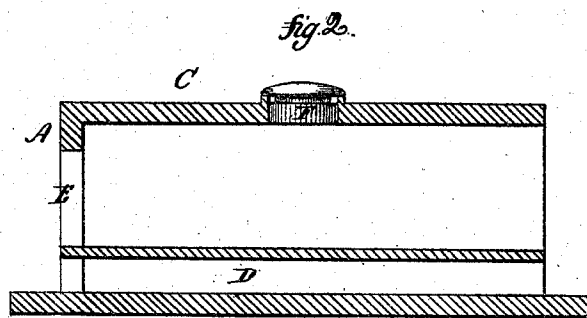
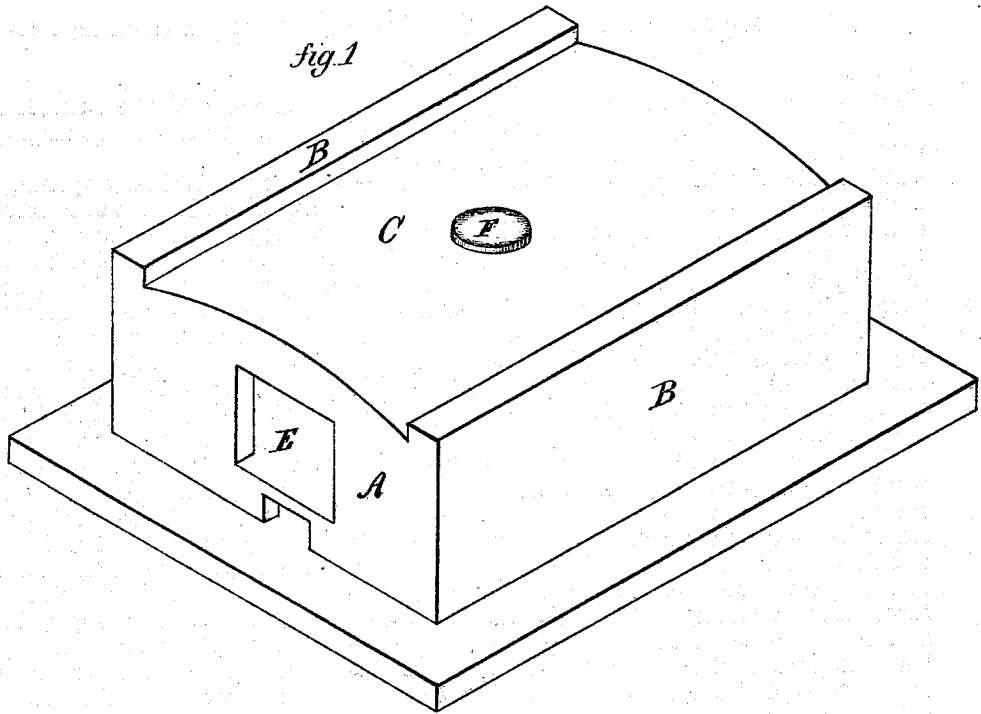


(85.)

Thorvald F. Hammer's *Impt in Annealing Furnace*
Self
Assignor to, E. C. Hammer.

No. 122,604.

Patented Jan. 9, 1872.



Witnesses
J. H. Hummer
A. J. Tibbitts

Thorvald F. Hammer
Inventor
By his Attorney,
John E. Eaul

UNITED STATES PATENT OFFICE.

THORVALD F. HAMMER, OF BRANFORD, CONNECTICUT, ASSIGNOR TO HIMSELF AND E. C. HAMMER, OF SAME PLACE.

IMPROVEMENT IN ANNEALING-FURNACES.

Specification forming part of Letters Patent No. 122,604, dated January 9, 1872.

To all whom it may concern:

Be it known that I, THORVALD F. HAMMER, of Branford, in the county of New Haven and State of Connecticut, have invented a new Improvement in Annealing-Furnace; and I do hereby declare the following, when taken in connection with the accompanying drawing and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawing constitutes part of this specification and represents, in—

Figure 1, a perspective view; and in Fig. 2, a longitudinal central section.

This invention relates to an improvement in what are commonly called annealing-furnaces, specially designed for the manufacture of malleable iron—that is, furnaces in which the flue is below the floor of the annealing-chamber. The long-continued heat to which this class of furnaces is subjected before the contents are in a condition to be removed so thoroughly heats all parts of the furnace that days are required to cool the furnace sufficiently to enable the workman to perform a second operation. To overcome this loss of time, and ventilate the furnace as it may be required at other times than for cooling, is the object of my invention; and it consists in constructing an opening or openings through the dome or highest point of furnace, which, in combination with the charging-doors or openings in the ends of the furnace, when both the doors and opening or openings are open, creates a circulation of air within the furnace to greatly facilitate the cooling of the furnace.

A is the front; B B, the sides; C, the dome; and D, the flue of a common annealing-furnace. The length of the furnace depends upon cir-

cumstances; and the furnace is provided at one or both ends with a charging-door or opening, E.

Heretofore the only openings into the annealing-chamber have been through the charging-doors; and when the charge is drawn these doors are open to cool the chamber, which ordinarily requires several days before the chamber is so far cool as to permit the workman to enter the furnace for repairs or recharging.

In my invention I form one or more openings, F F, through the dome or highest point of the chamber, which openings are closed by any suitable covers, and which, when the charge is drawn, are opened; the result of which is that a draught is immediately created through the charging-openings to the opening in the top, the higher opening permitting air to pass freely out, thus maintaining a constant circulation of fresh air, which greatly aids in cooling the furnace, saving, in the common furnace, forty-eight hours time, as, with this free circulation of air, the workman can operate within the furnace while the walls are at a comparatively high temperature.

To facilitate this ventilation, pipes may be attached to lead to any convenient flue to increase the draught of air through the furnace.

I claim as my invention—

In annealing-furnaces, the combination of one or more openings through or near the dome or top of the furnace with the charging-doors below, in the manner and for the purpose substantially as described.

T. F. HAMMER.

Witnesses:

A. J. TIBBITS,
J. H. SHUMWAY.

(85)