

(No Model.)

H. WHITELEY. PLATE AND SHEET FURNACE.

No. 586,300.

Patented July 13, 1897.

Fig. 1.

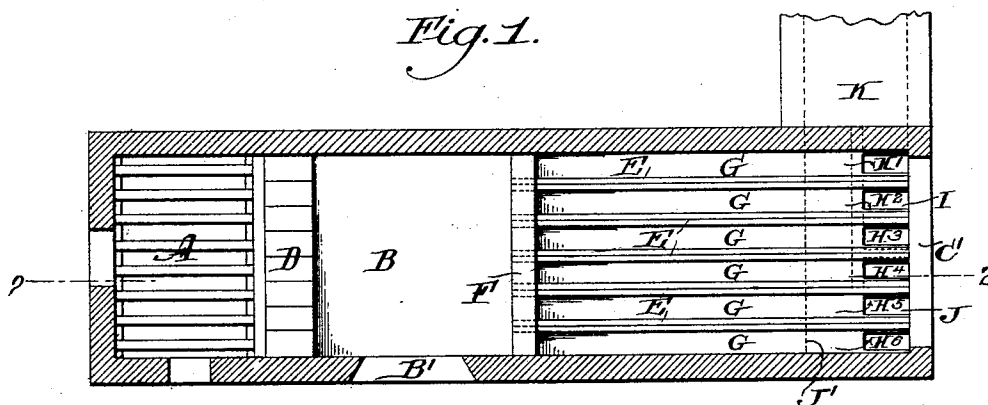


Fig. 2.

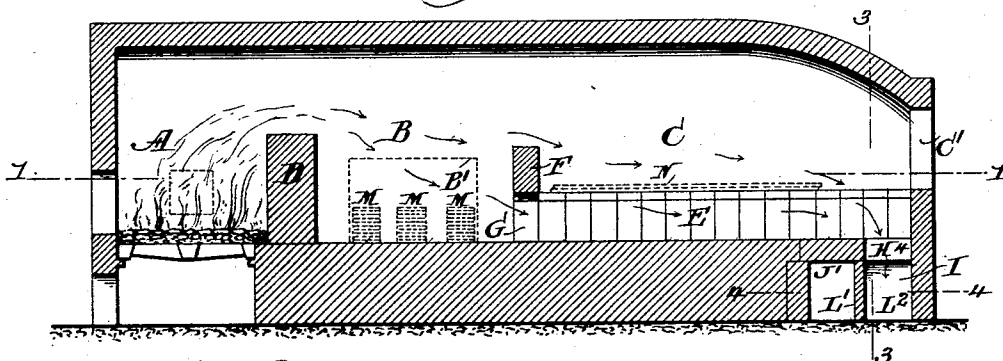


Fig. 3.

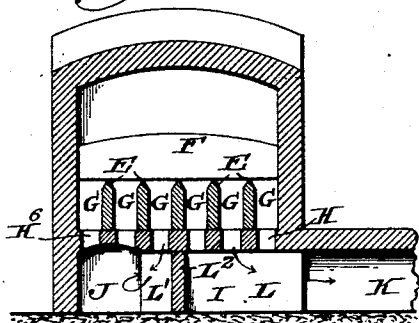
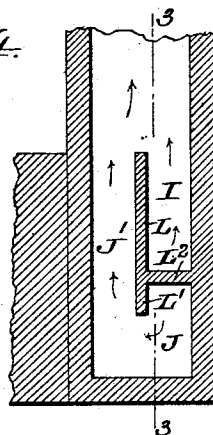


Fig. 4.



Witnesses.

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PLATE AND SHEET FURNACE.

SPECIFICATION forming part of Letters Patent No. 586,300, dated July 13, 1897.

Application filed April 6, 1897. Serial No. 630,988. (No model.)

To all whom it may concern:

Be it known that I, HENRY WHITELEY, a citizen of the United States of America, residing in the city and county of Philadelphia, in the State of Pennsylvania, have invented a certain new and useful Improvement in Plate and Sheet Furnaces, of which the following is a true and exact description, reference being had to the accompanying drawings, which form a part thereof.

My invention relates to the construction of furnaces particularly adapted for use in rolling-mills where sheet-iron is made and intended for heating the plates and the partially-rolled sheets.

The object of my invention is especially to provide for an even distribution of heat in the part of the furnace in which the sheets are reheated, and the nature of my improvements will be best understood as described in connection with the drawings, in which they are illustrated, in which—

Figure 1 is a plan view taken on the section-line 1 1 of Fig. 2 of my improved furnace. Fig. 2 is an elevation taken on the section-line 2 2 of Fig. 1 of the furnace. Fig. 3 is a cross-sectional view taken on the section-line 3 3 of Fig. 2; and Fig. 4 is a sectional view of the take-off flues, taken on the section-line 4 4 of Fig. 2.

A is the fire-chamber of the furnace, which may be of any desired construction and which is separated from the plate-heating chamber B by a wall D, B' indicating the opening into the chamber B, through which the plates are inserted and removed.

C is the sheet-heating chamber and is provided with a series of upwardly-extending parallel ridges E E E, &c., extending longitudinally through the furnace-chamber and forming a support upon which the sheets rest, and also a series of parallel open-topped flues, (indicated at G G, &c.)

H H' H² H³ H⁴ H⁵ are offtake-flues formed at the bottom of the flues G G, &c., and at their ends farthest removed from the fire-chamber, and instead of letting these flue-passages H H', &c., open into a common take-off flue I provide separate flues I and J J', into which the said downtake-flues or passages H H', &c., open, the said offtake-flues

I and J J' communicating finally with the common flue K, which leads to the stack. The flue I is separated from the flue J J' by walls L and L², and preferably I continue the wall L beyond the wall L², as indicated at L', the object of this construction being that the gases passing from one group of flues, for instance H, H', and H², shall be kept entirely separate from the gases passing down through the other group of flue-passages H³, H⁴, and H⁵, and not only so, but that the draft in the offtake-flues shall tend to draw the gases through the first group of downtake-flues in the opposite direction from that in which the gases from the second group of downtake-flues are drawn. The result of this construction is to make a substantially uniform draft through the whole series of flues G G, &c., overcoming a tendency which in similar furnaces has been found to exist for the furnace-gases to pass toward one corner of the furnace, and of course this equalizing of the draft through the furnace extends as well to the gases which pass through the upper portion of the chamber C as to those which pass through the flues G.

I prefer to construct the chamber C with a bridge-wall F, mounted on top of the ridges E at the end nearest to the fire-chamber, so that those portions of the gases which pass to the top of the chamber C will not impinge directly upon the ends of the sheets, but will, after passing over the bridge F, impinge with a downward motion upon the sheets.

The sheets are introduced into the chamber C through the opening C', and in the chamber B, I have shown a series of piles M M M, indicating plates in position to be heated, while N indicates a pile of sheets being treated in the chamber C.

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

1. In a furnace the combination with a fire-chamber A of a sheet-heating chamber C, a series of parallel ridges E extending longitudinally through the sheet-heating chamber to form a support for sheets and parallel open-topped flues G, a series of flues H H' &c., one opening from the bottom of each of the flues G at their ends farther from the fire-chamber

and separate flues I and J J' situated beneath the bottom of the furnace into which flues H H' &c., open.

2. In a furnace the combination with a fire-chamber A of a sheet-heating chamber C, a series of parallel ridges E extending longitudinally through the sheet-heating chamber to form a support for sheets and parallel open-topped flues G, a bridge-wall F supported on top of the ridges G and a series of flues H H' &c. opening from the bottom of flues G at their ends farthest from the fire-chamber.

3. In a furnace the combination with a fire-chamber A of a sheet-heating chamber C, a series of parallel ridges E extending longitudinally through the sheet-heating chamber to form a support for sheets and parallel open-topped flues G, a bridge-wall F supported on top of the ridges G, a series of flues H H' &c., opening from the bottom of flues G at their ends farthest from the fire-chamber and separate flues I and J J' situated beneath the bottom of the furnace into which flues H H' &c., open.

4. In a furnace the combination with a fire-chamber A of a plate-heating chamber B, a

sheet-heating chamber C, a series of parallel ridges E extending longitudinally through the sheet-heating chamber to form a support for sheets and parallel open-topped flues G, a series of flues H H' &c., opening from the bottom of flues G at their ends farthest from the fire-chamber and separate flues I and J J' situated beneath the bottom of the furnace into which flues H H' &c., open.

5. In a furnace the combination with a fire-chamber A of a plate-heating chamber B, a sheet-heating chamber C, a series of parallel ridges E extending longitudinally through the sheet-heating chamber to form a support for sheets and parallel open-topped flues G, a bridge-wall F supported on top of the ridges G, a series of flues H H' &c. opening from the bottom of flues G at their ends farthest from the fire-chamber, and separate flues I and J J' situated beneath the bottom of the furnace into which flues H H' &c., open.

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Witnesses:

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