J. T. SMITH.

FURNACE DOOR-WAY FOR STEAM BOILERS.

No. 187,922. Patented Feb. 27, 1877.

Fig 1

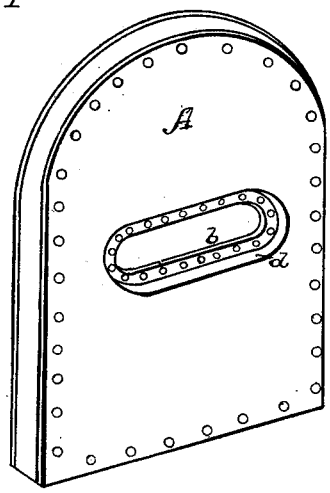
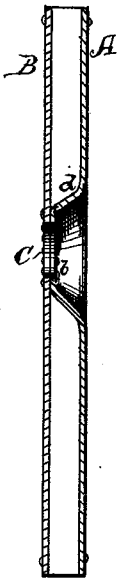


Fig 2



Witnesses

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UNITED STATES PATENT OFFICE.

JAMES T. SMITH, OF BALTIMORE, MARYLAND, ASSIGNOR TO HIMSELF AND JOHN W. SMITH, OF SAME PLACE.

IMPROVEMENT IN FURNACE-DOORWAYS FOR STEAM-BOILERS.

Specification forming part of Letters Patent No. **187,922**, dated February 27, 1877; application filed February 8, 1877.

To all whom it may concern:

Be it known that I, JAMES T. SMITH, of Baltimore, in the county of Baltimore and State of Maryland, have invented certain new and useful Improvements in Furnace-Doors; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to boiler-furnaces; and it consists in a dished or double-flanged fire-door, made of one piece of metal, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a perspective view, and Fig. 2 a vertical section, of my invention.

The head of the furnace is composed of an interior plate, A, and exterior plate B, forming the water-space *a* between them, and having the doorway C formed through the head. The interior plate A at this doorway is first dished outward, as shown at *d*, until it reaches, or nearly comes in contact with, the outer plate B, and it has then a second dish, as shown at *b*, this portion lying flat against the plate B, and the two plates are here riveted together in such a manner that both heads of the rivets are exposed—one on the outside of the head, and the other in the doorway.

It will be noticed that the outer sheet B of the furnace-head is entirely straight, without any flanges or dishing, and has simply an aperture of suitable size for the door, and the inner sheet A is double-flanged, to form the doorway, and lie flat against the outer sheet B, to be riveted thereto.

The doorway, it will be seen, is entirely formed of the same plate as the inside of the head.

By this method of forming the doorway there are no rivet-heads within the water-space for the sediment to collect upon, but it leaves a clean, smooth surface for the water to act upon the iron. It also makes the contraction and expansion equal, which is not the case where a solid ring is used.

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

The combination, in a boiler-furnace head, of the outer straight sheet B and the inner sheet A, having the double flanges *d* and *b* formed therewith, and the second flange *b* riveted to the outer sheet B, substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of three witnesses.

JAS. T. SMITH.

Witnesses:
C. L. EVERT,
FRANK GALT,
W. C. MCARTHUR.