(No Model.)

J. H. MEYER.

DENTAL FURNACE.

No. 532,681. Patented Jan. 15, 1895.

Fig. 1.

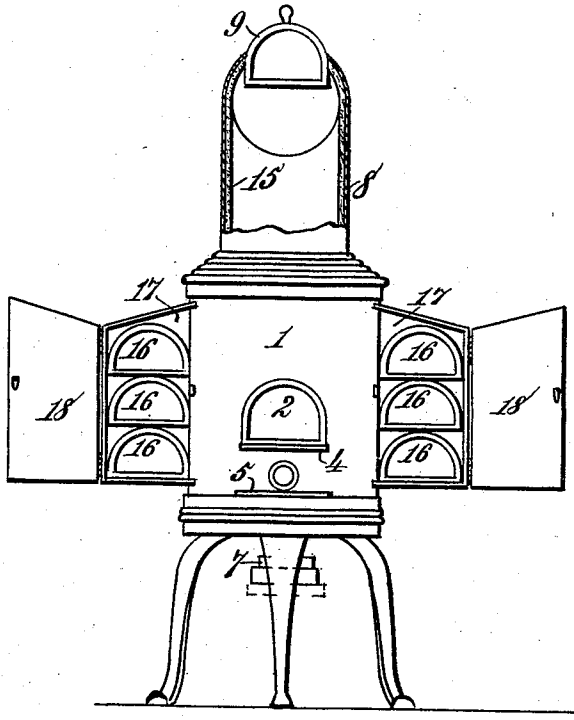


Fig. 2.

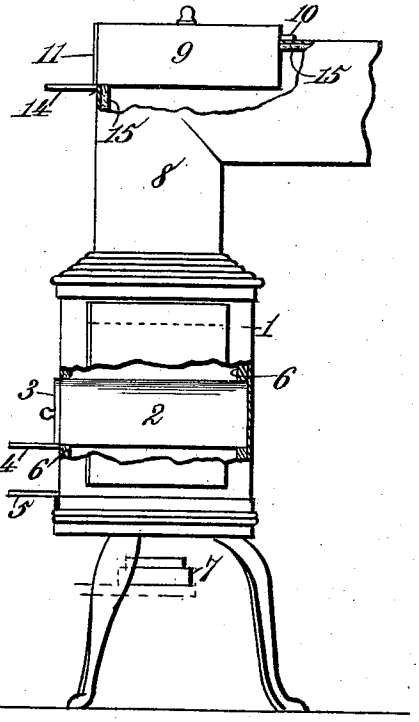


Fig. 3.

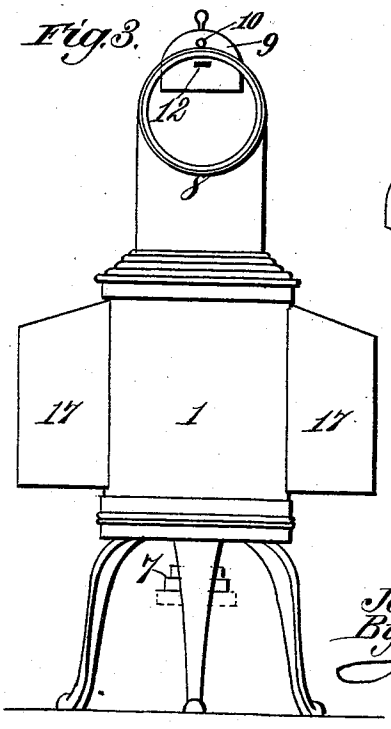


Fig. 4.

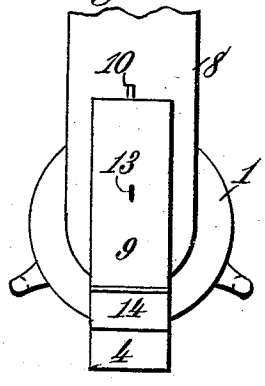
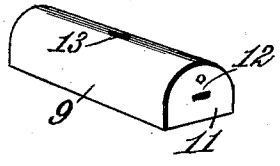


Fig. 5.



Witnesses.
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UNITED STATES PATENT OFFICE.

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DENTAL FURNACE.

SPECIFICATION forming part of Letters Patent No. 532,681, dated January 15, 1895.

Application filed October 31, 1894. Serial No. 527,535. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. MEYER, a citizen of the United States, residing at 159 West Thirty-fourth street, in the city, county, and State of New York, have invented a new and useful Improvement in Dental Furnaces, of which the following is a specification.

This invention relates to dental furnaces and has for its objects to utilize escaping heat passing from the furnace chamber through its flue or chimney and to improve the construction of the furnace for carrying on, in an economical, rapid and efficient manner, the operations of drying, baking and annealing porcelain and other substances for block or bridge-work.

The invention is illustrated in the annexed drawings, in which—

Figure 1, is a partly sectional front elevation of the improved dental furnace, with the muffles or retorts in end view. Fig. 2, is a partly sectional side elevation of the dental furnace. Fig. 3, is a rear elevation of the same. Fig. 4, is a top view of a dental furnace without the annealing or cooling retort, but with a retort or muffle located in the elbow of the furnace flue for preliminary heating or drying of the substance to be subsequently baked in the muffle or retort of the main furnace chamber. Fig. 5, is a perspective of the muffle to be located in the furnace flue.

Referring to the drawings, the numeral 1 designates the body portion or main chamber of the furnace proper, which may have any suitable or convenient form and dimensions. In this chamber 1, is located, as shown in Figs. 1 and 2, a muffle or retort 2 having at its front end a door or cover 3, as shown. The muffle 2 may be supported at each end by the furnace walls; and aprons 4 and 5 may be provided, if desired. It is preferable to provide the furnace chamber 1 with a lining 6, Fig. 2, of fire clay, or other suitable material to assist in retaining the heat, so that a very high temperature may be maintained for completing the baking operation.

The required heat may be obtained by any suitable burner 7, located beneath the furnace body.

In the elbow of the furnace flue 8 is located a retort or muffle 9 to utilize the heat that would otherwise be wasted; and this muffle is adapted more particularly for the purpose of subjecting to a preliminary heating and thereby drying and partially baking the porcelain or other substance before it is placed in the lower muffle 2 for completion of the baking operation. This arrangement of a muffle in the furnace flue is a very important improvement, especially for facilitating rapid work, as a high degree of heat ascends through the furnace flue. It is preferable to support this muffle 9 in the elbow of the flue, so that it will interfere as little as possible with the draft. The muffle 9 may project partly through the flue, as shown, and it may be supported in any convenient manner, as by a pin 10 at one end and also by resting on the partly cut away wall of the flue. One end of this muffle 9 is provided with a door 11, and in one or both ends a vent 12 may be provided, for escape of vapor from the substances being dried. A similar vent 13 may be arranged in the top of the muffle, and these vents may be controlled by plugs, or otherwise. An apron 14 is provided at the front end of the flue muffle. In the flue 8 is a lining 15, of fire clay, or other refractory material, and the flue and its lining are made to converge toward the sides of the muffle 9, as shown. The muffle 9 is preferably flat on its bottom and is made long enough to receive two or more plates or forms at the same time.

After a partial or preliminary heating or drying of a charge is effected in the muffle 9 the charge will be removed and then placed in the lower retort or muffle 2 where the baking will be completed.

For the purpose of cooling and annealing the baked material series of retorts or muffles 16, Fig. 1, are arranged in chambers 17, on opposite sides of the furnace proper, the said chambers being provided at one end with doors or shutters 18; and thus the operations of drying, baking and annealing can be conducted simultaneously and continuously in the same furnace.

What I claim as my invention is—

1. The combination with a dental furnace inclosing the muffle 2 and provided with a flue or chimney, of the muffle or retort 9 located in the elbow of said flue or chimney and adapted for preliminary heating of a sub-

stance to be subsequently baked in the furnace muffle, the said muffle 9 being provided with vents, and the flue lining 15 converging at its upper end toward the sides of said muffle 9 and composed of refractory material, substantially as described.

2. The combination with a dental furnace having the inclosed muffle 2 and provided with a flue having the muffle 9 therein, of the annealing and cooling muffles 16 located in chambers on the opposite sides of the main furnace chamber, and the shutters 18 for closing in said annealing muffles, substantially as described.

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