

H. H. GILMORE.

Fire-Chamber of Puddling and other Furnaces.

No. 160,180.

Patented Feb. 23, 1875.

fig. 1

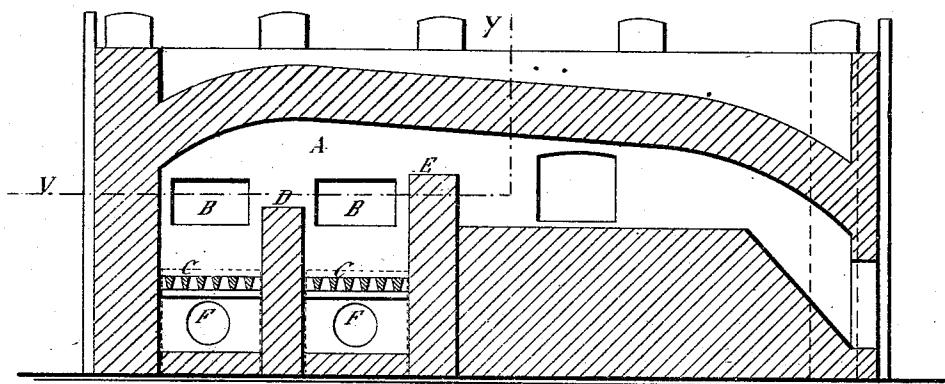
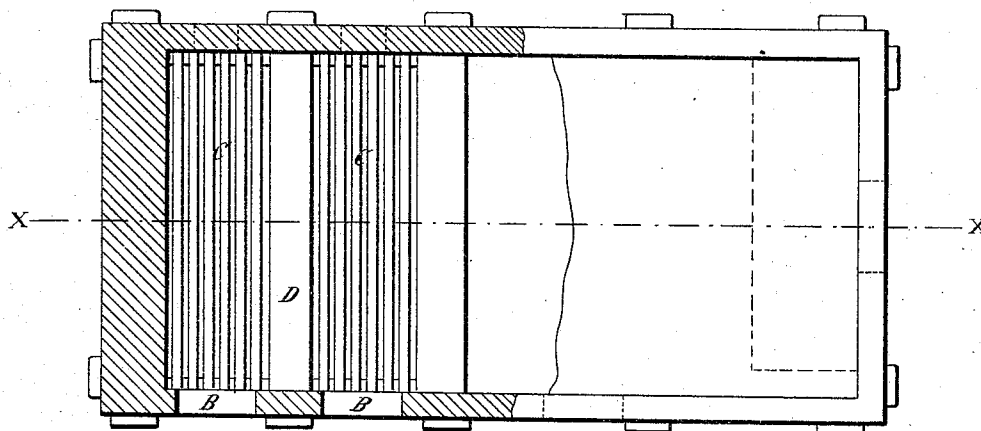


fig. 2



WITNESSES:

C. Nevoux
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INVENTOR:

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BY

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ATTORNEYS.

UNITED STATES PATENT OFFICE.

HENRY H. GILMORE, OF CAMBRIDGEPORT, MASSACHUSETTS.

IMPROVEMENT IN FIRE-CHAMBERS FOR PUDDLING AND OTHER FURNACES.

Specification forming part of Letters Patent No. **160,180**, dated February 23, 1875; application filed April 25, 1874.

To all whom it may concern:

Be it known that I, HENRY H. GILMORE, of Cambridgeport, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Reverberatory and other Furnaces, of which the following is a specification:

The invention will first be fully described, and then pointed out in the claim.

Figure 1 is a longitudinal sectional elevation of a furnace constructed to be operated according to my invention, taken on line *xx* of Fig. 2. Fig. 2 is a horizontal section, taken on the line *yy* of Fig. 1.

Similar letters of reference indicate corresponding parts.

A is the firing-chamber; B, stoke-holes; C, separate sections for firing alternately; D, dividing-walls, of fire-brick or other material, for separating sections; E, bridge-walls; F, ash-pits.

It is intended to fire each grate alternately, so that one division shall carry a clear flame, that shall intercept and consume the gaseous qualities of the fuel set free by the fresh firing upon the other division, and thus prevent the escape and waste, in the form of heavy black smoke, of much of the valuable combustible portion of the fuel, which is now lost by the present mode of supplying fresh fuel to the whole area of the grate at once. It also prevents the chilling of the furnace which now takes place when the fresh fuel is added, by causing the instantaneous combustion of the

gases set free from the fresh fuel, thereby actually increasing the heat while in the act of firing.

The firing-holes are, by preference, placed one on each side of the furnace, whereby certain advantages are secured, which will be readily comprehended by practical furnace-men; but they may be arranged in front, and the fire-grates and the dividing-wall may be arranged at right angles to the bridge-wall, if preferred.

I have found, by practical use, this improvement in the way of feeding the furnace to secure a very considerable economy of fuel. The improvement is equally valuable when applied to furnaces used for making steam, particularly when bituminous coal is used.

This furnace may be worked equally well by draft or by blast.

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

The firing-chamber A of a reverberatory furnace, divided by walls D into a series of connected sections, provided with stoke-holes C, as specified, to enable the sections to be fired successively, and the unconsumed products of combustion, that are always wasted for some time after a furnace-fire is started, to be thus burned and utilized.

HENRY H. GILMORE.

Witnesses:

ALBERT HEBBARD,
CHAS. C. HEBBARD.