

C. HOOK.

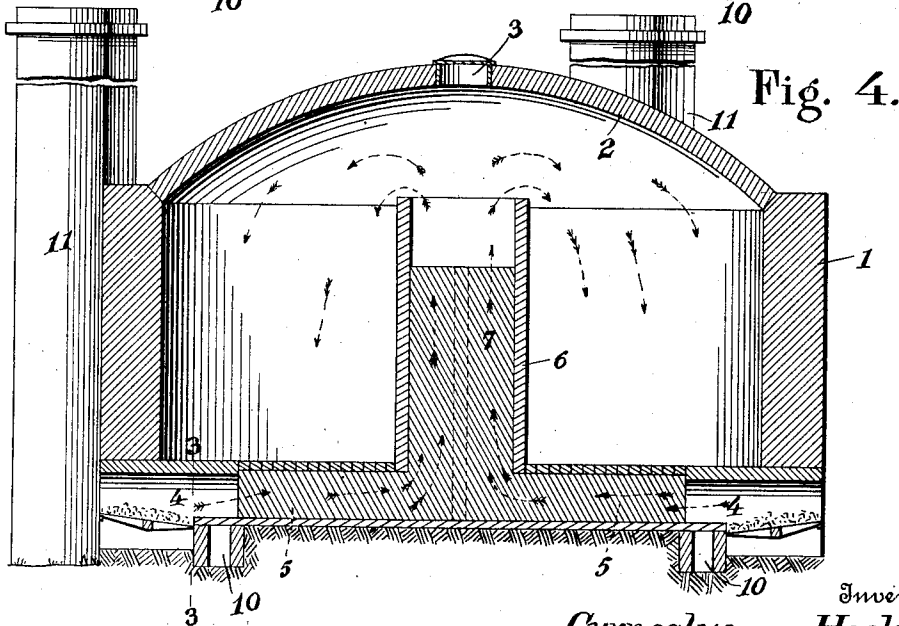
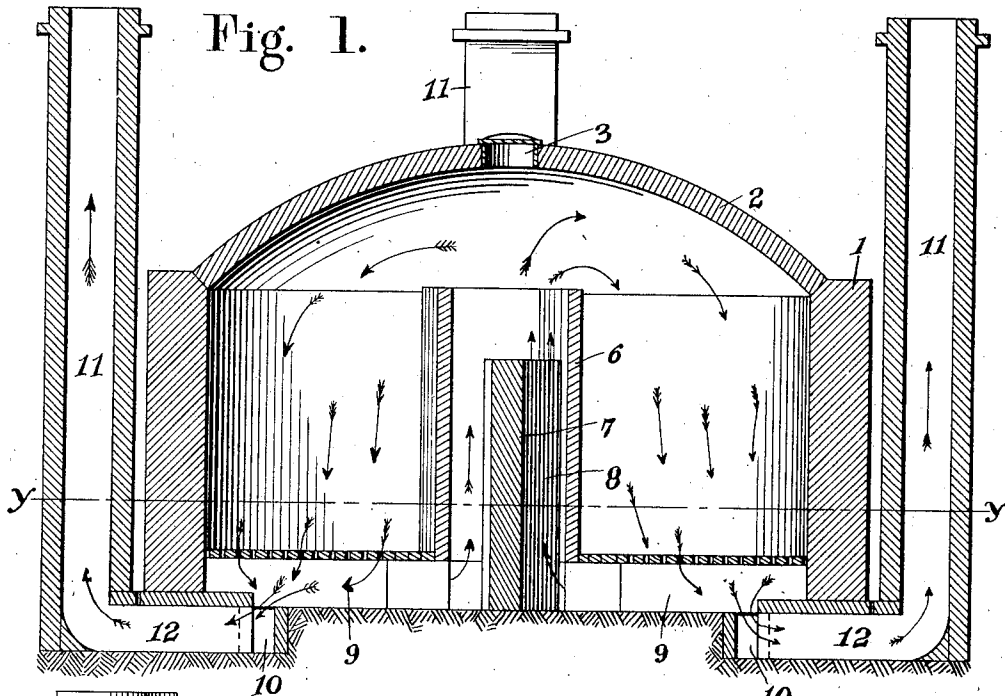
KILN.

APPLICATION FILED OCT. 25, 1911.

1,037,769.

Patented Sept. 3, 1912.

2 SHEETS—SHEET 1.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 2.

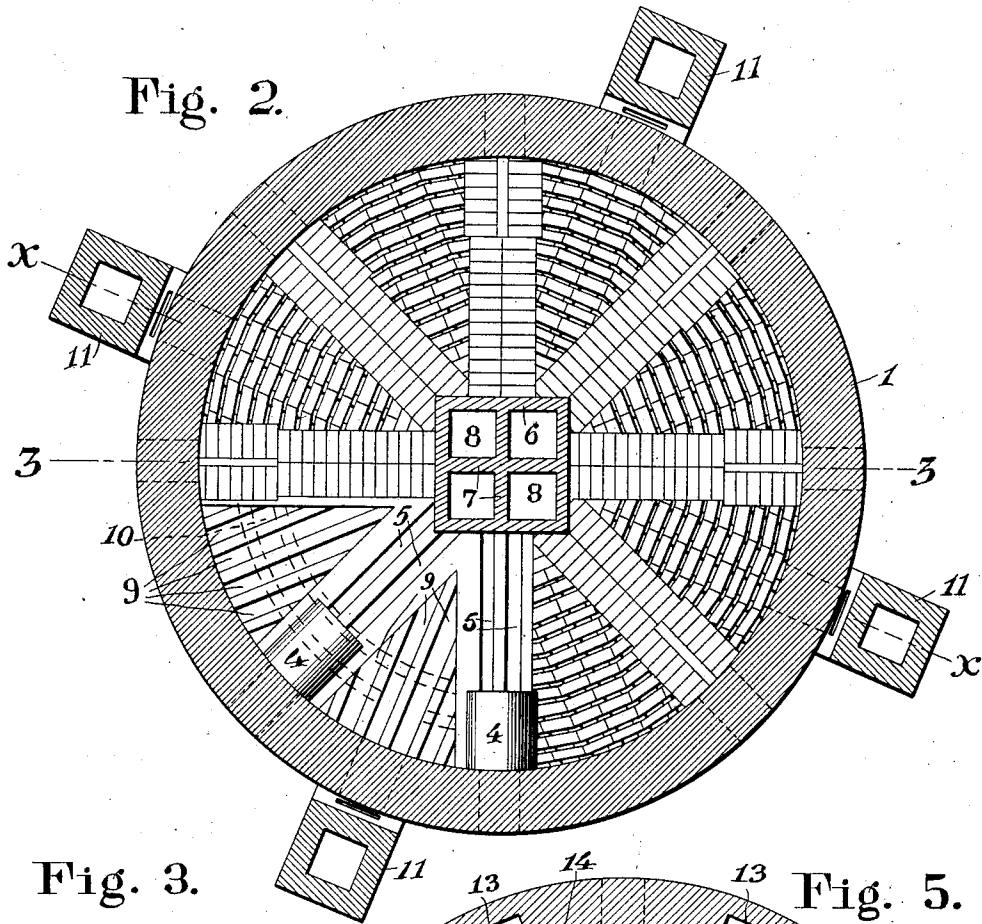


Fig. 3.

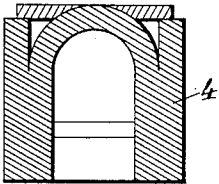
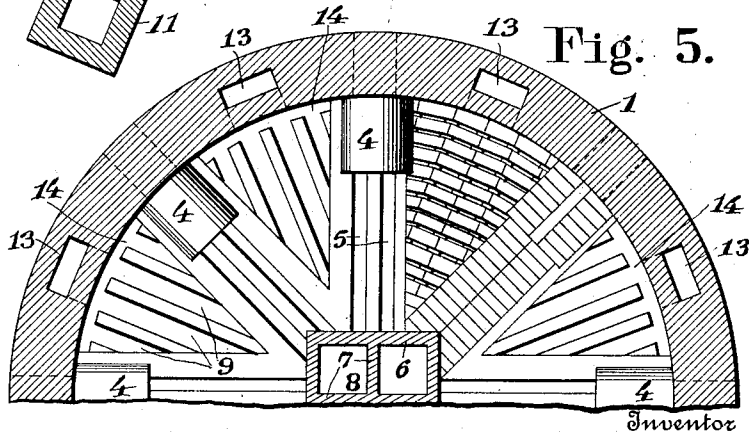


Fig. 5.



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UNITED STATES PATENT OFFICE.

CURNEALUS HOOK, OF VIGO, OHIO.

KILN.

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Specification of Letters Patent.

Patented Sept. 3, 1912.

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To all whom it may concern:

Be it known that I, CURNEALUS HOOK, a citizen of the United States, residing at Vigo, in the county of Ross and State of Ohio, have invented new and useful Improvements in Kilns, of which the following is a specification.

This invention provides a kiln designed chiefly for burning clay products, the purpose being economy in construction and in the consumption of fuel besides providing ample floor space for receiving the ware to be burned and enabling the kiln to be easily manipulated as well as to insure a uniform burning of the articles and prevent cracking or over burning.

The invention consists of the novel features, details of construction and combination of parts, which hereinafter will be more particularly set forth, illustrated in the accompanying drawings, and pointed out in the appended claims.

Referring to the drawings, forming a part of the specification, Figure 1 is a vertical central section of a kiln embodying the invention taken on the line $x-x$ of Fig. 2. Fig. 2 is a horizontal section on the line $y-y$ of Fig. 1, a part of the floor being removed to show the arrangement of the several passages. Fig. 3 is a detail section of the arch of one of the furnaces on the line 3-3 of Fig. 4. Fig. 4 is a vertical section on the line $z-z$ of Fig. 2. Fig. 5 is a horizontal section of a modification.

Corresponding and like parts are referred to in the following description, and indicated in all the views of the drawings, by the same reference characters.

The kiln is of circular outline and embodies a wall 1 and a top 2, the latter being of dome shape and having a centrally disposed opening which is closed by means of a cover 3. A plurality of furnaces 4 are arranged about the wall 2 and are spaced apart an equal distance. The furnaces 4 communicate by means of passages 5 with a centrally disposed flue 6, which terminates a short distance from the top 2. The flue 6 is subdivided by means of intersecting partitions 7 into a plurality of passages 8, the latter terminating a short distance from the upper end of the flue 6. The passages 5 communicate at their inner ends with the passages 8 of the flue 6. By providing a number of vertical passages 8 the drifting of the hot air from one furnace to another

is prevented and a positive discharge of the hot air from each of the furnaces into the upper portion of the kiln is assured. The spaces formed between the furnaces 4 and passages 5 are subdivided into a plurality of passages 9, which communicate with an annular passage 10 located in a lower plane than the series of passages 5 and 9. The annular passage 10 is in communication with stacks 11 by means of horizontal passages 12. It is preferred to interrupt the annular passage 10 at regular intervals by partitions, the purpose being to prevent any counter-currents and to insure a positive draft through the kiln and the stacks 11. The floor of the kiln is preferably composed of bricks or tiles, the latter being placed close together over the arches of the furnaces and the passages 5 and spaced apart over the passages 9, thereby admitting of the hot air from the kiln passing downwardly through the openings of the floor into the passages 9, thence into the annular passage 10 and out through the stacks 11 by way of the passages 12. The central portion of the floor adjacent the flue 6 is solid, thereby preventing over burning of the ware when the kiln is in operation, the ware adjacent to and near the flue 6 being burnt by radiation and partly by direct circulation of the hot air.

In the modification shown in Fig. 5 the stacks 13 are formed in the wall of the kiln and communicate at their lower ends with a passage 14, which in turn is in communication with the passages 9. The construction of the kiln otherwise is substantially the same as hereinbefore described. When the kiln is in operation the ware to be burned is piled upon the floor about the flue 6 and the hot air from the furnaces after discharging from the upper end of the flue 6 is deflected and caused to pass downwardly through the ware into the passages 9, thence into the passage 10 and out through the stacks 11, the draft in the latter being such as to insure a circulation of the hot air in the manner stated and in the direction indicated by the arrows. After the ware has been properly burned the cover 3 is removed to admit of the hot air escaping directly from the top of the kiln, and the fires are permitted to die out and the incoming air through the furnace is heated so as to prevent chilling of the ware and a consequent cracking or a too rapid cooling thereof. It is observed that the construction is such as to assure an

equalization of the heat throughout the interior of the kiln, with the result that the ware is uniformly burned. The arrangement of the furnaces and hot air passages is
5 such as to admit of a minimum amount of fuel being required in the operation of the kiln. The centering of the hot air flue 6 results in a maximum amount of floor space as well as uniformity in the distribution of
10 the hot air.

From the foregoing description, taken in connection with the accompanying drawings, the advantages of the construction and of the method of operation will be readily
15 apparent to those skilled in the art to which the invention appertains, and while I have described the principle of operation of the invention, together with the device which I now consider to be the embodiment thereof,
20 I desire to have it understood that the device shown is merely illustrative, and that such changes may be made when desired as are within the scope of the claims appended hereto.

25 Having thus described the invention what is claimed as new, is:—

1. A kiln of the character described having a centrally disposed flue subdivided into
30 a plurality of vertical passages, furnaces disposed equidistant about the kiln and having communication with the passages of the said flue, the kiln having passages below the floor in communication with the interior of the kiln through the openings formed in the
35 said floor, and stacks grouped about the kiln and having their lower ends in communication with the passages communicating with the interior of the kiln through the openings

in the floor thereof, said kiln having the floor adjacent the central flue and for a
40 short distance therefrom made solid and having the portions of the floor extending over the passages connecting the furnaces with the flue likewise made solid.

2. A kiln of the character described comprising a substantially circular wall, a dome shaped top closing said wall and having a centrally disposed opening adapted to be closed by means of a cover, a centrally disposed flue extending upwardly from the bottom of the kiln within a short distance of the top thereof and subdivided into a plurality of vertical passages, furnaces disposed equidistant about the kiln and having communication with the passage of the flue, an
55 annular passage located in a lower plane than the passages connecting the furnaces with the vertical flue, passages arranged between the furnaces and having connection with the said annular passage, the floor of the kiln being solid over the passages connecting the furnaces with the flue and adjacent the flue and for a short distance therefrom, and having openings establishing communication between the interior of the kiln
65 and the passages in communication with the annular passage, and stacks arranged about the kiln and having their lower ends in communication with the said annular passage.
70

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

CURNEALUS HOOK.

Witnesses:

Mrs. C. Hook,
T. D. YOAHEM.