

(No Model.)

2 Sheets—Sheet 1.

J. CONLEY & J. M. WOLFE.  
BRICK KILN.

No. 477,994.

Patented June 28, 1892.

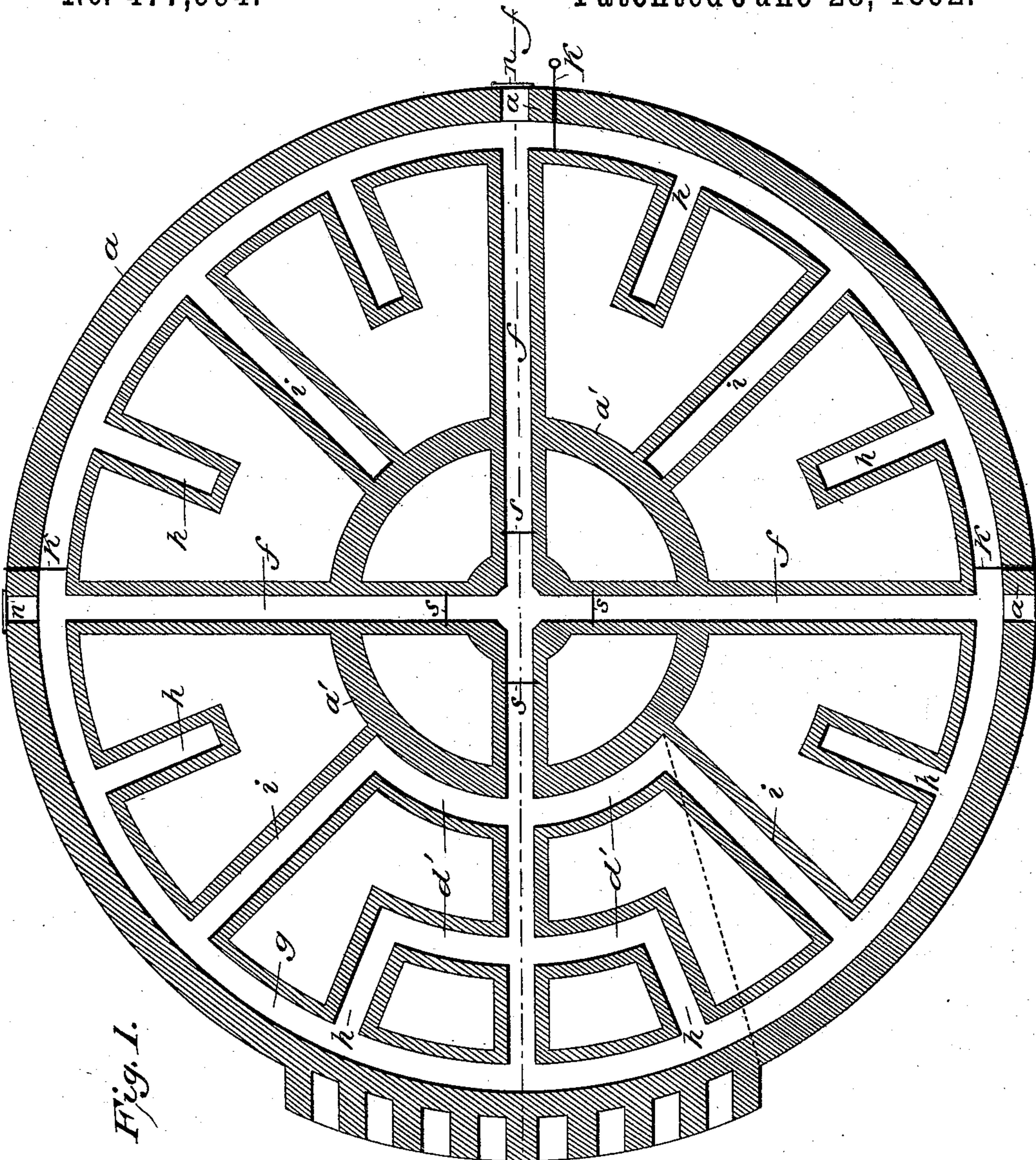


Fig. 1.

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and  
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Inventor

Witnesses

G. S. Elliott.

T. M. Johnson

by

Attorney

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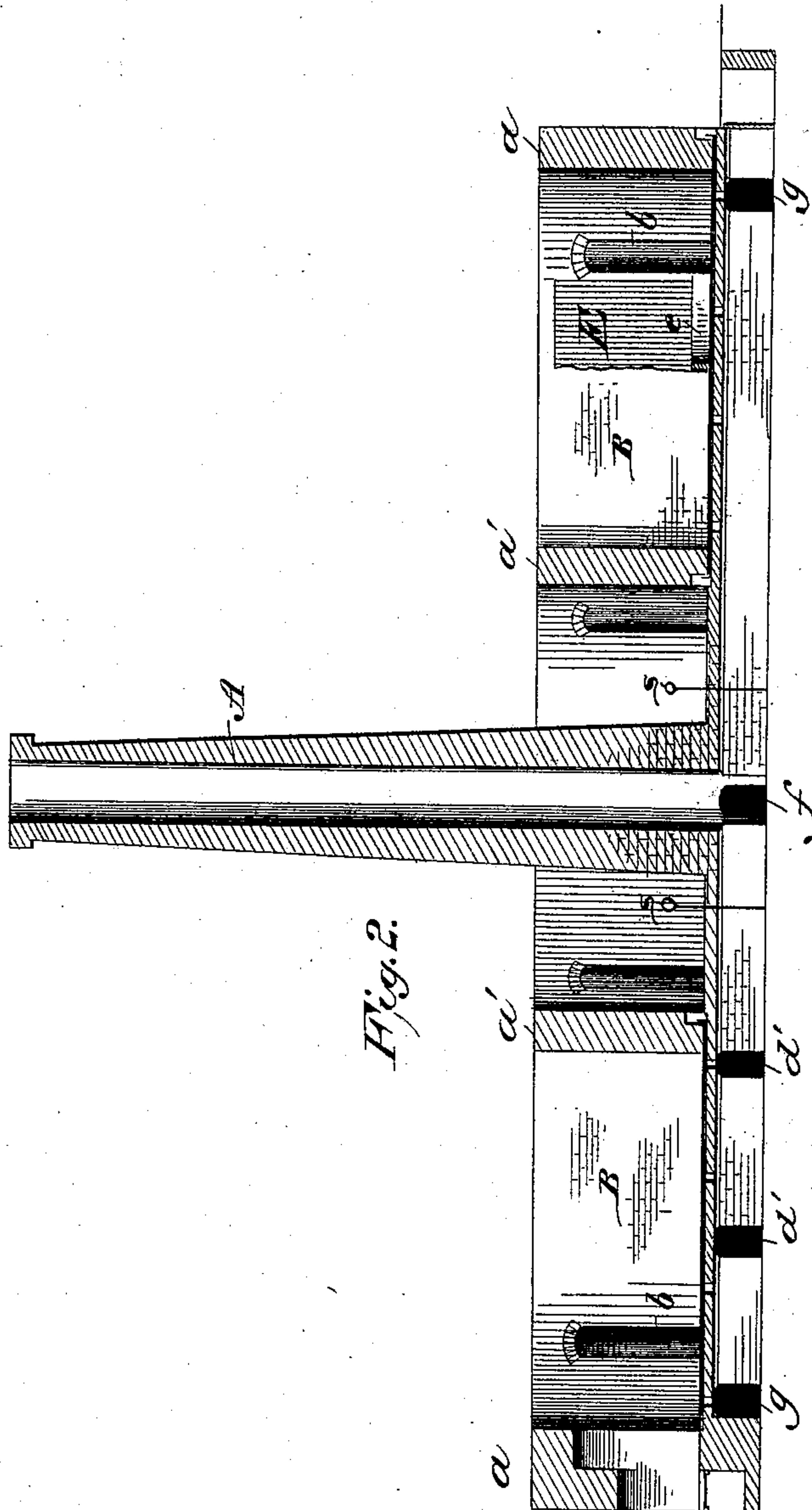


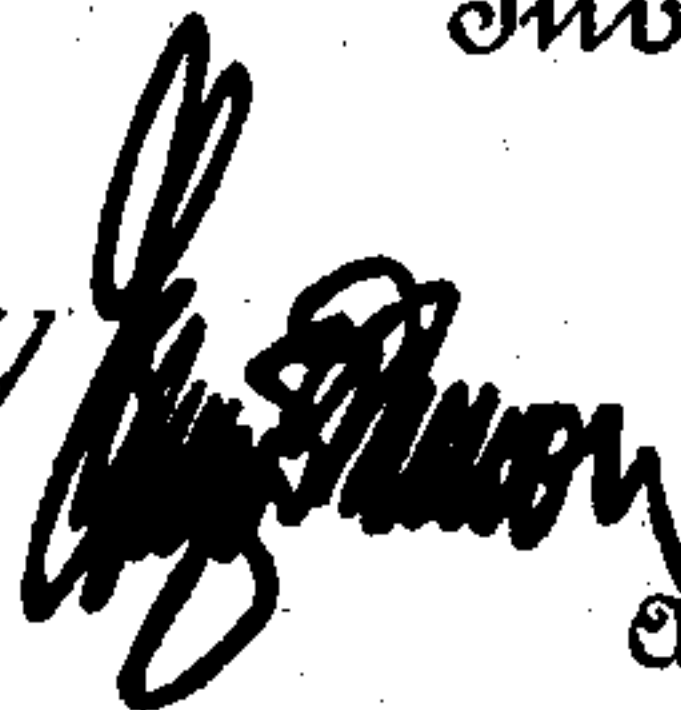
Fig. 2.

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# UNITED STATES PATENT OFFICE.

JOSEPH CONLEY AND JAMES M. WOLFE, OF TARKIO, MISSOURI.

## BRICK-KILN.

SPECIFICATION forming part of Letters Patent No. 477,994, dated June 28, 1892.

Application filed March 12, 1892. Serial No. 424,715. (No model.)

*To all whom it may concern:*

Be it known that we, JOSEPH CONLEY and JAMES M. WOLFE, citizens of the United States of America, residing at Tarkio, in the county of Atchison and State of Missouri, have invented certain new and useful Improvements in Circular Brick-Kilns; and we 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, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in circular brick-burning furnaces, the object thereof being to provide a circular kiln, which consists of several chambers or sections which can be connected with each other and with a central chimney, so that each section can be connected to a common furnace for heating or water-smoking the bricks, after which the bricks are burned by fuel fed in through the top of the kiln into passage-ways made by stacking the bricks within the kiln, the said passage-ways communicating with flues having dampers, by means of which air may be fed to the fuel, the top of the kiln adjoining the passage-way supporting pots with covers for closing said passage-ways, as will be hereinafter fully set forth, and particularly pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a plan view taken below the ground-level of the kiln. Fig. 2 is a vertical section on the line *f f* of Fig. 1.

*A* designates a central chimney, which is connected by a series of flues to an annular space *B*, in which the bricks to be burned are placed, this space being adapted to be divided into sections by temporary vertical paper partitions, which extend from the base to the top, being connected to boards at the base, the board portions of said partitions being removable through the doorways or openings *b*. There are two or more of these doors in the outer permanent wall *a* of the kiln and four in the inner permanent wall *a'* near the center of the kiln.

*C* designates a furnace having grate-bars and ash-pits, which are formed within the

permanent wall *a* of the kiln, which at this point is increased in thickness, said furnace being used in starting the fires and igniting the fuel, which is fed through pots placed on the top of the kiln and which communicate with passage-ways formed by properly stacking the bricks, said passage-ways leading to air-supply ducts, as will be hereinafter fully set forth.

It will be observed that when the fire is started in the furnace *C* it can be confined to the first section of the kiln or to any succeeding section by properly manipulating the dampers above the underground flues and by the withdrawal of the boards *e*, through the doors *b*, formed in the outer wall.

*f f* designate transverse flues, which extend from the outer wall to the chimney, said flues communicating with the sections *B* of the kiln through apertures in the floor covered by dampers, said dampers being operated either from the space at the center of the kiln or from the exterior thereof.

*g* designates a circular flue, which is provided with damper-openings, and from this flue radiate short flues *h*, provided with dampers, while between the same are located flues *i*, which extend from the outer wall *a* to the inner wall *a'*, said flues also having dampers operated either within or without the kiln. Flues *f* to be used also as cold-air flues are provided having openings through the outer wall and dampers *K*. The opening through which cold air is admitted to flue *f* is designated by the letter *n*. The inner wall *a'* is extended at a point opposite the furnace *C*, so as to provide a short flue *d'*, which communicates with the flue *f* and is used in starting the fires.

In practice the bricks are stacked in the compartments *B* and the paper partitions properly placed. The fire is then started and after the bricks in the first section of the kiln are sufficiently heated fuel is fed through the pots to the apertures formed by the bricks in stacking the same, and the fuel is ignited by the furnace. As the bricks are stacked to form ledges, the fuel, which is preferably slack coal, will catch on said ledges and distribute the heat, the air-supply being through one set of flues and down the other flues to the chimney. If at any time there is too much



fire in any section and the burning of the bricks is progressing too rapidly, cold air may be admitted through the flues *f* by closing the dampers *K* and openings doors *n*. After  
 5 one section of bricks has been burned the board *e* at the bottom of the partition is removed and the bricks in the next section water-smoked and burned in a similar manner. It will be noted that the fuel used for burn-  
 10 ing the bricks in the first section of the kiln is utilized to a great extent in heating the bricks in the adjacent section, thus utilizing the full effect of the fuel and providing a means for continuously burning bricks, the  
 15 cold-air flues providing means for cooling the bricks after being burned.

The kiln is provided with a wall *E*, which is a temporary wall to be taken out as soon as the fire has been advanced from the place  
 20 of starting and the burned bricks are sufficiently cooled to be removed. Hence we never have to start the fire at the furnace but once, as we keep building in new material at least two or three sections in advance of the  
 25 fire, thus completing the circuit of kiln as often as desirable without again starting the fires from the furnace. In a kiln thus constructed the bricks at the bottom, which have to sustain the greatest pressure, are first  
 30 burned.

We are aware that prior to our invention it has been proposed to provide a brick or pottery kiln with underground flues; but such flues are usually provided with independent  
 35 furnaces and entire bottom of kiln perforated; and we do not claim, broadly, the providing of a brick-kiln with underground flues through which the products of combustion from the furnace pass to a central chimney; but

40 What we do claim as new, and desire to secure by Letters Patent, is—

1. In a circular kiln for burning bricks, the combination of the outer and inner circular

walls and a central chimney, said walls having doorways through which access can be had 45 to the space between the inner and outer walls, said space being connected by flues with the central chimney, substantially as shown, and for the purpose set forth.

2. The combination, in a circular kiln, of 50 the inner and outer walls *a* and *a'*, a central chimney *A*, connected with the space between the inner and outer walls by flues having dampers *s*, and a single furnace *C*, substantially as shown, and for the purpose set 55 forth.

3. In a brick-burning furnace or kiln, the combination of the inner and outer walls *a* and *a'*, having doorways through the same, 60 flues with apertures and dampers above the same, a furnace *C*, communicating with the space *B*, in which the bricks are placed to be burned, and a temporary partition-wall *E*, adjacent to the furnace, extending from the 65 outer to the inner wall, substantially as shown, and for the purpose set forth.

4. In a furnace for burning brick, the combination of the inner and outer walls *a* and *a'*, flues having dampers communicating with the central chimney and with a space *B*, in 70 which the bricks to be burned are placed, flues *f*, extending through the walls *a* and *a'* and provided with apertures and dampers for communicating with the compartment *B*, a temporary partition-wall *E* between the walls 75 *a* and *a'* and adjacent to the furnace *C*, and means, substantially as set forth, for dividing the space *B* into separate compartments, for the purpose set forth.

In testimony whereof we affix our signatures 80 in presence of two witnesses.

JOSEPH CONLY.  
 JAMES M. WOLFE.

Witnesses:  
 JOHN A. GERLASH,  
 TENNIE E. HAINES.