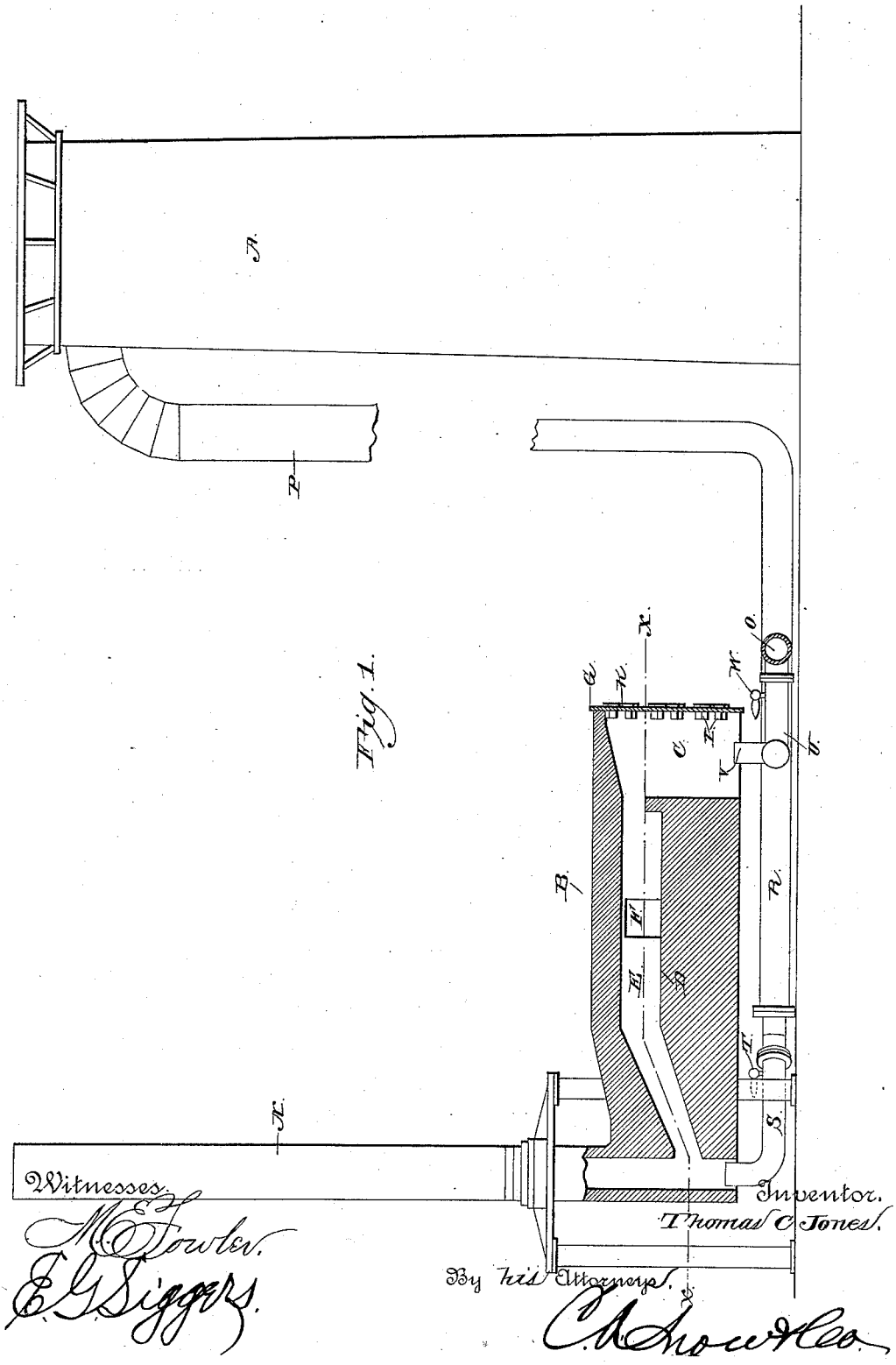
(No Model.) 2 Sheets—Sheet 1.

# T. C. JONES.

## REHEATING FURNACE.

No. 382,986. Patented May 15, 1888.



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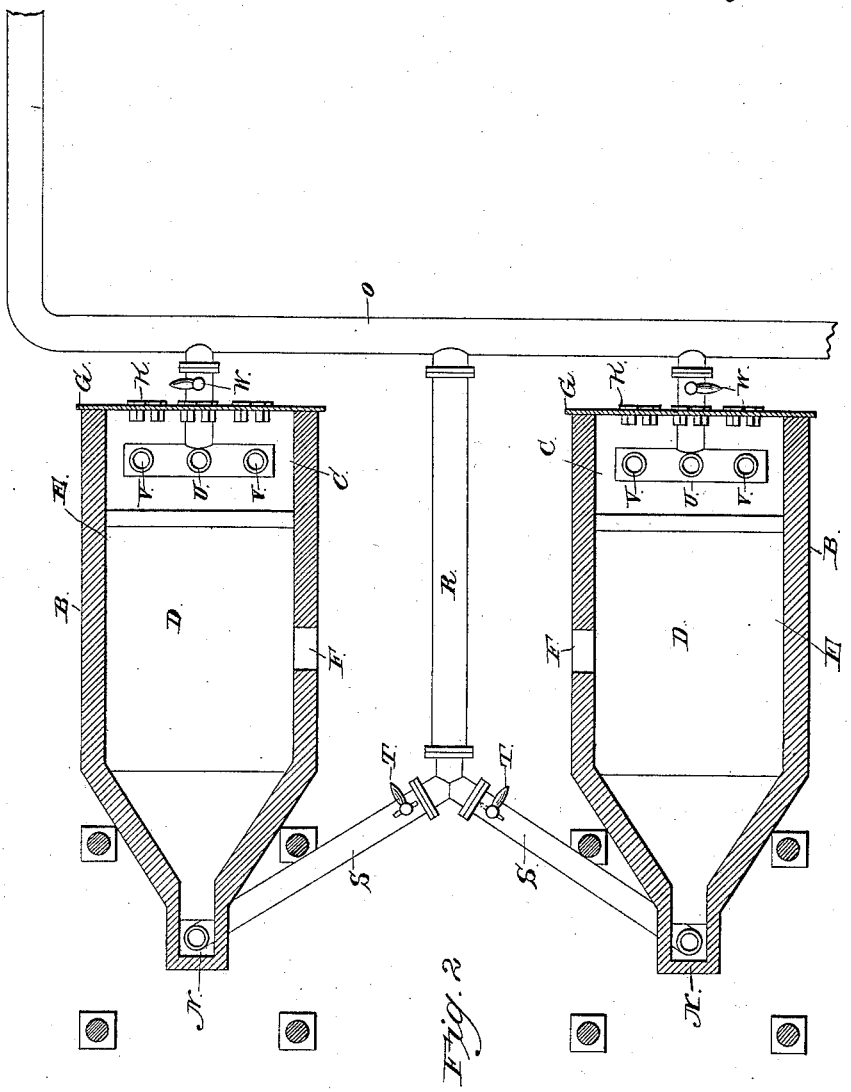


Fig. 2.

Witnesses.
M. E. Fowler.
E. G. Siggers.

Inventor.
Thomas C. Jones.
By his Attorneys.
C. A. Brown & Co.

# UNITED STATES PATENT OFFICE.

THOMAS CATESBY JONES, OF LYNCHBURG, VIRGINIA.

## REHEATING-FURNACE.

SPECIFICATION forming part of Letters Patent No. 382,986, dated May 15, 1888.

Application filed July 16, 1887. Serial No. 244,526. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS CATESBY JONES, a citizen of the United States, residing at Lynchburg, in the county of Campbell and State of Virginia, have invented a new and useful Improvement in Reheating-Furnaces, of which the following is a specification.

My invention relates to an improvement in reheating-furnaces; and it consists in the peculiar construction and combination of devices, that will be more fully set forth hereinafter, and particularly pointed out in the claims.

The object of my invention is to provide certain improvements in that class of furnaces in which the gas from a blast-furnace is utilized in a reheating-furnace to economize fuel, whereby the efficiency of this class of furnaces will be increased.

In the drawings, Figure 1 is an elevation, partly in section, of a furnace embodying my improvements. Fig. 2 is partly a top plan view of the same and partly a horizontal section, taken on the line *x x* of Fig. 1.

A represents the cupola of a blast-furnace, and B represents a pair of reheating-furnaces, which are arranged within a suitable distance of the blast-furnace. Each reheating-furnace has a chamber, C, in its front end, corresponding with a combustion-chamber, and is provided with a hearth, D, over which a flue, E, extends in the usual manner.

F represents an opening made in one side of each reheating-furnace, through which iron may be introduced to or taken from the furnace.

At the rear end of each reheating-furnace is a stack or chimney, N, the lower end of which is opened and communicates with the rear end of the flue E.

O represents a pipe which is arranged in front of the reheating-furnace, and P represents a pipe which extends from the upper end of the cupola A and communicates with the pipe O. A pipe, R, extends from the pipe O and runs between the reheating-furnaces, and from the rear end of pipe R extend branch pipes S, the outer ends of which are upturned and are arranged in the lower ends of the chimneys N.

T represents dampers with which the pipes S are provided.

Communicating with the pipe O are T-shaped pipes U, which are arranged transversely under the chambers C of the furnaces B, and are provided with vertical pipes V, which extend upward toward the said chambers, and are thereby adapted to direct gas from the blast-furnace into the chambers C. The said pipes U are provided with dampers W.

The operation of my invention is as follows: When the blast-furnace is in operation and the dampers W and T are opened, the gas from the blast-furnace is fed through the pipes O and P to the combustion-chamber C of the reheating-furnaces, and to the lower ends of the chimneys or stacks N. The front ends of the furnaces are provided with suitable dampers, which are opened to admit air to the reheating-furnaces in sufficient quantities to render the gas combustible, and the gas is ignited in the combustion-chambers C, and the smoke, flames, and products of combustion therefrom sweep rearward through the flues E over the hearths D, thereby producing an intense heat, sufficient to treat the iron placed upon the said hearths. The current of gas from the upturned ends of the pipes S escapes up the chimneys or stacks N, thereby tending to create a partial vacuum in the reheating-furnaces, and consequently affording increased draft therefor.

A furnace thus constructed enables the gas which ordinarily escapes from the blast-furnace and becomes wasted to be utilized in reheating the iron.

Having thus described my invention, I claim—

1. The combination of the blast-furnace, the reheating-furnace having a combustion-chamber, C, and a stack or chimney, N, and a pipe leading from the blast-furnace to carry off the blast-furnace gases, and having branch pipes communicating with the combustion-chambers C, and with the lower ends of the chimneys or stacks, substantially as set forth.

2. The combination of the blast-furnace, the series of reheating-furnaces, each having a combustion-chamber, C, and a chimney or stack, N, the pipe P, leading from the top of the blast-furnace, the pipe O, extending from the pipe P past the front ends of the reheat-

ing-furnaces, the T-shaped pipe U, leading from the said pipe O and provided with the damper W, and the vertical pipes V in the combustion-chambers, and the pipes R S, leading from the pipe O to the lower ends of the chimneys or stacks N, and provided with dampers T, substantially as specified.

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

THOMAS CATESBY JONES.

Witnesses:

R. H. ADAMS,

JOHN L. ADAMS.