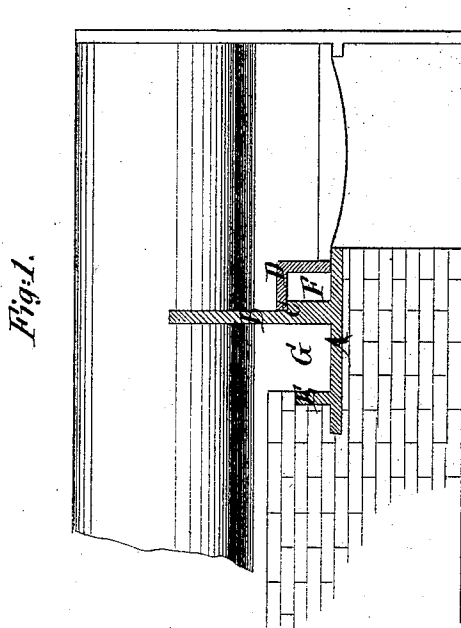
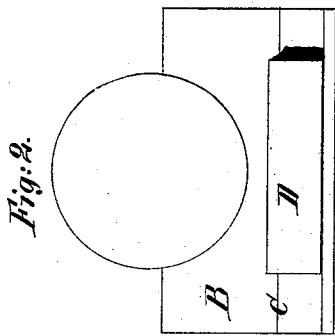


*J.A.T. Overend,*

*Boiler Furnace.*

*No. 102,581.*

*Patented May 3, 1870.*



Witnesses:  
*M. Vorländer*  
*W. A. Clark*

Inventor:  
*J.A.T. Overend*  
PER *[Signature]*  
Attorneys.

# UNITED STATES PATENT OFFICE.

JOHN A. T. OVEREND, OF SAN FRANCISCO, CALIFORNIA.

## IMPROVEMENT IN BOILER-FURNACES.

Specification forming part of Letters Patent No. **102,581**, dated May 3, 1870; antedated April 23, 1870.

*To all whom it may concern:*

Be it known that I, JOHN A. T. OVEREND, of San Francisco, in the county of San Francisco and State of California, have invented a new and useful Improvement in Boiler-Furnaces; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

The object of this invention is to provide improvements in the construction of bridge-walls and furnace-backs for boiler-furnaces, calculated to make them more durable and to facilitate repairs.

The invention consists in the application, to furnaces, of metallic fire-backs and bridge-walls, arranged for ready removal for the substitution of others when worn out, and in a manner calculated to resist the heat to the best advantage, and to provide an air-chamber behind the bridge-wall to facilitate the combustion of the gases, all as hereinafter more fully specified.

Figure 1 represents a longitudinal section of my improvement, and Fig. 2 represents a front elevation of the same.

Similar letters of reference indicate corresponding parts.

A represents a base-plate, of metal, supporting a bridge-wall, B, having a shoulder, C, for the support of the removable fire-back D,

also of metal, and supporting at the rear a wall, E, which forms the rear of an air-space, F, behind the bridge-wall. The front part G of the plate A also supports the rear of the fire-grate.

These parts are commonly made of brick, and soon crumble and wear away, and are difficult to replace.

My object in the construction and arrangement of them in this way is to make them more durable and more ready of removal, which may be done in the case of either part by lifting the one off and putting in place the new ones.

Air may be caused to circulate through the space F for the protection of the fire-back D, and air may be supplied in any way to the chamber G behind the bridge-wall for the protection of the latter, and for supplying oxygen to the gases to cause them to be more fully consumed in the space beyond.

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

The combination, in a boiler-furnace, of the metallic plate A, bridge-wall B, wall E, and fire-back D, when arranged substantially as specified.

J. A. T. OVEREND.

Witnesses:

WM. W. DUNN,  
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