W. B. SANDFORD.

TUBE-WELDING FURNACE.

No. 189,579. Patented April 17, 1877.

Fig. 1,

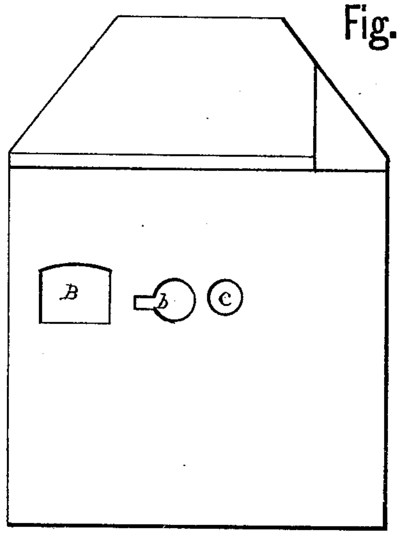


Fig. 2.

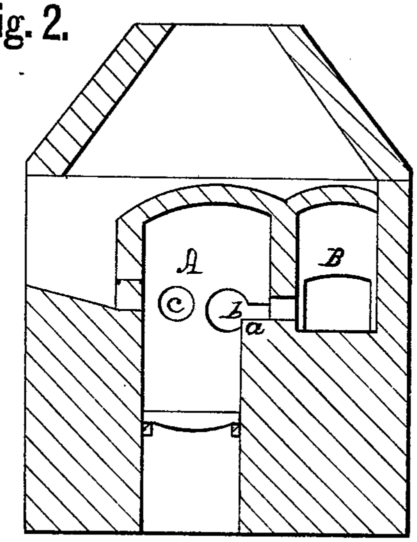


Fig. 3.

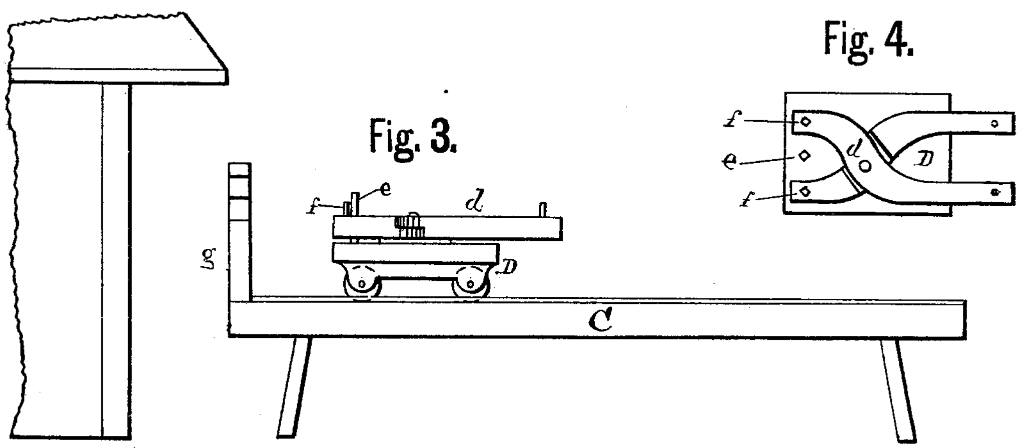
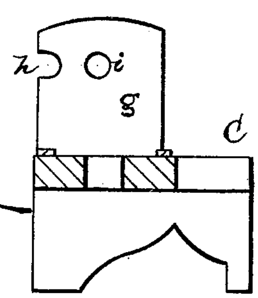


Fig. 4.

Fig. 5,



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UNITED STATES PATENT OFFICE.

WILLIAM B. SANDFORD, OF CHICAGO, ILLINOIS, ASSIGNOR TO CRANE BROTHERS MANUFACTURING COMPANY, OF SAME PLACE.

IMPROVEMENT IN TUBE-WELDING FURNACES.

Specification forming part of Letters Patent No. **189,579**, dated April 17, 1877; application filed February 6, 1875.

To all whom it may concern:

Be it known that I, WILLIAM B. SANDFORD, of the city of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Coke-Furnaces for Welding Wrought-Iron Pipe, of which the following is a full description, reference being had to the accompanying drawings, in which—

Figure 1 is an elevation, showing the end of the furnace at which the workmen are placed; Fig. 2, a vertical cross-section; Fig. 3, a side elevation of the parts shown; Fig. 4, a top view of the tongs and carriage; Fig. 5, an end view of the draw-bench, with the carriage removed.

My invention relates to welding-furnaces for pipes and similar articles, and consists in providing the furnace with an offset or shelf, extending the entire length of the wall on which the pipe-blanks are placed, in combination with an opening arranged to admit of the insertion and removal of the blanks, as will be hereinafter more fully described.

In the drawings, A represents the fire-chamber. *a* is a shelf at the side of the fire-chamber. It is formed by making an offset in the side wall of the chamber instead of carrying it up to the top of the chamber in a continuous line, as has been customary.

b is an elongated opening in the wall, through which the pipes can be placed upon and removed from the shelf.

c is an opening into the body of the fire-chamber, through which a single pipe is inserted to be heated, as usual.

B is a chamber into which the waste heat passes, and in which the pipes can be partially heated. This chamber and the remaining parts of the furnace are constructed in the ordinary manner.

C is a draw-bench, on which moves a carriage, D, which carries the tongs used in drawing the pipes through the dies. This carriage can be operated by any suitable power.

In order to draw two pipes at the same time, the tongs and carriage must be so constructed that two pipes can be grasped.

e is a pin permanently secured to the carriage midway between the two jaws. *f f* are pins or projections, one on each jaw, and two pipes can be grasped at the same time, one on each side of the pin *e*. The tongs are connected with the carriage as usual.

g is a stop, secured to the upper end of the draw-bench, against the inside of which the dies through which the pipes are drawn are placed and held, and it is provided with holes or openings *h i*, through which the pipes pass. Chains are to be connected to the handles of the tongs, by means of which they are to be drawn along with the carriage to which they are secured.

I use two dies at the same time, one before each of the openings *b c*. Both can be held in one pair of tongs by an operator.

In use, a number of pipes can be placed in the chamber B, to be partially heated. Two or more are to be placed on the shelf, and at the same time a pipe partially welded should be in the body of the furnace, having been inserted through the stop and through opening. When this is ready to be welded, one of the pipes upon the shelf will be hot enough to be drawn through the die, to form and partially weld it; and the pipe in the body of the furnace, and one from the shelf, can be drawn at the same time through the dies, thus enabling the operators to do the work much more rapidly than heretofore.

The pipe drawn from *c* will be completed by another operation, without reheating, and that drawn from the shelf will be placed in the body of the furnace.

The pipe in the body of the furnace will be drawn straight out, but those on the shelf will be drawn out at an angle; but this will do no harm.

The draw-bench is located in front of that end of the furnace shown in Fig. 1.

What I claim as new, and desire to secure by Letters Patent, is as follows:

In the pipe-welding furnace herein described, the offset or shelf *a* for supporting the pipe-blanks, in combination with opening *b*, arranged to admit of the insertion and removal of the pipe-blanks, as specified.

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