

E. S. WHEELER.

Furnaces for the Manufacture of Iron and Steel.

No. 147,456.

Patented Feb. 10, 1874.

fig. 1.

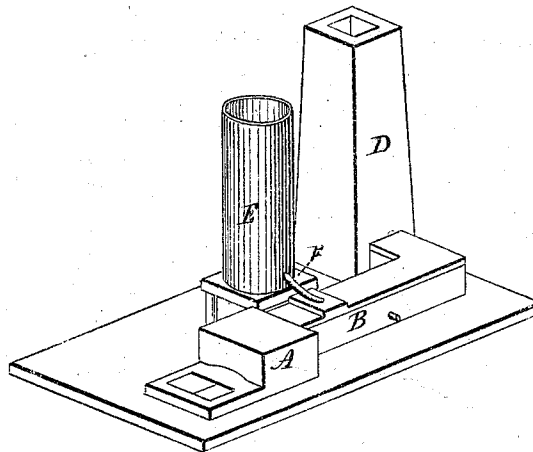
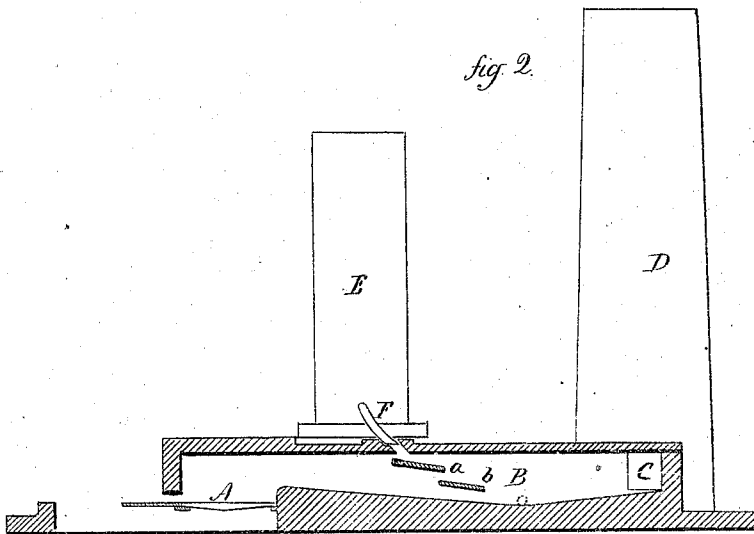


fig. 2.



Witnesses
J. H. Shumway
A. J. Dehler

Eli S. Wheeler
Inventor
By Atty.
J. S. Earle

UNITED STATES PATENT OFFICE.

ELONZO S. WHEELER, OF WESTPORT, CONNECTICUT, ASSIGNOR TO HIMSELF,
STEPHEN C. WARNER, OF CLEVELAND, AND EDWARD L. HINMAN, OF
COLUMBUS, OHIO.

IMPROVEMENT IN FURNACES FOR THE MANUFACTURE OF IRON AND STEEL.

Specification forming part of Letters Patent No. **147,456**, dated February 10, 1874; application filed
October 24, 1873.

To all whom it may concern:

Be it known that I, ELONZO S. WHEELER, of Westport, in the county of Fairfield and State of Connecticut, have invented a new Improvement in Malleable-Iron Furnaces; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a perspective view, and in Fig. 2 a longitudinal section through the air-blast.

This invention relates to an improvement in that class of furnaces known as "air-blast furnaces," and such as are commonly used in the manufacture of malleable iron, the object being to refine the iron to a greater extent; and the invention consists in passing the iron, after it is melted, through the air-blast, over a succession of falls, so that the blast is driven through or in contact with the flowing metal as it passes through the blast to the draw-off.

A is the furnace or fire-box; B, the chamber; C, the flue, and D the chimney, in construction substantially the same as in air-blast furnaces. E is a cupola or furnace, of similar construction, in which the pig-iron or ore is melted. This is arranged in convenient proximity to the chamber B, so that a duct, F, will

lead from the furnace E directly into the furnace B at or near the top, and between the fire-box A and the lowest point of the furnace B, that the metal which is melted in the furnace E may flow directly into the air-blast furnace B, and there be struck by the blast from the furnace A, heated to a still greater extent, and thereby refined.

In order to give the metal more contact with the fire than it would have if it fell directly upon the bottom of the furnace, I arrange plates *a b*, more or less in number, inclining downward, one forward of the other, the first so that the metal will fall upon the upper surface, flow over that surface, and fall onto the next, and so on till it reaches the bottom, the blast passing between and over the plates.

I claim as my invention—

The combination of a melting and an air-blast furnace, when the said air-blast furnace is provided with a succession of plates, *a b*, arranged so that the metal from the melting-furnace will flow into the air-blast furnace over the said plates, and be brought into contact with the blast of that furnace, substantially as described.

ELONZO S. WHEELER.

Witnesses:

F. D. FANTON,
FRANK W. PERRY.