

W. DAWSON & J. HUGHES.

Steam-Boiler Furnace.

No. 162,536.

Patented April 27, 1875.

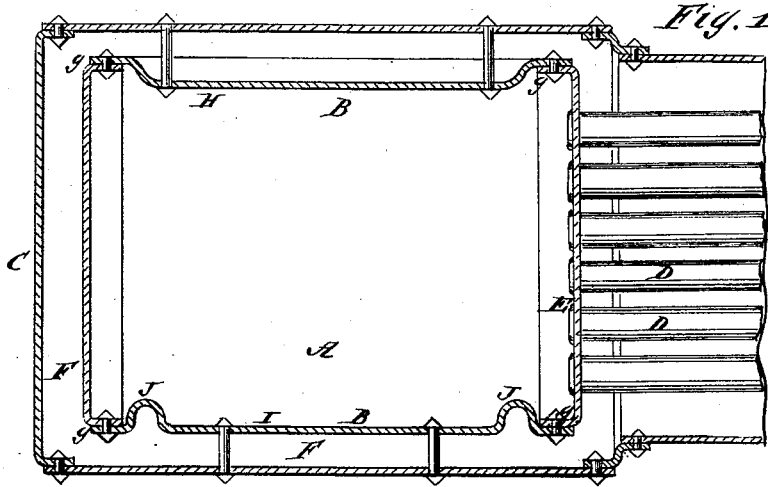
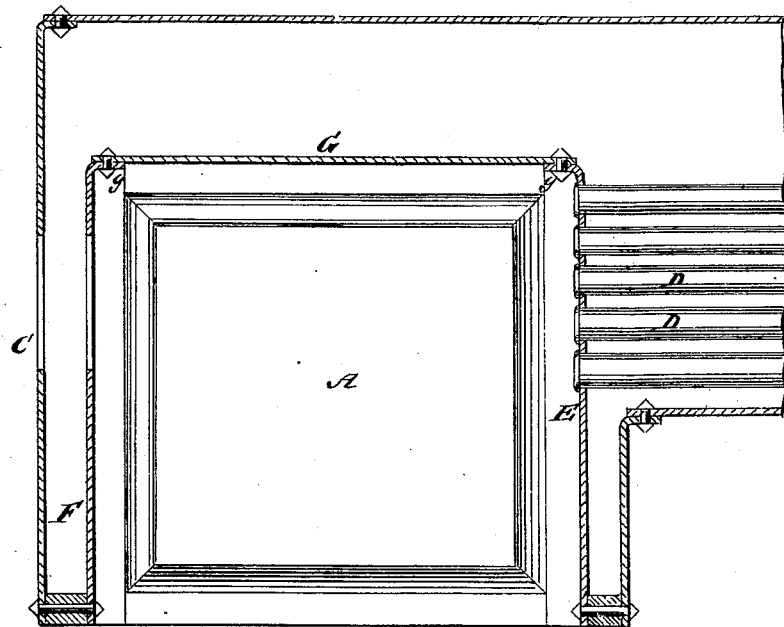


Fig. 2.



WITNESSES:

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INVENTOR:

*James Hughes and*  
*W. Dawson*  
BY *Munroe*

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# UNITED STATES PATENT OFFICE

WALTER DAWSON AND JAMES HUGHES, OF SCRANTON, PENNSYLVANIA.

## IMPROVEMENT IN STEAM-BOILER FURNACES.

Specification forming part of Letters Patent No. **162,536**, dated April 27, 1875; application filed April 3, 1875.

*To all whom it may concern :*

Be it known that we, WALTER DAWSON and JAMES HUGHES, of Scranton, in the county of Luzerne and State of Pennsylvania, have invented a new and useful Improvement in Furnaces for Steam-Boilers, of which the following is a specification :

This invention relates to a new and useful improvement in the fire-boxes or furnaces of steam-boilers; and consists in the formation of the side sheets of the furnace to protect the corner-joints and flanges from the intense heat of the fire.

Figure 1 is a plan view of the furnace, showing also a portion of the tubes of the boiler. Fig. 2 represents an elevation of the furnace.

Similar letters of reference indicate corresponding parts.

A is the fire-box or furnace. B B are the side sheets thereof. C is the front of the furnace. D are the tubes of the boiler. E is the tube-sheet of the furnace. F represents the water-legs. G is the crown-sheet. In ordinary boilers the side sheets B B, which lap onto the flanges *g g* of the front and tube sheets, are straight sheets, which leave the flanges and rivets exposed to the full heat of the fire. The furnace consequently fails at the corners from the heat and cor-

rosion caused by the increased thickness of iron at those points. Our object is to prevent this, and to make the corner-joints as durable as any portion of the furnace, and for this purpose we bulge the side sheets inward, either as seen at H, throughout the entire width, or as seen at I, where the central portion of the sheet is on the same plane as the joints, with bulges J J adjacent to the flanges to protect the joints. By this means the joints are protected from the intense heat of the fire, and are preserved and rendered as durable as any part of the furnace. We have found by actual practice that the corner-joints are rendered comparatively safe by such projections, and we claim protection for the discovery, believing it to be new.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

A fire-box or furnace of a steam-boiler, having the side sheets bulged or projected inward, substantially as seen in the drawing, for the purposes described.

WALTER DAWSON.  
JAMES HUGHES.

Witnesses:

WM. A. DUER,  
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