J. McCREA.

Metal-Heating Furnace.

No. 202,566. Patented April 16, 1878.

Fig. 1.

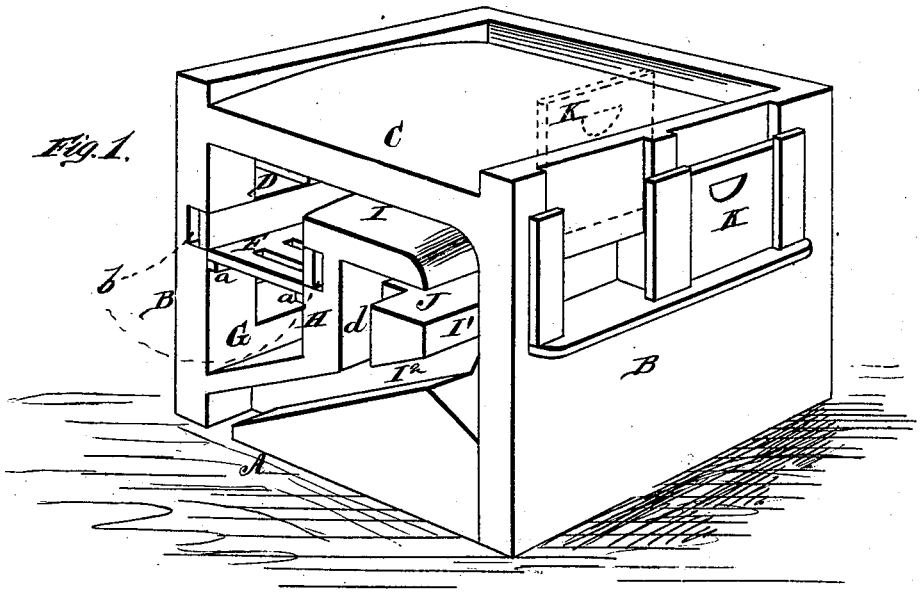


Fig. 2.

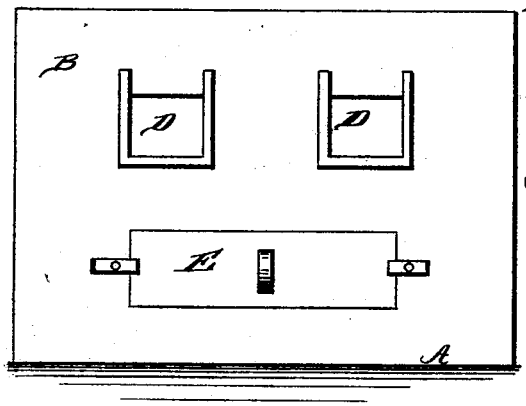
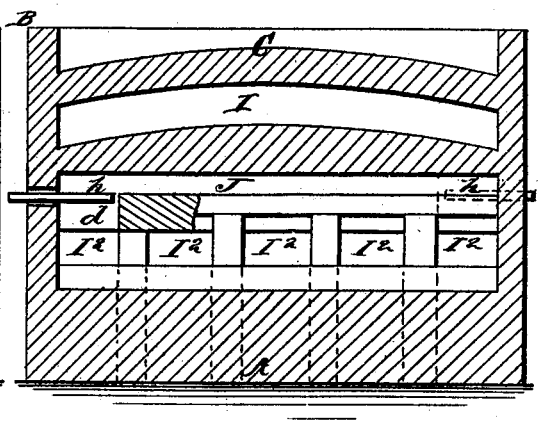


Fig. 3.



WITNESSES

Robt Everett

Jas J. Shrady

INVENTOR.

John McCrea.

Gilmore, Smith & Co.

ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOHN McCREA, OF WILMINGTON, DELAWARE.

IMPROVEMENT IN METAL-HEATING FURNACES.

Specification forming part of Letters Patent No. **202,566**, dated April 16, 1878; application filed January 26, 1878.

To all whom it may concern:

Be it known that I, JOHN McCREA, of Wilmington, in the county of New Castle and State of Delaware, have invented a new and valuable Improvement in Furnaces; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a perspective view of my furnace. Fig. 2 is a front view, and Fig. 3 is a longitudinal vertical section of the same.

The nature of my invention consists in the construction and arrangement of a furnace for heating iron for upsetting, welding, &c., as will be hereinafter more fully set forth.

The annexed drawing, to which reference is made, fully illustrates my invention.

A represents the bottom, B B the walls, and C the top, of the furnace. In the front wall are inlets D D for fuel to be deposited upon the grate F. Below the grate in the front wall is a door, E, leading to the ash-pit G. The bottom of the ash-pit is inclined from the bridge-wall H downward and forward, for convenience in removing the ashes through the door E.

The grate F rests upon ledges *a a* formed or attached to the inside of the front wall of the furnace and to the bridge-wall H, as shown. In the walls of the furnace and the bridge-wall is inserted a hollow water-box, *b*, all around the fire-box, and immediately above the grate F, so as to keep the grate from choking up with cinders, thereby saving the time and labor of cutting cinders. The bridge-wall H forms a flue, I, between the top thereof and the top of the furnace, through which the flame sweeps, and then downward through a flue, I^1, between the back of the bridge-wall and the rear wall of the furnace. From the bottom of this flue I^1 a series of inclined flues, I^2 I^2, pass under the bottom of the ash-pit and out through the bottom of the furnace. In the back part of the bridge-wall I is formed a bed, J, extending the entire length thereof, and communicating, through a passage, *d*, at each end, with the end flue I^2. This passage *d* may be closed by a valve, *h*, through the end wall of the furnace, as shown.

In the rear wall of the furnace are two or more openings, with doors K K, sliding upward, as shown. The bottom of these openings is on a level with the bed J in the back of the bridge-wall, so that iron inserted through said openings can rest therein and on the bed, and the flame sweeping down through the flue I^1 will heat the same. With this furnace, therefore, any number of bars can be heated at the same time, and only at the points where such heating is required. It will also be seen that the iron, of whatever kind is put in, can be heated at any desired point left exposed to the action of the flame in the flue I^1.

What I claim as new, and desire to secure by Letters Patent, is—

The within-described furnace, provided with the grate F, bridge-wall H, with bed J in the back part thereof, the flues I I^1 I^2, and rear doors K, all substantially as and for the purposes herein set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

JOHN McCREA.

Witnesses:
H. S. TRUITT,
W. H. BRADY.