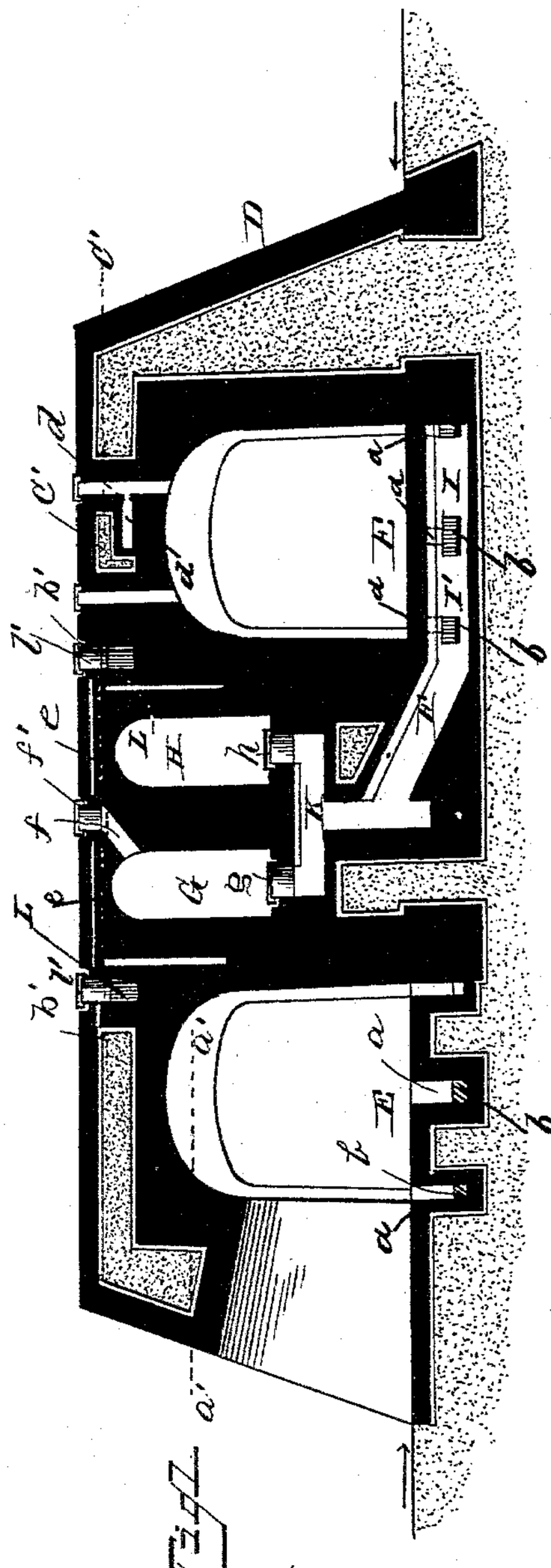
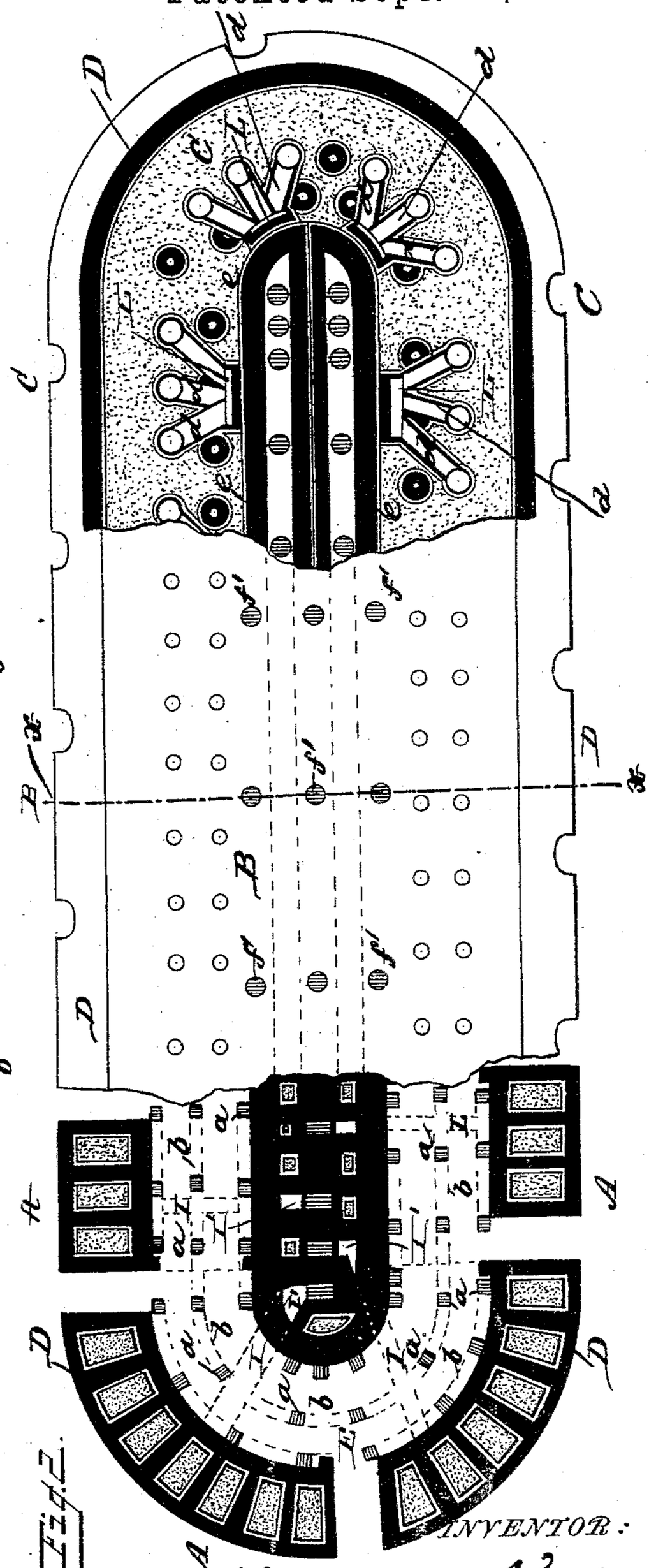
(No Model.)

V. NIELSEN.

BRICK KILN.

No. 411,726. Patented Sept. 24, 1889.





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UNITED STATES PATENT OFFICE.

VALDEMAR NIELSEN, OF ODENSE, DENMARK.

BRICK-KILN.

SPECIFICATION forming part of Letters Patent No. 411,726, dated September 24, 1889.

Application filed January 23, 1889. Serial No. 297,250. (No model.)

To all whom it may concern:

Be it known that I, VALDEMAR NIELSEN, a subject of the King of Denmark, residing at Odense, in the county of Tyn and Kingdom of Denmark, have invented certain new and useful Improvements in Brick-Furnaces; 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, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a sectional view, on a transverse vertical plane, (indicated by the broken line *x x* in Fig. 2,) of a brick baking and drying furnace embodying my improved construction; and Fig. 2 is a plan view looking downward and laid through three different horizontal planes—viz., the left part (marked A) representing a horizontal section through the plane denoted by line *a' a'*, the middle part (marked B) representing a similar section through line *b' b'*, and the extreme right part of the figure (marked C) representing a horizontal section on the line marked *c' c'* in Fig. 1.

Like letters of reference denote corresponding parts in both the figures.

This invention has relation to so-called "continuous" brick furnaces, or kilns and furnaces of a similar character, for drying and baking brick, pottery, tiles, and other like articles of clay; and my improvement consists in the detailed construction and arrangement of parts of a continuous furnace of that type, as will be hereinafter more fully described, and particularly pointed out in the claims.

Reference being had to the drawings, the letter D designates the outer walls of the kiln or furnace, which are preferably, though not necessarily, of an oval form, as shown in Fig. 2. The floors of the firing-chambers E are provided with vertical ducts *a*, communicating with horizontal flues *b*, which in turn open up into larger collecting-flues I and I', through which the heated air and products of combustion from the firing-chambers are conveyed up through the flue F into a central hot-air duct K. The latter, which is of a T shape in cross-section, communicates by means of valves *h* with the hot-air chamber H, which extends lengthwise through the furnace between the firing or drying chambers on opposite sides thereof, and thus it will be seen that any one or all of said chambers E may be connected at will with the central hot-air chamber H by means of the ducts *a*, flues *b*, I, I', and F, central duct K, and the appropriate valve or valves *h*. In this manner the heated air which accumulates in the central hot-air chamber from the firing-chambers may be fed into any one of the chambers used for drying the green brick through the floor-ducts *a* simply by opening its appropriate hot-air valve *h*. This hot air used for the first drying of the brick becoming charged with vapor from the green brick is discharged through ducts *d* in the roof of the firing-chambers, which converge in sets of three (more or less) into chambers or reservoirs L, which communicate through the top flues *e* with other flues *f*, leading downwardly into a smoke-collecting chamber G, which runs lengthwise through the furnace parallel to and of even length with the hot-air chamber H. From this chamber G the products of combustion and the vapors mixed therewith may be finally discharged into the open air either through an ordinary chimney connected by a flue with the smoke-chamber or through valved apertures *f'*, leading through the roof of the furnace down to the inclined flues *f*.

If it is desired to reverse the direction of the draft—*i. e.*, lead the hot air through the firing (drying) chambers from the roof to the floor—then this may readily be accomplished by building a fire in the chamber L appropriate to that drying-chamber or series of drying-chambers in which it is desired to reverse the current of hot air, opening the appropriate draft-hole *l'* and also valve *g* in the smoke-chamber, through which the vapor-laden air will pass into chamber G through the flues K, F, I', I, *b*, and *a*.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In a brick-furnace, the combination of the firing-chamber, horizontal flues below the same, vertical ducts communicating with the horizontal flues and firing-chambers, collect-

ing-flues communicating with the horizontal flues, a hot-air duct communicating with the collecting-flues, a hot-air chamber, and a valve for regulating the communication between the hot-air duct and the hot-air chamber, substantially as described.

2. In a brick-machine, the combination of the firing-chambers located at each end thereof, a hot-air duct communicating indirectly therewith, a hot-air chamber communicating with the said firing-chambers, and valves for connecting the hot-air ducts and hot-air chambers, substantially as described.

3. In a brick-machine, the combination of the firing-chambers located at each end thereof, a hot-air duct communicating indirectly therewith, a hot-air chamber communicating with the said firing-chambers, and valves for connecting the hot-air ducts and hot-air chambers, a smoke-collecting chamber extending parallel to the hot-air chamber, and a valve for connecting the hot-air duct and smoke-collecting-chamber, substantially as described.

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

VALDEMAR NIELSEN.

Witnesses:
H. SÁRENSEN,
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