

(No Model.)

2 Sheets—Sheet 1.

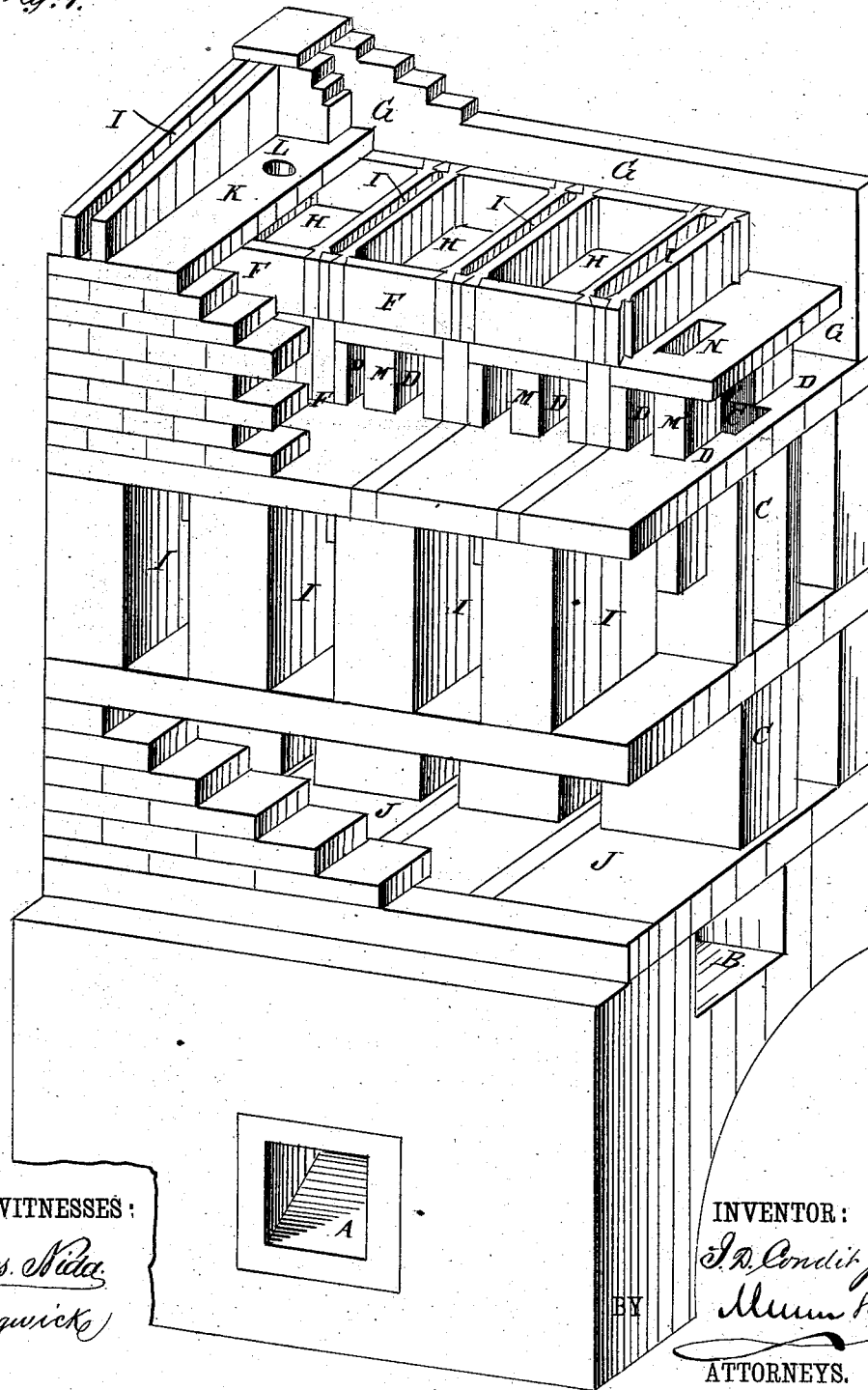
I. D. CONDIT, Jr.

FURNACE FOR DEOXIDIZING IRON ORE.

No. 260,539.

Patented July 4, 1882.

Fig. 1.



WITNESSES:

Chas. Nida
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INVENTOR:

I. D. Condit Jr
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BY

ATTORNEYS.

(No Model.)

2 Sheets—Sheet 2.

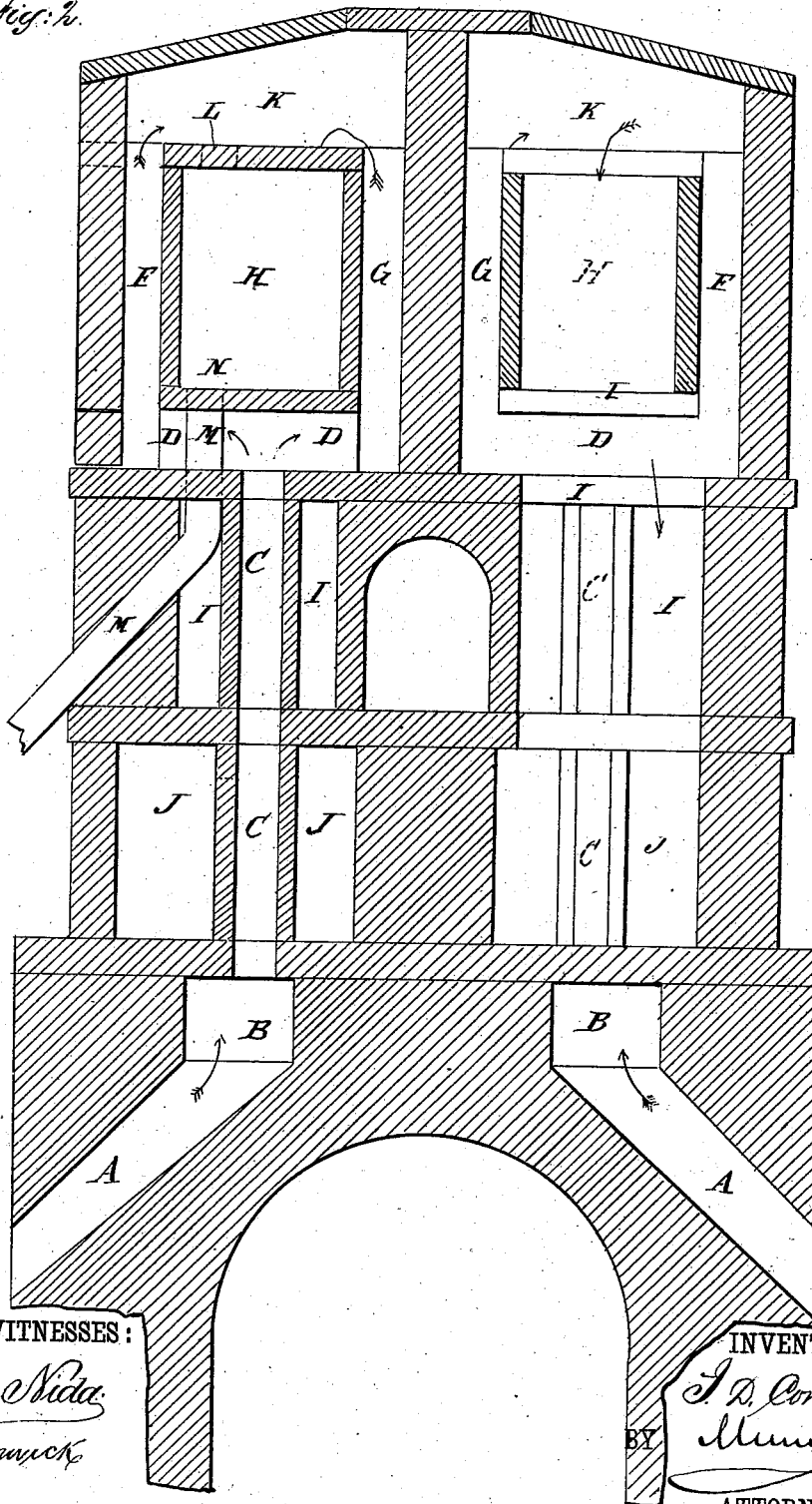
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Fig. 2.



UNITED STATES PATENT OFFICE.

ISRAEL D. CONDIT, JR., OF MILLBURN, NEW JERSEY.

FURNACE FOR DEOXIDIZING IRON ORES.

SPECIFICATION forming part of Letters Patent No. 260,539, dated July 4, 1882.

Application filed October 11, 1881. (No model.)

To all whom it may concern:

Be it known that I, ISRAEL D. CONDIT, JR., of Millburn, in the county of Essex and State of New Jersey, have invented certain useful improvements in Furnaces for Deoxidizing Iron Ores, of which the following is a full, clear, and exact description.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in both the figures.

Figure 1, Sheet 1, is a perspective view of my improvement, parts being removed. Fig. 2, Sheet 2, is a sectional end elevation of a double furnace, the left-hand part being taken through a retort and the right-hand part being taken through a flue between two retorts.

The object of this invention is to improve the construction of the furnaces for which Letters Patent Nos. 128,993 and 145,471 were granted, respectively, July 16, 1872, and December 9, 1873, Joel Wilson inventor, in such a manner as to distribute the heat more equally and eliminate the oxygen more uniformly in less time and at a less cost than is possible with the construction heretofore used.

The invention consists in a furnace for deoxidizing ores constructed with a heat-distributing chamber and vertical flues located directly beneath the retorts and leading into the flues surrounding the retorts, as will be hereinafter fully described.

I build the furnaces of fire-brick, in rectangular form, and prefer to build them double, the two sets being set back to back against a division-wall.

A is a flue, through which the products of combustion from a forge-fire, a puddling-furnace, or other fire enter the deoxidizing-furnace, and are discharged into the distributing-chamber B. The distributing-chamber B extends the entire length of the furnace, and from it flues C extend upward to the cross-flues D beneath the bottoms of the retorts H. In the flues D the products of combustion divide, part passing up through the flues F at the front sides of the retorts H and part passing

up through the flues G at the rear sides of the said retorts. The products of combustion from the flues F and G meet in the space, chamber, or flue K, above the retorts H, and pass down through the flues I between the said retorts H into the discharge-flue J, from which, at any desired point, they can be led to the chimney. With this construction the retorts H will be heated upon all sides, so that all parts of the ore within the said retorts will be heated equally and the ore will be deoxidized evenly, the oxygen being eliminated in less time and at a much less cost than when a furnace constructed in the ordinary manner is used.

The ore to be deoxidized is introduced into the retorts H through openings L in the tops of the said retorts, and the deoxidized ore is withdrawn through the discharge-flues M, which lead down from openings N in the bottoms of the said retorts H, as indicated in Fig. 2.

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

1. In a furnace for deoxidizing ores, the combination, with the inlet-flue A, the retorts H, and the transverse flues D, arranged beneath the retorts and communicating with said inlet-flue, of the flues F G I and the chambers K, substantially as shown and described, whereby the heat is distributed equally all around the retorts, as set forth.

2. In a furnace for deoxidizing ores, the combination, with the heat-inlet flue A and the flues D F G K I, surrounding the retorts H, of the heat-distributing chamber B and the vertical flues C, located directly beneath the retorts, substantially as herein shown and described, whereby the heat is distributed equally all around the retorts, as set forth.

The above specification of my invention signed by me this 7th day of October, 1881.

ISRAEL D. CONDIT, JR.

Witnesses:

JAMES T. GRAHAM,
C. SEDGWICK.