

E. WOOD.  
Puddling Furnace.

No. 109,284.

Patented Nov. 15, 1870.

Fig: 1.

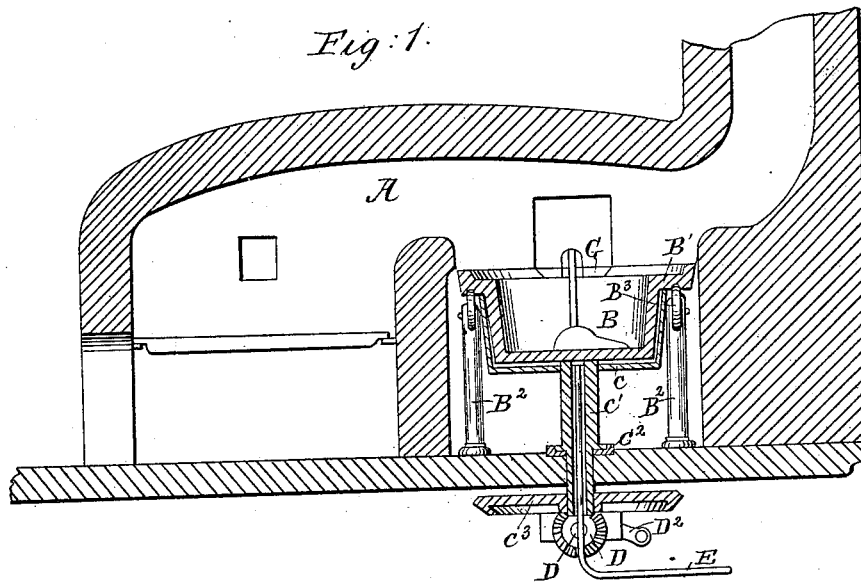
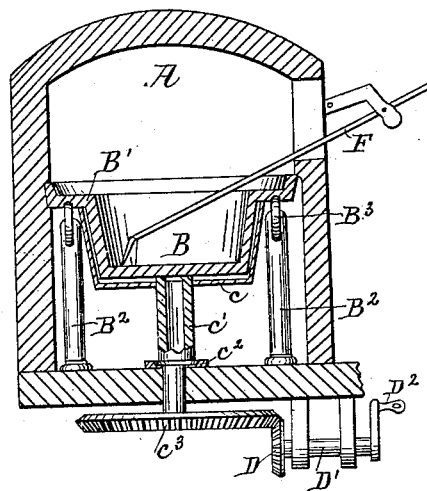


Fig: 2.



Witnesses.

E. Malcolm Turner.  
Jno P. Clarke.

Inventor.

Enoch Wood  
per his Attorney  
Charles H. B. B. B.

# UNITED STATES PATENT OFFICE.

ENOCH WOOD, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO HIMSELF,  
EDWARD PERRY, RICHARD PERRY, WILLIAM McPHERSON, AND EDWARD  
WILLIAMS, OF SAME PLACE.

## IMPROVEMENT IN ROTARY PUDDLING-FURNACES.

Specification forming part of Letters Patent No. 109,284, dated November 15, 1870.

*To all whom it may concern:*

Be it known that I, ENOCH WOOD, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Rotary Puddling-Furnace; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon, which form a part of this specification.

The nature of my invention consists in a construction of puddling-furnace, whereby a rotary motion can be given to the bed thereof, whereby the process of puddling is simplified and manual labor saved.

In the accompanying drawing, Figure 1 is a longitudinal section of my invention; Fig. 2, a cross-section thereof.

Letters of reference denote parts.

The puddling-furnace A is of the ordinary construction, save that the bed B is a metallic annular basin, having a flange, B<sup>1</sup>, around the upper portion, said flange B<sup>1</sup> being provided with a groove at its under part. Said bed B is supported by columns B<sup>2</sup>, of any suitable construction, to the upper portion of which are centered wheels B<sup>3</sup>, which fit into the before-named groove and bear up the bed B, which is encircled with an annular chamber, C, in such a manner that there will be a space between it and the said bed B, to the base of which is attached, in any suitable manner, a hollow vertical driving-shaft, C<sup>1</sup>, which may, if required, be also attached to the said chamber C. Said shaft C<sup>1</sup> rests in a step, C<sup>2</sup>, of any suitable construction, and the end of the said shaft is provided with an ordinary bevel or other geared wheel, C<sup>3</sup>, which meshes into a bevel or other geared pinion, D, affixed to a horizontal shaft, D<sup>1</sup>, revolving in suitable bearings, by means of the crank D<sup>2</sup>, a band-wheel, or any such device, the whole being so arranged that upon rotating the said shaft D<sup>1</sup> the bed B is revolved. A pipe, E, passes through the shaft C<sup>1</sup>, and

empties into the chamber C, which is provided at any suitable point with an outlet for waste water. The bed C is also provided with an opening, G, in the flange B<sup>1</sup>, to facilitate the removal of cinder.

Attached to the door of the furnace, or in any other position in any ordinary manner, is the rabble or other suitable tool F, its extremity resting within the bed, the whole being so relatively arranged that by the revolution of the bed, the rabble being stationary, the iron is kept in motion and worked up to "nature." A stream of water passing through the pipe E into the chamber C keeps the bed cool, which may be lined with fire-brick or other suitable material preventing adhesion of the molten iron. The cinder passes off through the opening G into any suitable receptacle.

The process of puddling, from the intense heat emitted by the furnace, is very laborious, especially the first process, which converts the "cast pig" into malleable iron.

By the use of my described invention this process is done mechanically, dispensing with manual labor, save in the change of tools; the iron is converted more rapidly, and the liability to burn the iron considerably reduced.

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

In combination with a puddling-furnace, an annular bed, supported by columns and wheels, being encircled with a chamber provided with water from a pipe passing through a hollow shaft, and rotated at right angles with the line of its axis by suitable gearing, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

ENOCH WOOD.

Witnesses:

EDWARD PERRY,  
PERCEVAL BECKETT.