

J. PARDOE.

Furnaces for Heating Iron-Bars, &c.

No. 136,667.

Patented March 11, 1873.

Fig. 1.

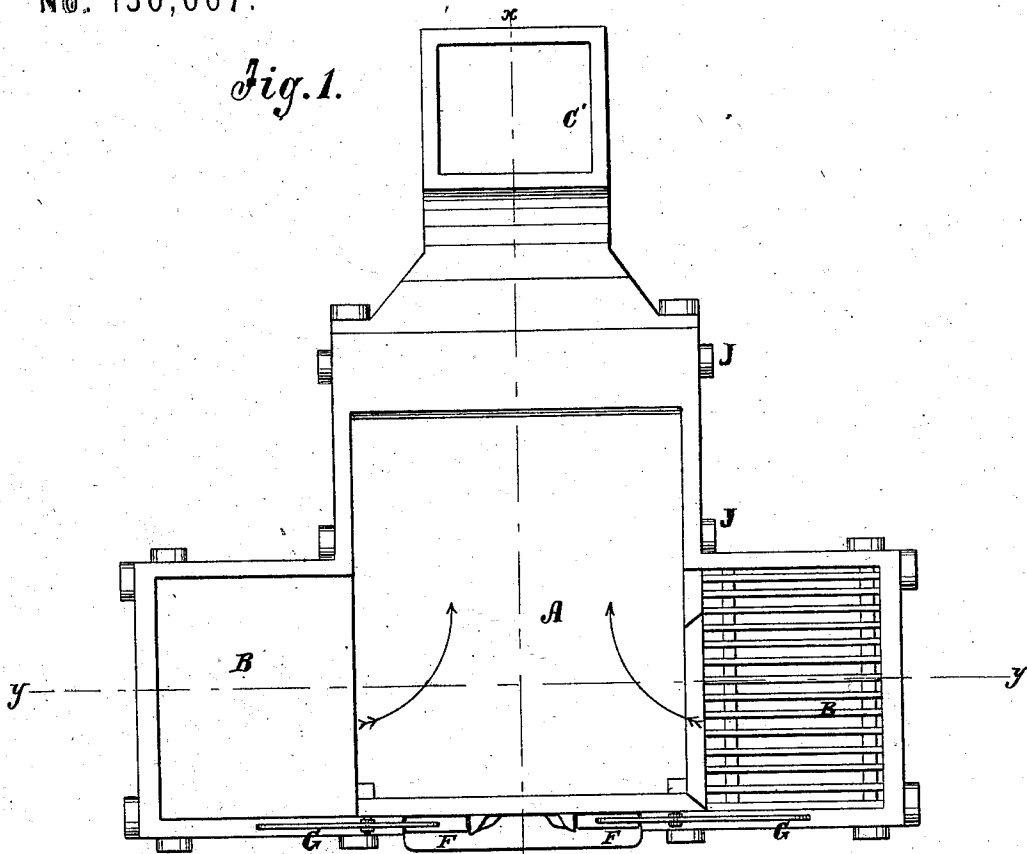
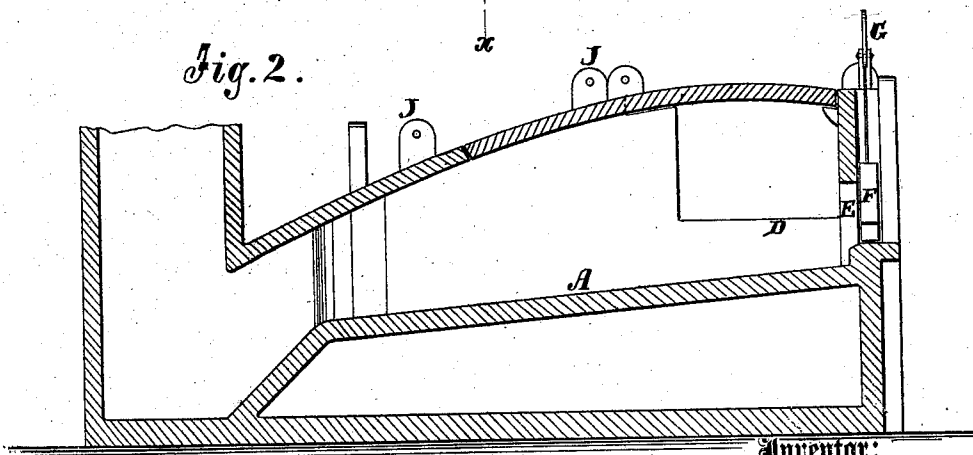


Fig. 2.



Witnesses:

A. Beermann
Edgwick

Inventor:

PER

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Fig. 3.

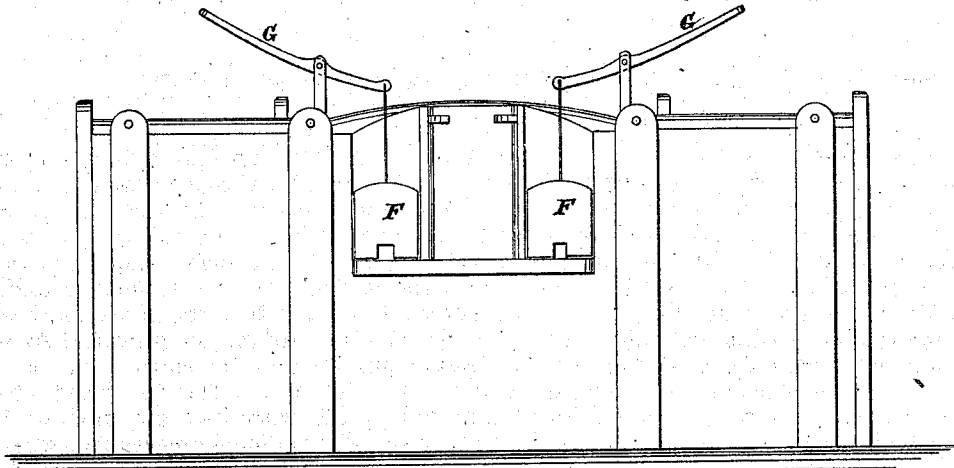


Fig. 4.

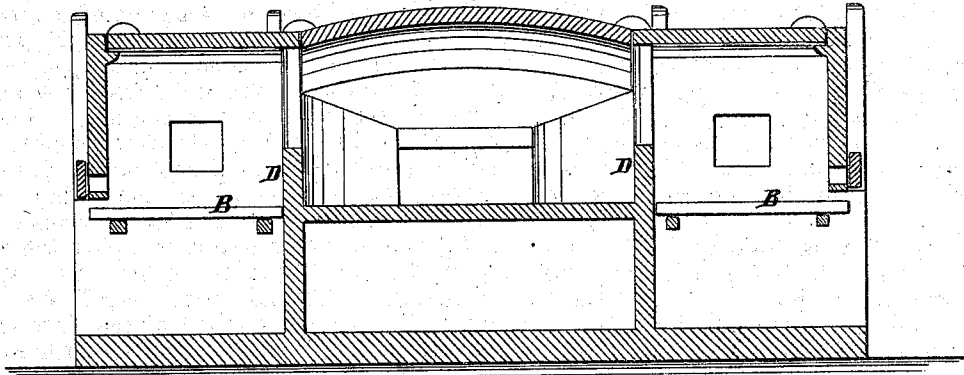
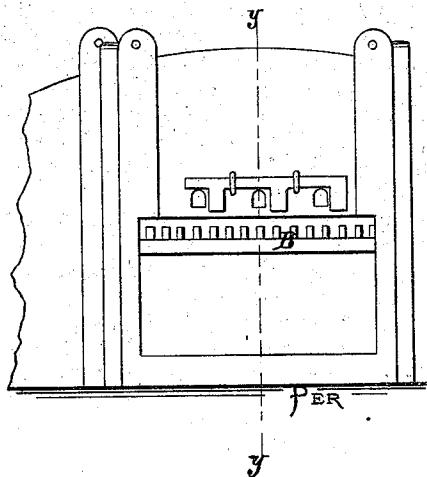


Fig. 5.



Witnesses:

A. Bennekenhof
Sedgwick

Inventor:

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UNITED STATES PATENT OFFICE.

JOSEPH PARDOE, OF WORCESTER, MASSACHUSETTS.

IMPROVEMENT IN FURNACES FOR HEATING IRON BARS, &c.

Specification forming part of Letters Patent No. 136,667, dated March 11, 1873.

To all whom it may concern:

Be it known that I, JOSEPH PARDOE, of Quinsigamond Iron-Works, in Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Furnaces for Heating Iron, of which the following is a specification:

Furnaces for heating bar-iron for rolling out rods for manufacturing wire and similar purposes have hitherto been made with a single fire in the front part of the furnace, and with side openings for introducing the iron, the iron thus being placed at right-angles with the course of the flame. This construction has been found objectionable on many accounts, as it does not allow of the perfect consumption of the gases, and the bars of iron, being thus placed transversely to the course of the flame, are not as readily heated as when the flame penetrates bars laid parallel therewith; and this invention consists in the arrangement of two separate fires in connection with the furnace-hearth, as hereinafter set forth and described.

In the accompanying drawing, Figure 1 is a top or plan view. Fig. 2 is a vertical section of Fig. 1 taken on the line *x x*. Fig. 3, Sheet 2, is a front elevation. Fig. 4 is a vertical section taken on the line *yy* of Figs. 1 and 5. Fig. 5 is an end elevation.

Similar letters of reference indicate corresponding parts.

A is the furnace-hearth, on which the iron to be heated is placed. B B are furnaces, one on each side of the hearth. C are grates of these furnaces, on which the fuel is placed for heating the iron. C' is the chimney. D represents bridge-walls, over which the flame passes on its course to the chimney, as indicated by the arrows. The bars of iron to be heated are of a length corresponding with the length of the hearth, and are introduced through the apertures E E at the front. These apertures are closed by means of the drop-doors F F, which are actuated by means of

the levers G G. Two fires are thus arranged, one on each side of the furnace-hearth, and are fed alternately with fuel, so that the gases from the fresh coal of one fire will be consumed by the heat from the incandescent coal of the opposite fire. The iron is placed lengthwise of the hearth, so that the flame and heat pass between the bars and lengthwise thereof, instead of first striking the sides of the bars, as in ordinary furnaces. The iron, besides being placed parallel with the draft, may by this arrangement be cut in longer pieces than where it is placed transversely of the course of the flame. This results in a material saving in stock, as well as in time. By having two fires arranged in this furnace I am enabled to introduce the iron through the right and left hand doors alternately, and keep it in two separate piles, one exposed to fire of the fresh fuel, and in the process of gradually heating, and the other exposed to the heat of incandescent fuel, and ready to be withdrawn and rolled. In this manner I am enabled to keep the rolling-mill constantly running, instead of being compelled to stop the rolls occasionally to await the action of the fire. This also results in a material saving of time and money. H H are apertures for the introduction of fuel into the furnace. The furnace is inclosed with iron plates and fire-brick walls, bound together by rods through the eye-lugs J. As regards the provisions for insuring durability, and the construction of hearth and walls, this furnace need not differ from other furnaces constructed for the same purpose.

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

The combination of the furnaces B B with the hearth A, arranged substantially as shown and described, for the purposes set forth.

JOSEPH PARDOE.

Witnesses:

WM. B. MAXWELL,
SAMUEL T. FIELD.