

J. G. BLUNT.

Improvement in Puddling-Furnaces Heated by Gas.
No. 129,268.

Patented July 16, 1872.

Fig. 1.

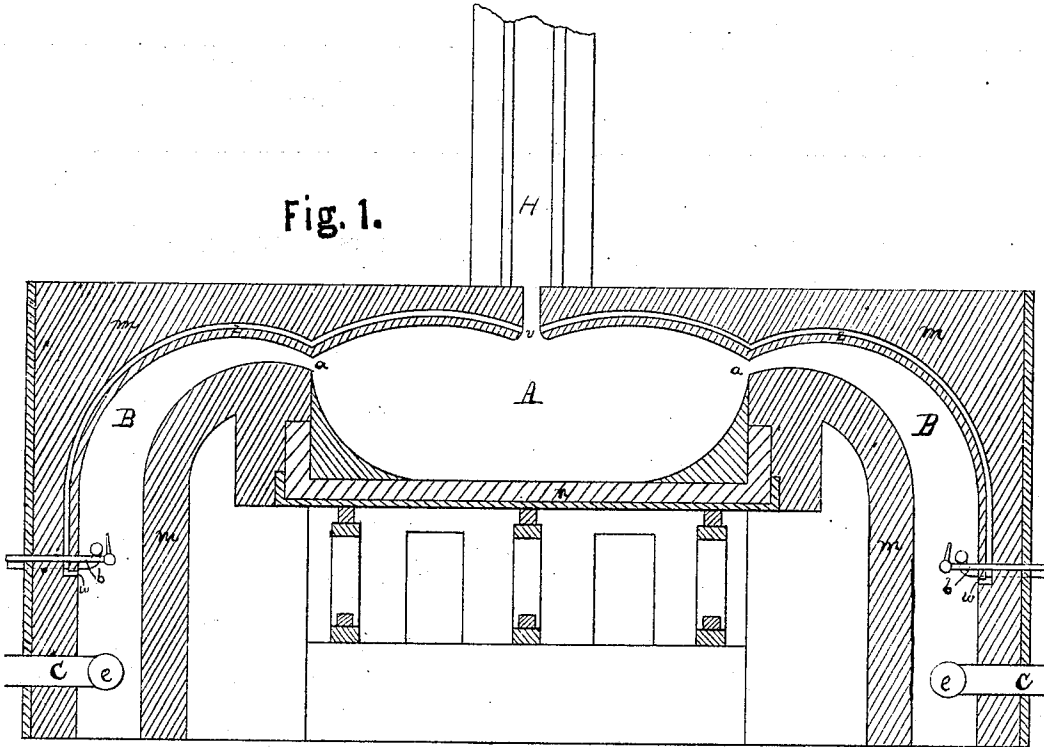
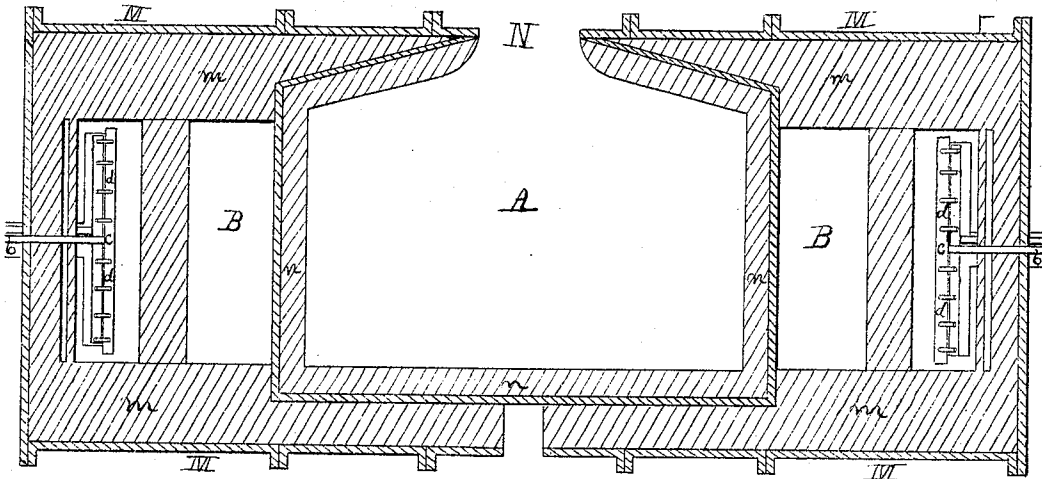


Fig. 2.



WITNESSES.

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UNITED STATES PATENT OFFICE.

JAMES G. BLUNT, OF LEAVENWORTH, KANSAS, ASSIGNOR OF ONE-HALF OF HIS RIGHT TO MERRITT H. INSLEY, OF SAME PLACE.

IMPROVEMENT IN PUDDLING-FURNACES HEATED BY GAS.

Specification forming part of Letters Patent No. 129,268, dated July 16, 1872.

To all whom it may concern;

Be it known that I, JAMES G. BLUNT, of Leavenworth, in the county of Leavenworth and State of Kansas, have invented a new and valuable Improvement in Puddling and Reheating 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 drawing making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is a representation of a longitudinal vertical section of my invention. Fig. 2 is a horizontal section of the same.

This invention has relation to an improved furnace for reheating and puddling iron; and it consists in the construction and novel arrangement of the flame-passages, hearth and flues, whereby the application of carbon-gas generated from petroleum or other oleaginous substance, in connection with superheated steam as fuel, is accomplished.

In the accompanying drawing, the letter A represents the boiling or reheating oven where the iron is placed for the process of reheating or puddling, which may be constructed of such width and length as is most convenient. The side walls of this oven are brought up in a concave curve by the openings *a* or heat-passages, which lie on each side, as shown. B represents the fire-brick combustion-chambers. These chambers or flues extend up vertically for a certain distance, or until about on a level with the hearth, and from this point they curve upward and inward toward the oven A, into which they open by the horizontal passages *a*. These flues taper in the upper or curved portions from the lower part of said curve to the openings *a*. In these chambers the gases are mingled and ignited, in connection with the proper amount of cold or heated air, producing a heat at once intense and pure, which rapidly reduces pig-iron. The gas-pipes *b* are introduced into each flue B at about the middle thereof, or before it takes the bend. These pipes terminate in transverse extensions *c*, pro-

vided with burners *d*. C represents the blast-pipes, which are introduced into the combustion-chambers below the gas-pipes, and are also provided with transverse extensions or cylinders *e* at the end, slitted along the top for the emission of the air in a uniform sheet, and in such volume as may be desired, suitable means being provided to regulate the size of this transverse slot, or to close it entirely, when necessary, in the shape of a movable gate, damper, or other device. H represents the chimney or stack, located in a central position with reference to the combustion-chambers, and provided with the ordinary means for regulating the draught. That portion of the furnace which is required to be built of fire-brick is lettered *m*, and the filling or fixing is lettered *n* on the drawing. M represents the frame-work of the furnace. N represents doors, provided for obtaining access to the interior. *z* represents a flue or space in the top of the oven, running parallel, or nearly so, with the same, and designed for setting up a current of heated air, which, entering at the opening *v* at the base of the stack-flue, courses along the hollow space *z*, and passes out in a thin uniform sheet at *w*, just below the row of gas-burners.

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

1. The puddling or reheating oven A, in combination with the double combustion flues or retorts B and central smoke-flue, arranged substantially as specified.
2. The combination, with the puddling or reheating oven A and curved tapering combustion-flues B, of the hot-air flue *z*, gas-burners and blast-pipe, substantially as and for the purpose specified.

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

JAS. G. BLUNT.

Witnesses:

G. E. UPHAM,
PHIL. C. MASI.