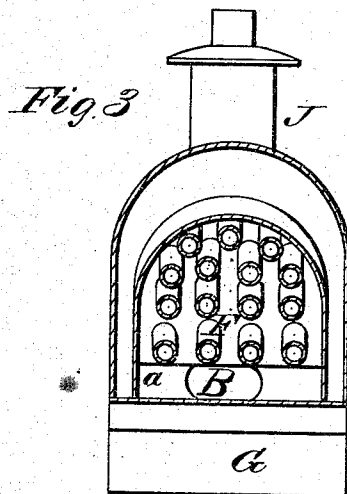
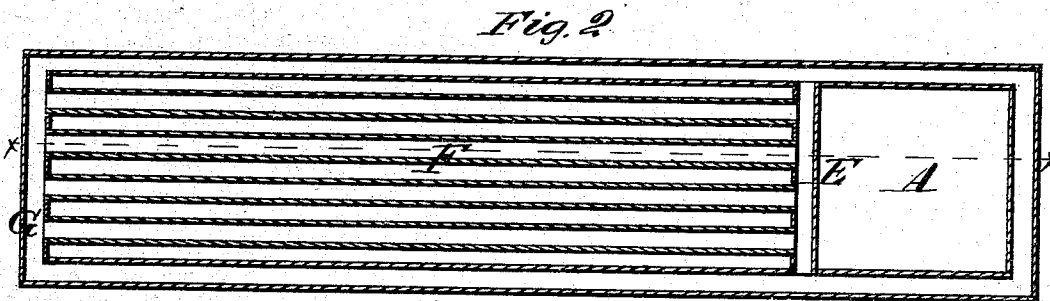
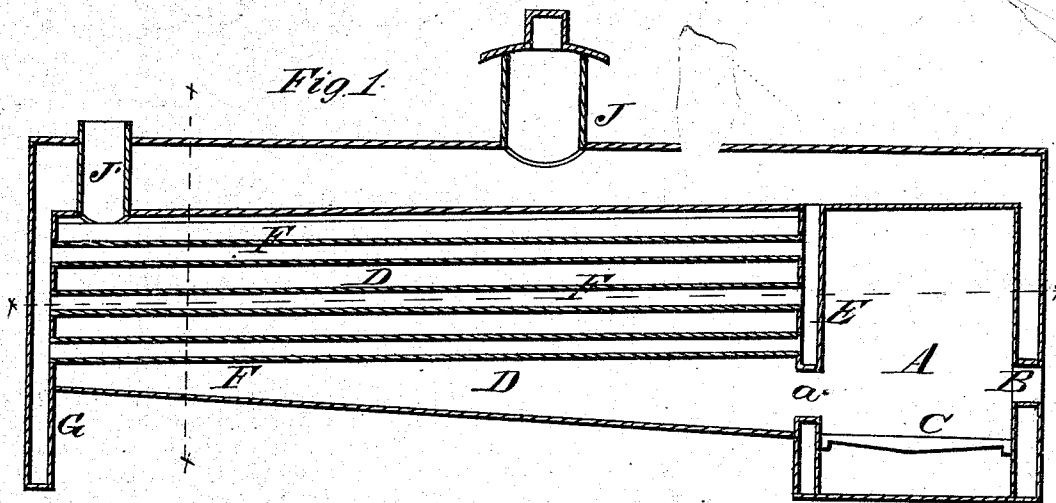


E. P. CHANCELLOR.
Furnaces for Steam Boilers.

No. 158,625.

Patented Jan. 12, 1875.



WITNESSES

Robert Corvett,
Geo. E. Whann,

INVENTOR

Edmund P. Chancellor
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ATTORNEYS

UNITED STATES PATENT OFFICE.

EDMUND P. CHANCELLOR, OF PARKERSBURG, WEST VIRGINIA.

IMPROVEMENT IN FURNACES FOR STEAM-BOILERS.

Specification forming part of Letters Patent No. **158,625**, dated January 12, 1875; application filed November 28, 1874.

To all whom it may concern:

Be it known that I, EDMUND P. CHANCELLOR, of Parkersburg, in the county of Wood and State of West Virginia, have invented a new and valuable Improvement in Safety Steam-Boilers; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a longitudinal vertical section of my boiler. Fig. 2 is a horizontal sectional view of the same, and Fig. 3 is a transverse vertical sectional view.

This invention has relation to stationary or portable steam-boilers, wherein all of the longitudinal tubes in the flue-chamber communicate with the water-space of the boiler, and allow a free circulation of water and steam through them.

The nature of my invention consists in a water-back between the fire-box and the tube-chamber, in combination with a fire-passage arranged below the cluster of tubes, and with a water-space at the rear end of the boiler. My main object is to prevent rapid destruction of the tubes by the intense heat to which they are necessarily subjected.

In the annexed drawings, A designates the fire-box; B, the fire-door, and C the grate-bars. D designates a chamber, which communicates with the fire-box A by means of a fire-passage, *a*, which is made through a double-wall fire-back, E, just above the grate-bars. In the chamber D are arranged the tubes F, which are more or less inclined from a horizontal plane, and which are connected to the rear

wall of the fire-back E and to the front wall of a water-leg, G, at the rear end of the boiler. The tubes communicate with the water-back and water-leg, and allow a free circulation of water and steam through them, and a free circulation of flame and heated products around them. J designates the steam-dome, and J' designates the smoke-pipe, which latter passes through the steam-space and out of the boiler-shell, near the rear end thereof, as shown in Fig. 1. In cross-section the boiler is the form of the capital letter U inverted—that is to say, the sides of the boiler are flat throughout their entire length, and the top of the boiler is semi-cylindrical. This form of boiler allows me to use stay-bolts to the best advantage, and to make a boiler of any desired size and strength.

By my improved construction of a steam-boiler I believe that I obtain the greatest amount of available heating-surface in the smallest space, as well as insuring the greatest strength and economy.

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

In a horizontal boiler, the furnace A, provided with the opening *a*, in combination with the chamber D, surrounding water-tubes, horizontal tubes F, communicating with the water-back E and water-leg G, and smoke-pipe J', all constructed and arranged substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

EDMUND P. CHANCELLOR.

Witnesses:

BARNA. POWELL,
PHILIP D. GAMBRILL.