

L. SCHANTL.  
COKE OVEN.

No. 103,507.

Patented May 24, 1870.

Fig. 2.

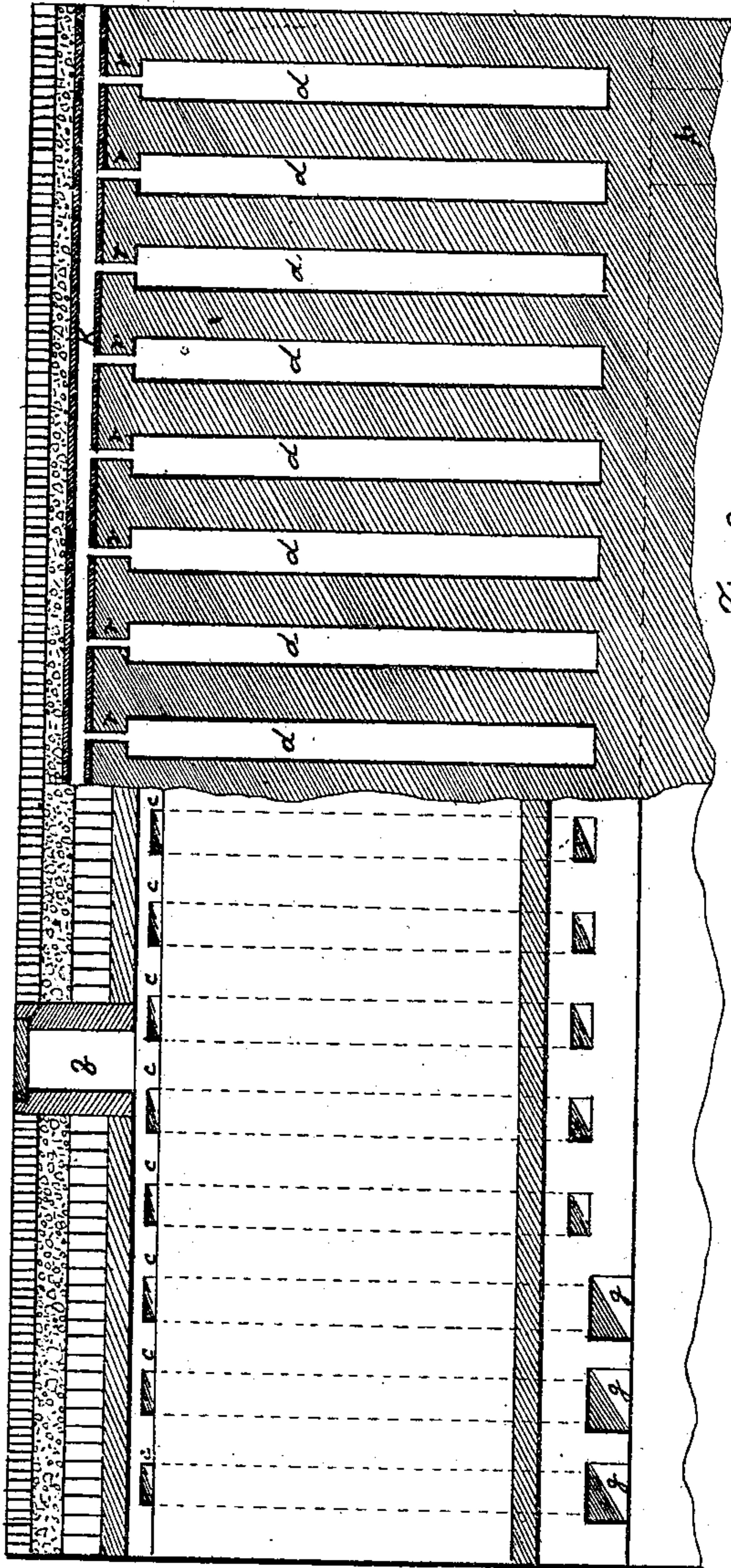


Fig. 3.

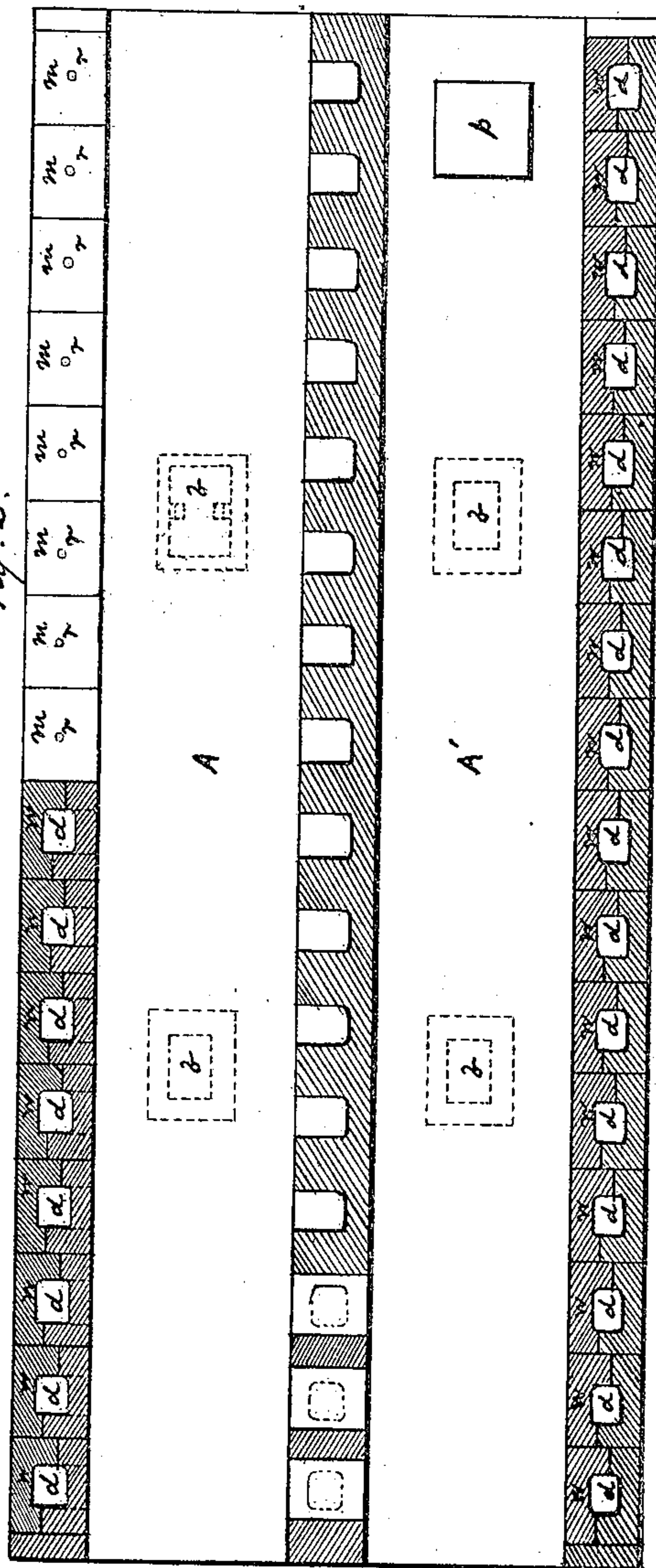
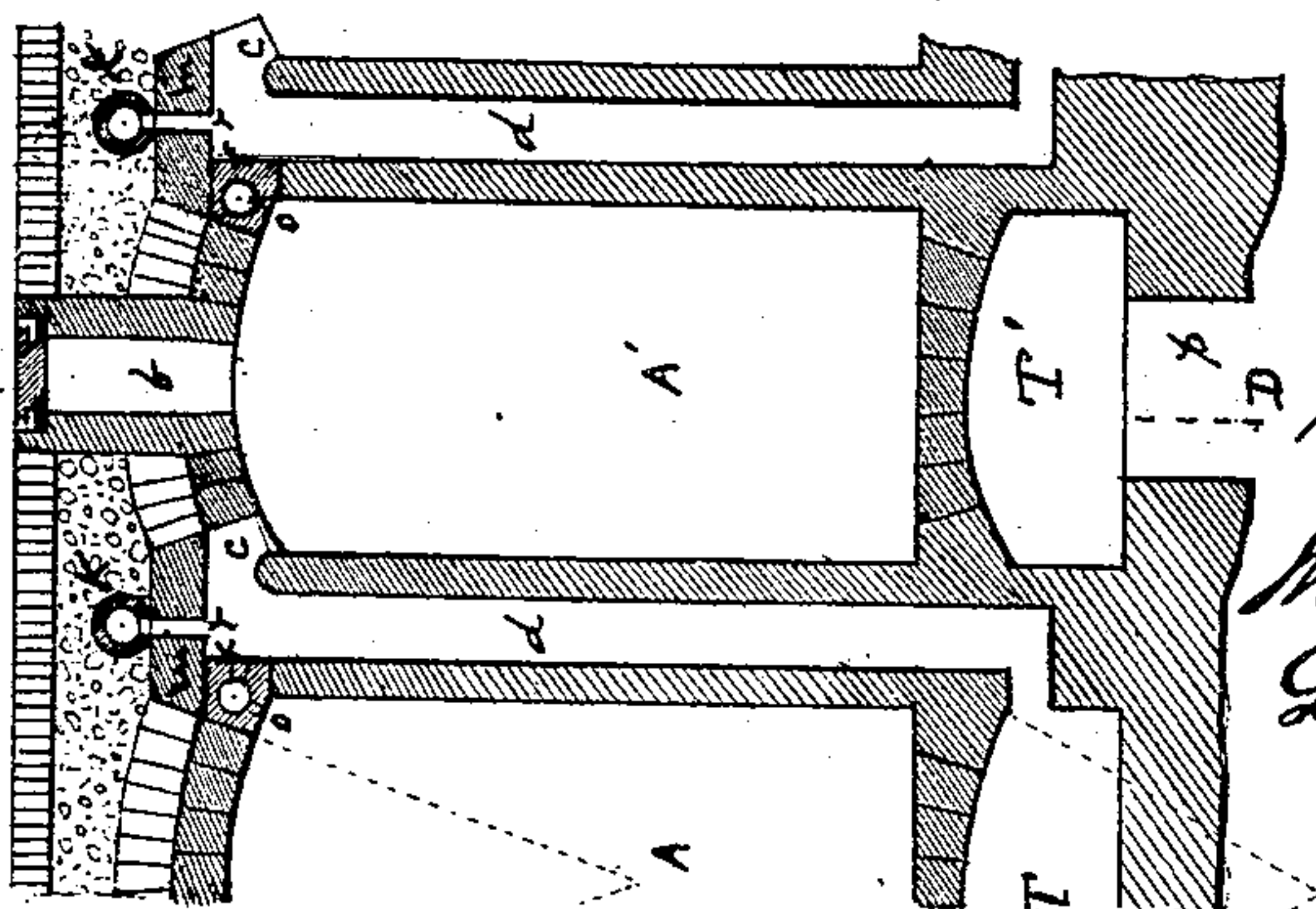


Fig. 1.



Witness  
Theodore Meier  
Lewis Myers

Inventor  
L. Schantl by  
Emil S. Boyd  
Atty



# United States Patent Office.

LEWIS SCHANTL, OF ST. LOUIS, MISSOURI.

Letters Patent No. 103,507, dated May 24, 1870.

## IMPROVEMENT IN COKE-OVENS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, LEWIS SCHANTL, of the city and county of St. Louis, State of Missouri, have invented a new and useful Improvement in Coke-Ovens, of which the following is a full, clear, and exact description, reference being had to the annexed drawing making a part of this specification, in which—

Figure 1 represents a transverse sectional elevation of a pair of my ovens.

Figure 2 represents a longitudinal sectional elevation of same, taken at lines C D and A B.

Figure 3 represents a plan of the bottom of same. Similar letters indicate like parts.

The object of my invention is to produce an oven wherein the gases usually wasted may be utilized, and the admission of the requisite quantity of atmospheric air may be completely under the control of the operator.

The ovens will be operated in pairs, and may be extended to any desired number, and may be of any desired shape, or constructed of any proper material.

I prefer the form shown at A A', fig. 1, which is made of fire-proof material and closed by an arch, as seen.

In the top of the oven, passing through the arch, are several openings, *b*, figs. 1, 2, 3, through which the ovens are charged in the usual manner.

In the top of the ovens A A', (the drawing only representing one set of ovens,) throughout the entire length, are numerous openings *c*, figs. 1, 2, connecting with flues *d*, figs. 1, 2, 3, between the walls of the adjoining ovens, and extending to the bottom of same, as seen, and there, by another set of side flues, opening into the chamber T beneath A.

This flue or chamber T at the front of the oven is connected by the passages *g* with the flue T' under A, and this in turn by an opening, *p*, is connected either with the chimney or such other outlet as may be deemed most convenient.

The hot gases given off by the coal, instead of being wasted and their heat lost as soon as they pass from the oven, are, by means of the flues *c d T T'*, made to circulate around the sides of both ovens and along their bottoms, thoroughly and evenly distributing the heat, and in particular bringing it to the parts of the oven, the bottom, where it is most needed.

In order to give the coal in the ovens the necessary amount of air, I arrange flues *f*, fig. 1, running along the top of the ovens from front to rear, and by numerous openings *o*, fig. 1, connected with the ovens.

These flues, at their ends, are closed by light damp-

ers or slides, so that the amount of air admitted may be exactly regulated.

Along the top of the ovens and directly over the vertical flues *d* are pipes or flues *k*, figs. 1, 2, which, by means of openings *r*, figs. 1, 2, and 3, connect with and supply air to the flues *d*, for mingling with the gases contained in them.

These pipes are also provided at their extremities with air-tight dampers by which the admission of air may be regulated, so that there shall always be enough to insure the burning of the gases.

The side walls of the oven are built of U-shaped bricks *w*, fig. 3, which give a very superior bend and prevent any leakage from the ovens or side flues by reason of loose or imperfect joining, as is evident.

I make the floor of the ovens arched, so that the same may be easily repaired.

The doors at either end of the oven are provided with chains or other convenient device by which they may be raised and lowered, and the charging holes are provided with air-tight coverings.

When the coke is finished I use an engine to push the same from the ovens.

As I have before stated, these ovens are designed to be worked in pairs, and the drawing, fig. 1, indicates how additional ovens may be added to the set whose operation and construction has just been described.

The air-pipes *f* are preferably made of molded fire-proof blocks, and the pipes *k* of fire-proof clay.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination and arrangement in pairs of two or more coke-ovens, in such a manner that the burning gases given off by the coal in each may, by means of vertical and side flues, be made to pass around the sides and bottom of both ovens, for the purpose of more evenly and effectually distributing the heat to all parts of each oven, substantially as shown and specified.

2. The ovens A A', vertical flues *d*, longitudinal flues T T', and connecting transverse flues *g*, all in combination, substantially as shown and specified.

3. In combination with the devices above specified, the cold-air flues *k* and *f*, arranged for joint operation therewith, substantially as shown and specified.

4. The construction of the walls of U-shaped blocks, which at the same time form the vertical flues, as shown and specified.

Witnesses:

SAML. S. BOYD,

THEOD. G. MEIER.

LEWIS SCHANTL.