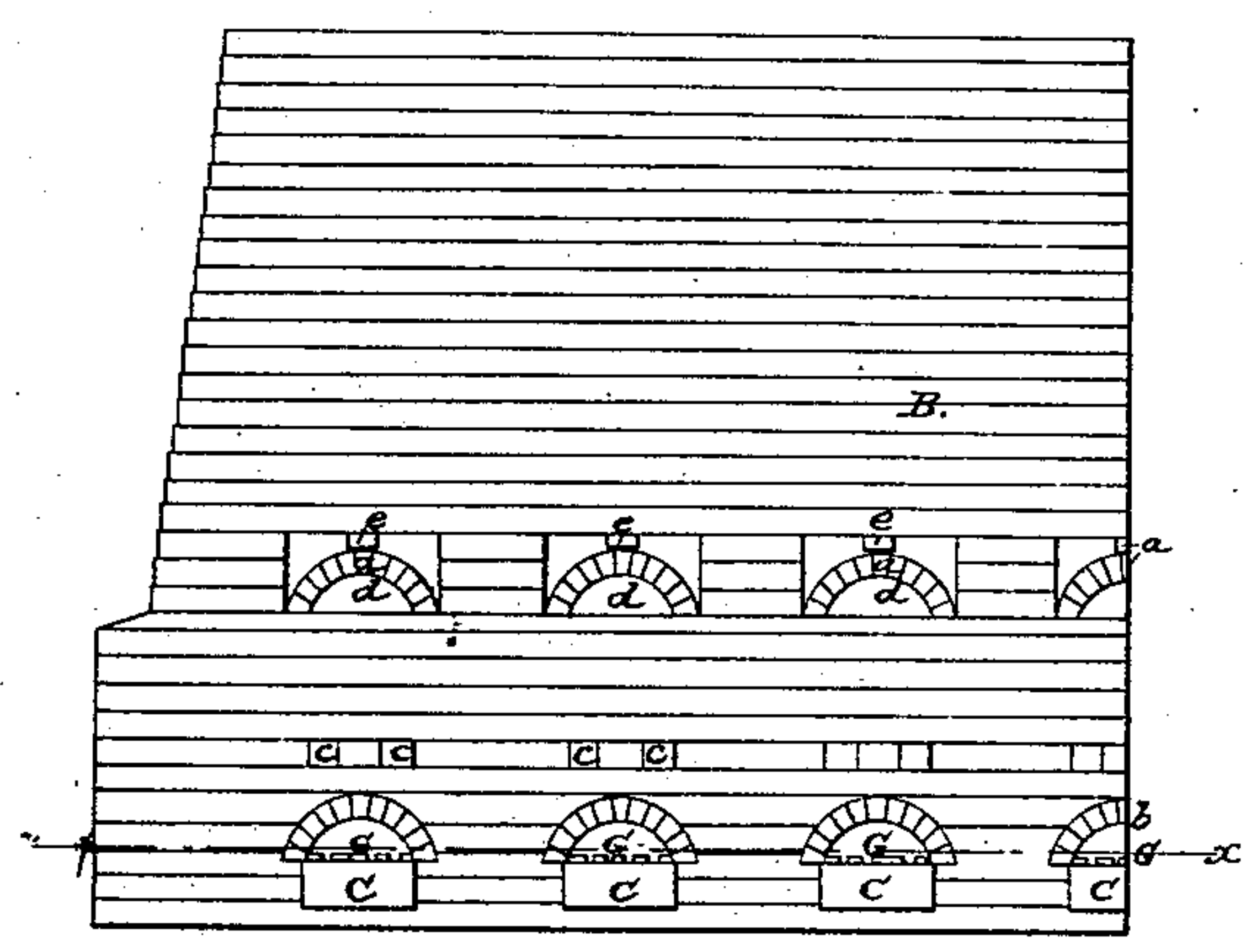


*J. & G. M. Blucher,*

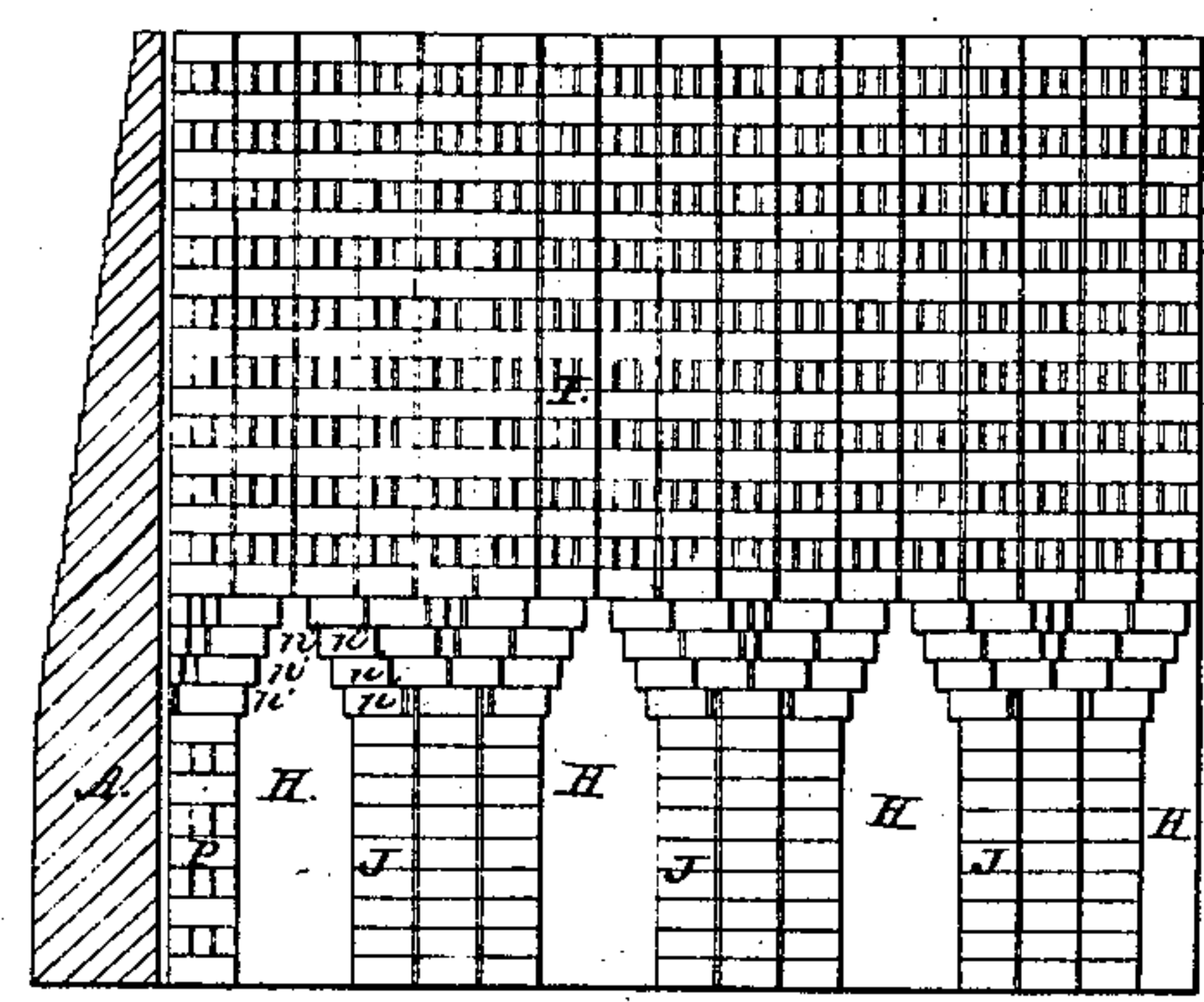
*Brick-Kiln.*

*Fig. 1. No. 12,991.*

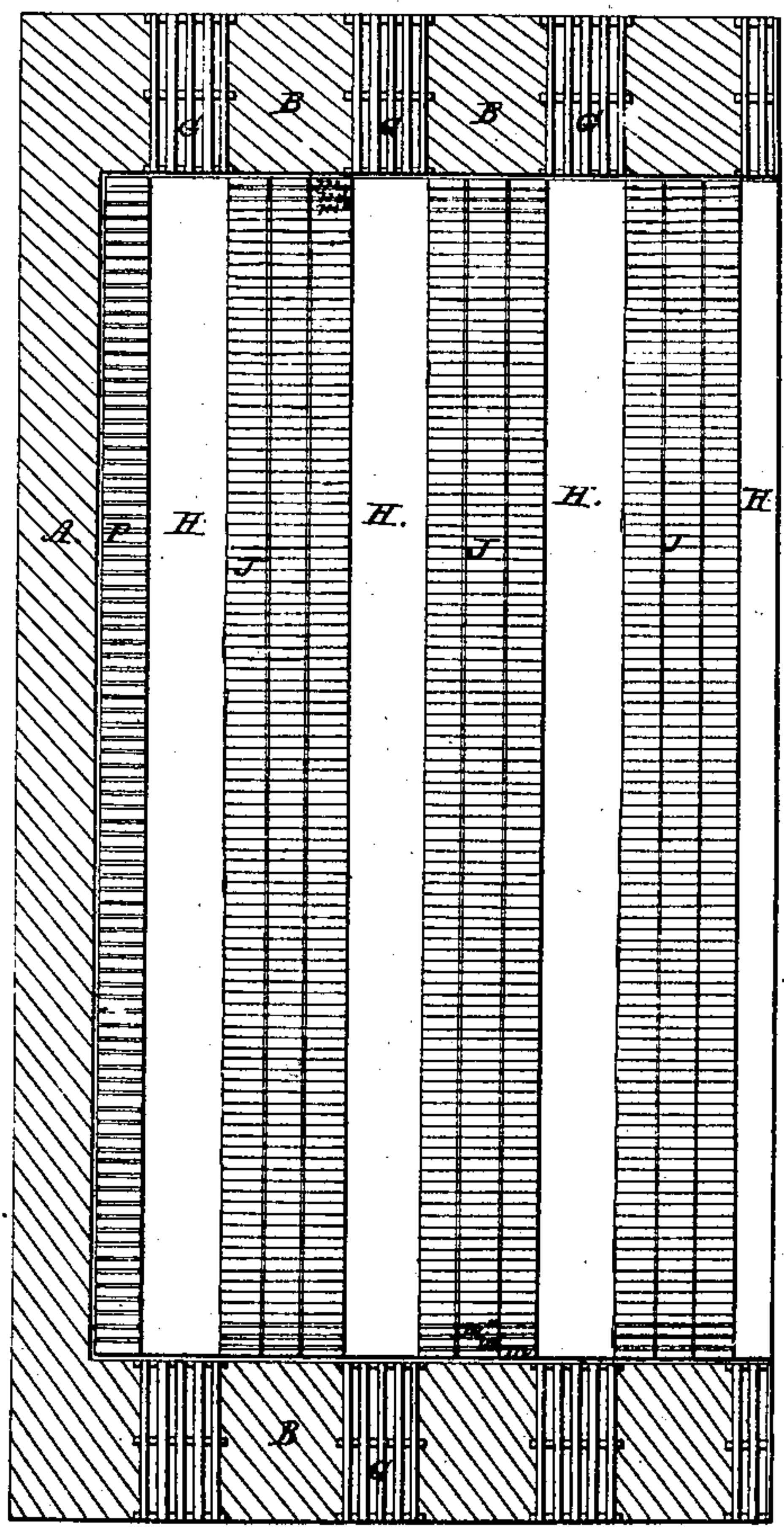


*Patented June 5, 1855.*

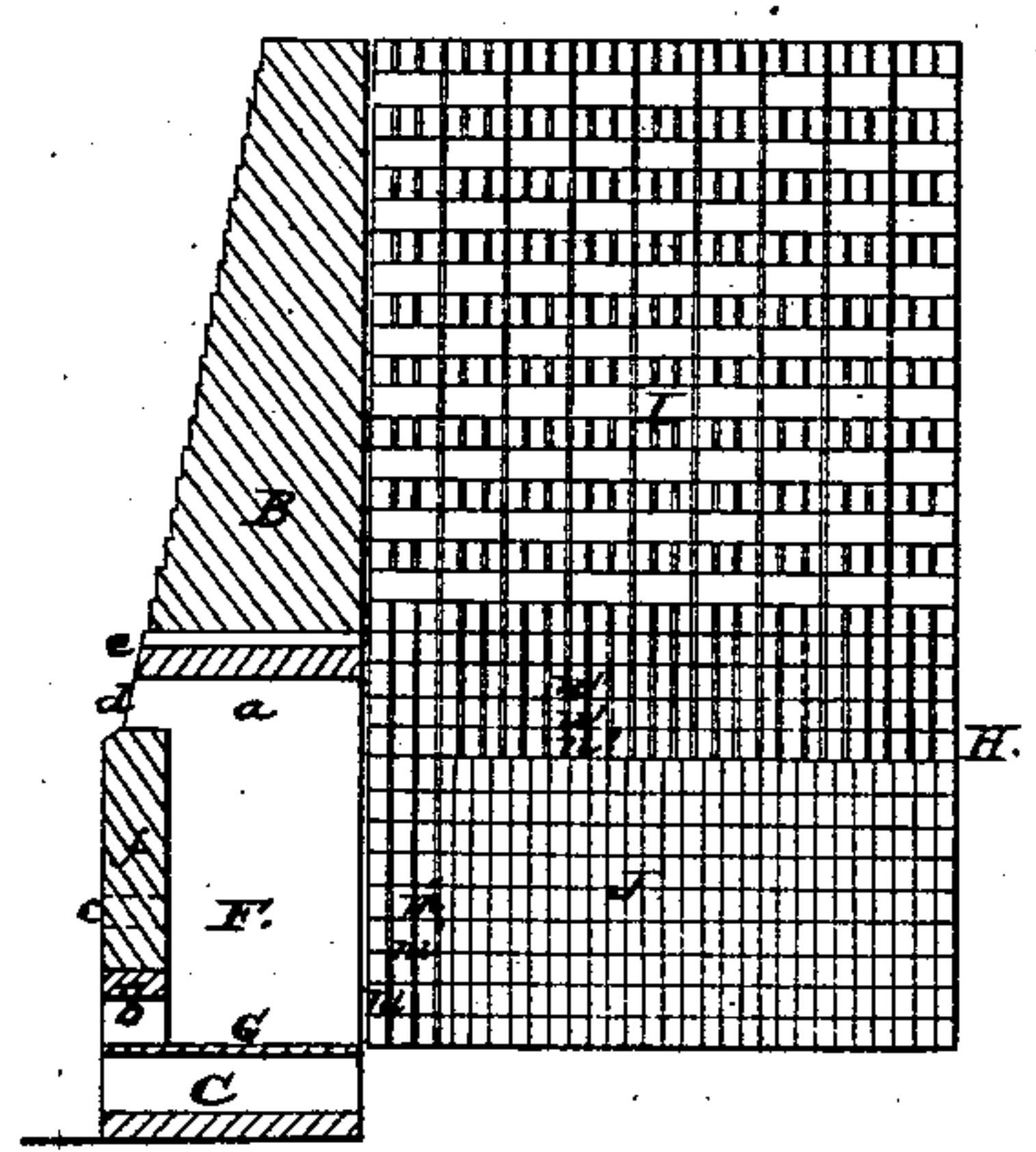
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*





# UNITED STATES PATENT OFFICE.

DANIEL BLOCHER AND GEO. M. BLOCHER, OF CUMBERLAND, MARYLAND.

## BURNING BRICK.

Specification of Letters Patent No. 12,991, dated June 5, 1855.

*To all whom it may concern:*

Be it known that we, DANIEL BLOCHER and GEORGE M. BLOCHER, of Cumberland, in the county of Allegany and State of Maryland, have invented a new and useful Improvement in Brick-Kilns; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing, forming part of this specification, in which—

Figure 1 is an elevation of one of the furnace faces of our improved kiln. Fig. 2 is a vertical section of the kiln, perpendicular to the direction of the arches. Fig. 3 is a horizontal section of kiln on line *x x* Fig. 1. Fig. 4 is a vertical section of kiln through the crown of one of the arches, showing the setting of the brick in the arches.

Similar characters of reference in the several figures denote the same part of the kiln.

The invention here considered has reference to kilns burned by bituminous coal, and is designed to obviate the necessity for the long grates running entirely through the arches, which are now used when coal is employed as fuel; the burning being performed with greater regularity as regards solidity and color, a much larger quantity of brick being placed in the kiln, than can be done when wood is used, or coal employed in the manner above stated. The nature of the invention which effects these advantages, is a peculiar construction of the furnaces in the casement, combined with a manner of setting the brick not heretofore employed: the extent of the invention, its operation, and its distinguishing features will be fully understood from the following description and a reference to the drawing, in which—

A is an end, and B a front wall of the casement, built up in the usual manner with the exception of the furnaces and parts connected therewith.

G G are the grates made of cast iron and running entirely through the casement; beneath the grates are the ash pits C as seen in Figs. 1 and 4. From the grate the sides of the furnace F rise perpendicularly to the arch *a*, the front *f*, being about the length of a brick in thickness, and having a low arch *b* turned over the front of the grate G, for the purpose of removing the cinders

and facilitating draft. Above the arch *b* and through the front of the furnace are two holes C, to admit a poker for stirring the coal. At the top of the furnace beneath the arch *a* is the feed opening *d*, and above the same arch, running through the casement is a small opening *e* for observation regarding the progress of the burning; this opening can be closed by the insertion of a brick when it is desired. This comprises the construction of the furnace, which in connection with the following improvement in setting the brick renders the kiln more economical, and the burning better than any arrangement now in use.

H H are the arches of the kiln, and I the main body of the brick. The arches are supported on the benches or pillars J made up of brick set close together except the three outer courses *m*, *m'*, *m''*, of each interior bench and the entire exterior supports P, which have the interstices common to ordinary setting. The courses *n*, *n'*, *n''* composing the projecting portion of the interior arches have the ordinary setting, as also the main body of brick I.

The operation of our improvement is as follows: The heated air generated in the furnaces is by the closely set interior benches prevented from passing off as soon as generated, while the loosely set outer courses permit a portion of the air to pass up the outer sides of the kiln and thus be diffused throughout every part. The closely set benches of the interior arches constituting sides of chambers to retain the heated air and permit its gradual diffusion. The restriction of the fuel to the casement admitted of by our construction and arrangement, prevents the injury to the arch brick which always obtains when the fire is in contact with the brick. In our furnaces the coal never enters beyond the inner edge of the grate, and as no air enters except through the fire from the draft openings, the arches become the receivers of heated air, to be gradually distributed throughout the mass of brick. These beneficial results are due to the high furnaces entirely within the casement and fed from the top, when taken in connection with the closely set benches; for if the ordinary loose setting was used for the benches, the heated air would pass off too rapidly after leaving the furnace, and the burning fail.

What we claim as new and of our own

invention and desire to secure by Letters Patent, is—

5 The furnaces F entirely within the case-  
ment, and fed at the top, in combination  
with the close setting of the interior benches  
as described, by which, placing the fuel  
within the arches is avoided, and the burn-

ing of the kiln improved, as herein set  
forth.

DANIEL BLOCHER.  
GEO. M. BLOCHER.

Witnesses:

S. C. GEPHART,  
J. B. WARNER.