

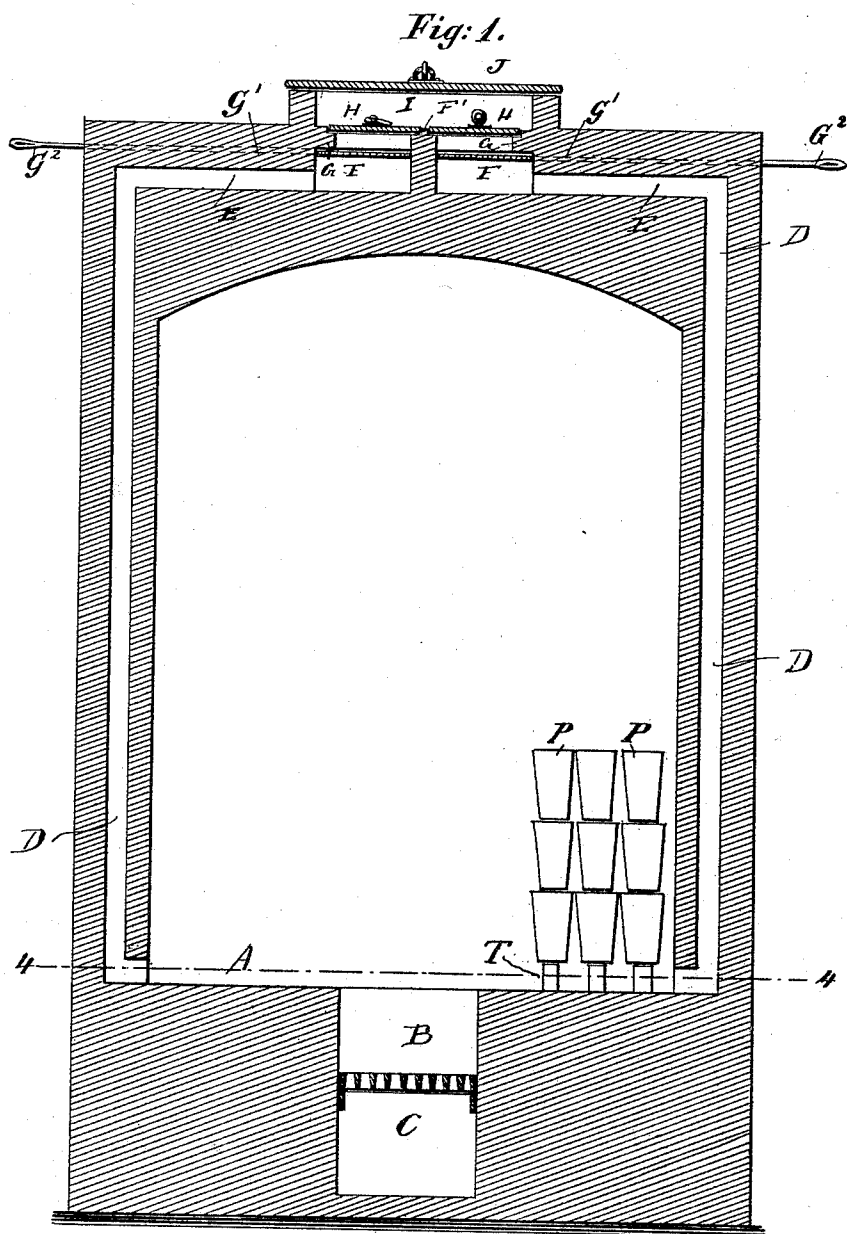
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3 Sheets—Sheet 1.

G. A. PROCHAZKA & W. SCHARRINGHAUSEN.  
ULTRAMARINE FURNACE.

No. 495,515.

Patented Apr. 18, 1893.



WITNESSES:

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(No Model.)

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Fig. 2.

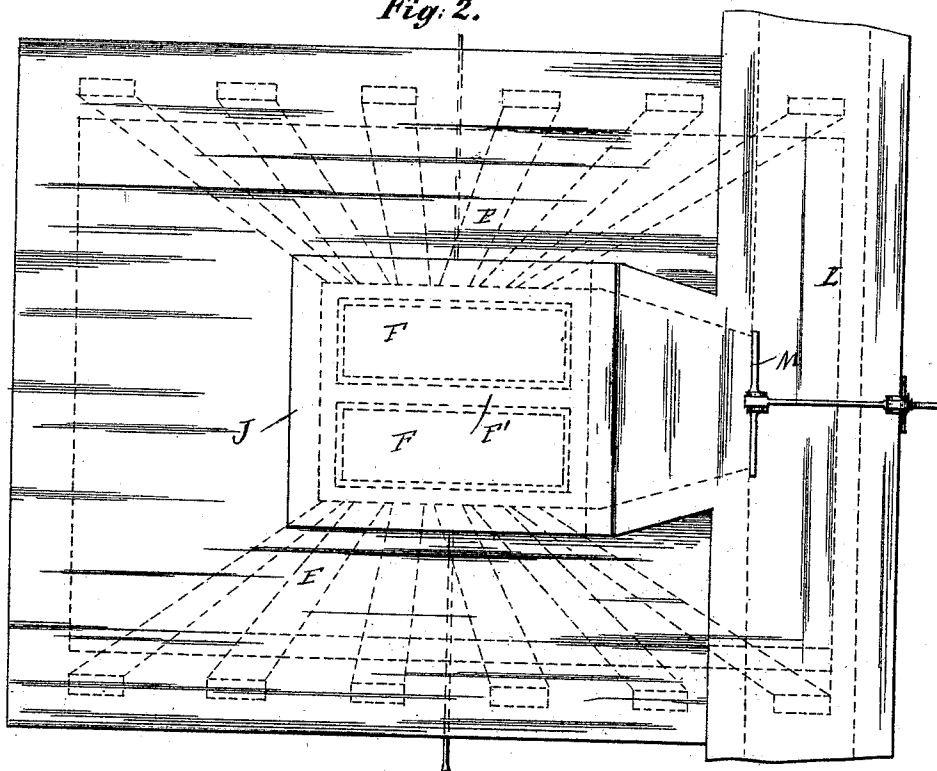
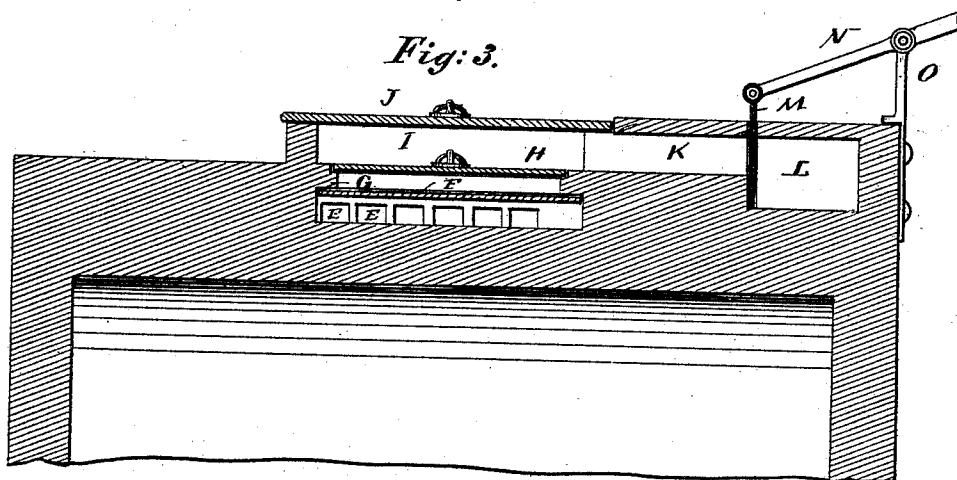


Fig. 3.



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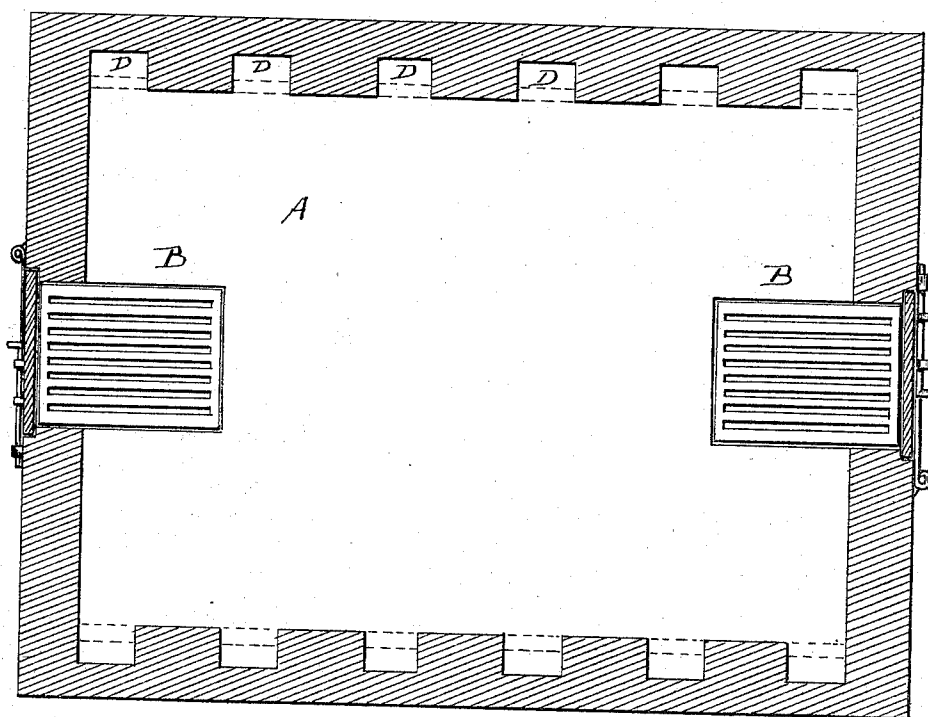
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*Fig. 4.*



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# UNITED STATES PATENT OFFICE.

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NEW JERSEY, ASSIGNORS TO THE HELLER & MERZ COMPANY, OF SAME  
PLACE.

## ULTRAMARINE-FURNACE.

SPECIFICATION forming part of Letters Patent No. 495,515, dated April 18, 1893.

Application filed July 26, 1892. Serial No. 441,314. (No model.)

*To all whom it may concern:*

Be it known that we, GEORGE A. PROCHAZKA and WILLIAM SCHARRINGHAUSEN, citizens of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Ultramarine-Furnaces, of which the following is a specification.

This invention relates to an improved furnace for making ultramarine, and especially to the devices for regulating and controlling the draft.

In the accompanying drawings, Figure 1 is a vertical transverse sectional view of our improved ultramarine furnace. Fig. 2 is a plan-view of the same. Fig. 3 is a vertical longitudinal sectional view of the upper part of the same, and Fig. 4 is a sectional plan-view, on the line 4 4, of Fig. 1.

Similar letters of reference indicate corresponding parts.

The furnace is constructed with a hearth A and a fire-place B and ash-pits C at each end of the furnace, said fire-places being of considerable less width than the hearth, and being built in recesses or openings of said hearth. In each side-wall of the furnace a series of vertical flues D is built, the lower ends of which terminate on the plane of the hearth and have openings communicating with the bottom part of the furnace, and the upper ends of the several flues D are in communication with converging flues E arranged in the roof of the furnace and leading into the outer sides of two compartments F separated by a partition F' and provided at the top with an inwardly-projecting ledge G running along the sides and adapted to serve as a support for a removable covering plate H. The flues E lead into said compartments below the ledge G, as shown in Fig. 3.

Below the ledge G of each compartment F a sliding damper G' is arranged, which can be manipulated by means of a rod G<sup>2</sup> extending to the side of the furnace or in any other suitable manner.

Above the two compartments F a chamber I is formed and is provided with a removable cover-plate J to a smoke-channel L built on top of the furnace at the front end trans-

versely to the longitudinal axis of the same and leading to a suitable stack. A damper or gate M passes through a slot in the top of the smoke-channel L and serves to close the end of the duct K so as to interrupt the communication between the duct K and smoke-channel L. Said damper or gate M is pivoted to the inner end of a lever N suitably pivoted on a standard O of the furnace, which lever N can be manipulated by any suitable devices, such as a lever, cord and weight.

Ordinarily the covers H are removed, the gate M is raised and the cover-plate J is in place. The products of combustion pass from the fire-places around the pots P placed in the furnace, and on bricks T on the hearth said pots containing the material to be treated, and with the fumes and vapors generated by the heating of the contents of the pots, pass through the flues D and the flues E into the compartments F, then into the upper parts of the compartments F and through the duct K to the smoke-channel L. The draft can easily be regulated by adjusting the fire-doors and by raising the gate M more or less. When it is found that the pots on one side of the furnace are being heated more than the pots on the other, or if for any other reason it is desired to have less heat at one side of the furnace, the corresponding damper G' is closed more or less, so as to interrupt more or less the communication of the flues E on that side of the furnace with the duct K. When the contents of the pots have been burned for a sufficient length of time, it is desirable that all communication between the smoke-channel L and the furnace should be interrupted absolutely. To accomplish this, the two plates H are placed upon the compartments F and the gate M is closed: but as the draft in the stack is very great the same still draws air through the furnace and through the crevices between the edges of the plates H and ledge G and creates more or less suction or draft in the furnace. To obviate such suction or draft entirely, the cover-plate J is removed, the gate M remaining closed. Whatever draft is created does not affect the furnace, as the said draft would draw in air through the duct K into the smoke-channel L. The operator

can thus easily regulate the draft of the furnace and is provided with means for cutting off one side of the furnace at will, and can prevent all draft whatever in the furnace when this becomes necessary.

The charges for the pots form no part of this invention and are well known.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. A furnace for making ultramarine, constructed with flues in the side-walls, two compartments on the top of the furnace, of which the flues in one side-wall and the other with the flues in the other side-wall of the furnace, a plate for closing each compartment and a duct leading from the two compartments to a stack, substantially as set forth.

2. A furnace for making ultramarine, constructed with flues in the side-walls having their upper ends connected by a series of flues in the roof of the furnace with two compartments, removable plates for closing the tops of said compartments, a chamber formed above the compartments, which chamber is connected by a duct with a smoke-flue, and a plate for closing the top of said chamber, substantially as set forth.

3. A furnace for making ultramarine, con-

structed with flues in the side-walls having their upper ends connected by flues in the top of the furnace with two compartments, each provided with a plate for closing it, a chamber formed above said compartments, a plate for closing the top of said chamber, a duct leading from said chamber to a smoke-channel and a gate for closing that end of the duct leading into the smoke-channel, substantially as set forth.

4. A furnace for making ultramarine, constructed with flues in the side-walls having their upper ends connected by a series of flues in the roof of the furnace with two compartments, dampers for closing said compartments, removable plates for closing the tops of said compartments, a chamber formed above the compartments which chamber is connected by a duct with the smoke flue, and a plate for closing the top of said chamber, substantially as set forth.

In testimony that we claim the foregoing as our invention we have signed our names in presence of two subscribing witnesses.

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Witnesses:

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