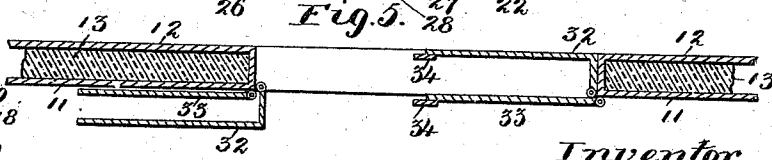
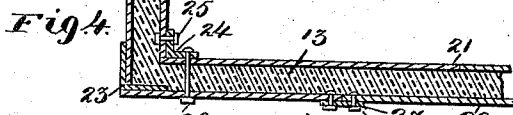
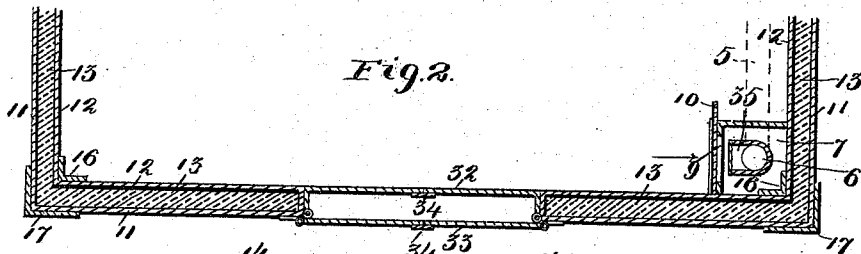


P. J. PAULY, Jr.
JAPANNING FURNACE.

Patented Dec. 11, 1894.



Inventor:
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UNITED STATES PATENT OFFICE.

PETER J. PAULY, JR., OF ST. LOUIS, MISSOURI.

JAPANNING-FURNACE.

SPECIFICATION forming part of Letters Patent No. 530,549, dated December 11, 1894.

Application filed February 1, 1894. Serial No. 498,817. (No model.)

To all whom it may concern:

Be it known that I, PETER J. PAULY, JR., of the city of St. Louis, State of Missouri, have invented certain new and useful Improvements in Japanning-Furnaces, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention has relation to improvements in japanning furnaces and consists in the novel arrangement and combination of parts as more fully set forth in the specification and pointed out in the claim.

In the drawings, Figure 1 is a vertical longitudinal section of my furnace. Fig. 2 is a horizontal section showing the front of the furnace. Fig. 3 is a detail horizontal section showing the method of connecting the inner and outer plates of the walls. Fig. 4 is a vertical detail section showing the method of connecting the side walls with the floor or bottom of the baking chamber, and Fig. 5 is a detail section showing more clearly the construction of the doors of the baking chamber.

The object of my invention is to construct a japanning furnace or oven which will be simple and durable in construction, retain a maximum degree of heat and wherein said heat can be suitably regulated as will more fully hereinafter appear.

In detail the furnace may be described as follows:

Referring to the drawings, 1 represents the baking chamber of the furnace having a hood 2 at one end under which is located an ordinary stove or heater 3 whose feed door 4 opens out from the walls of the chamber 1. The pipe 5 leads to an uptake flue 6 located at one corner of the chamber within an uptake air shaft 7, both the flue 6 and shaft 7 leading through the ceiling of the chamber and through the roof 8 of the building within which the furnace is located. The shaft 7 is provided at or near the floor of the chamber 1 with an opening 9 controlled by a valve 10 which regulates the heat and quantity of air within the chamber. The baking chamber having no air inlet opening, becomes practically an air tight chamber; and when subjected to the influence of heat the air within the same expands and thus becomes rarefied,

a portion of the air being permitted to escape through the opening 9.

It has been found in practice that superior results in japanning are attained by having the baking chamber constructed so that no fresh air can enter it while the articles are being heated therein, a certain degree of rarefaction being always desirable. Of course, upon cooling of the chamber fresh air can enter it through the opening 9, when the resistance to its admission into said chamber disappears.

As best shown in Fig. 3 the walls of the furnace are composed of outer and inner plates 11 and 12 breaking joint with one another and separated by a suitable non-expanding and nonconducting packing material 13 preferably magnesia block or asbestos or equivalent composition, the parts being secured along the outer joints by bolts 14 and reinforced by strips 15 running the length of the walls. The meeting edges of the walls are secured by interior and exterior angle irons 16 and 17 held together by bolts. The inner joints are reinforced by parallel angle irons 18 placed adjacent to one another and secured to each other and to the inner plates 12 by suitable bolts 19 and 20. In securing the plates 11 and 12 of the walls to the plates 21 and 22 of the floor of the chamber an angle bar 23 is interposed between the lower edge of the exterior series of plates 11 and the lower plate 22 of the floor. (See Fig. 4.) A second angle bar 24 is placed on the inside at the juncture of the inner plates 12 and 21, and suitable bolts 25 and 26 secure the several parts, the latter bolt passing through the angle bar 24 and plates 21 and 22. The joints of the lower plates 22 may be reinforced by strips 27 secured by suitable bolts 28 passing through the same and said lower plates.

To the inside of the ceiling of the chamber 1 is secured a series of parallel angle irons 29 between which are interposed plates or strips 30 having suitable openings into which are passed hooks 31 for suspending the articles to be japanned.

The front of the chamber 1 is provided with two pairs of double doors registering with one another, the inner doors 32 being composed of angle plates the shorter legs of the angle

plates being pivoted along the outer vertical edge of the opening formed for the door and when in their open position the longer legs of the angle overlap the outer doors 33 when in their open position which are pivoted adjacent to the pivots of the short legs of the inner door. (See Fig. 5.) The joints between the doors when the latter are closed are covered by the strips 34 secured to the adjacent edges of one of the pairs of doors as best seen in Fig. 5. When in their closed position the short legs of the angle plates of the inner doors rest against the side wall of the opening for the doors as best seen in said Fig. 5.

15 With the above construction the furnace always preserves its shape, the parts do not warp, the heat is thoroughly retained therein and the most perfect control of the temperature within the baking chamber can be attained. Accumulation of soot and dirt in the flue 6 can be removed through the opening 35 at the bottom thereof. By reason of the non-

expanding and heat non-conducting packing between the plates and the specific construction of the chamber it is found that a minimum amount of fuel is required to accomplish the purpose for which the furnace is designed.

Having described my invention, what I claim is—

A japanning furnace comprising an air tight baking chamber, a suitable heater in said chamber, a shield for said heater, an air shaft leading from said chamber, a valve for said shaft, a flue located within said air shaft and passing through the ceiling of said chamber, and a connecting pipe between said flue and heater, substantially as set forth.

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

PETER J. PAULY, JR.

Witnesses:

JAMES J. O'DONOHUE,
C. F. KELLER.