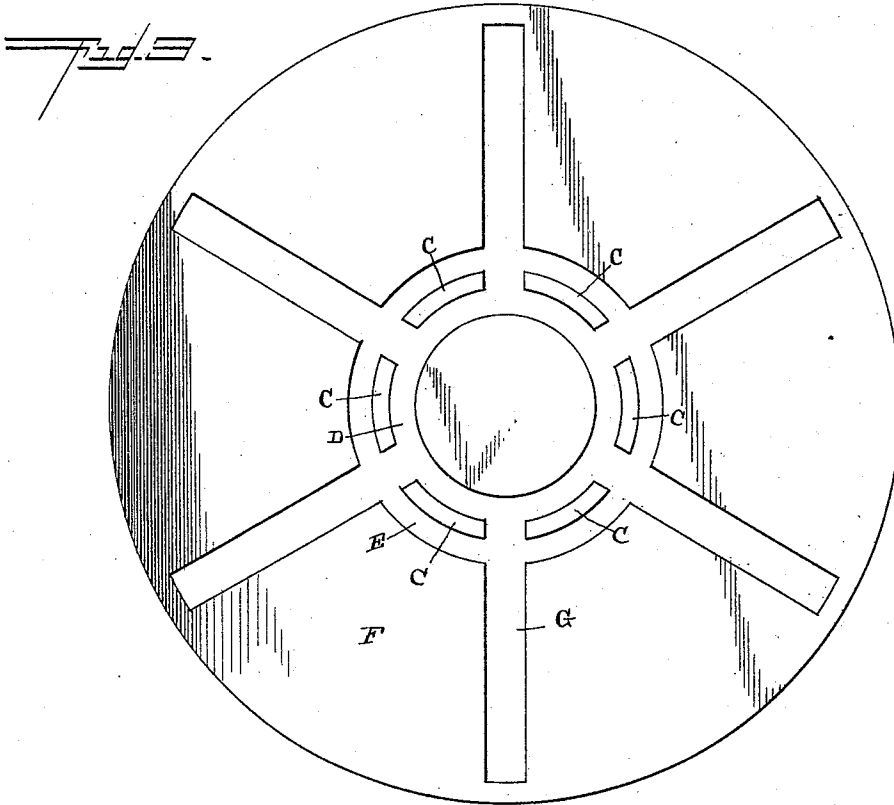
(No Model.)

3 Sheets—Sheet 2.

W. CRUMLIC.
BRICK KILN.

No. 475,237.

Patented May 17, 1892.



Witnesses
C. S. Frye
Thomas E. Turpin

William Crumlic
By
W. F. Fitzgerald & Co.
Inventor:
Attorneys

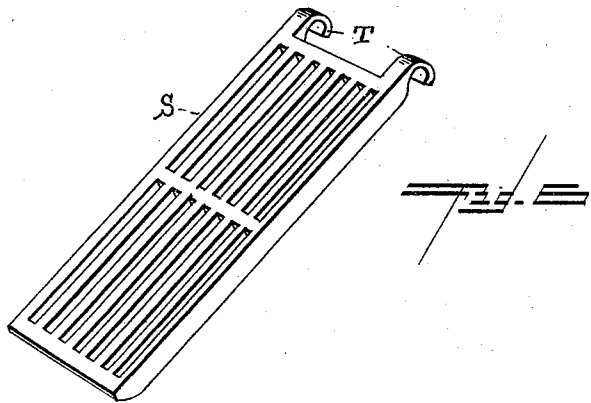
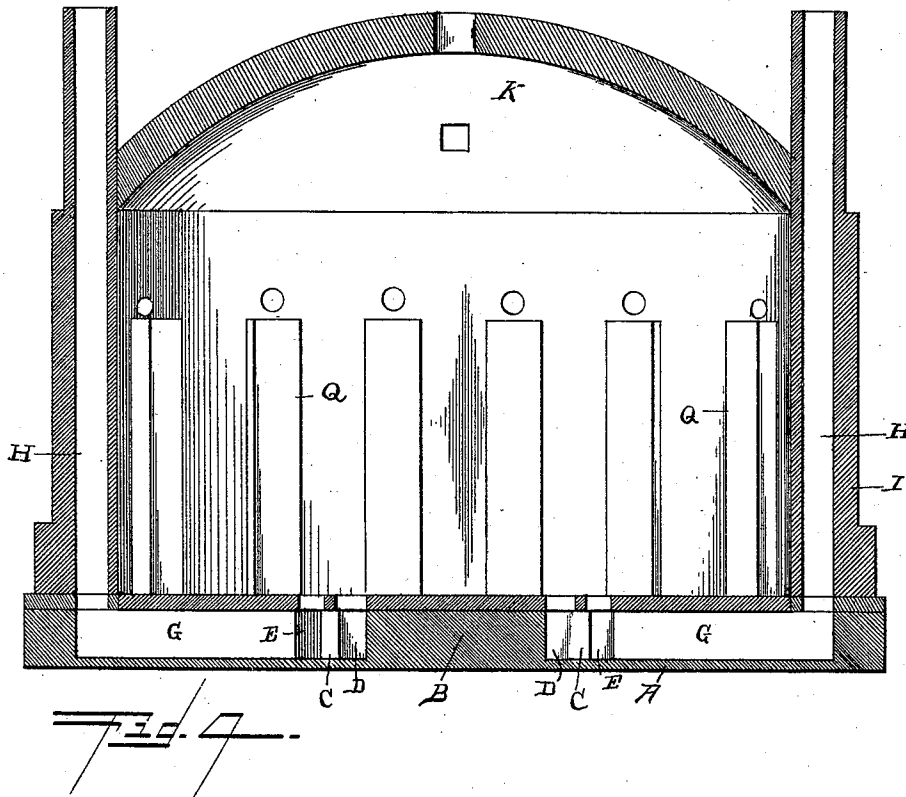
(No Model.)

3 Sheets—Sheet 3.

W. CRUMLIC.
BRICK KILN.

No. 475,237.

Patented May 17, 1892.



Witnesses

C. S. Frye
Thomas C. Turpin

William Crumlic
By *R.* Inventor;

W. J. Fitzgerald & Co.

Attorneys.

UNITED STATES PATENT OFFICE.

WILLIAM CRUMLIC, OF DECATUR, ILLINOIS, ASSIGNOR OF ONE-HALF TO
J. G. SHEA, OF SAME PLACE.

BRICK-KILN.

SPECIFICATION forming part of Letters Patent No. 475,237, dated May 17, 1892.

Application filed December 12, 1891. Serial No. 414,854. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM CRUMLIC, a citizen of the United States, residing at Decatur, in the county of Macon and State of Illinois, have invented certain new and useful Improvements in Brick-Kilns; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has relation to an improved construction of brick and tile kilns; and it has for its general object to provide a construction of kiln embodying such flues, passages, and chambers that a thorough circulation of the hot air from the fire-holes through the bricks in the stacking-chamber will be effected.

A further object of the invention is to provide such supports in the fire-holes for the grates and such a construction of grate that the same may be readily placed in position and as readily removed for clearing, &c.

To the attainment of the foregoing and other objects the invention consists in the peculiar construction, certain novel combinations, and the adaptation of parts hereinafter described, and particularly pointed out in the claim appended.

In the accompanying drawings, Figure 1 is an elevation of my improved brick-kiln. Fig. 2 is a horizontal section taken in the plane indicated by the line *xx* on Fig. 1, the circular and radial passages beneath the floor of the stacking-chamber being illustrated by dotted lines. Fig. 3 is a horizontal section taken in a plane immediately below the floor of the stacking-chamber. Fig. 4 is a vertical diametrical section taken in the plane indicated by the line *yy* on Fig. 2. Fig. 5 is a detail vertical section taken in the plane indicated by the line *zz* on Fig. 1, illustrating one of the grates in position in one of the fire-holes; and Fig. 6 is a detail perspective view of one of the grates removed.

In the said drawings similar letters designate corresponding parts in all the several views, referring to which—

A indicates the base of my improved kiln, which is constructed of fire-brick or the like in the ordinary or any approved manner. Rising from the center of the base or foundation

A is a short pier B, of preferably circular form, adjacent to the peripheral edge of which are arranged at intervals a series of curvilinear walls C, of a corresponding height, which serve, in conjunction with the said pier B, to form the inner circular passage D, which communicates through the short passages formed between the ends of the walls C with a curvilinear passage E, formed between the outside of the walls C and the inner curved ends of the segmental piers F, which are arranged at suitable intervals apart, so as to form between them the radial passages G, which communicate at their inner ends with the outer circular passage E and at their outer ends with the vertical flues H, which are formed at suitable intervals in the side wall I of the kiln and merge at their upper ends into the uptakes or chimneys H.

Built upon the side wall I of the kiln, which is preferably of a general circular form, as shown, is the dome K, which is preferably provided with a series of apertures, as illustrated, for the introduction of trial pieces into the stacking-chamber of the kiln.

M indicates the floor of the stacking-chamber, which is built upon the piers B and F and the curvilinear walls C. This floor M, which is preferably formed from the same material as the other parts of my improved kiln, is provided at or adjacent to its center with two circular series of vertically-disposed apertures N N', which communicate with the circular passages D and E, respectively, and serve to conduct the vapor, &c., from the stacking-chamber into said passages, from whence it passes through the radial passages G to the flues H and up the same into the open air.

Formed at suitable intervals in the side wall I of the kiln are the fire-holes P, which are preferably arched, as illustrated, and communicate with the vertical flues Q upon the inside of the said wall I, which flues serve to lead the hot air into the stacking-chamber adjacent to the upper end of the side wall, for a purpose presently described.

Arranged in the fire-holes P, adjacent to the back and bottom thereof, are cross-bars R, which serve in practice to support the lower free ends of the inclined grates S, which are provided at their upper ends with hooks T,

which engage a cross-bar U, which extends around the outside of the wall I, and serves the twofold function of bracing said wall and supporting the grates.

- 5 By the manner described of supporting the grates S it will be readily perceived that the same may be readily removed for clearing, or may be readily removed when broken and replaced by new ones.
- 10 Formed in the side wall I of the kiln, and preferably at points between the flues H and the flues Q, are doorways Q' for setting and drawing the kiln, which doorways are closed in practice by suitable doors.
- 15 In operation the green brick, tile, or the like are stacked upon the floor M, and preferably around the circular openings N N', to the height required, after which the doorways are closed and the fires started.
- 20 From the foregoing description, taken in conjunction with the annexed drawings, it will be seen that the hot air will pass from the fire holes or boxes up the flues Q into the upper portion of the stacking-chamber and force the aqueous vapor, incidental to the drying
- 25 of the bricks, through the openings N N' of the floor M into the circular passages D E, and from thence through the radial passages G, flues or uptakes H, and chimneys J into the
- 30 open air. By reason of the hot air continuously entering the upper portion of the stacking-chamber it will be seen that it will be forced downward through the stacked bricks or other ware and will exert a pressure upon
- 35 the aqueous vapor, which normally rests in

the lower portion of the chamber, and will force the same out of the chamber through the apertures N N' and the passages and flues described, whereby it will be seen that after the fires are once started the kiln will be kept in a dry and wholesome state and the burning of the brick will be greatly facilitated.

Although I have described my improved kiln as of a general circular form and the passages D E of a corresponding form, yet I do not desire to be confined to such form of kiln or passages, as they might be of a rectangular or other form suitable to the purposes of my invention.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

In a brick-kiln, substantially as described, the combination, with the side wall, the fire-holes arranged at intervals in the side walls, the cross-bars R, arranged in the fire-holes adjacent to the back and bottom thereof, and the bar U, extending around the outside of the side wall and across the fire-holes, of the grates resting on the lower cross-bars R and having hooks at their upper ends to engage the bar U, all substantially as and for the purpose described.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM CRUMLIC.

Witnesses:

J. W. CRANE,
JOHN DILLER.